

**Clinical instructor's experiences of clinical education at a
Chiropractic teaching clinic in KwaZulu-Natal**

**Conducted and compiled by
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I, Enya Elizabeth Vogl, declare that this dissertation is representative of my own work in
both conception and execution, except where indicated via references.

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Date:

Supervisor Dr P. Orton: Ph.D. Nursing

DEDICATION

This dissertation is dedicated to all the academic women out there. To the ones that beat the odds and continue to beat the odds, every day.

“What’s the greatest lesson a woman should learn?

That since day one, she’s already had everything she needs within herself. It’s the world that convinced her she did not.” – Rupi Kaur

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ABSTRACT

INTRODUCTION: This dissertation provides insight into the status of the clinical instructor's experience of clinical education at a chiropractic teaching clinic in KwaZulu-Natal and aims to equip the profession to understand better how clinical instructors perceive their role in the clinical education of chiropractic students.

AIMS AND OBJECTIVES: The primary objective of this study was to explore and describe the experiences of the clinical instructors at the Durban University of Technology (DUT) Chiropractic Day Clinic (CDC) as perceived by themselves. This study contributes to knowledge of the clinical education experience of clinical instructors at the DUT CDC. This information can assist the institution to better equip the clinical instructors for clinical learning, thus improving the educational experience of the students, and accomplishing the departmental and institutional vision and mission.

RESEARCH DESIGN: This study was conducted within a constructivist paradigm using a qualitative, exploratory, descriptive design to explore the experiences of clinical instructors at the DUT CDC with regards to the clinical education setting. The constructivist paradigm as an epistemological position takes the view that knowledge of how things are is a product of how we come to understand them. This design concentrates on understanding and exploring meaning and the way people make meaning rather than proving a theory.

RESEARCH METHODOLOGY: Semi-structured interviews were conducted with chiropractic clinical instructors so as to explore their clinical education experience within the DUT CDC, until saturation was met. A total of 14 interviews were conducted and analysed. The data was transcribed and coded by the researcher as well as the research supervisor. Content was analysed using the Graneheim and Lundman (2004) framework.

RESULTS: The research question was answered and three primary themes that encompassed the experience of the chiropractic clinical instructors were identified. These were: clinical instruction and the role of the clinical instructor; interpersonal relationships in the clinical education setting; and the clinical education environment experience.

Key concepts: Chiropractic, education, clinical instruction, experience, qualitative research

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LIST OF ACRONYMS

AHPCSA

Allied Health Professions Council of South Africa

CASA

Chiropractic Association of South Africa

CDC

Chiropractic Day Clinic

DUT

Durban University of Technology

EBP

Evidence based practice

IREC

Institutional research ethics committee

OSCE

Objective Structured Clinical Examination

CHAPTER 1: INTRODUCTION

1.1 Background to the research

Clinical education is an essential component in the training of many professionals including, though not limited to, chiropractic, homeopathy, medicine, midwifery, nursing, speech therapy and radiology (Higgs and McAllister 2005; Giordano 2008; Pollock *et al.* 2017). The interpretation of the term “clinical education” can vary, dependent upon the discipline to which it is being ascribed (Cantatore, Crane and Wilmoth 2016). Clinical education, in the context of health sciences, covers a spectrum of experiences within patient care that is conducted under clinical instructor supervision in healthcare facilities such as outpatient clinics, hospitals, or private offices (Jackson 2015). Graduates have identified that settings that encouraged and welcomed student participation in patient care were crucial in the clinical education learning process (Newton *et al.* 2009). The main goal of clinical education is to provide students with the knowledge and skills needed to provide patients with competent quality care (Valiee *et al.* 2016).

Mrozek *et al.* (2006) stated that additional research into chiropractic education would be of great benefit to the profession and its further growth. Quality chiropractic clinical education and assessment are essential ingredients in producing first-rate chiropractic graduates (Johnson 2007) as it allows the student to cope with the changing role of the chiropractor within a rapidly changing healthcare scene where patient expectations are constantly evolving (Mrozek *et al.* 2006).

The Durban University of Technology (DUT) Chiropractic Day Clinic (CDC) represents a clinical education training facility for DUT chiropractic Masters students. It has functioned since February 1994 with the intent of providing chiropractic care to the general population of Durban (Durban University of Technology 2017c). Learning in this clinical environment occurs under the supervision of clinical instructors during the hours of 08:00 – 18:00 (Monday – Friday). Chiropractic students are required to see a minimum of 35 new patients and 350 follow-ups at the DUT CDC to complete their master’s education, which is as the equivalent of a minimum of 210 hours under the supervision of a clinical instructor. However, it is mandatory for a student to spend a minimum of one full calendar year in the clinic as part of their academic requirements, regardless of whether patient numbers have been met, or not. (Durban University of Technology 2017b). Ganesh (2017) found that the chiropractic

students at the DUT CDC find the clinical supervision to be an essential factor in their clinical education experience.

Clinical supervision by a clinical instructor plays a vital role in health science clinical education; it is, however, one of the least investigated and discussed aspects of education, with a limited amount of published literature (Kilminster and Jolly 2000). There is often confusion in the literature where terms such as clinical instructor, preceptor, mentor, supervisor or clinician are interchanged and have inconsistent meanings in different countries or depending on the discipline they are being ascribed to. A definition of the role is seldom provided leaving the reader to interpret the meaning from their own understanding, which has the potential to be incorrect (Brammer 2006).

Teaching in a clinical education setting occurs at a fast pace with stringent demands being placed on the clinical instructors. A clinic environment is unpredictable as patient cases can vary in number, type, and complexity, consequently limiting the time for effective feedback (Hecimovich, Maire and Losco 2010). A correlation has been identified between the performance level of students and the effectiveness and competence of their clinical instructors. The above can be translated to mean that programme learning objectives are at risk of not being met if performance levels of students are low, subsequently affecting a programmes credibility (Casa 2015).

Researchers have found that despite the amount of published literature relating to clinical instruction, the perspective of clinical instructors is not well represented despite the critical role played by them in bridging a student's clinical reality with their theoretical knowledge (Higgs and McAllister 2005; Dahlke *et al.* 2012). Few studies have been conducted on the clinical instructor experience. Higgs and McAllister (2005) studied the lived experiences of speech pathology clinical instructors, while Greenfield *et al.* (2012) focused on the experiences of clinical instructors within physical therapist clinical education, identifying their roles, teaching skills, and competencies. However, the researcher found no evidence of research on the experience of a chiropractic clinical instructor.

The main purpose of this study was to explore and describe the experiences of chiropractic clinical instructors at the DUT CDC in terms of the clinical education setting. This study provided clinical instructors the opportunity to express their experience with regards to the students, their understanding of their role within the clinic as well as their perceived level of competence. By understanding the experience of clinical instructors, we can attempt to identify factors that can be controlled and continuously enhanced. The outcomes of this

study will contribute to knowledge of the clinical education experience of clinical instructors at the DUT CDC by identifying possible areas for improvement. This information can help the institution to better equip the clinical instructors as clinical educators for clinical learning thus improving the educational experience of the students and accomplishing the departmental and institution vision and mission statement. The vision and mission statement includes providing a learning environment that values and supports the university community as well as promoting excellence in learning and teaching (Durban University of Technology [DUT] 2017c).

This study was conducted at the DUT CDC within a constructivist paradigm using a qualitative, exploratory, descriptive design, using non-probability consecutive sampling. The population was the 14 clinical instructors at the DUT CDC. Sampling continued until data saturation was reached, which occurred after all 14 instructors were interviewed. Content analysis per Graneheim and Lundman (2004) was utilised to identify themes within the data.

1.2 Aim of the research

This study aimed to explore and describe the experiences of clinical instructors at the Durban University of Technology (DUT) Chiropractic Day clinic (CDC).

1.3 Research question

What are the experiences of the clinical instructors in a clinical education setting at a chiropractic teaching clinic in KwaZulu-Natal?

1.4 Structure of the study chapters

This dissertation consists of six chapters.

Chapter 1: This chapter served to introduce the research to the reader. It identified the rationale and context for the research and provided a brief overview of the research procedures that were followed. It presented the research aim and research question.

Chapter 2: This chapter presents and discusses an extensive literature review of relevant research. It includes information regarding health science clinical education, the role and effect of the clinical instructor as well as a history of chiropractic and chiropractic clinical

education. It identifies the gap in the literature so to allow the reader to understand why the research was conducted.

Chapter 3: In this chapter, the research methodology is justified and explained in extensive detail, outlining the steps that were taken to complete the study. Ethical considerations are discussed.

Chapter 4: The results of the study and interpretation of such are presented in this chapter. The results of the study are supported with the use of verbatim quotes from the transcribed text.

Chapter 5: In this chapter the results are discussed in relation to the literature. The relevance of the results is highlighted and related back to the original study aims and objectives.

Chapter 6: This chapter encompasses the conclusion to the study. This chapter serves to summarise the study findings and present recommendations for the institution and department.

1.5 Conclusion

Clinical education in chiropractic is an integral component in the training of competent, confident chiropractors (Ganesh 2017). Limited research is available in what has been described as a key component of clinical education: namely the clinical instructor. This study aimed to explore the experiences of clinical instructors within the chiropractic clinical education setting, the findings of which can be used to enable the institution to further explore opportunities for developments within this setting.

This chapter served as an introductory chapter to the forthcoming research. The rationale behind the study was included to emphasise the necessity of the research. Emphasis was placed on areas of interest, including the background to the research, study questions, context, and upcoming chapter breakdown. Following this introduction, Chapter 2 presents and discusses the pertinent literature related to the study.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

In this chapter, an extensive literature review relating to the topic of clinical instructors, clinical education and chiropractic within the health sciences is discussed. This is undertaken to give the reader a thorough context of the relevant literature surrounding the key concepts behind clinical instruction. All searches were conducted in the English language with key search terms including, but not limited to: clinical education; chiropractic; clinical instructor/ supervisor; clinical learning and health sciences. The sources used in this literature review were accessed and obtained from several databases including, but not limited to: Medline, CiNAHL, ERIC, DUT Summon and Google Scholar.

2.2 Clinical education

Clinical education is an essential component in the training of professionals in nursing, medicine, and psychology, and can, therefore, be interpreted differently depending on which discipline is being referred to. In healthcare, clinical education can be defined as “healthcare education conducted in healthcare facilities, outpatient clinics, emergency centres, hospitals or private offices under the supervision of a qualified practitioner or teaching staff” (Cantatore, Crane and Wilmoth 2016: 1).

2.2.1 Health sciences clinical education

Clinical education is a vital component of health science students’ professional education (Giordano 2008; Manninen *et al.* 2015; Palmgren *et al.* 2015). Clinical education sites must provide supportive clinical instructors and sufficient patient cases so as to afford sufficient learning opportunities for students (Giordano 2008). Clinical training serves to bridge the gap between theory and practice by providing students with real-world situations. This aids the student to not only develop the required skills, attitudes, and knowledge, but also to form their unique professional identity (Rapport *et al.* 2014). Through clinical education, students’ knowledge, attitude, and practice can be promoted in terms of critical thinking, clinical judgement, clinical competency and performance. The primary goal of clinical education is to provide students with the knowledge and skills needed to provide patients with quality care (Valiee *et al.* 2016).

Many studies have focused on the impact of demographic factors on learning opportunities within the health sciences (Ingrassia 2011; McCallum *et al.* 2016; Ozga *et al.* 2016), but it is vital to understand the impact of problem-based learning and guided practice in clinical education settings, as these can be designed, controlled and enhanced. Clinical education is composed of various components that have a range of effects. One of these components is how the actual setting impacts the quality of the education (Shahsavari *et al.* 2013). A clinical learning environment that is supportive is essential for student learning (Jansson and Ene 2016). A positive, encouraging environment is linked to improved student performance (Giordano 2008). Clinical education should be an environment that facilitates learning through interacting with patients, but also through professional socialisation (Cunningham, Wright and Baird 2015), opportunities that not readily available in the classroom (Greenfield *et al.* 2012).

2.2.2 Clinical education challenges

Many clinical settings are not ideal for student education which means that the limited time available in clinical practice is not utilised effectively (Kragelund 2011). Due to the fact that clinical education is carried out in clinical settings, the environment is not always conducive to learning because it is mainly focused on patient care (Manninen *et al.* 2015). A study conducted on 29 nursing students, with the aim of identifying the perceptions of the impact of mentorship on clinical learning, concluded that the quality of the clinical learning environment had a major bearing on learning ability (Kilcullen 2007).

A review of 54 articles concluded that there is a lack of evidence supporting what constitutes quality clinical education (McCallum *et al.* 2013). Ironside and McNelis (2010) conducted a nationwide survey in the United States in order to identify major barriers to effective clinical education. The study identified the following factors as having a negative effect on effective clinical education:

- Lack of quality clinical learning environments;
- Lack of qualified instructors;
- Low instructor to student ratios;
- Restrictions on the number of students; and
- The time-consuming nature of students' learning.

DaRosa *et al.* (2011) conducted a similar study on medical doctor clinical instructors and found that although there are numerous barriers to effective clinical education, the common ones were:

- Time constraints;
- Inadequate institutional financial support;
- Lack of access to education specialists; and
- Lack of access to educational space and resources.

The results from the above studies highlight the crucial link that is present between clinical education and the clinical instructor. Clinical instructors should be aiding in creating a nurturing clinical environment, creating experiences that assist the student in developing competent practical skills (Greenfield *et al.* 2012). Despite the studies identifying slightly different barriers, time constraints to clinical education learning was one that was common to both studies, thus making it an important issue.

A literature review conducted by Hecimovich and Volet (2011) sought to establish the importance of gaining an understanding of how specific learning opportunities within the health sciences contribute to professional confidence. The study aimed to highlight not only the contribution, but also the importance of, professional confidence in the doctor to patient relationship. It was concluded that this professional confidence is fostered during formal training in the clinical education setting, and that effective clinical instructor supervision enhanced it materially.

The 'theory-practice gap' is described as the inability to correlate and implement theoretical knowledge gained in the classroom or textbook setting to the practical application of modern day healthcare practice (Monaghan 2015; De Guzman, Factor and Matienzo 2017). Theory principles are often abstracted from reality and therefore are decontextualised, which makes it difficult for students to recognise which is an appropriate setting to apply it practically (Dadgaran, Parvizy and Peyrovi 2012). It is essential that students have the ability to apply theoretical knowledge to clinical practice as this skill is pivotal in the overall quality of care offered by health care professionals. It was found that the students inability to link and implement these two concepts affected students' clinical performance and learning experience (De Guzman, Factor and Matienzo 2017). The theory-practice gap describes the discrepancies between the university education experience and the clinical practice reality (Caine and Jackson 2011), which raises the question of how clinical instructors can help bridge this gap. A study by Dadgaran, Parvizy and Peyrovi (2012) revealed that clinical instructors that have current knowledge, patience, confidence, clinical skills and who

interact with students by giving them the opportunity to carry out practical tasks by applying clinical knowledge, can be effective in bridging the theory-practice gap.

2.3 Clinical instruction

Clinical instructors are used across the board in health science education and play an important role in the education experience (Giordano 2008). Chiropractic, homeopathy, medicine, midwifery, nursing, speech therapy and radiology are a few of the professions that use clinical instructors as part of their clinical training education experience (Higgs and McAllister 2005; Giordano 2008; Pollock *et al.* 2017).

2.3.1 The role of the clinical instructor

Clinical instructors oversee the students' clinical education and so, therefore, it is essential that they can competently guide and advise the students they work with (Ingrassia 2011). Clinical instructors can help bridge the theory-practice gap experienced by many students (Caine and Jackson 2011; Dadgaran, Parvizy and Peyrovi 2012; Casa 2015). Additionally, they are required to take time to demonstrate techniques and to engage with the student to encourage critical thinking processes (Recker-Hughes *et al.* 2014).

The role of the clinical instructors involved in clinical education must be well defined with the added support of a formalised system. This is needed to establish appropriate roles for both the instructor as well as the student (Jansson and Ene 2016). Researchers have found that challenges arise when there is a lack of formalised teaching systems as both clinical instructors and students become frustrated. This can be interpreted to mean that when clinical instructors do not teach consistent practices, student learning outcomes may be hindered thus indicating that the performance levels of students are directly influenced by the competence and effectiveness of their clinical instructors (Casa 2015).

Wimmers, Schmidt and Splinter (2006) found that the role of the clinical instructor increase in importance when patient numbers and disease variations are low. Clinical instructor participants felt that clinical education effectiveness was influenced by accessibility to patients with varying symptoms and disease; they argued that if the patient numbers and disease variations were low, it was a challenge create a sufficiently diverse and adequate clinical learning environment. Dolmans *et al.* (2002) found that student satisfaction was greater when there was a high level of patient numbers with disease variation as well as when there was a high level of supervision. This means that the effectiveness of clinical

learning, in the students' opinion, is largely dependent on the richness of feedback rather than on the patient numbers and disease variations, thus identifying that an important component to successful clinical learning is good supervision.

Duffy and Watson (2001) identified six themes that constitute the role of nursing clinical instructor's according to their experiences. These include being:

- An adviser;
- A supporter;
- A regulator of professional standards;
- An interpreter of unclear language related to student evaluations; and
- A networker.

Although Duffy and Watson (2001) focused on identifying what constitutes the role of clinical instructors, it has been shown that clinical instructors have different ways of perceiving their roles according to literature sources. Brammer (2006), identified eight categories into which nursing clinical instructors could be placed, dependent upon the instructors preferred role:

1. Facilitator role.
2. Teacher/Coach role.
3. Oversee/Supervisor role.
4. Peer support and role model role.
5. Instructor role.
6. Manager/Foreman/Forewoman role.
7. Authority role.
8. Resister/Dissenter role.

Brammer (2006) concluded that the facilitator, teacher and overseer understand their role as one of placing the student as the focus, while the clinical instructors understand their roles as being peer support and role model or supervisor focused on completing the workload. This differs from the clinical instructors that are included in the manager and authority roles who believe the clinical instructor has control and that the student is an added burden while the dissenter would rather avoid the student entirely. While this might give an interesting insight into the perceived roles of clinical instructors, that particular study investigates the roles of nursing clinical instructors, who instruct in a very different environment to chiropractic clinical instructors. Many of the studies on clinical instructors are conducted in a qualitative method on small sample sizes with no intention of generalisability but rather focusing on how to further develop the role of the clinical instructor within the clinical education environment.

2.3.2 The clinical instructor to student relationship

A positive clinical instructor-student relationship is thought to be associated with a positive clinical education experience (Chan, Tong and Henderson 2017). Relationships that are supportive provide students with educational and emotional support thus enhancing students' clinical education experience (Heydari, Yaghoubinia and Roudsari 2013).

Although the role of clinical instructor seems to vary greatly in the literature, the key characteristics that students would want in a clinical instructor appear to have more overlap (Duffy and Watson 2001; Brammer 2006). A characteristic is defined as "a distinguishing trait, quality or property" (Merriam-Webster Dictionary 2017). Research has shown that students have identified key characteristics that they feel clinical instructors need to adopt in order to teach clinical skills effectively (Gignac-Caille and Oermann 2001; Ingrassia 2011; Ozga *et al.* 2016; Valiee *et al.* 2016). Gignac-Caille and Oermann (2001) surveyed 292 students and found that communicating clear expectations, correcting students without belittling them, being approachable, demonstrating clinical skill and judgement, clear explanation and being well prepared were the six most important clinical instructor characteristics. Ozga *et al.* (2016) identified four categories that correlated with how effective clinical instructors were, namely:

- Interpersonal relationships;
- Communication;
- Professional skills; and
- Teaching behaviours.

From these themes the researchers created a survey which was completed by 103 students who rated the importance of each of the themes. The results were as follows: interpersonal relations was rated as the most important, followed by communication behaviours, then the clinical instructor's professional skills and finally their teaching behaviours. Heydari, Yaghoubinia and Roudsari (2013) also found that communication is the building block for a supportive clinical instructor-student relationship. This shows the importance of clinical instructors being aware of their interpersonal relationship skills and the impact that a supportive relationship can have on a students' clinical education experience.

The relationship between the clinical instructor and the student is indispensable as it will assist the student in gaining the most from the teaching experience (Warne *et al.* 2010). Many studies have identified the importance of developing student and clinical instructor

relationships within the clinical education context (Gignac-Caille and Oermann 2001; Kilcullen 2007; Heydari, Yaghoubinia and Roudsari 2013; Shahsavari *et al.* 2013). As important as the above key characteristics are, studies have identified that the crux of the student to instructor relationship is trust – instructors who appear competent and professional create trust thus enabling students to embrace the required clinical lessons. When clinical instructors are perceived as incompetent, this can reduce the students' trust (Shahsavari *et al.* 2013). In a similar way, nursing students reported that when clinical instructors perform the same skill but in different ways without communicating the link, students were left feeling unconfident in what they learnt in the classroom setting (Newton *et al.* 2009). This further reinforces the importance of developing a student and clinical instructor relationship built on trust and forged through communication as it appears from the literature that this is the crux of the interpersonal relationship.

A study conducted by Hecimovich, Maire and Losco (2010) focused on the effect of the clinical instructor's feedback in fifth-year chiropractic students' patient communication skills. The study concluded that there was a lack of adequate clinical instructor feedback to the students during the clinical education experience. Feedback is the process of providing information to students with the intention of improving performance (Ramaprasad 1983; Hecimovich, Maire and Losco 2010). Feedback encourages students to evaluate their performance in order to remedy past mistakes and to reinforce clinical competency. This may influence the development of positive clinical skills such as patient communication. However, there is a prominent failing in health care education, namely, the lack of adequate effective feedback in the clinical education setting (Hecimovich, Maire and Losco 2010).

A study conducted in by Ganesh (2017) looked at the clinical experiences of first-time registered master's chiropractic students during their clinical practice at the DUT CDC. The results of the study concluded that although the inter-relationship that exists between the student and clinical instructor was seen as an indispensable component of the chiropractic student clinical education experience, it was not without challenges. The main negative barriers to clinical instruction at the DUT CDC that came to light from the study included:

- Time spent on clinical discussion;
- Delivery of criticism on the part of the clinical instructor; and
- Incongruences in practice philosophy between the student and the clinical instructor.

The results from the above study correlate with the results of DaRosa *et al.* (2011) and Ironside and McNelis (2010) who also found time constraints to be a barrier to effective clinical instruction to students. Delivery of criticism is related to the method of feedback from

the clinical instructor to the student, which correlates with the findings of Hecimovich, Maire and Losco (2010), who also found that chiropractic students felt there could be an improvement in the way feedback is imparted. Incongruences in practice philosophy is a factor that is unique to chiropractic as there are many varying philosophies within the profession depending on the practitioner.

Despite the amount of published literature about clinical instruction, the perspective of clinical instructors is not well represented, even though they play a critical role in bridging the gap between theoretical knowledge and clinical reality (Higgs and McAllister 2005; Dahlke *et al.* 2012). Many studies focus on the perspective and experience of the student and therefore, the student's perceived ideas of clinical education are well understood (Sharif and Masoumi 2005; Smedley and Morey 2010; Warne *et al.* 2010; Elisha and Rutledge 2011; Sole *et al.* 2012; Valiee *et al.* 2016; Ganesh 2017). Clinical instructors play a vital role in the clinical education experience and understanding the clinical instructor's perspective could be an important tool in advancing clinical education strategies.

2.3.3 Clinical instructor effect on clinical education

One of the most influential components of the clinical training experience is thought to be the clinical instructor (McCallum *et al.* 2016). Clinical instructors are critical to the clinical education of health science students who experience many stresses, which can be lessened by the competence and skill of the clinical instructor (Giordano 2008). Increasingly the acceptance of clinical supervision is more widespread, so it is being included in multiple health care courses. The evidence, however relating to clinical supervision by clinical instructors is generally of a poor standard (Pollock *et al.* 2017).

Effective clinical instructors can improve the educational experience of the student while ineffective clinical instructors can inhibit learning, consequently taking away from the clinical experience. For this reason, it is important that quality clinical training experiences are designed so as to promote student learning (McCallum *et al.* 2016). A competent clinical instructor should help students identify, and deal with, any negative emotions, so as to prevent any learning inhibition and should rather enhance the effect of positive emotions on learning (Lahteenmaki 2005).

There is a correlation between the performance level of students and the effectiveness and competence of their clinical instructors. Programme learning objectives are at risk of not being met if the performance levels of students are low, so affecting a programme's

credibility (Casa 2015). There is extensive empirical and anecdotal evidence that the clinical instructor experience can enhance student professional confidence and competence (Wimmers, Schmidt and Splinter 2006; Lai, Sivalingam and Ramesh 2007). Nevertheless, there is a shortage of quality clinical instructors and insufficient systems in place to ensure professional standard consistency (Recker-Hughes *et al.* 2014).

Clinical instructors aim to teach and evaluate students in the clinical education environment: however, they do not always have the appropriate training and preparation know how, and often it is the case that the selection of clinical instructors is based on their technical ability in their respected profession, rather than their ability to teach or educational training experience (Giordano 2008). In most cases, they will not be required to undergo any form of education training (Ingrassia 2011; Dahlke *et al.* 2012) and thus, many clinical instructors base their teaching style on their own clinical educational experience (Giordano 2008). Research has shown that clinical instructors are inconsistent in their teaching techniques, such as in using reflective practice or providing time for student dialogue (Recker-Hughes *et al.* 2014), although due to variance in patient cases, personal experiences, reflections and teaching style variance amongst students, it is inevitable that they would be perceived as inconsistent. This is not done to confuse the student but is an inevitable consequence of the environment in which clinical education occurs. Additionally, it would be mistaken to assume that all clinical instructors inherently possess the knowledge, skills and behaviours observed in more experienced clinical instructors. It should be acknowledged that clinical instructor development is a developing process that needs to be supported by the relevant department and institution as well as through personal development.

There is a correlation between experienced clinical instructors and ongoing reflection on their teaching skills (Greenfield *et al.* 2012). It could, therefore, be said that proficient clinical instructor teaching skills need to be developed through reflection of clinical instructors on their teaching manners, relationship building and continuous professional development (McCallum *et al.* 2016). Reflective learning is an active process that results in change: it occurs when there is critical self-examination as a result of an adverse practical experience where an individual felt challenged so leading to this process which invariably results in the individual identifying different alternatives, pointing to a more desirable and effective future experience (Duffy 2007). Reflective practice has extended across many professions. Many professional organisations, as well as regulatory bodies, have made reflective practice a mandatory component of professional development. Allied health professions have implemented the concept so as to demonstrate evidence of professional development (Duffy 2007). The benefits of reflective practice have been shown to include enhancement

of patient care, linking of the theory-practice gap, practice-related problem resolution and critical thinking stimulation (Paterson and Chapman 2013).

Reflective learning has been used in postgraduate nursing, medicine, and social work (Duffy 2007; Mann, Gordon and MacLeod 2009; Vachon and LeBlanc 2011; Paterson and Chapman 2013). Different strategies have been implemented to facilitate reflective learning, such as critical incident analysis, reflective journal writing, portfolio development and commitment to change contracts (Vachon and LeBlanc 2011). Literature has shown that guidance and supervision are significant for reflection and that students felt this was beneficial to their learning as it offers them the opportunity to consider their strengths and weaknesses as well as an opportunity to identify learning needs (Mann, Gordon and MacLeod 2009; Middleton 2013; Paterson and Chapman 2013). An important task for clinical instructors may be to model critical reflection on their own reflective learning practice. Reflective learning has been described as an essential attribute of competent healthcare professionals (Mann, Gordon and MacLeod 2009).

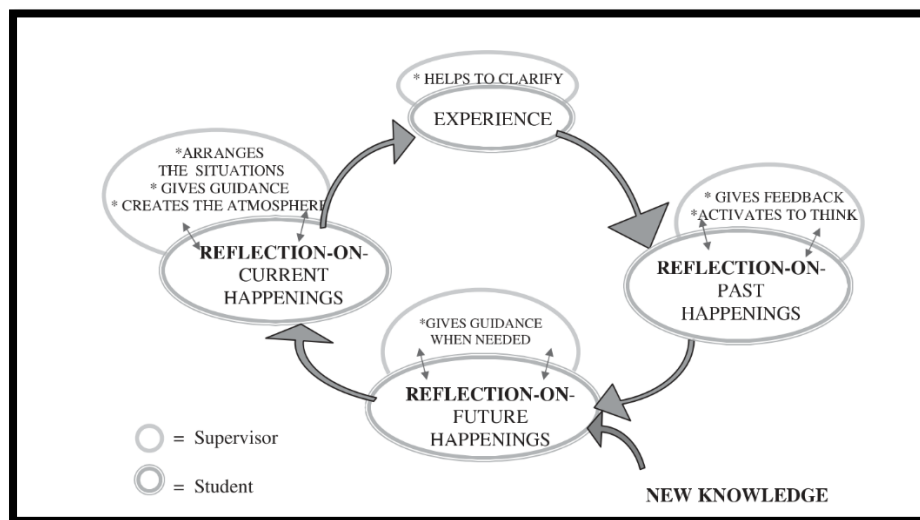


Figure 1: Reflective training process
Source : Lahteenmaki (2005)

The role of the clinical instructor/supervisor is critical to effective reflective learning in the clinical environment (Mann, Gordon and MacLeod 2009). As seen in Figure 1, Lahteenmaki created a reflective training model for students and clinical instructors (referred to as supervisors in the above figure). Active reflection is crucial not only in the learning process, but also in processing the experience; by reflecting upon their experiences, students increase their understanding and thus their competence in the task. In the model, reflection begins with the students learning experience. The students then find themselves in a situation requiring them to recall their experience and if required, the clinical instructor will

help the student to simplify their thought processes. This will be guided by discussion and question asking without direct answers. Then the student will focus on finding new ideas and concepts with the support of the clinical instructor thus allowing the student to implement their practical skill as an independent practitioner and subsequently, generate new experiences (Lahteenmaki 2005).

A study conducted on physiotherapy students revealed that they felt a good clinical instructor enabled them to reflect on their issues, so prompting them to clarify their thought process, as well as their subsequent actions in the clinical setting. This helped reinforce their ability to critically analyse and evaluate their own thoughts and ideas as well as create a better understanding as to the effect on their patient (Lahteenmaki 2005). A literature review completed found that within nursing clinical education, practitioners acting as clinical instructors are pivotal in enhancing students' skills within the clinical education setting (Newton *et al.* 2009).

2.3.4 Factors that affect clinical instructor's instruction and experience

Clinical instructors have multi-role accountability; they assume legal, ethical and moral responsibility for both the student as well as the patient. This requires them to take on the role of educator, counsellor, and evaluator (Higgs and McAllister 2005). A study conducted on speech pathologist clinical instructors identified that there are six major dimensions of the lived experience of being a clinical instructor:

1. A sense of self.
2. A sense of relationship with others.
3. A sense of being a clinical educator.
4. A sense of agency.
5. Seeking dynamic self-congruence.
6. Growth and development.

In recent years there has been a focus on research related to clinical instruction (Notzer and Abramovitz 2008; Paulis 2011; Shahsavari *et al.* 2013; Recker-Hughes *et al.* 2014; Rowbotham and Owen 2015; McCallum *et al.* 2016; Ozga *et al.* 2016; Valiee *et al.* 2016). With this growing body of literature, educational institutions now expect clinical instructors to demonstrate expertise as clinical educators (Delany and Bailocerkowski 2011). This can be interpreted to mean that there are now factors that affect a clinical instructors' instruction that were not present in the past.

A study conducted on the effect of clinical instruction workshops found that lasting improvement in clinical instructor performance was possible through the attendance of brief workshops on clinical instruction methods (Notzer and Abramovitz 2008). This study on 121 clinical instructors from varying allied health professions looked at improvements within five special dimensions of clinical instruction, namely:

1. Overall assessment of the instructor;
2. Presentation of theoretical material;
3. Tutor availability to students;
4. Contribution to clinical training; and
5. Instructor-student relationship.

The study found that one year after attendance of the workshop, the above dimensions of clinical education instruction increased significantly according to student feedback (Notzer and Abramovitz 2008).

Not all students require the same teaching style and it is essential for clinical instructors to be able to not only recognise this, but also adjust their respective teaching skills, so as to offer a more effective learning experience. Clinical education and classroom education are very different learning settings; clinical education occurs in a complex situation (Baraz, Memarian and Vanaki 2014). Unlike classroom learning, which is structured, clinical education is more unplanned with much of the learning occurring through direct patient contact (Cheraghi, Salasli and Ahmadi 2008; Baraz, Memarian and Vanaki 2014). This creates a complex role for the clinical instructor, one that requires them to adapt their learning styles in response to not only the students learning style, but also their level of skill (Recker-Hughes *et al.* 2014). This does not necessarily require clinical instructors to undergo personality training, but they do need to have a basic understanding of the differences in personalities and be able to present information appropriately so as to pass the knowledge on to each individual student accordingly (Giordano 2008).

Another factor that has been shown to influence the way clinical instructors instruct is the variation in learning styles amongst students (Baraz, Memarian and Vanaki 2014). Multiple instruments have been developed to determine the learning styles that students may have. Research has shown that the learning style inventory by Smith and Kolb (1986) is a superior tool which is based on the personality theory of John Dewey. It divides students into the following categories:

1. Diverger: Reflective learners who prefer to observe and rely on concrete experiences.

2. Assimilator: Theoretical learners who prefer abstract conceptualisation and reflective observation.
3. Converger: Pragmatic learners who prefer active experimentation and who prefer single correct answers to a question or problem.
4. Accommodator: Activist learners who prefer doing things that include concrete experience and active experimentation. These learners tend to be more open to taking risks and to utilise the trial and error model.

Learning variations amongst clinical instructors also need to be taken into consideration as they would also fall in the same categories as above, thus it could be said that a 'Diverger' learner would respond well to a 'Diverger' clinical instructor due to the inner understanding they would experience for each other's learning styles. Therefore, it would be of value for the clinical instructors to be aware of where they fit in the above learning styles as well as ways in which to aid students of different learning styles.

2.4 Chiropractic

The World Health Organisation (2005) defines chiropractic as "A health care profession concerned with the diagnosis, treatment and prevention of disorders of the neuromusculoskeletal system and the effects of these disorders on general health. There is an emphasis on manual techniques, including joint adjustment and/or manipulation with a particular focus on subluxations".

2.4.1 Brief History of chiropractic and chiropractic education

The word "chiropractic" can be traced back to a Greek origin, meaning "done by hand". The principle of chiropractic is based on a premise that an individual's nervous system is integral to an individual's state of health and that an interference with the nervous system will impair normal body functioning, resulting in a decline in the body's ability to resist disease (National Board of Chiropractic Examiners: NBCE 2015). Its emphasis is on manual treatments, including spinal adjustment or manipulation. Chiropractic is seen as an alternative health care, and is used in conjunction with conventional medicine in many countries (Ernst 2008).

Chiropractic's history originated in 1895 when magnetic healer, Daniel David Palmer commenced practice as a chiropractor in Davenport, Iowa in the United States of America. The initialising event occurred when Palmer applied a "hand thrust" to a deaf man's spine which resulted in restoration of his hearing. Despite Palmer having no formal training, he

was well respected for his knowledge of human anatomy and physiology (Keating 1992). In 1897, he opened the first chiropractic educational institute called the Palmer School of Chiropractic, later being taken over by his son BJ Palmer. Now, in 2018, there are 44 chiropractic educational institutes in 18 countries worldwide (World Federation of Chiropractic 2017). In an international context, chiropractic is now considered to be the third fastest growing healthcare profession, surpassed only by medicine and dentistry (NBCE 2015).

A summit was held in July 2009 by academic leaders from eight Asian Pacific Chiropractic colleges to discuss chiropractic education. The summit agreed that reflective learning in chiropractic clinical education was invaluable. This summit concurred that the interaction between the student and the clinical instructor is integral in promoting positive clinical education experiences (Ebrall *et al.* 2009). Students need to have an adequate clinical education as preparation for the ever-changing role of the chiropractor so assisting in keeping abreast of development and the increasingly stringent demands placed on chiropractors by patient expectations (Mrozek *et al.* 2006). Quality clinical education is essential in establishing competent chiropractic graduates and maintaining good practice skills (Johnson 2007).

2.4.2 Chiropractic in South Africa

South African chiropractic legislation was licensed in 1971 under the Chiropractic Association of South Africa: it took however, a further 11 years for the legislation of full professional status to be promulgated, the first group of chiropractic students graduating in 1994 (Myburgh and Mouton 2007), and governed under The Allied Health Professions Act 63 of 1982. The Allied Health Professions Council of South Africa (AHPCSA) is now the regulatory authority for chiropractors (Allied Health Professions Council of South Africa [AHPCSA], 1982).

Prior to 1989, individuals interested in studying chiropractic were required to do so internationally as the first chiropractic students were only accepted into the Technikon Natal, (known today as DUT) in 1989 (Chiropractic Association of South Africa [CASA] 2017). The chiropractic Master's Degree can currently be obtained from two universities in South Africa, the Durban University of Technology or at the University of Johannesburg (CASA 2017). The academic component of the chiropractic programme spans a minimum of five years of full-time study, after which a Master's Degree in chiropractic is obtained. In addition to the academic component, a research project and dissertation is required to be completed as

well as clinical education training within the DUT CDC under the supervision of qualified chiropractors known as clinicians / clinical instructors (DUT 2017a).

In South Africa, chiropractors hold the position of primary contact practitioners, with the ability to diagnose and manage in a manner that is associated with a physician (Myburgh and Mouton, 2007; Allied Health Professions Council of South Africa [AHPCSA], 1982). Although the legislated scope of practice tends to limit chiropractic to treat relatively benign musculoskeletal problems, it does not limit chiropractors from contributing to broader patient management through appropriate referral. Chiropractic services are however, absent from the formal public health setting as it is not government funded and therefore, may not be experienced by the broader community (Myburgh and Mouton, 2007).

2.4.3 DUT CDC clinical education

The mission of the Chiropractic Department at DUT is to produce chiropractic graduates who uphold the ideals of practicing environments with regards to patient care, business practice, ethics and professional development. (DUT, 2017c). The DUT CDC is a training faculty for DUT master's chiropractic students and has functioned since February 1994 with the goal of providing chiropractic care to the population of Durban during the hours of 08.00 – 18.00 from Monday – Friday (DUT 2017b). It offers chiropractic service at a discounted rate in comparison to private practice rates.

In this setting, master's chiropractic students assess, diagnose, treat and manage patients under the supervision of qualified chiropractors within the scope of chiropractic care (Allied Health Professions Act 63 of 1982). These qualified chiropractors are termed “clinicians” within the DUT environment and is interchangeable with the term “clinical instructors”, which is used within this dissertation. Learning in the clinical environment constitutes approximately 10% of the Masters in Chiropractic qualification at DUT. Chiropractic students are required to see 35 new patients and 350 follow-ups at the DUT CDC to complete their master's education (Personal communication with Dr. Korporaal, 2017). However, it is mandatory for a student to spend a minimum of one full calendar year in the clinic as part of their academic requirements, regardless of whether patient numbers have been met (DUT 2017b).

The organisational structure of the DUT CDC is as follows (DUT 2017b):

1. The clinic director: Oversees the clinical operations and management and reports to the faculty.

2. The clinic co-ordinator: Organises and administrates clinician meetings.
3. Administrative staff:
 - 3.1 Finance administrator: Manages the monetary aspects of the clinic.
 - 3.2 Student liaison administrator: Organises and manages the student rosters; captures patient numbers and attends to student complaints and disciplinary matters.
 - 3.3 Back office administrator: Captures patient data and attends to medical aid matters.
 - 3.4 Health and Safety administrator: Ensures that safety regulations are complied with, that the clinic is clean and attends to any general clinic maintenance.
 - 3.5 Front desk reception staff: Schedule patients, manage payments, draw patient files and ensure laundry is done. They are assisted by the fifth-year students, who are rotated so as to ensure one student is rostered daily at reception.
4. Clinical instructors: Responsible to impart the clinical education curriculum according to the Chiropractic Handbook, assist in Objective Structured Clinical Examination (OSCE) examinations, attend clinician meetings as well as supervise between four and six master's students' research throughout the course of the year, however this has varied over the years (2017b).

In 2011, the demographic characteristics of the patients presenting to the DUT CDC were found to show a mean age of 37.8 years with females making up 50.9% of the total (McDonald 2014). During 1995 – 2005, the clinical conditions chiropractic treated comprised 17.92% cervical spine complaints, 3,50% thoracic complaints, 17.31% lumbo-sacral complains and 9.38% extremity complaints (Benjamin 2007; Jaman 2007; Venketsamy 2007). These percentages only refer to the primary complaint that the patient presented with as patients often present with multiple regional complaints.

The DUT CDC chiropractic masters students are made up of students at two different stages of learning namely:

1. Fifth-year students who have yet to complete their fifth-year academic requirements.
2. Student interns who are in the sixth year and above – these students have completed all their fifth-year academic and clinical requirements except for research.

According to the Chiropractic Clinic Manual (DUT 2017b), the aims of the DUT CDC include the following:

1. To give the student and intern, the opportunity of gaining initial clinical experience by providing primary contact, curative and rehabilitative health care teaching facilities and through this, provide quality chiropractic care and patient education.
2. To provide a patient base for research projects.
3. To provide a base for students and student interns to obtain further clinical experience in terms of their statutory responsibilities.

2.5 Conclusion

This chapter discussed the existing literature regarding clinical instruction and clinical education in health sciences and within chiropractic. It included a look at the current clinical education scene in the health sciences and established that current challenges faced within clinical education included low instructor to student ratio, time constraints and the theory-practice gap experienced amongst students (Ironsides and McNelis 2010; DaRosa *et al.* 2011). It was established that clinical instructors' roles are multifactorial and encompass being an educator and a mentor. They have the ability to bridge theoretical knowledge and clinical practice when placed in a supportive clinical environment and can develop meaningful relationships with their students (Dadgaran, Parvizy and Peyrovi 2012). Clinical instructors have been shown to benefit from training in reflective practice, learning style recognition and interpersonal skills development (Giordano 2008; Mann, Gordon and MacLeod 2009).

Clinical instructors play a vital role in the clinical education of the chiropractic student. As shown in this chapter, numerous studies have focused on the viewpoint of students regarding clinical instruction, a few have been focused on clinical instructor experience. Higgs and McAllister (2005) looked at the lived experiences of becoming a speech pathology clinical instructor while Greenfield *et al.* (2012) focused on the experience of clinical instructors within physical therapist clinical education, identifying their roles, teaching skills, and competencies. To the best of the researchers' knowledge, there no

research has been conducted on the experiences of chiropractic clinical instructors internationally or within the South African context.

CHAPTER 3: METHODOLOGY

3.1 Introduction

In the previous chapter, the literature relevant to the topic was discussed in-depth. In this chapter, the methodology utilised to meet the aims and objectives of the study is described, including:

- Study design;
- Population;
- Sampling;
- Instruments used;
- Procedures employed;
- The inclusion and exclusion criteria;
- Analysis of the collected data; and
- Rigour.

3.2 Study design

This study was conducted within a constructivist paradigm using a qualitative, exploratory, descriptive design to explore the experiences of clinical instructors at the DUT CDC. Qualitative is defined by Creswell (2013: 39) as

A type of educational research in which the researcher relies on the view of the participants, asks broad, general questions, collects data consisting largely of words from participants, describes and analyses these words for themes, and conducts the inquiry in a subjective, biased manner.

Qualitative research is concerned with understanding how experiences are interpreted, how individuals construct their worlds and what they attribute their experience to (Merriam and Tisdell 2016: 6). The intention of qualitative research is to allow for an understanding of social constructs by exploring subjective matters such as views, perceptions, opinions, attitudes and experiences. This design was utilised as it concentrates on understanding and exploring meaning as well as focusing on the way people construct meaning rather than proving a theory, or determining relationships (Braun and Clarke 2013: 30). The use of qualitative research has increased and has been shown to be beneficial in chiropractic research as its approach is in-depth, open and flexible. It has played a minor role in chiropractic research development (Cawood 2016). Qualitative approaches to research

within chiropractic education seek to address matters related to the multi-faceted human behaviours within complicated environments (Mrozek *et al.* 2006). Qualitative research was chosen as it was best suited for the research as well as for the desired outcomes. Qualitative research provides rich, intricate data within an inductive flexible research design, allowing the researcher to explore the participants' true emotions and everyday experiences (Maxwell 2012). Since the research aimed to identify chiropractic clinical instructor's experiences, it was concluded that using qualitative semi-structured interviews to explore the phenomena would be the most effective.

Structured approaches in qualitative research lacks the flexibility to respond to developing insights; however semi-structured interviews allows the researcher to ask a combination of predetermined questions (with prompts) that allow an open and exploratory response (Maxwell 2012). This approach allowed the researcher to stray from the predetermined questions when it was felt to be appropriate and allowed participants the freedom to express their true experience (Cohen and Crabtree 2006).

Qualitative research generally investigates issues from a variety of paradigmatic positions. A paradigm is said to comprise four elements (Denzin and Lincoln 2017):

1. *Ethics* – How am I going to conduct this study so that it is morally suitable for the participants partaking in it?
2. *Epistemology* – How do I know the world?
3. *Ontology* – What is the basic nature of what or who I am researching? What is their perceived reality?
4. *Methodology* – How will I go about focusing on the best means for me to gain the knowledge I seek?

A paradigm, when being ascribed to research, is described as the assumptive foundation from which we go about producing knowledge (Adams, Broom and Jennaway 2008). The constructivist paradigm is an epistemological position that takes the view that knowledge of how things are, is a product of how we come to understand it (Braun and Clarke 2013: 30). This paradigm seeks to record the individuals own perspective of a process, event or intervention (Adams, Broom and Jennaway 2008). This design concentrates on understanding and exploring meaning and the way people construct meaning rather than to prove a theory or to determine relationships (Braun and Clarke 2013:35). The epistemology within this qualitative paradigm allows the researcher and the participant to be actively linked, so that the "findings" are created as the research progresses (Lincoln and Guba 1985; Guba and Lincoln 1994). The collected data is analysed with the acknowledgement

that the themes are interpreted based on the experiences and relationships shared between the researcher and the participants (Polit and Beck 2012: 500).

Exploratory or inductive research designs are used to develop and explore a rich understanding of an area of interest where there is paucity in the existing literature pertaining to that topic. In exploratory research, there are no predetermined themes or categories, as they are revealed during the content analysis process (Guest, Namey and Mitchell 2013). Explorative design was utilised in this research due to the researcher's interest in understanding the experiences of the chiropractic clinical instructors at a chiropractic teaching clinic as perceived by themselves. It was also utilised because there is a scarcity of literature relating to chiropractic clinical instructor's clinical education experience. Descriptive and exploratory research occurs in concurrence with one another. It describes what happened in terms of potentially observable behaviour by expanding on the concept, so as to interpret and identify significance and meaning from the data (Maxwell 2012).

Qualitative research can play a central role in providing a critical rather than merely descriptive examination of numerous chiropractic education matters (Adams, Broom and Jennaway 2008). It is for this reason, and those stated above, that a constructivist qualitative exploratory, descriptive design was chosen and applied to understand the experiences of the chiropractic clinical instructors at a chiropractic teaching clinic.

3.3 Research setting

A research setting describes the location where the research took place. In this study, the research setting was the DUT CDC as this was the natural environment in which the clinical instructors work. The DUT CDC is situated in Berea, Durban, and acts as a training faculty for DUT chiropractic students by exposing them to clinical experience. The clinic aims to provide chiropractic treatment to the greater general Durban population (DUT 2017b).

The DUT CDC underwent an upgrade in 2012 to improve the facility and to ensure that it complied with the Occupational Health and Safety Act (Act 181 of 1993). The revamped DUT CDC consists of a reception, three bathrooms, a clinical instructors' room, 23 treatment rooms, a rehabilitation room, six modality rooms as well as a student common room. The clinic rooms are comfortably furnished with a desk, two chairs, a plinth, a small mirror and a chiropractic bed. The rooms all have air-conditioning and are wheelchair accessible.

The majority of interviews took place in a treatment room within the DUT CDC. When arranging a venue, it is desirable that the location be private, quiet, have quality acoustics with minimal disturbance. The private treatment rooms at the DUT CDC were suitable in this regard. One-to-one semi-structured interviews were conducted in order to obtain data from participants. During the interviews, the researcher either sat adjacent or opposite to the participant with the door closed. The researcher aimed to keep the atmosphere relaxed but professional so to maintain the relationship that existed between the researcher/student and participant/clinical instructor. It was found that the clinical instructors were open and honest to the researcher despite the affiliation of the researcher having been a student under their supervision at the DUT CDC. Permission to use the DUT CDC was obtained beforehand (Appendices A and B).

3.4 Population

In this study, the clinical instructors were qualified chiropractors who were either full-time or part-time staff at DUT. Full-time staff are employed by the institution on a full-time basis. Their responsibilities include: lecturing, supervising research, departmental responsibilities as well as clinical instruction within the DUT CDC. Part-time staff members supervise research and clinically instruct at the DUT CDC. All clinical instructors previously graduated from the same university, although it was then referred to as Technikon Natal or the Durban Institute of Technology. They directly instructed and supervised the chiropractic students within the teaching clinic while the students were treating patients (DUT Chiropractic Clinic Manual, 2017).

The study population consisted of all 14 chiropractic clinical instructors at the CDC at DUT. All members of the population agreed to partake in the study.

3.4.1 Advertising and recruitment

No formal advertising was required for the study as the total population of chiropractic clinical instructors were accessible at the DUT CDC. After full institutional research ethics committee (IREC) approval (Appendix F), an email was sent out to each clinical instructor with a letter of information (Appendix D) to inform them that the researcher would be approaching them at the clinic to invite them to participate in the study. Clinical instructors were then approached individually at the DUT CDC and given a recruitment form (Appendix C) to fill in if they were willing to participate. If they were unable to be approached at the

DUT CDC, an appointment at their private chiropractic practice was made if they wished to partake.

3.4.2 Sampling procedure

3.4.2.1 Sampling

Non-probability consecutive sampling was used. Consecutive sampling involves recruiting all those from an accessible population who meet the eligibility criteria over a specific time interval or for a specified sample size (Polit and Beck 2012: 278). Non-probability sampling is the method of choice for most qualitative studies since generalisation is not a goal of qualitative research. Non-probability sampling allows the researcher to focus on solving qualitative problems such as discovering what occurs, the implications of what occurs and the relationships connecting occurrences (Merriam and Tisdell 2016). Because the population size was small and accessible, the researcher aimed to discover and explore the experiences of the entire population of chiropractic clinical instructors at the DUT CDC.

3.4.2.2 Sample size

In this study, all 14 chiropractic clinical instructors were interviewed. The sample size was appropriate to the research question as it included the population who best had knowledge of the research topic within the research setting.

Sampling continued until data saturation occurred – the point at which no new insights were attained, and no new themes were recognised (Bowen 2008, which coincided with the 14th participant).

3.4.2.3 Inclusion and exclusion criteria

Inclusion Criteria:

- Chiropractic clinical instructors who were currently instructing chiropractic students at the DUT CDC.

Exclusion Criteria:

- Chiropractic clinical instructors that partook in the departmental research committee overseeing the researcher's research proposal.
- Non-compliance with the inclusion criteria.

3.5 Data collection methods and instruments

Individual, semi-structured interviews were conducted, to obtain data from participants, as this led to an in-depth understanding of the phenomenon being studied (Baraz, Memarian and Vanaki 2014). Interviews may be seen as a simple conversation however; the difference lies with the involvement of preconceived understandings and assumptions regarding the environment.

When the researcher needs to gain insights into things like people's opinions, feelings, emotions and experiences, then interviews will almost certainly provide a more suitable method – a method that is attuned to the intricacy of the subject matter. (Denscombe 2007: 174)

Semi-structured interviews consist of a set of specific questions with additional probes (Appendix E). Semi-structured interviews are flexible in that they allow the interviewee to speak freely about the topics and expand on their own thoughts and interests. Semi-structured interviews are the most commonly performed one-on-one between the interviewer and interviewee. This method is beneficial in that interviews are easily arranged and controlled as well as ideas originating from a single source guaranteeing an easier link between concepts and individual participants. Furthermore, less room is left for error during the transcription process (Denscombe 2007). Since each clinical education environment within the health science scene has its own unique learning environment, instructional offering and operating guidelines, it was decided that the researcher create an interview schedule that is relevant to the experiences of the DUT CDC. These were constructed from the researcher's experience within the clinical education setting and from the literature review which was explored in Chapter 2. Structured approaches help to ensure the data is comparable with other studies. Unstructured approaches allow the researcher to focus on

the phenomena being studied trading generalisability for internal validity and contextual understanding (Maxwell 2012).

The interview schedule was developed from the aims of the study. A grand tour question was first asked so to enable the participant to give the researcher a broad idea of what they experienced as a clinical instructor at the DUT CDC. This grand tour question allowed the participant to answer the question broadly, without the effect of 'tunnel vision' which can lead to important factors being left out (Maxwell 2012). Depending on the information obtained, certain additional probes were asked. The probes ensured that the researcher obtained answers to the research questions and enabled participants to expand on their answers so providing further and broader detail (Braun and Clarke 2013: 36). Probing questions changed and allowed modification with subsequent participants as data collection and analysis occurred. If a theme of interest was found, it was probed further with subsequent participants. The interviews were voice recorded with the permission of the participant as audio recordings provide a record of what was said for transcription and interpretation by the researcher as well as assessment by additional researchers if needed.

3.6 Research procedure

Permission to use the DUT CDC and to conduct the study was obtained from the clinic director Dr. C. Korporaal (Appendix B), IREC (Appendix F), and the Research and Postgraduate Support Director Professor C. Napier (Appendix A) prior to collecting data.

Once IREC approval was received, the researcher emailed the clinical instructors with a letter of information asking them if they would be willing to participate and asking for an appropriate time to conduct the interview. If willing to participate, the clinical instructor received a letter of information (Appendix D), informed consent (Appendix H) and demographic form (Appendix G) to complete and sign. Participants were then given a hard copy of the interview schedule (Appendix I) to read. Any questions they had were answered. Participants were then interviewed individually at a mutually convenient time and place (either in an available clinic room at the DUT CDC or at a location of their choosing).

All interviews were conducted in English, as this was the spoken language of the researcher as well as the course/clinic language. Brink, van der Walt and van Rensburg (2012) found that the outcomes of face to face interviews can be influenced by the gender, ethnic origin, manner of speaking and clothing of the interviewer. These factors were kept as constant as possible during the interviewing process. Maxwell (2012) referred to this influence of the

researcher on the participants as “reactivity”. As important as it is to control this influence, it is also impossible, therefore it is suggested that instead of trying to remove this influence, the researcher should rather try to understand it and subsequently use it productively. Interviews were recorded with the permission of the participant and then transcribed per verbatim. The interviews continued until data saturation was met.

3.6.1 The interview schedule

1. Before the interview commenced, the clinical instructor received a letter of information (Appendix D), informed consent (Appendix H) and demographic form (Appendix G) to complete and sign.
2. Clinical instructors were then given a hard copy of the interview schedule (Appendix I) to read. Any questions they had were answered.
3. The researcher introduced herself to each clinical instructor, taking time to explain the purpose and use of the interview without showing bias.
4. Despite written consent having been obtained in advance of the interview, the clinical instructor was asked if he or she were comfortable with the voice recording process. All interviews were recorded on a pre-tested digital audio-recording device.
5. The researcher reassured each clinical instructor that the interviews were completely confidential, that pseudonyms would be used, and that each could withdraw their consent at any time during the study.
6. The researcher started the interview process with a broad, open-ended, question, to allow the interview to be conversational, as opposed to being rigid, so that the clinical instructors felt at ease. The clinical instructor was then given the opportunity to answer. Once they concluded their answer, the researcher asked any additional probes to elicit information that they did not cover. This continued until no new information was attainable.
7. The researcher then asked the clinical instructor if there was anything else they felt they needed to express or any questions they would like to ask to allow them to voice their opinions. This form of interviewing allowed the data produced to not only be detailed but also to truly represent the clinical instructors’ beliefs and perceptions about their clinical education experience.
8. After questioning, the researcher thanked the clinical instructors for partaking in the interview and once again assured them of confidentiality.

The duration of the interview varied depending on the length of the participants’ responses but on average lasted approximately 20 minutes.

3.7 Data analysis

The data analysis process is represented in Figure 2. Prior to data analysis, the researcher transcribed the interviews verbatim. The transcripts were then proof read for any mistakes that may have occurred in the transcription process, by listening to the interviews while simultaneously reading the transcripts (Figure 2 point A). The researcher then immersed herself in the data by reading the transcribed interviews numerous times and listening to the recorded interviews repeatedly, noting the tone of the voices (Figure 2 point B). Content analysis using Graneheim and Lundman (2004) was utilised to analyse and identify themes within the data. The unit of analysis for this study was the interview text about clinical education experience of chiropractic clinical instructors. The interviewed text was read repeatedly, and headings written in the margins. At this stage the research supervisor was involved as a peer reviewer. The headings collected from the margins were then placed into table form as codes (Figure 2 point C). These were then analysed. Graneheim and Lundman (2004) advocate that content analysis be divided into different stages involving shortening of the text:

1. Reduction: decreasing the volume of script.
2. Distillation: deals with the abstracted/reduced texts, reducing them further.
3. Condensation: shortening the distillate text without compromising the core of the experience.

Sub-categories were then developed from the condensed text by identifying overlapping thoughts and feelings (Figure 2 point D). These were then grouped even further into categories when no further links were identifiable (Figure 2 point E). Once the categories were identified, the researcher could begin identifying themes. Themes have multiple meanings but with a recurring regularity. By analysing all the components, themes were developed. These interpretations were cross-checked by the research supervisor to reduce any bias (Figure 2 point F).

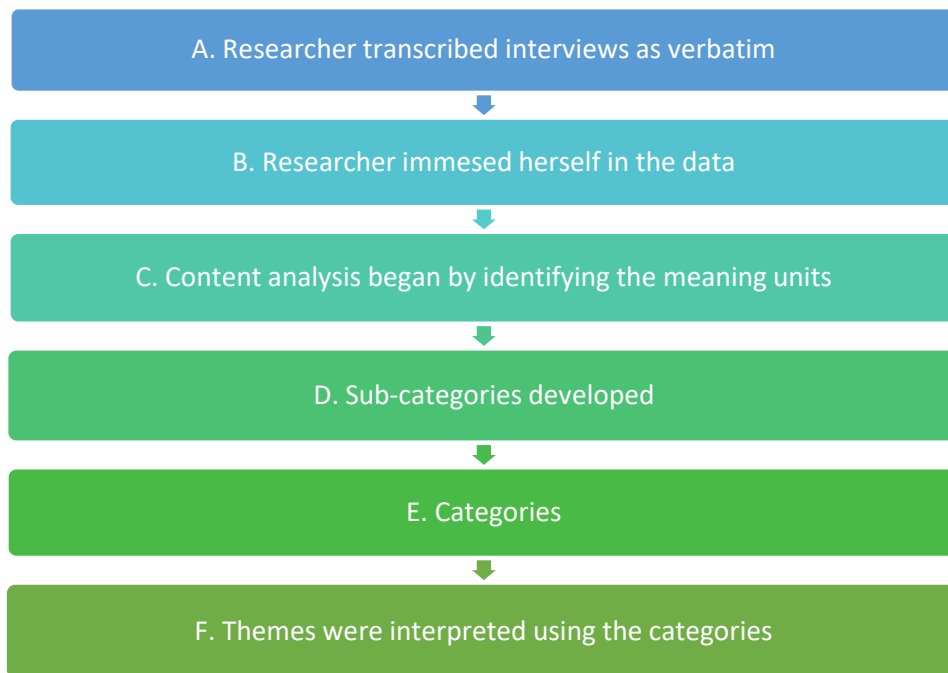


Figure 2: Flow diagram depicting data analysis

3.8 Integrity of the study

Rigour is described as the practise of rational systems throughout a study. Although qualitative studies have been criticised for their lack of rigour, the problem is not the quality of rigour in qualitative studies but rather the unsuitable application of valuation mechanisms (Ryan-Nicholls and Will 2009; Polit and Beck 2012: 582). Quantitative research focuses on the objectivity of a study's findings, also called the scientific merit of a study (Polit and Beck 2006). In contrast, qualitative research emphasises the trustworthiness of a study. Trustworthiness encompasses four criteria, namely: credibility, dependability, confirmability and transferability (Lincoln and Guba 1985; Guba and Lincoln 1994). Authenticity was later added as a fifth criteria (Polit and Beck 2012: 585). The trustworthy enhancement methods used in this study are represented in Table 1 below and thereafter, described in more detail.

Table 1: Trustworthy enhancement strategies used

Methods used:	Credibility	Dependability	Confirmability	Transferability	Authenticity
Transparency	X				
Peer review	X	X			
Documentation		X	X		
Audit trail	X			X	
Reflexivity	X				X
Confirming evidence	X		X	X	
Thick description	X			X	X
Triangulation	X		X		
Data saturation	X			X	
Audiotaping & Verbatim transcription	X				X

Source: Adapted from Polit and Beck (2012: 588)

3.8.1 Credibility

Credibility is referred to as the confidence in a study, that the interpretation of the data is a true representation of the participant's experience. This is achieved when confidence in the researcher's interpretation of the results is high enough that readers recognise the results to be authentic (Polit and Beck 2012: 500). This is assessed in terms of not only the researcher's reflection on the research methodology, but also on the participants' ability to recognise and explain their experience (Ryan-Nicholls and Will 2009). Credibility of the study was obtained through the following:

1. All personal connections that the researcher may have had to the participants and research setting were made transparent.
2. Peer reviewing the data, which involved having the research supervisor also analyse the data to make sure that no discrepancies occurred (Maxwell 2012).

3.8.2 Dependability

We can say a study is dependable when another researcher can easily follow the methodology and achieve the same results (Ryan-Nicholls and Will 2009; Cope 2014), or

by asking the question of whether the research could be redone on the same/similar participants to reveal the same/similar results (Polit and Beck 2012: 585). Dependability in this study was achieved by:

1. Careful documentation by detailing a thorough transparent decision trail throughout the research writeup (Polit and Beck 2012: 588). The original transcripts and voice recordings were stored and will remain in secure storage for five years.
2. An audit trail was utilised by the comprehensive collection of documentation that would allow an independent researcher to come to similar conclusions about the data. The audit trail included: the raw data, data reduction and analysis tables as well as the data reconstruction documents.

3.8.3 Confirmability

Confirmability and objectivity are two interchangeable terms when it comes to qualitative research. Confirmability is achieved when the findings reflect the participants' voice and not the researcher's bias, motivations, experiences or perceptions. It is known that in qualitative research, there will be some subjectivity of the identified themes by the researcher and research supervisor, however, the aim must be to remain true to the information that the participants provided (Polit and Beck 2012). Confirmability was achieved by:

1. The researcher being aware of the part that she played within the study and reflecting on her own behaviour, with the aim of keeping the role as constant as possible so that the effect on the data would be consistent.
2. Searching for confirming evidence by doing a thorough literature review to identify all pertaining literature to any areas relating to the study.

3.8.4 Transferability

Generalisability is used in quantitative research to explain how easily the results can be transferred to different contexts or subjects across varied populations, settings and times. This idea is replaced by transferability when referring to qualitative research, which measures the ability of the study to be applied to a reader's personal experience and therefore, have external context (Polit and Beck 2012). In this study, transferability was supported through the following:

1. Thick description by giving the reader rich information about the research setting, participants and observed experiences. (Polit and Beck 2010).

2. Investigator triangulation was also utilised to allow for transferability by having the research supervisor aid in making data collection, coding and analytic decisions (Polit and Beck 2012: 592).
3. Data collection occurred until data saturation was achieved as well as having every accessible participant participating in the research.

3.8.5 Authenticity

Authenticity refers to the degree to which the researcher fairly described the participants' experiences. It involves asking the question of what the researcher can do to sufficiently represent the multiple realities of the participants (Polit and Beck 2012: 585). Authenticity was maintained in this study by:

1. Critically reflecting the bias, preferences and fears that the researcher may have had regarding the study. By being aware of these, the researcher was able to avoid them.
2. Audiotaping and transcribing all interviews verbatim.
3. Investigator triangulation was utilised by having the research supervisor code some of the data and then comparing the codes to those of the researcher.

3.9 Ethical considerations

The research proposal was approved by the Durban University of Technology IREC (Appendix F). It was a requirement that permission be sought from the Dean and Head of Chiropractic programme (Appendix A) as well as the Research Director (Appendix B) to conduct interviews within the premises of DUT CDC as well as to interview the clinical instructors of the DUT CDC.

The following ethical principles were a priority:

- Confidentiality and autonomy: for which a letter of informed consent and information was given before the participants decision to participate. Pseudonyms were utilised so that no link to the name of each of the participant's data was allowed, additionally, pseudonyms are not a reflection of the participant's gender. The recorded interviews were heard only by the researcher and research supervisor; they were kept on one computer which is password locked with no copy being made. Signed consent forms were kept separate to their appropriate interview so that no link could be made. Categories were reported in order that no participant could be identified.

- Non-maleficence: was achieved by allowing participants to withdraw at any time without any repercussion, and for any reason. The venue of the interview was agreed upon by both parties to ensure that the clinical instructor felt comfortable during the data collection.
- Justice: everyone was treated in a similar manner and subjected to the same traditions. All accessible clinical instructors were given equal opportunity to participate in the study.
- The accuracy of the data and their interpretation: no act of omission, inclusion or fraud was committed in the collection or analysis of data. Data was peer-reviewed by the research supervisor so that themes were confirmed, and opinions correctly analysed.

3.10 Conclusion

The research methodology used in this study are discussed in detail in this chapter. This study was conducted within a constructivist paradigm using a qualitative, exploratory, descriptive design, using non-probability consecutive sampling. This study was conducted at the DUT CDC, and the sample population was sourced from the DUT CDC , and sampled until saturation occurred. The sample population included 14 clinical instructors at the DUT CDC with all 14 clinical instructors participating in the study. Content analysis as per Graneheim and Lundman (2004) was utilised to analyse and identify themes within the data. Integrity of the study was maintained by placing into practice the five criteria of trustworthiness: credibility, dependability, confirmability, transferability and authenticity. Ethical considerations were made and maintained throughout the conduction of the study. In the following chapter, the results that were found following this methodology will be presented.

CHAPTER 4: RESULTS

4.1 Introduction

The results obtained from the thematic analysis of 14 semi-structured interviews performed on chiropractic clinical instructors in 2017 are presented in this chapter. The results seek to explore the clinical education experience of chiropractic clinical instructors within a teaching clinic in KwaZulu-Natal. Themes were identified on the foundation of the qualitative conceptual framework that was chosen for this study, although it is acknowledged that the identification of themes are a subjective activity as determined by the researcher and research supervisor.

4.2 Demographics of the participants

Prior to the interviews commencing, the 14 clinical instructors were requested to complete a form regarding their personal demographics (Appendix H). The demographics of the clinical instructors are presented as follows:

- The ages of the clinical instructors that partook in the study maintained within the range of 30 to 40 years of age, with 10 of the 14 clinical instructors being in their thirties.
- Both genders were represented; however, a female majority existed, with only six male participants. The race of the participants varied, with seven being Caucasian, six being Indian and one clinical instructor being Black.
- The accessible clinical instructors were mainly part-time staff with only four full-time staff members participating in the study; it must be noted that two full-time staff members fell within the exclusion criteria of this study.
- Most of the population reported having graduated with their Masters of Technology in Chiropractic Degree between 6-10 years ago while four graduated more than 15 years ago. Three of the clinical instructors graduated between 11-15 years ago whereas only one participant graduated less than five years ago.
- Experience being a clinical instructor varied with four of the 14 participants having more than 15 years' experience, while five reported having between 6-10 years of experience. One had been a clinical instructor for the last three to five years whereas four of the 14 participants had less than two years of clinical instructor experience.
- Additionally, the clinical instructors were asked to elaborate on whether they had attended any tertiary educational teaching courses, which could include personality

training, of the 14 chiropractic clinical instructors, only three had additional educational training.

4.3 Introduction to the themes

Through the in-depth data analysis of 14 interviews, three central themes were identified as being crucial influences within the clinical education experience of chiropractic clinical instructors. These have been listed in Figure 4 below and thereafter are individually supported in detail with their appropriate quotes from the data. All participants have been given pseudo-names to ensure anonymity. The three themes were:

1. Clinical instruction and the role of the chiropractic clinical instructor

This theme emerged from the categories: Treatment, theory-practice gap, personal experience and the role of the clinical instructor.

2. Interpersonal relationships in the clinical education environment

This theme arose after the clinical instructors made apparent the relevance of the relationship between the clinical instructor and the chiropractic student as well as the relationship that exists between the clinical instructors.

3. Clinical education environment experience

This theme encompasses the knowledge, challenges, and recommendations made by the clinical instructors.

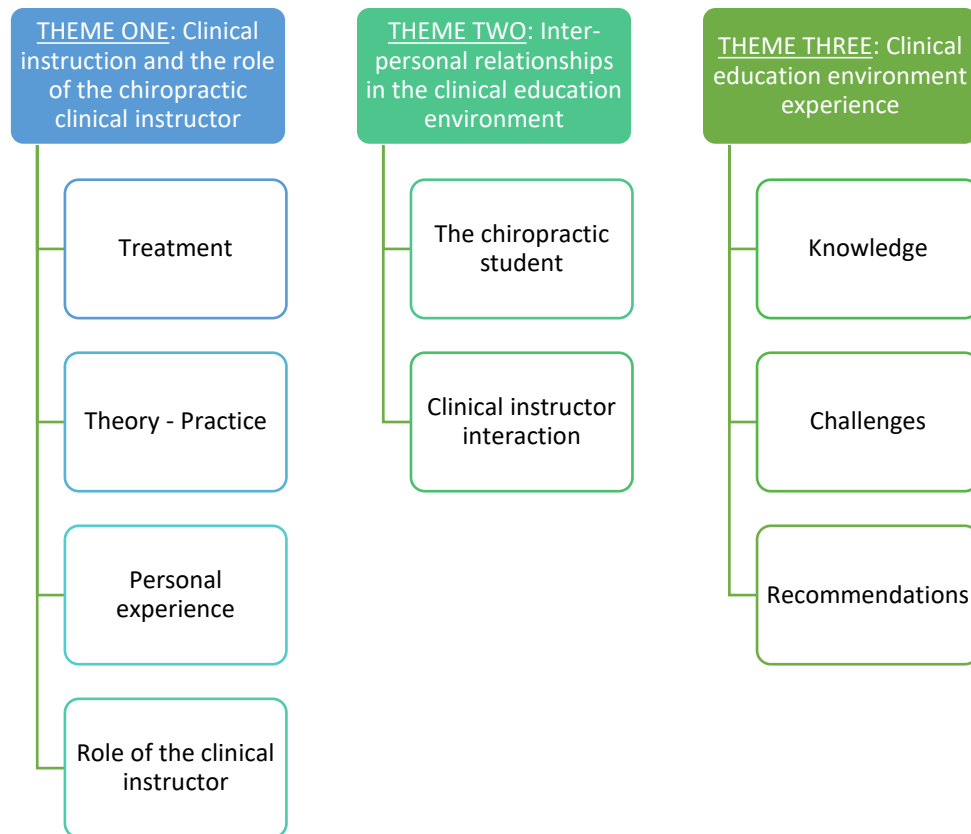


Figure 3: Themes and categories

4.4 Theme one: Clinical instruction and the role of the clinical instructor

4.4.1 Treatment strategies

When discussing treatment, the clinicians identified two ways in which they impart treatment strategies, namely in either a holistic health care model or in an evidence based practice (EBP) approach. Most of the clinicians fell into either one or the other, however there were a few that made comments that fell into both categories and those who made no comments on their treatment strategy as a clinical instruction method.

The majority of clinical instructors fell into the holistic category, with one of the clinical instructors quoted saying the following:

My teaching style comes from understanding a patient's condition and personality. I often require students to tell me a lot more on the background of the patient in terms of lifestyle, occupation, um etc. and tie this in with the condition that they have. This is a more holistic approach than just treating a joint and muscle. – Emily

Other participants who expressed similar views included:

... looking at a patient more holistically rather than as a number. ... students should learn when they need to just refer or not. – Hannah

I think the most important roles are helping them to learn how to behave correctly, not correctly, but behave in practice, so when to refer patients, when to change your treatment protocol, when to adopt a new strategy. Those kind of things, so, cause [sic] that's when patients are really hard to treat, when you have to try and, when they are not responding, when they have to be referred or those kinds of difficult scenarios. – Veronica

... there is just so many aspects of patient care, health and wellbeing that we study, that um, I don't think people realise how, how well placed we are, so that creates a sense of responsibility um, you know to, to sort of really be accountable for sort of [sic] the entire aspect of, of patient care. – Matthew

As shown below, one of the clinical instructors emphasised the importance of a multidisciplinary approach and found that the chiropractic students did not always apply this thought process:

I just don't know why students aren't applying that in their thinking, when they're treating patients. They seem to be so focused on spine, instead of the whole body. And thinking also for referral [sic]. Um, you know ok, you're dealing with someone say that's got a lumber disc for example, there is no thought of referral to an outside biokineticist, or physio, or anything like that ... – Sophia

On the other side of the scale, there were chiropractic clinical instructors who opted for a more EBP treatment protocol when addressing the students, namely they looked at the empirical evidence as well as their clinical experience:

I think my teaching style is always based on my experience and what I see in practice, as well as, from all the journals or articles that come up and I read. – Jada

Um, I go based on what the literature says, because I have recently been doing, I do a lot of reading... – Ava

.... I think its very text book based, um, and very scientific based. So, based on what the literature says, um that's what's imparted to the students. – Emma

I believe the, a clinical instructor is somebody who is able to assist students with the clinical planning, the treatment protocols and the management of patients that is done um, through their personal experience as well, in fact their personal clinical experience together with objective and clinical [sic], based on clinically evident and pertinent research protocols and treatment protocols. – Jenny

4.4.2 'Theory-practice gap'

The theory-practice gap describes the difference between classroom-based academic learning and practical application within the clinical setting that the clinical instructors felt were apparent in the chiropractic student interns.

Many of the clinical instructors identified themselves as being facilitators in bridging the gap between academic knowledge and practical application:

... to make sure that they are able to use and draw on the knowledge that have been taught through their career as a student ... – Jacob

... a pretty important role is to sometimes take things that people have learnt on, out of books and on paper and stuff like that and convert it to actual practical knowledge ... – William

... govern the difference between academic knowledge, and putting it into practice. So just to get that link between the two ... – Veronica

... it is a very different scenario from um, academic, um treatment protocols, because when you out there in the real world, real patients, um you have to, you have to actually um, take what you know in theory and adapt it for practical exposure and, and results. – Jenny

You take theory and you put it into practice. I think that's where you step in as the clinical instructor because you have to aid them, you have to guide them, you have to make them start to think critically. – Ava

And then also to give our expertise and to, to the students and um, our clinical acumen, so it's not so much the theoretical application of the knowledge and the conditions, but any sort of, any practical applications that we know of that is there theoretically. – Ethan

... I think sometimes what happens in an academic institution is we get too fixed up on lists and diagnosis without actually thinking how we can practically apply what you have learnt for the last four or five years before you go to the clinic and how to manage patients and so then perhaps this is probably what we have to look on. - Logan

Some of the clinical instructors felt that the chiropractic students were not thinking outside of the box enough and that their thinking was very textbook-based, lacking the ability to link the different academic subjects:

... a lot of the knowledge that student's kind of learn come out of books and uh, a lot of the time there is a lot more recent information that may be applicable to a situation that they haven't learnt about yet and hasn't become part of a structured syllabus. – William

... their technique is, uh, very textbook, if I can say. Uh, it's not, uh, sometimes it's not really, what can I say, adjusted for a patient. It's always what is learnt, accordingly. Uh, you don't blame them I suppose cause [sic] that is what they are taught. Uh, then the other thing is, I also think their diagnostics is very boxed. They not thinking out of the box. – Jada

But to make them think of that, there are, realise that there are other ways of doing things, and that there are other opinions to ... – Emma

... I feel they could think out of the box more. – Sophia

4.4.3 Personal experience as a teaching strategy

Many of the clinical instructors felt that their clinical instructing skills or teaching skills were based on their personal experience, this personal experience either come from their experience as a student within the clinic or their experience as a qualified chiropractor.

Those that felt it was based on their experience as a student within the clinic had this to say:

... my teaching style obviously uh, I think being kind of a natural teacher as I went along all the way through all the sports I played and all the teachers I was exposed to, all the way through school and university and everything, you pick up uh, ways of kind of imparting and sharing information that work and other ways that definitely don't work um, and yeah I would just say that it's been influenced by people that I have been exposed to. – William

... I haven't really based it on too much, I suppose you probably tend to look at people that have had an impact on you when you were a student. – Logan

... the experience of what I would have liked to see back in my day, that we didn't have. Number one. Or, even the kind of things that we did have, that made a difference to us. So, a combination of those things. Leaving out those things that I did not want to see and did not like, as a student. But including those kinds of things that, I saw, I really enjoy, and I think this is what made a difference for me, so I can impart it to other people. But also at the same time knowing that you what, we could've had this, but we didn't, so I would like to give it to the students. – Jacob

So, I go based on my experience as a student in clinic and we had a variety of clinicians. If I can recall, you, you had some clinicians that would do what I said. So, they would engage, they would facilitate, they would help you learn and then you get some clinicians that would just pick on everything you do, and then you don't know why, and you feel, why you victimising me? So, I don't want to be that clinician – I don't want to be the person that the students are afraid of, and lose respect for ... – Ava

The idea of experience came up quite a bit throughout the interview process and those that felt their teaching was based very much on what they had personally experienced since graduating and working within a clinical setting had this to say:

Our own experience with cases and um, also specifically with chiropractic because it's, um, it's not always the best understood and it's still a growing profession, to help students understand, better understand their roles um, in, in primary spine care and medicine – Matthew

I base it a lot on clinical experience and what I've learnt. – Sophia

... I think my teaching style is always based on my experience and what I see in practice. – Jada

4.4.4 Role of the clinical instructor

The final category that emerged from theme one was that of the role of the clinical instructor. As seen in Chapter 2, the role of the clinical instructor is one that has been explored in previous studies and covers a wide range (Duffy and Watson 2001; Dahlke *et al.* 2012; Pazargadi, Ashktorab and Khosravi 2012; Manninen *et al.* 2015). In this study, clinical instructors generally felt their role within a chiropractic teaching clinic fell into three sub-categories; mentorship, personal skills or personal development.

As a mentor, many clinical instructors felt their duty was to guide the student through the transition from the academic environment they had become accustomed to, to a more practical patient based environment. They felt a sense of accountability to make sure that the student goes on to become a competent and responsible chiropractor:

... the most important role would be to guide the student into making the correct decisions. – Jacob

... its basically being a guide to the students, so they come with the treatment so we there to offer advice and, and check to see that what treatment is right as to what they are doing. – Ethan

My feeling of a clinical instructor is somebody that acts, um, yes in an educational but also in a supportive role. So, it's allowing students to learn things for themselves, um, while you are there safeguarding against mistakes. – Emma

It's, a guide. A person is there to observe the student and to listen and to teach them where they are, where there are gaps. To, to help them to think, to help them to be people that, that think before they do, to apply what they have learnt um, and then to help them on a, cope with each challenge that they have as, with their patients. – Noah

I feel like my role is as a clinician at DUT, I try to help the students, um, firstly with difficult cases and not only in difficult cases, but just in what to do next, and how to put all this knowledge into practice. – Veronica

... guiding thinking, um sometimes helping with techniques and things like that. Sometimes, uh, sometimes actually taking blinkers off when people are not thinking correctly, sort of pointing them in a different direction. – William

... we are there to guide them with our knowledge of how they should and shouldn't do things. – Sophia

You have to promote an environment of learning as a clinical instructor, and I also think that it is someone that is in this clinical setting, who is there to guide the students. – Ava

So, just too um (sic), guide the student and ah, assist the student in becoming a competent, qualified practitioner at the end of the day. – Jenny

And that's one quality you also have to have, you have to be a mentor. Because people are coming to this profession, you know, wanting to be a chiropractor and they want to see what you, as a clinical instructor, you know have, that makes you a good chiropractor, and they would like to develop some of those qualities. – Jacob

It was established that certain personal skills were of value when instructing students in a clinical education setting. These varied amongst the chiropractic clinical instructors but included: communication skills, identifying students' different personalities, power play as well as the ability of the clinical instructor to reflect on their clinical practice.

Regarding communication skill, clinical instructors recognised that the ability to communicate academic thoughts in a practical setting was of importance:

Communication is quite important, to be able to communicate theoretical principles in a practical manner ... – Logan

I think having a little bit of knowledge of how to impart that, that clinical experience, because you do get people that are highly experienced but may not be very sure.

Or very, or, ah, yeah, well, they might not have any experience and be able to communicate that experience across. – Jacob

Listen, understand why they want to do that, and if you completely disagree then, give your input and change things. – Sophia

... you have to be able to communicate with the student. Promote learning. – Ava

Being in the clinical education setting, the clinical instructors spoke about the variety of students that pass through the clinic over the years how different students will learn in different ways. They emphasised the importance of adapting their instruction depending on the student sitting in front of them:

... you have to have the quality being able to deal with different kinds of students, because not all students are the same. – Jacob

... each student is different on the outside. So, what works for A and B might not work for C and D. – Jada

So, it becomes difficult when you engaging (sic) with the various types of students, some are not to very open to learn, or open to your suggestions, where some are. – Hannah

They, um, they are all different and unique in every single way, ah, every one of them. And ah, I think it's um, we can't compare the, the students to one another because each um, student will draw their own type of patient and client base, based on their personality... – Jenny

... especially when it comes to dealing with difficult students, like some students you can click with and you can talk to and they fine, but some there is obviously other stuff going on and I think those kinds of cases. – Veronica

... different personalities, because I remember when clinicians used to do things to me that used to make me really upset, and then I used to get annoyed with the clinicians. Then you kind of build a barrier, that you actually don't want to listen to them, and you think they (sic) not of any competence, but, they might have a lot to

teach you, but now you are irritated because of how they approach something. – Sophia

During the interview process, the theme of power came up in different ways. The clinical instructors seemed very aware that they are in a perceived position of power and that by being in this position, it can be easy to belittle and subsequently demotivate the students that they instruct. Clinical instructors had this to say under the subcategory of power:

... when a person is instructing, you know there is always an element of power. Ah, or perceived power. – Jacob

... if you are a clinical instructor, you are not necessarily a dictator. – Hannah

... one of the roles is not to pigeon hole the students' um, into our way of thinking... – Noah

Many felt the need to emphasise the importance of how a clinical instructor should not belittle the student with some even admitting that upon reflection they have done this in the past.

I will tell them straight and I will be honest with them and tell them the way it is and try not to do it in a belittling way but just make them aware that their horizons need to be widened. – William

... I may be a bit maybe too hard on some of the guys. It's only because I am trying to get them think in certain lines. – Logan

... also to not belittle them, when they come in, um, I don't feel they should be intimidated by the clinicians. – Sophia

They have to advise the student on the protocols that are necessary, without at the same time being, um, someone that comes across as brash, or someone that's condescending, or someone that speaks down to the student. – Ava

I have recently been told by many students that ah, they are intimidated, that they feel it very difficult to uh, to present a case to me, especially in examinations for some reason, I don't know why. – Jenny

Clinical instructors felt it was their responsibility, as instructors to students, to continuously develop in different ways so to improve the clinical education experience. Within the category of personal development, the subcategory of reflective practice and continuous learning emerged.

Within reflective practice, there were clinical instructors who identified that they do reflect, in one way or another but not during a set routine or using a specific method:

... you wonder to yourself how could I make it even better? – Jacob

... it was their mid-year OSCE and I had an adjustment station and they were shocking. So, I decided, no and they were shocking because they weren't at the level they should be at ... I'm going to be a clinician, so when I'm there I actually need to do the best that I actually need to do ... So, from July this year ... I go in and watch all of their adjustments. – Ethan

I have reflected on it, and in my earlier years, you know what, it was just making sure that the students understood my clinical instruction style. I was more testing the student on their knowledge, and now it's changed, where is that I think it's important not just for the student to spew out knowledge but to think holistically around um, the situation and the condition that the patient presents and around the problem. – Emma

I do reflect on clinical instruction and even examination techniques when we in (sic) OSCE's. And I think it's important to do that. – Jenny

Ah, I am not going to lie. Um, it's not a regular thing. I mean I will do it, now and again. I am not going to go home and sit, and think ok, maybe I should have done this better. – Ava

I do reflect because then I think, well how can I change to get that student to maybe have the confidence, or to think differently, or to not be afraid to approach a clinician or anything like that. – Sophia

I suppose you do reflect a bit and get back and analyse and write notes. You do also get feedback with the departmental interviews and chats, in terms of student's responses, so that you can work out how you are managing. Also, just chatting to

students, which is probably a better way. I don't sit and analyse it at a major, major level. – Logan

*I only really think about it when I go home, um, if it's been a difficult case. So, it's been a case if the student really battled or even myself I felt a bit like, what would I really do and if I was unsure of the treatment. So, most cases often I would go home and do research on the condition or the test I wasn't sure about or the patient is unsure about, I mean the student, but I don't think I reflect on it, as a weekly thing.
– Veronica*

Chiropractors are required to undergo continuous professional development (CPD) under the rules of the AHPCSA (2017) and therefore many of them identified the importance of continuous learning. Many identified that this is what aids them in being competent clinical instructors to the students:

Uh, at the same time, what makes us more competent is how we are keeping abreast with all the information that comes out. We not just sitting back and saying we did it, we don't have to learn anymore. – Jada

I think you can only be a competent and excel as a clinician if you take your own initiative to develop within the profession ... not out of touch with the latest research and the latest electrotherapy modalities and somebody who is, you know, up to date with not only the treatment protocols but also research and, and the going on with certain disease processes and everything related to neuromusculoskeletal conditions. – Jenny

If you are a clinical instructor, an educational clinical instructor, you need to be on top of the game in your field, so to speak. Your education needs to be sound and you need to make sure that you keeping (sic) yourself up to date. So that what you are imparting to the students is not hogwash. – Emma

I feel that me attending conferences, me attending um, congress's keeps helping me learn as well ... – Ava

Um, on the other side chiropractors are all learning, all the time, doing CPD courses and studying further so, that's happening anyway. – Noah

This subcategory came out in many ways, namely a few clinicians identified that there have been times where they were required to do additional reading up on difficult cases that presented at the DUT CDC:

There are always challenging cases that come up and that is part of the process of being a clinician – knowing that you don't know everything. – Logan

I equally learn because there's a variety of cases where you may not see (sic) in clinical practice, so you have to always be a little bit on your toes. – Hannah

I would say it's a learning experience being in the OSCEs and things, especially after 5 or 6 years in practice, those kinds of questions are not ones you faced (sic) with every day, so it's quite nice to be refreshed with those things. – Veronica

4.5 Theme two: Interpersonal relationships in the clinical education environment

4.5.1 The chiropractic student relationship

When asked to describe their experience with the chiropractic students at the DUT CDC, clinical instructors expressed a range of views pertaining to the student-clinical instructor relationship. The dynamics of the relationship was found to be an evolving one with the subcategory being identified as a changing relationship. One of the thought processes shared by a few of the clinical instructors included how the relationship will develop from student to colleague:

... some of these students that are in sixth year, they could be, in inverted commas, a student to you in January, but in July they become your colleague and you need to realise that one day this person is going to be part of your profession ... – Hannah

... the more time they spend in clinic the more they will mature, and the better the relationship gets between the clinician and the student because there is this transition from lecturer and student to clinician and student to colleague and colleague because the student starts to evolve, and they become your colleague and I start to see them more or less from the colleague perspective in their 6th year like towards mid-year as I treating them in that manner ... – Ava

Other clinical instructors found the relationship to be a mutually beneficial one, with a few identifying how, during the teaching process, they as the teachers were the ones who learnt from the students:

... you can learn from the student... – Jacob

... some of them are quite knowledgeable and they can teach you a thing or two. – Hannah

While others felt the relationship was mutually beneficial as it bettered the profession as a whole if they instructed students in becoming competent chiropractors:

I have seen many different students. It's been a privilege to see them qualify and open up their own practices and still maintain a good relationship with them. I would like to, I would hope that even qualified students would ah, in an instance of a difficult case feel that they could still approach me for advice. I believe that, that's a role of senior clinicians in the field also, is to share their knowledge and experience with the students and help them grow within the chiropractic profession. So that we can build a chiropractic profession as a whole. – Jenny

I love seeing that, and the reason why I got into it was to make sure that the students coming out of the DUT are competent and clever and they're going to make the profession better and not bring it down by doing stupid things or silly things. – Sophia

4.5.2 Clinical instructor interaction

The interpersonal relationship between the chiropractic clinical instructors can be said to be a multi-faceted one, with some interesting sub-categories that emerged. At the DUT CDC, the clinical instructors, as established earlier, are categorised as either being full-time or part-time staff. Within this study, they also seemed to be categorised as academics or practitioners. The tension between part-time/full-time staff or academics/practitioners was made apparent as some clinical instructors felt that the academics lacked real-world practical experience:

I think that the clinicians that do better, are the clinicians that actually have a clinical experience, they have a practice. – Ethan

I have concerns about some clinicians who are ah, currently employed by our department, based mainly on their lack, and inexperience within the profession. – Jenny

... experience is very important, and one are we could improve on by holding onto experienced clinicians, classic that knowledge comes from reading books and wisdom comes from experience. Older clinicians are not more intelligent or brighter than the other guys but their experiences does give you a different perspective as you understand things a bit more clearly. – Logan

... a lot of the lecturers here that teach you guys do not have very much clinical experience in the real world ... – William

One of the clinical instructors brought an interesting thought to the topic of clinical instruction and the reason as to why there is this tension that exists:

... a lot of the academic staff here, I don't think have spent enough time being exposed to people from other environments who have had other teaching influences and they all kind of (pause) it's kind of like an inbred situation where someone who's been through the system at DUT or DIT or Technikon Natal then taught somebody else who then come in to teaching in the institution and they all kind of, it's like an inbred kind of situation so there's not an exposure to to (sic) outside thinking ... – William

The interaction between the clinical instructors seemed to be limited with two clinical instructors' feeling that if this was rectified there would be a better relationship between the clinical instructors as everyone would be on the same page:

I think if there was more interaction, I think there would be less double standards. – William

I would like if the clinicians were all on the same page – Ethan

There was one clinical instructor who felt that the interaction time was shortened but setting that factor aside, the interpersonal relationship between the clinical instructors had been positive:

I don't get to interact with many clinicians, because we come in just for our shift. Um, we interact at clinician's meetings and at OSCEs, ah, just informally at OSCEs before and after and ah, formally at a clinician setting in a meeting, but um, I can say that those clinicians which I have interacted with even within, ah shift changes as well, has been pleasant. We are able to communicate effectively regarding patients that are in the clinic at present. – Jenny

The clinical instructors said that they interact with one another mainly at the clinicians'/ clinical instructor meetings, which are recommended to occur four times per annum, however many of the clinical instructors portrayed frustrations when the topic of the clinicians' meetings came up. There were those that felt that the time was limited and was not being used efficiently:

There are supposed to be four (clinician meetings). I think there's been one.... I think at the last meeting there were maybe ...there were under five. So yeah, it's frustrating... it would be nice if the clinicians meeting, clinic relevant stuff got discussed as to protocols, as to what you're supposed to do in the clinic. What, when you refer, when you don't refer. The actual clinical application of being a clinician. Whereas a lot that gets spoken about with the bureaucracy of the aid of the department. – Ethan

The only time we ever interact would be a clinician meeting which is few and far. – Ava

I don't see any of the others [clinical instructors] ever, we have clinician meetings 3 times a year, and we have had none this year. They have all been cancelled. We haven't had any, even in those meetings there is a lot of us, and I don't feel like, we talk about any of the hectic issues, because everyone is kind of diverse. In those meetings some are saying no, no paperwork and some are saying more paperwork, so everyone is not on the same page. – Veronica

The rules don't ever change. So, I don't know why we have these meetings asking what we want to change. - Sophia

There was one clinical instructor that managed to acknowledge the lack of clinicians' meetings but also managed to show understanding as to why the clinical instructors do not attend:

We do have a mechanism in the department for that clinician meetings. But unfortunately, they don't, clinicians don't attend those meetings fairly often, and I can see their point of view, because it's a day of practice or a few hours of practice.
– Jacob

There were clinical instructors that brought up the lack of standardised clinical procedural guidelines:

I would like if the Clinicians were all on the same page.... we need to know that, are we all on the same page that blood pressure of 140 over 90 gets referred, that if this happens this gets referred. So, everybody knows what's happening. - Ethan

If I'm following on from a case and a student will come to me and then go, oh, um, a Clinician wants me to send for bloods, and I go ok what are you suspecting? And then I look at the bloodwork and there's probably five more tests that need to be added onto that form, that obviously that Clinician didn't have the knowledge on. But that being said, I could be in that position myself where I said, oh, ok, I want to send for x, y, z, and then the next Clinician take over and says, but I would also send for this, this and this. – Sophia

...a problem I do feel exists here, as a result of there not being enough standards. – William

4.6 Theme three: Clinical education environment experience

4.6.1 Knowledge of the clinical education model

Within this category it was found that the clinical instructors could only really fit into one of two groups; namely, they either found the clinic model well defined and understood the model or they found that the model was unclear and felt that it should be made more apparent when arriving in the clinic.

Those that found the model to be quite clear seemed to agree that having graduated from the same institution meant that they understood the model from experience:

... having qualified from this institution I kind of understood what the clinical model was. – Jacob

Well having been a student here and having been through the system, it was pretty clear as a student and um, in terms of those things – nothing has changed. So, I think for anybody who came through that system, I think there is no, uh, reason not to understand it because as a student it's all made blatantly clear and I think, almost everybody that works here and performs this role has been through that. – William

Other clinical instructors seemed to agree that the model was not clearly presented to them by the institution/department:

I realise I don't fully understand it, um nothing, nothing was ever fully outlined and explained to us in a, in a guideline given. – Matthew

I don't have any understanding of a formal model of instruction, but from my experience the model is that... – Noah

Two clinical instructors agreed that they felt the rules were made up as you went through the system and that there was no set model that they were made aware of:

I definitely don't think it's that clear. I think some rules are made along the way. I think when we encounter issues, or we encounter problems then that's when they come up with a solution and that's how the model is actually made. – Jada

So, I think, I think the rules are also easily bendable, which is also a problem. I think that it does have to be set in stone. – Sophia

4.6.2 Challenges within the clinical education environment

The challenges within the clinical education environment recognised by the clinical instructors is multifactorial with two major sub-categories emerging from the data analysis: lack of clinician support and the challenges with the novice – expert development.

The clinical instructors spoke of their challenges within the clinic, which included the lack of incentive to be there, some felt they were underappreciated:

I don't think there's enough incentive for us. Enough CPD points or monetary incentive. I mean, it's our skill and we are always, I feel short changed, in that regard

and we are just forced more onto our roles instead of guys coming up and saying we should do more for you guys. – Jada

Another clinical instructor agreed and emphasised how the distribution of funds should be relooked at:

... otherwise their budget defendant, things were cut and that, so a simple way would be to increase the fees. It's very simple. – Logan

The novice-expert development, as discussed in Chapter 2, is one which is seen with all students. Many of the clinical instructors commented on the student's competence and how it develops from the beginning of their clinic career and how they lacked in certain fields:

They don't have the ability to differentiate red flags from non-red flags; they very (sic) guarded in their treatment protocols ... I would say about 60% of them are very guarded against manipulation, which is a bit alarming considering you are a chiropractor. – Hannah

I mean we sat for our fifth-year final (OSCE) and I could see there was certainly a large number that are not competent at that level, in 5th year. – Jada

Skills that could be developed more I would say would be adjusting, and assessing of patients. – Emily

... a majority of students will have a lack of confidence ... – Jacob

... shortfalls of the students is (sic) that they are not independent enough. – Hannah

I think for most of them it's just a confidence issue, it's not that they don't know the knowledge, they just, I wouldn't say they even frightened, they just, too scared they going to mess up. – Veronica

One of the clinicians commented on how the students' progress through the student-novice journey, at different rates, which can be challenging as a clinical instructor when trying to remain consistent and fair to the students:

In the beginning in 5th year, you can have students come in, and you have to take a history each time, and then towards the end of the year, you're going ag, go do the history yourself. But then some students you actually don't feel confident enough for them to just go do the history themselves. And then you think well, that's not fair, because now one of the students you said to go do the history, the next one you're going in the room, to take a history. – Sophia

Finally, many clinicians agreed that by the time the students end their clinic education experience, they have transitioned to a more expert role:

But I would say on the whole, when they leave they are far more competent than when they started. – Veronica

... the biggest satisfaction that I get is to see students go through the learning process. Um, and to see how that learning changes them as people. That's one of my biggest experiences. – Jacob

I love seeing the students from the beginning to when they finish, how much confidence they get, how much knowledge they gain. You can see the difference when you see them in January, February and they're starting out, even to now in October, there is complete change, which is lovely to see. – Sophia

... the student starts to evolve and they become your colleague and I start to see them more or less from the colleague perspective in their 6th year like towards mid-year as I treating them in that manner, you no longer have to be babied, you no longer have to, I don't have to tell you do this, do that, I don't have to treat you as a student anymore, we are now colleagues, you evolve in that perspective. – Ava

4.6.3 Recommendations for improving the clinical education experience

Many of the clinical instructors had recommendations that were directed towards their experience of clinical instruction. The most common and emphasised comment on improving the clinical instruction experience was that they felt that there was an undeniable need for two clinical instructors per shift. The common reasons for this included that it would take some pressure off the clinical instructor, it would allow for more interaction with the students, it would allow for students to return to their patient faster and it would enable the clinical instructors to learn from one another.

Two clinical instructors felt that it would create more interaction time with the student:

I'd love there to be two clinicians at once um, which would enable, uh, a, for example, an interaction with a student would be less rushed because you wouldn't be as pressure to get students back to their patients. – William

You could have two clinicians on duty. I know there was a clinician in the past who did this. It's no longer being done, so one of them will be on duty when the clinic is not so busy. The other one gathers the students that are not seeing patients or not busy, takes them to a room. OK, you had a case, discuss the case, and let's have a Pod group. – Ava

Another clinical instructor acknowledged that there might be a limit of funds available to allow for two clinical instructors per shift and recommended the following:

... I mean people have asked for two clinicians to be on duty all the time. I think budget wise it's not going to happen. Um. If there is a younger, newer clinician, then I think a, two on, on duty. Just to help support is good, good with a more experienced clinician. – Ethan

One clinical instructor pointed out how having two clinical instructors, would enable them to learn from one another:

I think it would be beneficial. Because I think you, you also learn from the other clinician. You don't always know everything. – Emily

Other quotes on the recommendation of two clinical instructors included the following:

I think first off, we need more clinicians on duty to be honest. Especially me, I'm there between 12.00 and 2.30 and ninety percent of the time I'm by myself. And that's when all the new patients come in. And the students wait, and the patients wait. I think I had seven students waiting for me the other day, and it was new patient, after new patient, and then follow up to then waiting for me to go finish taking all the history by the time I was done with that the next lot was coming in. It's not overwhelming for me, but it's for the poor students and the patients that are now left waiting. – Sophia

... making sure that there is more than one clinician on duty at a time so that clinicians can be more involved in managing patients. So, you can actually understand how the person manages. In years gone by certainly when I was here you always had two clinicians on duty and one would roam and one would actually manage the patient for you and watch you, give you advice and feedback straight away. Another would be there to sign off SOAPE [subjective, objective, assessment, and plan] notes and that – Logan

... this revolves around not having enough clinicians in. – Matthew

So, maybe we need to think about, as I said previously, put in someone part-time and full-time together, so that we can actually engage, and maybe rotate with shifts,

so that we getting (sic) a balance of fifth years, we getting balance of sixth years, we not just stuck with the same people. – Hannah

And other than, what I think is a goal for everyone, is to have two clinicians at the same time at least and for there to be more clinician time in the rooms with the patients. So, you are not only in the room for the initial history or to help sometimes. – Noah

An interesting comment on implementing two clinical instructors was the idea that there should be a gender based integration of clinical instructors on each shift:

I reckon there should be a female and male clinician on duty at all time, because female chiropractors will adjust differently to male chiropractors. – Sophia

Another prominent recommendation was on the assessment procedure used within the clinic, many felt that it was outdated and could use improvement by integrating a more practical aspect.

I think it needs to be changed in terms of, it is all very separate still. So, we are taught separate subjects, in separate little blocks, even when you come and treat patients in separate little rooms. Clinicians sit in separate rooms. I think it should be a lot more interconnected. – Veronica

I had some thoughts on whether clinicians should like once an hour, one hour once a month. So, it doesn't have to be the same clinician but different clinicians talking about clinical experience in cases that they've seen, and the way students should think when it comes to certain cases. It's just the thought that I've had. Because you can only learn so much interacting with a clinician in that timeframe. And usually their other students and they butting in, and you have more questions, or you want to know something, and you just don't have the time to ask that clinician. – Sophia

Maybe you can get some students on a rotation basis with it using a registered system. Will sit there, will go through the history, the physical, the regional, discuss it with the student, come up with the plan with the student, and the student goes and discusses it with the clinician I think that's something that we could do here at DUT – Ava

... the competency book isn't working, and it won't work, because the students will go to clinicians that they like, and a lot of the clinicians don't take it seriously. – Hannah

The second is that there should be more um, open ah, door policies, so where ah, whereas I find sometimes I walk into clinician, into a student treating um, and then give them the clinical competency, based on whatever I find at that moment in the room. – Jenny

Two clinical instructors felt that the practical aspect could be more integrated by introducing a chiropractic bed into the clinician's office:

... a simple thing that I've asked for, at every clinician meeting for the last two clinicians meetings, is that there is a bed, a chiro bed in the clinician's office so that you can show, so that you can show adjustments and do stuff like that. Because to be honest it's a practical thing. – Ethan

I think that just a bed in our clinician's office, or a room designated for clinical ah, for clinicians for clinical instruction would, would be of benefit to the students. – Jenny

Another aspect of the clinical experience for the clinicians that needed updating was the way in which the patient paperwork was done within the clinic:

I think there's a lot of paperwork, sometimes I see the reason, I see what its needed and I think the students also get tired of the paperwork. – Jada

I would say the one thing is the paperwork. It's a lot of signatures that, that need to go on there. There could be a lot of irrelevant information that's actually taken out of that paperwork, I feel. – Emily

Like, I asked ages ago if we can have a section in the front of the files where X-ray reports, MRI reports, blood tests, all of that can be kept. So, if you want to quickly access this, you don't have to go through all the paperwork, and then also different like coding's for things that cannot be done, like no spinal manipulation or this, or that, would have a red sticker at the top because just having a conditional on the toilet paper [visit sheet]. Sometimes you don't, you sign everything off and then you look at what is this conditional for, now you have to go back through paperwork that's

maybe two or three years old, to find this conditional. I just, I think it could be managed so much better. – Sophia

Many of the clinical instructors spoke about receiving greater support from the institution with their clinical instruction, mainly in terms of clinical instructor focused workshops:

I think it would be very helpful um, to a lot of people to learn how to teach better because yeah, teaching is an art and just because you have knowledge or skills doesn't mean you can teach it to somebody else. So, I definitely, if those opportunities were available – I definitely would take them up and I do, one comment I would also add to that is that a lot of the opportunities that we are offered are, most of us turn them down, because they are not really helpful or relevant to what we actually do and what we actually are interested in. – William

I think that a seminar perhaps should be given at the beginning of the year as a refresher for those who are existing clinicians and as an introduction, like an orientation, for the new clinicians for the year, and ah, also to introduce the clinicians to one another and encourage ah, ah more open communication in the clinical setting. – Jenny

I mean it's hard enough to get clinicians to be there, but make them want to stay. Offer them more. - Ava

One clinician mentioned how the one way to allow for a change in the clinic is to implement different management of the clinic:

I think that the way the clinic is also run. It cannot be ... I feel that sometimes getting someone that's detached from the clinic to run the clinic might be a good idea as well. Someone that's more in a managerial position, not an academic. Someone that can make the clinic more dynamic and bring in more patients, can facilitate the way things are done, the way students are managed, are overseen. I'm not saying that what's happening is wrong, it's done to the best of the abilities that people can. But I feel there is still more that can be done. – Ava

4.7 Conclusion

This chapter included the demographics of the clinical instructors that participated. It further presented the results of how the chiropractic clinical instructors experienced clinical education at the DUT CDC. This was accomplished by constructing a narrative and then substantiating themes and categories with quotations from the verbatim transcribed interviews. From the analysis of 14 interviews, three main themes emerged, namely: clinical instruction and the role of the chiropractic clinical instructor; interpersonal relationships in the clinical education environment; and clinical education environment experience. In Chapter 5, these results will be discussed in the context of the existing literature on clinical instructors and clinical education.

CHAPTER 5: DISCUSSION

5.1 Introduction

This chapter focuses on the interpretation and discussion of the results in relation to the most recent relevant literature. The literature review in Chapter 2 established that despite the amount of published literature about clinical instruction, the experience of clinical instructors are not well represented even though they play a critical role in bridging the clinical reality with the theoretical knowledge (Higgs and McAllister 2005; Dahlke *et al.* 2012). Mrozek *et al.* (2006) stated that further research into chiropractic education, would be of great benefit to the profession and its further growth. The fact that few international studies exist on chiropractic clinical education and, more specifically, the experience of the chiropractic clinical instructor, presented a challenge to doing a meaningful comparative evaluation of this study with other studies.

5.2 Overview of the research discussion

The primary objective of this study was to explore and describe the clinical education experience of chiropractic clinical instructors at the DUT CDC. On analysis, the clinical education experience was best described as encompassing three main themes:

1. Theme one: Clinical instruction and the role of the chiropractic clinical instructor.
This theme emerged from the categories: Treatment, theory-practice gap, personal experience and the role of the clinical instructor
2. Theme two: Interpersonal relationships in the clinical education environment.
This theme arose after the clinical instructors made apparent the relevance of the relationship between the clinical instructor and the chiropractic student as well as the relationship that exists between the clinical instructors.
3. Theme three: Clinical education environment experience
This theme encompasses the knowledge, challenges, and recommendations made by the clinical instructors.

Using these three themes, the analysis revealed the multi-layered cohesive experience of the chiropractic clinical instructors. These will be discussed in further detail with regards to the relevant and recent literature.

5.3 Theme one: Clinical instruction and the role of the clinical instructor

5.3.1 Treatment strategies

A category that emerged from this first theme was the way in which the different clinical instructors impart treatment suggestions to students. It was found that the clinical instructors at the DUT CDC focus their treatment teaching strategies in two ways, either by focusing on a holistic health care model or on an EBP model. This was to be expected as those are the two-main treatment routes within the chiropractic field. Although some of the clinical instructors fell into both categories, they predominately focused on one or the other, which is discussed below.

The holistic health care model is characterised by identifying the patient as a “whole”; it supports the concept that the patient is made up of environmental, biological, emotional and behavioural aspects and identifies the patient to be more than the manifestation of the symptoms they present (Rodríguez-van Lier *et al.* 2014). Chiropractic care has been promoted as a holistic way of health care, proposing that the body has the ability to maintain its own health provided the body’s integrity is maintained. Chiropractors see their role as helping to preserve the body’s integrity by focusing their treatment on the connection between the spine and the nervous system (Parkinson *et al.* 2013): this way of thinking correlates with the chiropractic clinical instructors thinking when explaining their method of imparting holistic treatment care.

Evidence based practice (was a term first spoken about in the 1980s at the McMasters University (Alcantara and Leach 2015). It was later defined by Sackett *et al.* (1996) as the integration of research findings with one’s clinical expertise and has since been recognised in all aspects of healthcare. There have been several identifiable barriers to implementing EBP in chiropractic, resulting in a wide range of stances towards this topic amongst chiropractors (Bussières *et al.* 2016). Currently, only a few studies have been conducted to identify chiropractors knowledge, attitudes and skills regarding EBP. A survey on chiropractic students by Banzai *et al.* (2011) revealed that 96.7% of chiropractic students felt EBP was of importance and 70.7% felt they required additional training in applying evidence within their practice. Although more chiropractic clinical instructors taught and encouraged the holistic health care model; there seems to be a shift in attitude by younger chiropractors towards the inclusion of a more EBP model (Banzai *et al.* 2011; Walker *et al.* 2013). Other factors that affect the implementation of an EBP model, especially within the South African context, is the presence of a library, a resource person, internet access and managerial support.

In the many varied clinical education settings, there will be different groups of practitioners who will gain from the different aspects of clinical instructors. Students need to be aware of this and embrace opportunities that may be presented to them (Caine and Jackson 2011).

5.3.2 Theory-practice gap

The theory-practice gap is a well-documented challenge within the health sciences and this is no difference in the chiropractic field (Dadgaran, Parvizy and Peyrovi 2012; Monaghan 2015; De Guzman, Factor and Matienzo 2017; Wright and Homer 2017). Most of the chiropractic clinical instructors commented on challenges faced by students in applying practically the theoretical knowledge learnt. This was further supported by Ganesh (2017) who found that the DUT fifth-year chiropractic students also identified the theory-practice gap as a challenge in their clinical education experience.

There have, however, been studies focused on overcoming the theory-practice gap challenge. Gercama *et al.* (2014) found that medical students in their first practical year had difficulty applying their theoretical medical knowledge into medical practice. So, in order to prepare students more for the real world, the university organised a support course with the objective of improving students' clinical reasoning. This was accomplished through a weekly gathering of 12 students with a clinical instructor, termed "pod groups", to discuss clinical problems, cases or literature. These sessions improved students clinical reasoning and bridged the theory to practice gap.

There are, additionally, interpersonal skills that clinical instructors can impart to students such as problem solving, formulating care and EBP intervention which have shown to add meaning and skill to the theoretical knowledge, which further emphasises the value of interpersonal skills training amongst the clinical instructors (Caine and Jackson 2011). A study by Dadgaran, Parvizy and Peyrovi (2012) identified that clinical instructors who had current knowledge, self-confidence, clinical skills and who interacted with the students in such a way that enabled them to carry out practical tasks with the use of clinical knowledge were effective in bridging the theory-practice gap. These studies highlight the effect that the clinical instructor can have on the theory-practice gap when effectively educated on the topic.

5.3.3 Personal experience as a teaching strategy

A history of shortage of qualified academics has resulted in the use of expert practitioners in the role of clinical educator (Janzen 2010). Many clinical instructors base their teaching strategies on their own clinical education experiences instead of on current instructional strategies and methodologies (Giordano 2008; Paulis 2011). This could be due to the lack of official clinical instructor training prior to instructing the students (Ingrassia 2011; Dahlke *et al.* 2012), although there is no research on the downfalls of this concept.

Clinical instructors that have completed instructional method courses indicate that they feel more confident regarding their clinical instruction of students in terms of conflict resolution strategies, organisational skills and goal setting methods learnt on the courses (Paulis 2011), however no comment was made on how the instructional method courses improved the imparting of clinical education knowledge from instructor to student. Within this study, only three of the chiropractic clinical instructors reported having participated in educational training courses, which could arguably contribute to the reason that many of the chiropractic clinical instructors based their teaching strategies on personal experience, either as a past student within the DUT CDC or as a practicing chiropractor within a private practice setting.

5.3.4 Role of the clinical instructor

The chiropractic clinical instructors at the DUT CDC felt that their role branched into three sub-categories, namely; mentorship, personal skills and personal development. They commented on acting as a guide to the students and that in order to act as an effective guide, certain personal skills were required. Many of the clinical instructors brought up the need for their own continuous personal development, so as to enable them to constantly provide an encouraging and constructive clinical education experience for students.

Numerous studies have been conducted to explore the role of the clinical instructor within the clinical education environment (Duffy and Watson 2001; Brammer 2006; Dahlke *et al.* 2012; Manninen *et al.* 2015; Glynn *et al.* 2017). Ganesh (2017) found that chiropractic fifth-year students regarded their clinical instructors to be mentors, and expected them to guide them with regards to their treatment plans. The chiropractic clinical instructors in this study felt that it was their perceived role to guide the student as opposed to just giving the students the appropriate treatment plan. This correlates with a study on nursing clinical instructors who identified their clinical instructor role to be easily interchangeable with the term mentor rather than educator (Glynn *et al.* 2017). Greenfield *et al.* (2012) found that physical

therapist clinical instructors also described their roles as being to “guide” or “facilitate” students, correlating with the findings of this study.

Interpersonal skills were deemed an important aspect when discussing the role of the clinical instructors within the DUT CDC. These included: communication, power play and identifying different personalities. Chiropractic clinical instructors felt it was important to be able to effectively impart knowledge in a way that the students understood and respected it. They agreed that constructive and pleasant communication with the student was important. A study conducted on the chiropractic students at the DUT CDC by Ganesh (2017) highlighted that the ideal personal skills of the clinical instructors included approachability, respect and patience, which correlated with the findings in this study of what clinical instructors themselves deemed as important. Rowbotham and Owen (2015) found that nursing students felt that the clinical instructor should be able to clearly communicate thought and reason relating to why a task is performed. Ozga *et al.* (2016) found that clinical instructor communication behaviours were the second most important category to students when identifying effective clinical instruction skills.

Communication is the process of exchanging information and common understanding from one individual to another (Merriam-Webster Dictionary 2017). Lunenburg (2010) identified multiple barriers to effective communication, these included:

- Process barriers such as language and age,
- Physical barriers such as distance between individuals, outside noise and choice of media,
- Semantic Barriers such the words we choose, as the same word may mean different things to different individuals. If individuals do not understand the words, they cannot understand the message; and
- Psychosocial barriers:
 - Individuals variance in backgrounds, perceptions, expectations and biases.
 - Psychosocial barriers can include a psychological distance between individuals, for example, if a clinical instructor talks down to a student, they may resent this attitude thus blocking effective communication. It emphasises the importance of the way in which individuals communicate.

Effective communication has shown to be more receptive, when the party is sincere, many communication theorists have agreed that sincerity is the foundation for effective communication. Another area where communication breakdowns occur most frequently is role perception. When individuals are unsure of what their role involves and what is

expected of them, they will not know how to effectively communicate their intended message (Lunenburg 2010).

Another personal skill that was deemed important by the clinical instructors was the ability of the clinical instructor to put aside any sense of perceived power when instructing the student. This was corroborated by students in a study conducted by Rowbotham and Owen (2015) who found that clinical instructors who belittled or criticised students hindered clinical learning for certain students. This idea was likewise reiterated by Ganesh (2017), who found that chiropractic students at the DUT CDC felt that some clinical instructor' made them feel "foolish" thus demotivating the student. However, even though the idea of being belittled or made to feel foolish by a clinical instructor has the shared view of being a negative, Chan, Tong and Henderson (2017) showed that students still believed that it was appropriate that clinical instructors have a higher power level than students, in order for them to be able to stop student behaviour that may potentially cause patient harm. From the above studies, it can be argued that the most favourable outcome is for clinical instructors to have a power dynamic that involves respect, empathy and discussion.

The chiropractic clinical instructors easily identified that students have varying personalities and that not all students will learn using the same teaching methodology. Developing clinical instructors that have knowledge of different learning styles is essential in order to design and implement a student-centred curriculum that adopts positive teaching methods (Giordano 2008; Meehan-Andrews 2009; Recker-Hughes *et al.* 2014). A study conducted in Illinois (USA) of 121 clinical instructors from varied allied health professions found that 50% of the participants felt they would benefit from a clinical instructor course. One of the learning interests of these clinical instructors included addressing students with diverse learning styles (Rogers, Dunn and Lauter 2008). It is important to note that the learning styles of students may differ from that of the respective clinical instructor, which could cause difficulty when imparting information, regardless of whether they have learnt different learning styles as individuals will often default back to the method of learning that has historically been successful. However, 59% of dental hygiene clinical instructors agreed that clinical instruction preparation courses would have aided them in having more effective interactions with their respective students (Paulis 2011). Technology can be utilised so as to provide clinical instructors with an online guide for teaching strategies and support structures including educational tutorials/videos that can offer clinical instructors information on different student personalities or clinical instruction methods (West *et al.* 2009; Casa 2015).

Personal development came up as a subcategory in the category of the role of the clinical instructor and encompassed a) reflective practice and b) continuous learning.

a) Reflective practice

Although none of the clinicians had a set routine or way of reflecting, many did report reflecting with regards to instruction. One clinical instructor disclosed how it aided him in improving the way he went about clinically instructing, in itself an example of active reflection. It must be noted that having exposed the interviewees to the probes, including the probe regarding reflective practice, may have exposed them to concepts or ideas that they may not have previously explored. Many of the clinical instructors, therefore were found to answer superficially to this probe as opposed to delving deeper and showing reflection leading to a change in practice, as was the case in Ethan's interview (detailed in Chapter 4, theme one: role of the clinical instructor). Many organisations and regulatory bodies are making reflective practice a compulsory component of professional practice (Paterson and Chapman 2013) with reflective practice recently gaining popularity in the education setting, being described as a vital practice of competent health care professionals (Mann, Gordon and MacLeod 2009). Clinical instructors should not only practice reflection but also promote it as an educational strategy so to allow students to implement theoretical knowledge in their patient centred practices (Carlson and Bengtsson 2015). A correlation was found between experienced clinical instructors and ongoing reflection of their teaching skills (Greenfield *et al.* 2012) it can therefore be said that proficient clinical instructor teaching skills need to be developed through reflection on their manner of teaching, relationship building and continuous professional development (McCallum *et al.* 2016).

b) Continuous learning

Continuous learning came up as a subcategory within personal development as the clinical instructors identified the need to undergo continuous professional development themselves within the field of chiropractic and as an educator. A study on the experiences of speech pathology clinical instructors also noted the importance of continual educational development (Higgs and McAllister 2005). Rowbotham and Owen (2015) found that effective clinical instruction included clinical instructors being perceived as knowledgeable (regarding the area of clinical rotation they are in) by their respective students. Students felt they needed to be able to trust that the information they were receiving from the clinical instructor was current and correct (Rowbotham and Owen 2015). It is unrealistic to expect all the clinical instructors to inherently possess the skills, knowledge and character skills

needed to be an effective clinical instructor, therefore, some direction is needed to guide the instructors on becoming the best clinical instructors that they can be.

5.4 Theme two: Interpersonal relationships in the clinical education environment

5.4.1 The chiropractic student relationship

The relationship between the student and the clinical instructor is arguably the most important relationship within the clinical education environment as many clinical instructors make meaningful personal investments in their students (Higgs and McAllister 2005; Chan, Tong and Henderson 2017). It was shown that to students, a positive educator-student relationship is the most important factor when creating the ideal clinical education environment (Smedley and Morey 2010).

The clinical educational programme at the DUT CDC is a unique one, as clinical instructors will often spend two consecutive years with the same group of students, which can cultivate a familiarity with students and consequently, create a relationship that will develop with time. The clinical instructors and student relationship becomes increasingly symbiotic through familiarity bred by the interpersonal relationship experienced and as students improved their skills. This phenomenon was also found by Zieber and Hagen (2009), who reported how clinical instructors formed rich and rewarding relationships with their respective students when spending extended periods of time together. The study by Ganesh (2017) found that the chiropractic students also experienced the developmental change in their relationship with the clinical instructors when compared from the onset to the end of their fifth year. Some clinical instructors commented on how the students begin to feel more like colleagues than students during their sixth year, which is a fair comment as some students will graduate within their sixth year and thus be a colleague to the clinical instructor within the same year.

Absent from the relevant literature was any report by clinical instructors that they learnt from the students as part of their interpersonal experience. Our findings made it apparent that as the student to clinical instructor relationship evolves the clinical instructor gains more confidence in the student's abilities and knowledge, so becoming more receptive to the ideas that the students present, and as a consequence, learning from the student. This shift warranted further probing, nevertheless, it can still be said that it was a unique experience of the clinical instructors. It is thought that this unique element was raised by this group of clinical instructors due to the nature of the novice to expert relationship and therefore, as

the student becomes more knowledgeable, they become more aware of current research within their respective field – research that the clinical instructor may not have previously been exposed to. Another possibility is that as the student becomes more familiar within the clinical setting, they gain more confidence and subsequently find their own way of practicing thus exposing the clinical instructor to new methods or ideas.

An important factor to consider in this relationship, is that the structure of the student-clinical instructor interaction and relationship is not only the responsibility of the individuals but is also a by-product of the framework within which the individuals actively build their relationship – namely the clinical education environment site (Shahsavari *et al.* 2013). Therefore, future research should aim at identifying the elements of the clinical education environment that promote or constrain the student-clinical instructor interaction and relationship as this could be an essential step in improving the relationships. It can be said that the majority of the clinical instructors described a positive experience with regards to the chiropractic student with many saying it was satisfying seeing how the students go from novice to expert.

5.4.2 Clinical instructor interaction

Another noteworthy inter-relationship was the relationship between the different clinical instructors at the DUT CDC. Clinical instructors reported that they did not intermingle much with each other as interaction was reported to be limited to OSCEs, clinician meetings and time spent within the clinic during clinical instruction hours. Clinician meetings are designed for the clinical instructors as forums, which convene periodically, in which information is presented and ongoing issues pertinent to the DUT CDC are discussed (DUT 2017b).

Clinical instructors seemingly agreed that the time spent in the company of other clinical instructors was minimal. Systems that are in place trying to promote the interaction of clinical instructors with one another; namely the clinician meetings, seemed to be an insufficient method of interaction as few accurately recalled how many clinician meetings there should be or had been in the previous calendar year. The reason for this is unclear and warrants further investigation, suffice to say that the perceived experience of the clinical instructors concluded that the clinician meetings need to be re-evaluated in terms of number of meetings, times, and agenda. An issue of clinical instructor attendance was also brought up. Part-time staff reported attending clinician meetings to be a challenge due to the requirement of having to take a day off practice, exposing the notion of “value added” versus “negatives”. This is explained by clinician meetings being perceived as not providing enough

of a value add to some of clinical instructors when weighed up against the negatives (time out of practice, financial recoupment, bureaucratic admin, research and paperwork). Clinical instructors reported feeling that if there was more contact time with their fellow clinical instructors, there would be less double standards and consequently, a more positive interaction with clinical instructors and students alike.

An important component in comparing full-time and part-time clinical instructors is the differences in their roles. A previous study found that part-time clinical instructors are often found to be novice clinical educators (Clark 2013), whereas in this study it determined the opposite to be true as the part timers felt full timers lacked the experience needed to be classified as an expert clinical instructor. Clinical instructor effectiveness has been shown to be difficult to evaluate as clinical settings are complex and vary amongst professions; therefore, even though the need for effective clinical education is apparent, the criteria as to what this entails remains poorly defined (Girija 2012).

Tension was noted between full-time and part-time staff members, perhaps better termed “academic” and “non-academic” staff. Non-academic or part-time staff felt that the academic or full-time staff lacked clinical experience. This lack of clinical experience resulted in some members of the part-time staff contributing the lack of competence in the chiropractic students when they entered the clinic to the lack of clinical experience of the full-time staff, who also lecture the chiropractic students, prior to entering the DUT CDC. Delany and Golding (2014b) found that studies comparing expert and novice practitioners revealed significant differences in clinical reasoning. Expert practitioners depend on experiences to identify patterns and integrate knowledge automatically while novices work through a pattern of fixed thinking steps while asking more irrelevant questions.

The amount of clinical experience necessary to instruct at the DUT CDC varied amongst clinical instructors when probed further with some saying it was not a time dependent variable and others saying it was. Guidelines for the selection of clinical instructors vary amongst institutions (Morren, Gordon and Sawyer 2008). According to Paulis (2011) 60% of dental hygiene clinical education students indicated that 6-10 years of clinical experience was preferred while the clinical instructors in this study felt that having less than 5 years of clinical experience prior to clinically instructing was adequate. It is important to note that the above study was done on a dental hygiene clinical education programme within the United States of America and cannot be compared to the DUT CDC, as it is a unique setting, therefore further research should be completed on the chiropractic students and clinical instructors to determine if the above is similar to the population at the DUT CDC.

Clinical instructors who are experienced practitioners may find it difficult to explain and impart clinical reasoning because it has become an integrated way of thinking while students may find it hard to understand (Delany and Golding 2014a), it may then perhaps be argued that younger practitioners may relate more to students thinking due to their novice natures. It can, perhaps, be suggested that a younger 'novice' clinical instructor be paired with an experienced 'expert' clinical instructor so to provide a variety of perspectives for the student. It has also been shown that there was no significant association between clinical instructor demographics and student satisfaction / a more effective clinical experience. These characteristics included years of clinical experience, years of clinical instructor experience, gender or additional degrees earned (Morren, Gordon and Sawyer 2008).

5.5 Theme three: Clinical education environment experience.

5.5.1 Knowledge

The responsibilities of the clinical instructors must be clearly defined and supported by a formalised system (Jansson and Ene 2016). The results of this qualitative study revealed that there is a lack of knowledge amongst the clinical instructors since many clinical instructors answered with uncertainty when asked to describe the clinical model used at the DUT CDC. Those that found the model clear based their knowledge of the clinical model used at the DUT CDC on their own personal experience from when they were in the clinic as students. There was, however, also a lack of knowledge or understanding between clinical operations versus clinical procedural guidelines. A set document for clinical operations exists; namely, the Clinic Manual (DUT 2017b); there is however no standard for clinical procedural guidelines. According to the Institute of Medicine (2011: 25), clinical practice guidelines are "statements that include recommendations intended to optimise patient care. They are informed by a systematic review of evidence and an assessment of the benefits and harms of alternative care options".

It is recommended that systems be put in place to clearly identify clinical operations versus clinical procedural guidelines. Comments made by Sophia, Ethan and William identified that some clinical instructors felt that the discrepancies that exist between the two could be made clear for the benefit of clinical instructors, students and patients alike. However, it should be noted that common concerns exist regarding the development and implementation of clinical guidelines, namely:

- Conflicts of interest amongst guideline developers;

- A lack of clarity about whether opinion or evidence formed the guidelines;
- The practicability of implementation; and
- A lack of recognition of the heterogeneity of patient characteristics and preferences (Laine, Taichman and Mulrow 2011).

There is also the question of whether the implementation of clinical guidelines would affect the students' ability to clinically reason during patient care. Clinical reasoning involves collecting and analysing information to identify the most effective treatment action specific to a patient's circumstances and wishes (Delany and Golding 2014b). Casa (2015) conducted a study on clinical instructor calibration focusing on means of approaching uniform teaching practice. The study revealed that when clinical instructors do not practice uniform clinical education practices, student learning outcomes and comprehension may be poorly affected as both clinical instructors and students become frustrated. Additionally, it has been found that clear, current and well-constructed clinical guidelines can aid in decision making and possibly improve care by maximising benefit and minimising harm (Laine, Taichman and Mulrow 2011).

Although a Clinic Manual (DUT 2017b) exists with the aim of informing the clinical instructors of their responsibilities within the clinic, it does not include a set clinical procedural guideline for referral and contra-indications. These would need to be derived from the literature, which currently does not have set clinical procedural guidelines specific to chiropractic care and therefore, the clinical instructor group would need to consider developing mini-guidelines specific for use in the DUT CDC.

5.5.2 Challenges

As with all experiences, there were notable challenges within the clinical education experience of clinical instructors. Challenges experienced by the clinical instructors included the feeling of a lack of support from the institution, mainly in terms of incentives. A study by Williams, Angela and Cathy (2008) found a lack of institutional valuing, lack of time, high workload, and institutional priorities to be barriers towards undertaking clinical education practice.

Clinical instructors found it challenging dealing with gaps in knowledge of the chiropractic students when entering the clinic. Although the clinical instructors easily recognised that the students were still novice learners, they felt it was tough to differentiate between students as the level of competence varied so much. As the student transitioned from novice to

expert, clinical instructors felt more confident in the skills of the students and as a result would give the students more leeway when treating patients. However due to the variance in competence development between students, clinical instructors at the DUT CDC felt it was a challenge to deal with the variance in a fair and equitable manner. Other clinical instructors differed and felt that it was easy to set a standard and treat all students equally regardless of competence levels. Students have shown to not mind strong criticism in regard to their clinical performance as they agreed that it allowed them to personally and professionally grow, however they expect clinical instructors to impart this criticism in a manner which demonstrates respect and care (Chan, Tong and Henderson 2017). Based on the literature, criticising students' clinical performance does not improve their clinical education, however criticism followed by constructive feedback allowing growth enhances clinical education experiences (Heydari, Yaghoubinia and Roudsari 2013; Chan, Tong and Henderson 2017). This correlates with the findings of Ganesh (2017) who identified that the chiropractic students at the DUT CDC found one of the challenges with the clinical instructors to be their method of criticism. This shows that perhaps it is not the difficulty in treating students differently that the clinical instructors are experiencing but rather the difficulty in imparting the criticism without being "unfair". Thus, clinical instructors could benefit from interpersonal skills training to help them impart criticism in such a way that it demonstrates to the student that there is room for growth and how to accomplish it so that the student feels rewarded rather than punished.

Clinical instructors reported how students tended to enter the clinic with a lack of clinical confidence. This is not a new phenomenon to first-time clinical students and has been well documented in other health care fields (Lai, Sivalingam and Ramesh 2007; Banzai *et al.* 2011; Hecimovich and Volet 2011). A lack of confidence can result in students disengaging and subsequently de-registering from a programme; the building of a student's confidence, therefore, is an important component of the clinical education experience, and the responsibility of all participants. The development of clinical confidence during the clinical education experience from novice to expert depends on a range of factors with the clinical instructor contributing to how confident students feel (Hecimovich and Volet 2011). Therefore, it is important for clinical instructors to understand the impact that they have on students and impart knowledge in a way that will constructively improve the students sense of self-worth and esteem, as opposed to bringing the student down.

5.5.3 Recommendations

The recommendation most emphasised by the study participants was the need for more than one clinical instructor on a shift. Many clinical instructors felt this was the start and end of most of the challenges faced within the clinical education experience, as more clinical instructors per shift would allow for more time spent per student which would enable the clinical instructor to build on any downfalls the student may have.

Ironside and McNelis (2010) identified that a major barrier to effective clinical education was a low clinical instructor to student ratio; this was reiterated by a study conducted DaRosa *et al.* (2011) that found time constraints to be a barrier to clinical education by medical doctor clinical instructors. Not only was the low instructor to student ratio documented by the clinical instructors but Ganesh (2017) found that fifth-year chiropractic students at the DUT CDC also felt that time spent on clinical discussion was limited. Most clinical instructors agreed that two clinical instructors per shift would be highly beneficial and was a recommendation made by eight of the 14 clinical instructors. Budget restrictions may come into play with this recommendation so alternative methods need to be looked at for implementation.

Ava suggested having senior students, on a rotation basis, aid with the clinical presentation of the junior students (detailed in Chapter 4, theme three: recommendations for improving the clinical education experience). This method of teaching has previously been discussed in the literature: A South African study by Potgieter (2012) focused on methods within nursing education that could enable clinical students to develop more critical thinking skills. One of the strategies suggested was 'peer coaching' or 'peer-assisted learning'. Although it was initially suggested as a way to promote critical thinking, it could also be seen as a method in which to support the clinical instructors when there is only one on duty. 'Peer coaching' involves the use of senior students to coach junior seniors for their task, or in this case, patient. Coaching does not involve the senior student telling the junior student what to do but rather involves promoting effective communication, motivating and building confidence while assessing and guiding the student to think critically and discover new decisions. A recent study showed this method to have a positive impact on physiotherapy students by showing a 6% improvement in clinical academic achievement (Moore, Westwater-Wood and Kerry 2016).

Peer coaching is increasingly being implemented in clinical education, it is, however not as well documented in the allied health professions as it is in nursing and medicine

(Sevenhuysen *et al.* 2013). The University of the Free State has implemented peer coaching as a pilot study as a part of re-assessing the Occupational Therapy undergraduate curriculum and current clinical education platform. Benefits include:

- Reinforcement and revision of learning;
- Provision of feedback;
- Role-modelling;
- Facilitating communication skills;
- Team-working skills; and
- Transferring learning to new situations (van Vuuren 2017).

Students also reported that it provided an environment in which they felt more confident to ask basic questions as peer leaders were more approachable and familiar than a clinical instructor or faculty member (Sole *et al.* 2012). Peer coaching may assist clinical instructors with their teaching load without putting strain on the institutional budget as senior students can be given incentives such as clinical hours. However, legal implications are present and therefore, it is important to be explicit regarding what the responsibilities of the student would be.

An interesting concept brought forward by one of the clinical instructors when speaking of having two clinical instructors per shift was that there should be a difference in gender; namely, one female and one male clinical instructor. This was suggested since Sophia felt that there are gender dependent skills when treating a patient. This concept was both supported and disproven by different studies. A study by Muehlemann, Humphreys and Peterson (2017) found that the gender differences in treatment outcomes was eliminated on exclusion of the acute subgroup of patients, this suggests that patient outcome is influenced by chronicity more than gender. Another study found that male chiropractors saw more new and follow up patients per week when compared to their female associates (Vollenweider, Peterson and Humphreys 2017). Further probing should have been utilised here with follow up participants, however this did not constitute a new theme and therefore at the time felt unnecessary. Due to the differences between study outcomes on this topic, this topic be explored further within the chiropractic clinical education setting and amongst chiropractic students.

Recommendations regarding the assessment procedure of the chiropractic students during the clinical practicum at the DUT CDC were made by the clinical instructors. These recommendations included the following:

- A chiropractic bed be placed within the clinician's office so as to enable a more practical setting.
- Having each clinical instructor present a case once a month for the students.
- Peer coaching where senior students work on a rotation based system where a junior student will first report to a senior student and then to the clinical instructor.
- The clinical competency sheet should be worked on an open-door policy, where the clinical instructor can walk in at any time and give the student a competency assessment on what they find the student is doing at the time.

Ganesh (2017) recommended that the clinic paperwork be periodically reviewed by clinic management and updated so as not to contain redundant, insignificant or unclear information. This recommendation was based upon the chiropractic students' responses as to how they experienced the clinical education environment and practicum, this coincides with the thoughts of the clinical instructors, who agree that the clinic paperwork requires re-evaluating and subsequent updating. One recommendation was to include a section in the front of the file that contained all clinical test results including X-ray/MRI reports so that the clinical instructors and students can easily access these when re-assessing the patient so to save time from searching through the file. Additionally, it was shown that clinic paperwork can have a negative effect on time spent with not only patients but also time available for clinical education and teaching by the clinical instructors (Christino *et al.* 2013). Therefore, it can be said that paperwork that is trivial, unspecific and time consuming without merit can impact the clinical education experience of clinical instructors as well as of their respective students.

Clinic management came up as a subcategory of the theme support, however it could easily be argued that many of the challenges experienced by the clinical instructors could be due to outdated management and the recommendations made could be implemented with advances made in management of the clinic. No study existed on the experience of the chiropractic clinical instructors at the DUT CDC and therefore, the information could not have been there to implement the changes discussed and possibly needed. However, with the aid of this study combined with the results of the study done by Ganesh (2017), a clear overview as to the advances needed for the DUT CDC can be arrived at.

5.6 Conclusion

There is a limited amount of literature regarding the experience of clinical instructors (Higgs and McAllister 2005; Greenfield *et al.* 2012; Thuss *et al.* 2016). The intent of this study was

to add to the existing literature and body of knowledge regarding the clinical education experience of clinical instructors. It sought to provide an in-depth and specific look at the beneficial role to be played, and the clinical education experience of, chiropractic clinical instructors and compare their experiences to those of other health care clinical instructors. While some findings appeared to be consistent with general recurring themes in studies pertaining to clinical instruction, this study also provided rich insights into the experiences, challenges and recommendations of chiropractic clinical instructors within South Africa.

CHAPTER 6: EVALUATION OF THE RESEARCH

In the previous chapter the results of the study were discussed in correlation with the relevant literature on clinical instruction within health sciences. This is the final chapter and comprises the evaluation of the research in terms of a summary of the study, strengths, limitations and recommendations for the institution. It also looks into the researcher's reflections upon the completion of this dissertation.

6.1 Summary of the study

The primary objective of this study was to explore and describe the experiences of the clinical instructors at the DUT CDC as perceived by themselves. The researcher chose to utilise a constructivist paradigm using a qualitative, exploratory and descriptive design. The research question of what the experiences are of the clinical instructors at a chiropractic teaching clinical in Kwa-Zulu Natal was answered and revealed three primary themes that encompassed the experiences of the clinical instructors. These were: clinical instruction and the role of the clinical instructor; interpersonal relationships in the clinical education setting; and the clinical education environment experience.

6.1.1 Strength of the study

This study was conducted within a qualitative paradigm, with the hope of achieving rich data from the participants as to their experience within the clinical education environment. This qualitative study is the first of its kind regarding chiropractic clinical instructors' clinical education experience within the South African context, and contributes new knowledge about clinical instructors' experiences of the meaning of the clinical education environment. While this study incorporated some standard ideas in terms of clinical instruction, it also touched on some unique issues unique to chiropractic clinical instruction at the DUT CDC.

6.1.2 Limitations of the study

This was the first master's degree study that the researcher had conducted and compiled and therefore, upon reflection, there are aspects of the study that could have required further planning and insight. These are outlined below:

- Data, such as interviews, that rely on the participants to describe and interpret their experience is always open to results differing amongst varying researchers as the interpretation process is a subjective one.
- This study took place within the DUT CDC and focused on a unique population, namely; the chiropractic clinical instructors. Due to all teaching clinics having their own standard operating procedure and instructional offerings, the experiences of clinical instructors may differ at various teaching clinics. Therefore, caution is advised regarding generalisation of the findings of this study to other chiropractic clinics but should inspire other chiropractic institutions to conduct further research into the experience of the clinical instructors. Qualitative studies do not have the aim of generalisability and therefore, the application of this study to other populations has limitations. However, aspects of the results could be utilised as guidelines for clinical education and clinical instructions in the broader context.
- Two chiropractic clinical instructors were excluded from the study due to them being a part of the researcher's departmental meetings. Both of these clinical instructors were full-time staff and could have given insight into some of the more pertinent issues that existed between full-time and part-time staff.
- An expert group prior to data collection would have been helpful so to enable the researcher to see where further probing was necessary and where to focus the main ideas of clinical education experience.
- Having exposed the clinical instructors to the questions including the probes prior to the study may have exposed them to concepts/ideas that they had not had the proper time to explore and therefore, only provided superficial answers. This may also have given the clinical instructors a guide as what to include within their clinical education experience answers, therefore it is recommended that in future studies of this nature, probes are not given to the participants ahead of time.
- The researcher being a current student of the clinical instructors may have created a power imbalance when conducting the research. It may also have limited the participants in speaking freely about certain issues that relate to the students.

6.2 Recommendations

Although this study demonstrated that clinical instructors identified potential areas of improvement in clinical instructor support, changing existing methods of support may prove to be difficult. Clinical instructors' opinions of which teaching strategies are most important may differ from those presented in formal clinical instructor courses and this may cause resistance from the clinical instructors to change. Therefore, organisational support is

critical when implementing any adjustments to existing clinical instructor instruction methods. A previous study by Notzer and Abramovitz (2008) showed extensive benefits from even a brief clinical instructor educational support session, which would not require a great deal of financial and personnel resources on the part of the dental hygiene facility or surrounding educational institution.

It is hoped that the outcomes of this study improve the clinical education experiences at the DUT CDC for the clinical instructors through understanding their experience. It is the responsibility of the institution and stakeholders of chiropractic education to address the challenges and problems encountered by the chiropractic clinical instructors within the DUT CDC. The recommendations to advance and enhance the clinical education experience of the chiropractic clinical instructors are described below:

- The recommendation most emphasised in this study is for the institution to adjust the schedule and budget to allow for two clinical instructors per shift. Having two clinical instructors per shift during “peak times” so to avoid over-crowding and waiting was a recommendation made by both the clinical instructors as well as by the fifth-year chiropractic students in Ganesh’s (2017) study. The success of clinical instruction has been shown to be dependent on an institutions ability to create a supportive framework so to allow the necessary time to instruct students within the clinical education environment (Jansson and Ene 2016).
- The clinician meetings need to be re-evaluated as this study revealed that the clinical instructors rarely felt them to be helpful.
 - Suggestions to deal with administrative problems within the clinic include doing online polls or surveys that the clinical instructors can do without missing a day within practice – this could enable the clinician meetings to maintain their integrity by dealing with issues related to clinical instruction, students and patients. An online support mechanism, could assist in filtering issues, although it cannot replace the “hands on” benefit of personal interface.
 - Further online support could include identifying clinical instructors’ concerns. Prior to the clinician meetings, a request could be sent for suggestions for which issues to include for discussion at the next meeting. Depending on the majority vote, that concern could take precedence on the meeting’s agenda. At the meeting, clinical instructors could then be given an opportunity to share what concerns they would like to cover at the next meeting and this can be placed in a poll so that

the cycle can be repeated. This then is perceived as individual attention being highlighted and remedied, which could add to the value added.

- The clinic manual needs to be re-assessed as the clinical instructors seemed to experience this as not being an effective way at delivering the concept of the clinic model. As an alternative, it is proposed that a compulsory refresher course be done at the beginning of the year for the clinicians to provide a clear guideline as the model/framework utilised in the clinic. This would be seen as a valuable time to establish set guidelines in the clinic in terms of clinical procedural standards (e.g.: when blood pressure readings are referred to a specialist, when to adjust the patient and when not to adjust the patient) so that there is a decrease in the discrepancies reported amongst both the clinical instructors as well as the chiropractic students, (Ganesh 2017)
- Implementing workshops for clinical instructors, advising them on how to utilise and develop their abilities clinical educators.
- A monthly/quarterly journal from the clinic director with articles of interest on clinical instruction, clinical education and upcoming workshops can be implemented and funded by advertisers/ product suppliers or done online without funding. Clinical instructors could perhaps be included by them submitting any interesting articles or presenting cases of interest.
- Having new clinical instructors on shift with a more experience clinical instructor as part of a 'mentoring' programme might support the new clinical instructor and help build confidence amongst the students. This will also allow clinical instructors to become familiarised with the clinical instruction model at the DUT CDC. Research has shown that a mentorship programme for clinical instructors has proven beneficial in terms of implementing programme procedures, educational strategies and organisational structure of clinical models (Casa 2015).
- There are advantages as well as disadvantages behind the implementation of clinical guidelines. Therefore, it is recommended that the implementation of clinical guidelines be presented at a clinicians meeting and discussed.
- The concept of peer coaching can be presented to the clinical instructors and a pilot study can be done so to see if it would be a viable option for the DUT CDC.
- A similar study should be conducted at the University of Johannesburg to determine any similarities or differences to the findings of this study. It would also aim in identifying strengths of the clinical instructor programme there and possibly introduce them to the DUT CDC.

6.3 Researcher's reflections

The researcher was grateful to be given the opportunity to further her education and complete this dissertation. The researcher was excited to conduct and present this study as the first of its kind in South Africa. Recruiting the chiropractic clinical instructors was smooth with the data collection process being unproblematic. The researcher appreciated every clinical instructor that participated and was thankful for the contribution they made in producing this research paper.

Upon reflection, it is remarkable to think through the process that occurred so that this compiled research is available to you, the reader. This research process empowered the researcher to develop skills in interviewing, analysing and writing. It was a challenging yet enlightening process that allowed the researcher to open up to a completely new way of thinking. The research process aided the researcher in developing a more open-minded response to situations by realising that there is often no wrong way or right way to go about things but rather it identified the importance of reflection. The researcher was humbled in realising that there will always be room for improvement.

To conclude, the research process may be stressful and filled with challenges and unforeseen circumstances, which requires the researcher to constantly adapt – an ability this researcher now values. It has, additionally changed the researcher's thinking, as a student, by bringing to light the constant challenges that the chiropractic clinical instructors at the DUT CDC face, in the hope of furthering the profession and aiding in graduating competent, forward thinking and empathetic chiropractors. It has, further, enlightened the researcher as to the tremendous responsibility and importance of being a chiropractic clinical instructor. It has also changed the researcher as a chiropractor by re-iterating the responsibility of caring for patients within an alternative health care profession. The researcher hopes to go out into the chiropractic field and constantly learn more so as to enhance the positive reputation of the profession.

6.4 Conclusion

Being a clinical instructor is an evolving process, mirroring in some ways the evolving process that clinical instructors try to encourage amongst their respective students. The findings of this study can be used as the foundation for helping clinical instructors reflect on what it truly means to be a clinical instructor and how to succeed with the varying roles, responsibilities and experiences of being a clinical instructor in today's clinical education setting.

This qualitative study explored the clinical education experiences of chiropractic clinical instructors at the DUT CDC in 2017. The findings indicated that chiropractic clinical instructors, within the South African context, have a rich and multi-faceted experience within the clinical education experience, an experience that includes clinical instruction and the role of the clinical instructor, interpersonal relationships experienced within the clinical education environment as well as the clinical education environment experience. These experiences need to be supported by the relevant institution so as to best equip the clinical instructors for clinical learning, thus improving the educational experience and adhering to the institutional and departmental vision and mission.

REFERENCES

- Adams, J., Broom, A. and Jennaway, M. 2008. Qualitative methods in chiropractic research: one framework for future inquiry. *Journal of Manipulative and Physiological Therapeutics*, 31(6): 455-460.
- Alcantara, J. and Leach, M. J. 2015. Chiropractic attitudes and utilization of evidence-based practice: the use of the EBASE questionnaire. *Explore (New York, NY)*, 11(5): 367-376.
- The Allied Health Professions Council of South Africa [AHPCSA]. 1982. *The Allied Health Professions Act 63 of 1982*. Available: <http://www.ahpcsa.co.za> (Accessed 25 April 2017).
- Banzai, R., Derby, D. C., Long, C. R. and Hondras, M. A. 2011. International web survey of chiropractic students about evidence-based practice: a pilot study. *Chiropractic & Manual Therapies*, 19(1): 6-6.
- Baraz, S., Memarian, R. and Vanaki, Z. 2014. The diversity of Iranian nursing students' clinical learning styles: a qualitative study. *Nurse Education in Practice*, 14(5): 525-531.
- Benjamin, R. L. 2007. A retrospective cross sectional survey of thoracic cases on record at Durban University of Technology chiropractic day clinic. M.Tech. Chiropractic, Durban University of Technology.
- Bowen, G. A. 2008. Naturalistic inquiry and the saturation concept: a research note. *Qualitative Research*, 8(1): 137-152.
- Brammer, J. 2006. A phenomenographic study of registered nurses' understanding of their role in student learning: an Australian perspective. *International Journal of Nursing Studies*, 43(8): 963-973.
- Braun, V. and Clarke, V. 2013. *Successful qualitative research*. Thousand Oaks, CA: Sage.
- Brink, H., van der Walt, C. and van Rensburg, G. 2012. *Fundamentals of research methodology for healthcare professionals*. Cape Town: Juta.

Bussi eres, A. E., Al Zoubi, F., Stuber, K., French, S. D., Boruff, J., Corrigan, J. and Thomas, A. 2016. Evidence-based practice, research utilization, and knowledge translation in chiropractic: a scoping review. *BMC Complementary and Alternative Medicine*, 16: 216.

Caine, M. and Jackson, W. 2011. Clinical supervision and the theory-practice gap: view from a student mental health nurse. *Mental Health Nursing*, 31(6): 9.

Cantatore, F., Crane, L. and Wilmoth, D. 2016. Defining clinical education: parallels in practice. *Australian Journal of Clinical Education*, 1(1). Available: <http://epublications.bond.edu.au/ajce/vol1/iss1/2/> (Accessed 29 March 2017).

Carlson, E. and Bengtsson, M. 2015. Perceptions of preceptorship in clinical practice after completion of a continuous professional development course: a qualitative study Part II. *BMC Nursing*, 14(1): 41.

Casa, C. 2015. Clinical instructor calibration: influence and means of approaching uniform teaching practices. *ADHA Access*, 29(1): 14.

Cawood, H. 2016. Knowledge, understanding and perception of parents towards the utilization of chiropractic treatment for paediatric patients in the Durban Metropolitan area. M.Tech. Chiropractic, Durban University of Technology.

Chan, Z., Tong, C. and Henderson, S. 2017. Power dynamics in the student-teacher relationship in clinical settings. *Nurse Education Today*, 49(1): 174-179.

Cheraghi, M. A., Salasli, M. and Ahmadi, F. 2008. Factors influencing the clinical preparation of BS nursing student interns in Iran. *International Journal of Nursing Practice*, 14(1): 26-33.

Chiropractic Association of South Africa. 2017. *Chiropractic History in SA*. Available: <http://www.chiropractic.co.za/history/index.html> (Accessed 15 May 2017).

Christino, M. A., Matson, A. P., Fischer, S. A. and Reinert, S. E. 2013. Paperwork versus patient care: a nationwide survey of residents' perceptions of clinical documentation requirements and patient care. *Journal of Graduate Medical Education*, 5(4): 600-604.

Clark, C. L. 2013. A mixed-method study on the socialization process in clinical nursing faculty. *Nursing Education Perspectives*, 34(2): 106.

Cohen, D. and Crabtree, B. 2006. *Semi-structured interviews*. Available: <http://www.qualres.org/HomeSemi-3629.html> (Accessed 15 April 2017).

Cope, D. 2014. Methods and meanings: credibility and trustworthiness of qualitative research. *Oncology Nursing Forum*, 41(1): 89-91.

Creswell, J. 2013. *Research design: qualitative and quantitative approaches*. Thousand Oaks, CA: Sage.

Cunningham, J., Wright, C. and Baird, M. 2015. Managing clinical education through understanding key principles. *Radiologic Technology*, 86(3): 257.

Dadgaran, I., Parvizi, S. and Peyrovi, H. 2012. A global issue in nursing students' clinical learning: the theory-practice gap. *Procedia, Social and Behavioral Sciences*, 47: 1713-1718.

Dahlke, S., Baumbusch, J., Affleck, F. and Kwon, J.-Y. 2012. The clinical instructor role in nursing education: a structured literature review. *The Journal of Nursing Education*, 51(12): 692.

DaRosa, D. A., Skeff, K., Friedland, J. A., Coburn, M., Cox, S., Pollart, S., O'Connell, M. and Smith, S. 2011. Barriers to effective teaching. *Academic Medicine*, 86(4): 453-459.

De Guzman, A. B., Factor, E. M. R. and Matienzo, E. T. 2017. A square peg in a round hole: theory-practice gap from the lens of Filipino student nurses. *Nurse Education Today*, 57: 82-87.

Delany, C. and Bailocerkowski, A. 2011. Incorporating evidence in clinical educations: barriers and opportunities in allied health. *The Internet Journal of Allied Health Sciences and Practice*, 9(1).

Delany, C. and Golding, C. 2014a. Teaching clinical reasoning by making thinking visible: an action research project with allied health clinical educators. *BMC Medical Education*, 14(20).

Delany, C. and Golding, C. 2014b. Teaching clinical reasoning by making thinking visible: an action research project with allied health clinical educators. *BMC Medical Education*, 14(20).

Denscombe, M. 2007. *The good research guide: for small-scale social research projects*. 3rd ed. Maidenhead: Open University Press.

Denzin, N. and Lincoln, Y. 2017. *The Sage handbook of qualitative research*. 5th ed. Thousand Oaks, CA: Sage.

Dolmans, D. H. J. M., Wolfhagen, I. H. A. P., Essed, G. G. M., Scherpbier, A. J. J. A. and van der Vleuten, C. P. M. 2002. The impacts of supervision, patient mix, and numbers of students on the effectiveness of clinical rotations. *Academic Medicine*, 77(4): 332-335.

Duffy, A. 2007. A concept analysis of reflective practice: determining its value to nurses. *British Journal of Nursing*, 16(22): 1400-1407.

Duffy, K. and Watson, H. 2001. An interpretive study of the nurse teacher's role in practice placement areas. *Nurse Education Today*, 21: 551-558.

Durban University of Technology. 2017a. *Chiropractic and Somatology Handbook*. Durban: Durban University of Technology

Durban University of Technology. 2017b. *Chiropractic Clinic Manual*. Durban: Durban University of Technology. .

Durban University of Technology. 2017c. *Vision and mission*. Available: <http://www.dut.ac.za/vision/> (Accessed 02 April 2017).

Ebrall, P., Eaten, S., Hinck, G., Kelly, B., Nook, B. and Pennacchio. 2009. Chiropractic education: towards best practice in four areas of the curriculum. *Chiropractic Journal of Australia*, 39(5): 87-91.

Elisha, S. and Rutledge, D. N. 2011. Clinical education experiences: perceptions of student registered nurse anesthetists. *American Association of Nurse Anesthetists Journal*, 79(4): S35-42.

Ernst, E. 2008. Chiropractic: a critical evaluation. *Journal of Pain and Symptom*, 35(5): 544-562.

Factor, E and Matienzo, E. 2017. A square peg in a round hole: Theory-practice gap from the lens of Filipino student nurses. *Nurse Education Today*, 57(1): 82-87.

Ganesh, N. 2017. Clinical experiences of first-time registered master's chiropractic students during their clinical practicum. M.Tech. Chiropractic. Durban University of Technology.

Gercama, A., van Lankveld, T., Kleinveld, J., Croiset, G. and Kusurkar, R. 2014. Bridging the gap between CBME in theory and practice: the role of a teacher community. *Perspectives on Medical Education*, 3(6): 486-491.

Gignac-Caille, A. and Oermann, M. 2001. Student and faculty perceptions of effective clinical instructors in ADN programs. *Journal of Nursing Education*, 40(8): 347-353.

Giordano, S. 2008. Improving clinical instruction: comparison of literature. *Radiologic Technology*, 79(4): 289-296.

Girija, K. M. 2012. Effective clinical instructor: a step toward excellence in clinical teaching. *International Journal of Nursing Education*, 4(1): 25-27.

Glynn, D. M., McVey, C., Wendt, J. and Russell, B. 2017. Dedicated educational nursing unit: clinical instructors role perceptions and learning needs. *Journal of Professional Nursing*, 33(2): 108-112.

Graneheim, U. H. and Lundman, B. 2004. Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse Education Today*, 24: 105-112.

Greenfield, B. H., Bridges, P. H., Hoy, S., Metzger, R., Obuaya, G. and Resutek, L. 2012. Exploring experienced clinical instructors' experiences in physical therapist clinical education: a phenomenological study. *Journal of Physical Therapy Education*, 26(3): 40.

- Guba, E. G. and Lincoln, Y. S. 1994. Competing paradigms in qualitative research. In: Denzin, N. K. and Lincoln, Y. S. eds. *Handbook of qualitative research*. London: Sage, 105-117.
- Guest, G., Namey, E. and Mitchell, M. 2013. *Collecting qualitative data: a field manual for applied research*. Thousand Oaks, CA: Sage.
- Hecimovich, M. and Volet, S. 2011. Development of professional confidence in health education: research evidence of the impact of guided practice into the profession. *Health Education*, 111(3): 177-197.
- Hecimovich, M. D., Maire, J.-A. and Losco, B. 2010. Effect of clinician feedback versus video self-assessment in 5th-year chiropractic students on an end-of-year communication skills examination. *The Journal of Chiropractic Education*, 24(2): 165-174.
- Heydari, A., Yaghoubinia, F. and Roudsari, R. L. 2013. Supportive relationship: experiences of Iranian students and teachers concerning student-teacher relationship in clinical nursing education. *Iranian Journal of Nursing and Midwifery Research*, 18(6): 467-474.
- Higgs, J. and McAllister, L. 2005. The lived experiences of clinical educators with implications for their preparation, support and professional development. *Learning in Health and Social Care*, 4(3): 156-171.
- Ingrassia, J. M. 2011. Effective radiography clinical instructor characteristics. *Radiologic Technology*, 82(5): 409-420.
- Institute of Medicine (US). 2011. *Clinical practice guidelines we can trust*. Washington, DC: National Academies Press. Available: <https://doi.org/10.17226/13058> (Accessed 18 December 2017).
- Ironside, P. M. and McNelis, A. M. 2010. Clinical education in prelicensure nursing programs: findings from a national survey. *Nursing Education Perspectives*, 31(4): 264.
- Jackson, D. 2015. Employability skill development in work-integrated learning: barriers and best practice. *Studies in Higher Education*, 40(2): 350-367.

Jaman, R. 2007. A retrospective cross-sectional survey of lumbo-sacral cases recorded at the DUT chiropractic day clinic (1995-2005). M.Tech. Chiropractic, Durban University of Technology.

Jansson, I. and Ene, K. 2016. Nursing students' evaluation of quality indicators during learning in clinical practice. *Nurse Education in Practice*, 20: 17-22.

Janzen, K. J. 2010. Alice through the looking glass: the influence of self and student understanding on role actualization among novice clinical nurse educators. *The Journal of Continuing Education in Nursing*, 41(11): 517-523.

Johnson, C. 2007. Future trends in chiropractic education: conference on clinical assessment. *The Journal of Chiropractic Education*, 2 (1): 34-35.

Keating, J. 1992. *Toward a philosophy of the science of chiropractic: a primer for clinicians*. Stockton, CA: Stockton Foundation for Chiropractic Research.

Kilcullen, N. M. 2007. Said another way: the impact of mentorship on clinical learning. *Nursing Forum*, 42(2): 95-104.

Kilminster, S. M. and Jolly, B. C. 2000. Effective supervision in clinical practice settings: a literature review. *Medical Education*, 34(10): 827-840.

Kragelund, L. 2011. Student nurses' learning processes in interaction with psychiatric patients: a qualitative investigation. *Nurse Education in Practice*, 11(4): 260-267.

Lahteenmaki, M.-L. 2005. Reflectivity in supervised practice: conventional and transformative approaches to physiotherapy. *Learning in Health and Social Care*, 4(1): 18-28.

Lai, N., Sivalingam, N. and Ramesh, J. 2007. Medical students in their final six months of training: progress in self-perceived clinical competence and relationship between experience and confidence in practical skills. *Singapore Medical Journal*, 48(11): 1018-1027.

Laine, C., Taichman, D. B. and Mulrow, C. 2011. Trustworthy clinical guidelines. *Annals of Internal Medicine*, 154(11): 774-775.

- Lincoln, Y. and Guba, E. 1985. *Naturalistic inquiry*. Thousand Oaks, CA: Sage.
- Lunenburg, F. C. 2010. Communication: the process, barriers and improving effectiveness. *Communication Schooling*, 1(1).
- Mann, K., Gordon, J. and MacLeod, A. 2009. Reflection and reflective practice in health professions education: a systematic review. *Advances in Health Sciences Education*, 14(4): 595.
- Manninen, K., Henriksson, E. W., Scheja, M. and Silén, C. 2015. Supervisors' pedagogical role at a clinical education ward: an ethnographic study. *BMC Nursing*, 14(1): 55.
- Maxwell, J. 2012. *Qualitative research design: an interactive approach*. 3rd ed. Thousand Oaks, CA: Sage.
- McCallum, C. A., Mosher, P. D., Jacobson, P. J., Gallivan, S. P. and Giuffre, S. M. 2013. Quality in physical therapist clinical education: a systematic review. *Physical Therapy*, 93(10): 1298-1311.
- McCallum, C. A., Reed, R., Bachman, S. and Murray, L. 2016. A systematic review of physical therapist clinical instructor demographics and key characteristics: impact on student clinical education experiences. *Journal of Physical Therapy Education*, 30(3): 11.
- McDonald, M. L. 2014. Demographic characteristics of patients attending DUT chiropractic day clinic : a comparison of trends between 1994 and 2011. M.Tech. Chiropractic, Durban University of Technology.
- Meehan-Andrews, T. A. 2009. Teaching mode efficiency and learning preferences of first year nursing students. *Nurse Education Today*, 29(1): 24-32.
- Merriam-Webster. 2017. *Merriam-Webster's online dictionary*. 11th ed. Available: <https://www.merriam-webster.com/dictionary/character> (Accessed 13th December 2017).
- Merriam, S. and Tisdell, E. 2016. *Qualitative research*. 4th ed. San Francisco, CA: Jossey-Bass.

Middleton, R. 2013. Active learning in an undergraduate setting: reflections, key learning and recommendations. *International Practice Development Journal*, 3(Suppl 4).

Monaghan, T. 2015. A critical analysis of the literature and theoretical perspectives on theory-practice gap amongst newly qualified nurses within the United Kingdom. *Nurse Education Today*, 35(8): e1-e7.

Moore, C., Westwater-Wood, S. and Kerry, R. 2016. Academic performance and perception of learning following a peer coaching teaching and assessment strategy. *Advances in Health Sciences Education*, 21(1): 121-130.

Morren, K. K., Gordon, S. P. and Sawyer, B. A. 2008. The relationship between clinical instructor characteristics and student perceptions of clinical instructor effectiveness. *Journal of Physical Therapy Education*, 22(3): 52.

Mrozek, J. P., Till, H., Taylor-Vaisey, A. L. and Wickes, D. 2006. Research in chiropractic education: an update. *Journal of Manipulative and Physiological Therapeutics*, 29(9): 762-773.

Muehlemann, M. B., Humphreys, B. K. and Peterson, C. K. 2017. Differences in outcomes of patients treated by male vs female chiropractors. *Journal of Manipulative and Physiological Therapeutics*, 40(6): 420.

Myburgh, C. and Mouton, J. 2007. Developmental issues in chiropractic: a South African practitioner and patient perspective. *Journal of Manipulative and Physiological Therapeutics*, 30(3): 206-214.

National Board of Chiropractic Examiners: NBCE. 2015. *Practice Analysis of Chiropractic 2015*. Colorado: Available: http://nbce.wpengine.com/wp-content/uploads/chapter_01.pdf (Accessed 17 April 2017).

Newton, J. M., Billett, S., Jolly, B. and Ockerby, C. M. 2009. Lost in translation: barriers to learning in health professional clinical education. *Learning in Health and Social Care*, 8(4): 315-327.

Notzer, N. and Abramovitz, R. 2008. Can brief workshops improve clinical instruction? *Medical Education*, 42(2): 152-156.

- Ozga, K. L., Kenyon, L. K., Engel, A. J., Kool, P. A., Sievers, M. E. and Stephenson, P. 2016. Physical therapist students' perceptions of effective clinical instructor behaviors: a pilot study. *Journal of Physical Therapy Education*, 30(4): 35.
- Palmgren, P. J. and Laksov, K. B. 2015. Exploring chiropractic students' experiences of the educational environment in healthcare professional training: a qualitative study. *BMC Medical Education*, 15(1): 128.
- Parkinson, L., Sibbritt, D., Bolton, P., van Rotterdam, J. and Villadsen, I. 2013. Well-being outcomes of chiropractic intervention for lower back pain: a systematic review. *Clinical Rheumatology*, 32(2): 167-180.
- Paterson, C. and Chapman, J. 2013. Enhancing skills of critical reflection to evidence learning in professional practice. *Physical Therapy in Sport*, 14(3): 133-138.
- Paulis, M. R. 2011. Comparison of dental hygiene clinical instructor and student opinions of professional preparation for clinical instruction. *Journal of Dental Hygiene*, 85(4): 297.
- Pazargadi, M., Ashktorab, T. and Khosravi, S. 2012. Nursing students' experiences on the evaluating role of their clinical educators: a qualitative study. *Asian Journal of Nursing Education and Research*, 2(3): 6.
- Polit, D. and Beck, C. 2006. *Essentials of nursing research: methods, appraisal and utilization*. 6th ed. Philadelphia, PA: Lippincott, Williams & Wilkins.
- Polit, D. and Beck, C. 2010. Generalization in quantitative and qualitative research: Myths and strategies. *International Journal of Nursing Studies*, 47(11): 1451-1458.
- Polit, D. and Beck, C. 2012. *Nursing research: generating and assessing evidence for nursing practice*. 9th ed. Philadelphia, PA: Lippincott, Williams & Wilkins.
- Pollock, A., Campbell, P., Deery, R., Fleming, M., Rankin, J., Sloan, G. and Cheyne, H. 2017. A systematic review of evidence relating to clinical supervision for nurses, midwives and allied health professionals. *Journal of Advanced Nursing*, 73(8): 1825-1837.

Potgieter, E. 2012. Critical teaching: developing critical thinking in student nurses. *Professional Nursing Today*, 16(2).

Ramaprasad, A. 1983. On the definition of feedback. *Behaviour Science*, 28(4): 4-13.

Rapport, M. J., Kelly, M. K., Hankin, T. R., Rodriguez, J. W. and Tomlinson, S. S. 2014. A shared vision for clinical education: the year-long internship. *Journal of Physical Therapy Education*, 28(22).

Recker-Hughes, C., Wetherbee, E., Buccieri, K. M., FitzpatrickTimmerberg, J. and Stolfi, A. M. 2014. Essential characteristics of quality clinical education experiences: standards to facilitate student learning. *Journal of Physical Therapy Education*, 28(48).

Rodríguez-van Lier, M. E., Simón, L. M. H., Gómez, R. E. L. and Escalante, I. P. 2014. Intergrative health care method based on combined complementary medical practices: rehabilitative acupuncture, homeopathy and chiropractic. *African Journal of Traditional, Complementary and Alternative Medicines*, 11(1): 180.

Rogers, J., Dunn, L. and Lauter, C. 2008. Training health care providers to be educators. *Health Care Management*, 27(1): 40-44.

Rowbotham, M. and Owen, R. M. 2015. The effect of clinical nursing instructors on student self-efficacy. *Nurse Education in Practice*, 15(6): 561-566.

Ryan-Nicholls, K. and Will, C. 2009. Rigour in qualitative research: mechanisms for control. *Nurse Researcher*, 16(3): 70-85.

Sackett, D. L., William, M. C. R., Gray, J. A. M., Haynes, R. B. and Richardson, W. S. 1996. Evidence based medicine: what it is and what it isn't: it's about integrating individual clinical expertise and the best external evidence. *British Medical Journal*, 312(7023): 71-72.

Sevenhuysen, S., Nickson, W., Farlie, M., Raitman, L. and Keating, J. 2013. The development of a peer assisted learning model for clinical education of physiotherapy students. *Journal of Peer Learning*, 6(1).

Shahsavari, H., Parsa Yekta, Z., Houser, M. L. and Ghiyasvandian, S. 2013. Perceived clinical constraints in the nurse student-instructor interactions: a qualitative study. *Nurse Education in Practice*, 13(6): 546-552.

Sharif, F. and Masoumi, S. 2005. A qualitative study of nursing student experiences of clinical practice. *BMC Nursing*, 4(1): 6.

Smedley, A. and Morey, P. 2010. Improving learning in the clinical nursing environment: perceptions of senior Australian bachelor of nursing students. *Journal of Research in Nursing*, 15(1).

Smith, D. M. and Kolb, D. A. 1986. *User's guide for the learning style inventory: a manual for teachers and trainers*. Boston, MA: McBer.

Sole, G., Rose, A., Bennett, T., Jaques, K. and Rippon, Z. 2012. A student experience of peer assisted study sessions in physiotherapy. *Journal of Peer Learning*, 5(1).

The Allied Health Professions Council of South Africa. 2017. *Continuing professional development CPD cycle: 2015-2017*. Available: <http://ahpcsa.co.za/wp-content/uploads/2016/01/CPD-GUIDELINES-2015-2017-PDF-November-2016-4.pdf> (Accessed 4 December 2017).

World Health Organisation. 2005. *Guidelines on Chiropractic*. Available: <http://apps.who.int/medicinedocs/en/m/abstract/Js14076e/> (Accessed 01 April 2017).

Thuss, M., Babenko-Mould, Y., Andrusyszyn, M.-A. and Laschinger, H. K. S. 2016. Nursing clinical instructor experiences of empowerment in Rwanda: applying Kanter's and Spreitzer's theories. *International Journal of Nursing Education Scholarship*, 13(1): 117-125.

Vachon, B. and LeBlanc, J. 2011. Effectiveness of past and current critical incident analysis on reflective learning and practice change: critical incident analysis in continuing education. *Medical Education*, 45(9): 894-904.

Valiee, S., Moridi, G., Khaledi, S. and Garibi, F. 2016. Nursing students' perspectives on clinical instructors' effective teaching strategies: a descriptive study. *Nurse Education in Practice*, 16(1): 258-262.

Van Vuuren, S. 2017. An integrated literature review of undergraduate peer teaching in allied health professions. *African Journal of Health Professions Education*, 9(1): 9-12.

Venketsamy, Y. 2007. A retrospective cross-sectional survey of cervical cases recorded at the Durban University of Technology (DUT) chiropractic day clinic (1995-2005). M.Tech. Chiropractic, Durban University of Technology.

Vollenweider, R., Peterson, C. K. and Humphreys, B. K. 2017. Differences in practice characteristics between male and female chiropractors in Switzerland. *Journal of Manipulative and Physiological Therapeutics*, 40 (6): 434-440.

Walker, B. F., Stomski, N. J., Hebert, J. J. and French, S. D. 2013. A survey of Australian chiropractors' attitudes and beliefs about evidence-based practice and their use of research literature and clinical practice guidelines. *Chiropractic & Manual Therapies*, 21(1): 44.

Warne, T., Johansson, U., Papastavrou, E., Tichelaar, E., Tomietto, M., Van den Bossche, K., Moreno, M. and Saarikoski, M. 2010. An exploration of the clinical learning experience of nursing students in nine European countries. *Nurse Education Today*, 30(8): 809-815.

West, M. M., Borden, C., Bermudez, M., Hanson-Zalot, M., Amorim, F. and Marmion, R. 2009. Enhancing the clinical adjunct role to benefit students. *Journal of Continuing Education in Nursing*, 40(7): 305-310.

Williams, A., Angela, W. and Cathy, T. 2008. An investigation of nurse educator's perceptions and experiences of undertaking clinical practice. *Nurse Education Today*, 28(8): 899.

Wimmers, P. F., Schmidt, H. G. and Splinter, T. A. W. 2006. Influence of clerkship experiences on clinical competence. *Medical Education*, 40(5): 450-458.

World Federation of Chiropractic. 2017. *History of chiropractic*. Available: <https://www.wfc.org> (Accessed 01 April 2017).

Wright, S. R. and Homer, M. 2017. Addressing the theory-practice gap in assessment. *Perspectives on Medical Education*, 6(1): 7-9.

Zieber, M. P. and Hagen, B. 2009. Interpersonal boundaries in clinical nursing education: An exploratory Canadian qualitative study. *Nurse Education in Practice*, 9(6): 356-360.

APPENDICES

Appendix A - Gatekeepers permission

MEMORANDUM

To : Prof Ross
Chair : RHDC

Prof Adam
Chair : IREC

From : Dr Charmaine Korporaal
Clinic Director : ~~ECHS~~ Clinic

Date : 06.04.2017

Re : Request for permission to use the Chiropractic Day Clinic for research purposes

Permission is hereby granted to :

Ms Enya Vogl (Student Number: 21218968)

Research title : "Clinical instructor's experiences of clinical education at a Chiropractic teaching clinic in KwaZulu-Natal".

It is requested that Ms Vogl submit a copy of her RHDC / IREC approved proposal to the Clinic Administrators before she starts with her research in order that any special procedures with regards to her research can be implemented prior to the commencement of her seeing patients.

Thank you for your time.

Kind regards



Dr Charmaine Korporaal
Clinic Director : ~~ECHS~~ Clinic

Cc: Mrs L ~~Duggan~~ : ~~ECHS~~ Clinic : Student co-ordinator
Dr L O'Connor : Research co-ordinator
Dr P Orton : Research supervisor

Appendix B Permission to utilise the clinic



*Directorate for Research and Postgraduate Support
Durban University of Technology
Tromso Annexe, Steve Biko Campus
P.O. Box 1334, Durban 4000
Tel.: 031-37325767
Fax: 031-3732946*

19 September 2017

Ms Enya Elizabeth Vogl
c/o Faculty of Health Science
Durban University of Technology

Dear Ms Vogl

PERMISSION TO CONDUCT RESEARCH AT THE DUT

Your email correspondence in respect of the above refers. I am pleased to inform you that the Institutional Research Committee (IRC) has granted full permission for you to conduct your research "Clinical instructor's experiences of clinical education at a Chiropractic teaching clinic in Kwa-Zulu Natal" at the Durban University of Technology.

The DUT may impose any other condition it deems appropriate in the circumstances having regard to nature and extent of access to and use of information requested.

We would be grateful if a summary of your key research findings can be submitted to the IRC on completion of your studies.

Kindest regards.
Yours sincerely



PROF CARIN NAPIER
DIRECTOR (ACTING): RESEARCH AND POSTGRADUATE SUPPORT DIRECTORATE

Appendix C Recruitment form



Dear Sir/ Madam,

Thank you for taking the time to read this. I am currently registered for a Master's degree in Chiropractic at the Durban University of Technology (DUT).

In order to complete this degree, I am required to complete a research study. I have decided to complete my research study on the Chiropractic clinical instructors at the DUT Chiropractic day clinic (CDC). The purpose of this study is to explore the experiences of the clinical instructors at the DUT CDC.

Title of the research study: Clinical instructor's experiences of clinical education at a Chiropractic teaching clinic in Kwa-Zulu Natal

If you are currently a chiropractic clinical instructor at the DUT CDC then you qualify to participate in this research! Should you be willing to participate, you will be interviewed by the researcher at the DUT CDC or at a location of your choosing at your earliest convenience regarding your experience as a clinical instructor at a chiropractic teaching clinic. The estimate time taken for the interview is 30 minutes. Please be advised that should new data emerge in the final interviews, you may be required to undergo a second interview at a later time.

Please fill in your name and sign in the spaces provided below if you are willing to participate ☺

Name:

Sign:

Principal Investigator/s/researcher: Enya Elizabeth Vogl (B. Tech Chiropractic) Supervisors:
Dr P. Orton (PhD: Nursing)

Thank you for your time and consideration in the matter.

Sincerely,

Enya Elizabeth Vogl
Chiropractic intern



LETTER OF INFORMATION

Dear Clinical instructor,

Thank you for your consideration in participating in my study. Below is information regarding what will be expected if you if you wish to participate.

Title of the Research Study: Clinical instructor's experiences of clinical education at a Chiropractic teaching clinic in KwaZulu-Natal

Principal Investigator/s/researcher:

Enya Elizabeth Vogl (B. Tech Chiropractic) Dr.
Penelope Orton (PhD Nursing)

Brief Introduction and Purpose of the Study: The purpose of this study is to explore your experiences at the Durban university of Technology (DUT) Chiropractic teaching clinic. Learning in the clinical environment constitutes approximately 10% of the master's in chiropractic qualification at Durban University of Technology. Chiropractic students are required to see 35 new patients and 350 follow ups at the DUT Chiropractic Clinic to complete their master's education, this can be translated to a minimum of 108 hours within a clinical setting under the supervision of you (Dr Korpmaal, 2017).

Outline of the Procedures: Should you be willing to participate, you will be interviewed by the researcher at the DUT Chiropractic day clinic (CDC) or at a location of your choosing at your earliest convenience regarding your experience as a clinical instructor at the clinic. Prior to the interview, a demographic form will need to be filled in. The estimated time taken per interview is 30 minutes, however there is no time limit. Please be advised that should new data be revealed within the final interviews, you may be required to undergo a second interview at a later time. Inclusion criteria include being a clinical instructor at the DUT CDC.

Risks or Discomforts to the Participant: No risks or discomforts exist to you.

Benefits: None

Reason/s why the Participant May Be Withdrawn from the Study: There should be no reason why you may need to withdraw from the study as no risk or discomfort exists. If you want to withdraw you may do so at any time.

Remuneration: No financial or material gain will occur by being a participant.

Costs of the Study: You will be expected to cover traveling costs to and from the chosen venue.

Confidentiality: Raw data will only be reviewed by the researcher and research supervisor. All personal details i.e.: Name will be kept confidential by being allocated a code.

Research-related Injury: None.

Persons to Contact in the Event of Any Problems or Queries: Please contact the researcher: Enya Elizabeth Vogl – 083 634 0849, my supervisor (031 373 2537) or the research Ethics Administrator on 031 373 2375. Complaints can be reported to the Director: Research and Postgraduate Support, Prof S Moyo on 031 373 2577 or moyos@dut.ac.za

Appendix E – Interview questions

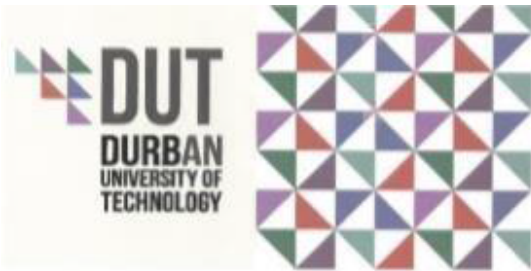
Grand tour question:

Please describe to me your experience as a chiropractic clinical instructor within the DUT CDC

Prompts:

- a) Please can you talk about how you understand the model of clinical instruction/supervision used at DUT to be
- b) Describe what you understand a clinical instructor to be
- c) What do you feel are the most important roles of a clinical instructor?
- d) Describe what you feel your role as a chiropractic clinical instructor within the DUT CDC is
- e) What do you feel are the most important characteristics of a clinical instructor?
- f) What do you feel makes a competent clinical instructor?
- g) Please describe how competent you feel as a clinical instructor
- h) Describe your experience as a clinical instructor with regards to the chiropractic students
- i) Describe how competent you feel the chiropractic students are when they enter the DUT CDC
- j) Please describe your relationship with the chiropractic student
- k) Please describe your teaching style and what you base your teaching style on?
- l) Do you ever reflect on your instruction/supervision and whether this assists you to change the way you experience clinical instruction?
- m) Can you talk to me about ideas you might have for changing the way clinical instruction is done at DUT?

Appendix F – Full IREC approval



Institutional Research Ethics Committee
Research and Postgraduate Support Directorate
2nd Floor, Berwyn Court
Gate 1, Steve Biko Campus
Durban University of Technology

P O Box 1334, Durban, South Africa, 4001

Tel: 031 373 2375
Email: irchad@dut.ac.za
http://www.dut.ac.za/research/institutional_research_ethics

www.dut.ac.za

27 September 2017

IREC Reference Number: **REC 84/17**

Ms E E Vogl
14 Montpellier Court
276 Montpellier Road
Morningside
Durban
4001

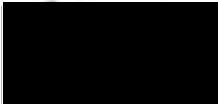
Dear Ms Vogl

Clinical instructor's experiences of clinical education at a Chiropractic teaching clinic in KwaZulu-Natal

The Institutional Research Ethics Committee acknowledges receipt of your gatekeeper permission letter.

Please note that Full Approval is granted to your research proposal. You may proceed with data collection.

Yours Sincerely,



Professor J K Adam
Chairperson: IREC



Appendix G – Demographic form



Pseudo name:

Dear Sir/ Madam,

Please read the questions below and answer **all** of them:

1. Age:

Gender: Female

Male

2.

3. Race (for statistical and research purposes only):

White

Black

Indian

Coloured

_____ Other specify: (Please)

Full time or part time staff member. Full time Part time

4.

5. When you graduated M. Tech: Chiropractic:

0 – 2 years

3-5 years

6-10 years

11-15 years

15 +

6. Number of years being a clinical instructor:

0 – 2 years	<input type="text"/>	3-5 years	<input type="text"/>	6-10 years	<input type="text"/>
11-15 years	<input type="text"/>	15 +	<input type="text"/>		

7. Have you had any educational/ teaching training (including personality training)?

Yes No

If yes, please elaborate:

Thank you for your time in the matter.

Sincerely,

Enya Elizabeth Vogl
Chiropractic intern

Principal Investigator/s/researcher: Enya Elizabeth Vogl (B. Tech Chiropractic) Supervisors:
Dr P. Orton (PhD: Nursing)



CONSENT

Statement of Agreement to Participate in the Research Study:

- I hereby confirm that I have been informed by the researcher, _____ (name of researcher), about the nature, conduct, benefits and risks of this study - Research Ethics Clearance Number: _____,
- I have also received, read and understood the above written information (Participant Letter of Information) regarding the study.
- I am aware that the results of the study, including personal details regarding my sex, age, date of birth, initials and diagnosis will be anonymously processed into a study report.
- In view of the requirements of research, I agree that the data collected during this study can be processed in a computerised system by the researcher.
- I may, at any stage, without prejudice, withdraw my consent and participation in the study.
- I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.
- I understand that significant new findings developed during the course of this research which may relate to my participation will be made available to me.

_____	_____	_____	_____
Full Name of Participant Thumbprint	Date	Time	Signature / Right

I, _____ (name of researcher) herewith confirm that the above participant has been fully informed about the nature, conduct and risks of the above study.

_____	_____	_____
Full Name of Researcher	Date	Signature

_____	_____	_____
Full Name of Witness (If applicable)	Date	Signature

_____	_____	_____
Full Name of Legal Guardian (If applicable)	Date	Signature

Appendix I – Interview schedule

Dear Participant,

Thank you for agreeing to be interviewed for my study. As you know I am interested in your experience as a clinical instructor at the chiropractic clinic at DUT. I would like you to begin, when ready, by talking about your experience of clinical instruction at DUT from your own perspective.

Probes:

- a) Please can you talk about how you understand the model of clinical instruction used at DUT to be
- b) Describe what you understand a clinical instructor to be
- c) What do you feel are the most important roles of a clinical instructor?
- d) Describe what you feel your role as a chiropractic clinical instructor within the DUT CDC is
- e) What do you feel are the most important characteristics of a clinical instructor?
- f) What do you feel makes a competent clinical instructor?
- g) Please describe how competent you feel as a clinical instructor
- h) Describe your experience as a clinical instructor with regards to the chiropractic students
- i) Describe how competent you feel the chiropractic students are when they enter the DUT CDC
- j) Please describe your relationship with the chiropractic student
- k) Please describe your teaching style and what you base your teaching style on?
- l) Do you ever reflect on your clinical instruction and whether this assist you to change the way you experience clinical instruction?
- m) Can you talk to me about ideas you might have for changing the way clinical instruction is done at DUT?

Appendix J – Interview transcription with Hannah

Interviewer: Enya Elizabeth Vogl

Date of Interview: 18th October 2017

Interview Topic: Clinical Education Experience of Clinical Instructor's

Location of Interview: DUT Chiropractic Teaching Clinic in KwaZulu-Natal

Convention: Non-italic sections are where the interviewer is speaking, and italic sections are where the participant is speaking. Transcribed as verbatim

Transcription:

Interviewer: Hello Dr. So, before we begin I would like to just assure you again that everything is completely confidential, no names will be attached to any of your answers and I would like you to answer as clearly and honestly as you can and if you have any questions please let me know and please know that you are also welcome to stop the interview at any time. Ok? Ok, so your first question is please talk to me about your experience of Clinical Instruction at DUT from your own perspective?

Interviewee: Well I would say that DUT, the CDC or you talking about it as a whole?

Interviewer: More, Specifically the clinic?

Interviewee: Specifically, the clinic. I would say the clinic is a very formal sort of structured process that we have in place. It's pretty basic because it's student have to come in and they have to address you with regards to their cases, you obviously have to give them your clinical reasoning, and or experience and they interact with you in that way on clinical matters especially diagnosis management and treatment on patients and they have the opportunity to learn different techniques from you, if possible or different treatment protocols, if possible. In terms of my experience here, I would say it is varied cause when you talking about experience I don't know if you are thinking in a personal capacity as an clinician, or in my experience with engaging with the students, or with both in a personal capacity and as an clinician? I would say that I equally learn because there's variety of cases where you may not see in clinical practice, so you have to always be a little bit on your toes. Your knowledge also has to be in depth to be able to approach these variety of cases that the clinic does see, because

obviously we are exposed to people that are from a middle to low social economics. They may not necessarily know a lot about Chiro, but their cases are pertinent to Chiro. In terms of clinical experience engaging with the students it is also very varied, because I think that some students come to you with a preconceived notion of maybe you should be diagnosing their patients, and you should be giving them treatment protocols, and they don't see it as a learning and independence process of them becoming clinicians one day. So, it becomes difficult when you engaging with the various types of students, some are not to very open to learn, or open to your suggestions, where some are. Others also, they don't take instruction well. So, it depends, on the type of student that you get in front of you. I think that it should be a process that facilitates learning. There should be engagement, you should have the ability to share your knowledge, but it doesn't always mean that you are always correct because with research, with technology of the world, things are changing, management processes are changing. You may be sitting in your practice every day doing one thing for the past 10 years, or 5 years, or 2 years, or you may have just taken things out of the clinic that you being a student once as well, and may have just adopted that as well in case, but it doesn't necessarily mean that it is correct, that you are correct, and that the student isn't, because students themselves, some of them are quite knowledgeable and they can teach you a thing or two. Um...I do think that some of the shortfalls of the students is that they are not independent enough when they come into the Clinic, and some of them are not independent enough, even at the sixth-year level.

They don't have the ability to differentiate red-flags from non-red flags; they very guarded in their treatment protocols. Some of them um, if you are a Chiropractor a lot of them choose not to manipulate. I would say about 60% of them are very guarded against manipulation which is a bit alarming considering you are a Chiropractor, and they don't have their independence to think and manage, which is a bit scary, because once you out of this shell where you a little bit sheltered by clinicians how do you know how to approach the patient that's sitting in front of you because you not going have to go to anyone to sign off anything. So that is I think is one of the biggest challenges that you face when you do come into the clinic. It's not necessarily we can understand you are in 5th year and it's your first time and it's something that you newly exposed to within the clinical environment but I would say at a sixth-year level, you should be functioning independent. You have been guided for an entire year. So, when you in sixth year I feel the student should come to you and tell you, this is what I want to do.

You as a clinician you should agree or guide. You shouldn't be disagreeing because at a sixth-year level you should be confident enough to identify a redflag and a non-red flag, what you should be doing, what you should not be doing. Ahh, how will I say ahh important characteristics of a clinical instructor. I think the biggest thing, it may be something that needs to be rectified, that if you are a clinical instructor you not necessarily a dictator. You need to have a little bit of rapport with the students. A lot of people feel as if you in a certain position that the student is beneath you. Why I think it's not, is because some of these students that are in sixth year, they could be, in adverted commas, a student to you in January, but in July they become your colleague and you need to realise that one day this person is going to be part of your profession and is going to have the same education level as you, not necessarily the same clinical experience, but the level of education is exactly the same. The same program you went through, the same program they going through. Um, so your rapport, I think the rapport of clinical instructors needs to change, because it de-motives the students or it doesn't gain them a lot of confidence if you not engaging with them in a positive manner. So, you don't have to be student-clinician relationship it should be more colleague-colleague when you at a 6th year level because they about to exit, so they should be able to engage in cases, some that are quite easy which is the common lower back pain cases, some which are quite difficult they may need to engage with you to gain knowledge, but it doesn't mean that you know so much more. Um, what do I think makes me competent? I would say that, you know I have a lot of faith in the program that we have been doing because it's a long program. Um, the lecturing process is intensive. The amount of work that you have to put in yourself as a student in the program, aids you to be able to go out there in the world, but, why do I feel that I'm more competent? I would not say I am more competent than any other clinician. I still feel that I learn every day because I'm still in an academic environment as well as in a clinical environment, so I see different cases in practice every day. I'm constantly having to be upon the research process and academic process at DUT. So, its stuff that you have to constantly learn, and reiterate so your knowledge could be a little bit less cobwebby than others that haven't opened maybe their text books in a long time. Aah, so it's a balance, so that's how I would say you can bring stuff from the outside, you can bring stuff from the academic world, you can balance it and maybe you can relate more to the student because you are engaging with them on a more often basis than other external clinicians do. And mmmm (pause)

Interviewer: What do you feel are the most important characteristics of a clinical instructor? Not necessarily yourself, what would you think is important?

Interviewee: I think you have to be passionate and you also have to be knowledgeable. A lot of people may see it as a job. But it's different because this is a teaching clinic at the end of the day and students are here to learn. So, you either, you have to have a little bit of that empathy, a little bit of humility, a little bit more patience and tolerance when you in this environment as opposed to in a clinical practice, because you see different variety of students. Some that are confident, some that are not confident, some that are knowledgeable based on academics, some that are not so knowledgeable, so the important characteristics for you, should be is a little bit of patience, a little bit of tolerance, and your knowledge, and also post graduate stuff. A lot of people when they in clinical practice they do, do external courses whether it's functional medicine whether it's strapping, needling different types of adjustment techniques different type of processes that chiropractors learn. So maybe come up with the knowledge and instill it, it may...um...stimulate different students to go out there and learn different things from what you learnt in the program. It could be working for you in your practice, but nobody else will know here. Because we leave the actual university with the knowledge that we are given here. So, come with the knowledge and be willing to assist and rather not shun because I know with my experience when I was once a student, I felt that the external clinical instructors, some of them, shunned you because they felt as if they knew more or they have got this experience and they shunned the program and they shunned the academics that were in the program as well. Which is aah a little bit bias because yes, you may be an academic, but being an academic would mean you would be engaging with current knowledge, which you are not exposed to. So, I found that they shunned students, they shunned other clinicians as well, which makes it a bit difficult and they felt a little bit superior because maybe they feel like, ok, that if you are an academic you not really exposed to a clinical environment. Clinical and practical yes, but knowledge could be more, because you constantly engaging current literature.

Interviewer: Then please describe your personal teaching style and what you base your teaching style on?

Interviewee: I feel like aahh when a student approaches you, you should not be excessively nurturing and excessively spoon feeding their mentality. I feel like you need to give the student the tools that's what I like to say, would like to use, for them to be able to know that when they leave, am I going to still be able to do this without someone having to sign off, because signing off is basically a process. It's a process that you have to go through just to safeguard yourself, let's say, but when you in sixth year you should know what you doing.

You shouldn't be spoon feeding, you should enable a student, so I will always say to a student, go and do all of the paperwork, and do the entire case and come back to me when you are done. Not because some people may say, oh, people do that because they are lazy, no because if when you sitting with a patient you going to have to sit with one piece of paper, and look at this patient as one person, and this patient is going to look to you. Thirty minutes maybe even too much, fifteen minutes and they expect you to treat them and give them a proper diagnosis, and give them proper feedback. So, if you not enabling people with the tools, with the constant back and forth, back and forth. How will they be able to actually sit with a patient and be thorough and yet be efficient in a short space of time?

Interviewer: Perfect, and then do you ever reflect on your clinical Instructor, like on the way that you instruct and does this assist you to change the way you experience clinical Instruction and how you actually instruct a student?

Interviewee: To be honest I never really think about it, but umm there are certain things or there could be certain students that I think of, and I think to myself these students are like a hazard you know, if they go out as a hazard, and how would you approach a student that is a hazard but not willing to learn. Ummm, so you try to be more friendly with them or relate to them on their level. Sometimes it works and sometimes it doesn't work. I know in particular a certain sixth year student who rushes everything, rushes everything and always assumes that they are correct when actual fact 90% of the time they are not, and I don't to be honest think that this student is competent, but you have been deemed competent because you have passed all of your tests so far to get you to this level. And I actually said to this student one day, there was a bit of confrontation and I said to the student that I don't think that you know what you are doing, and I don't think that you are ready for the real world, and why don't you tell me what is your plan when you leave this place, what will you be doing? The student didn't have distinct answers (break). The student really didn't really know what they wanted

to do outside of DUT. The student didn't really know the type of practice they would want to be involve in and if they wanted to practice or not want to practice, but the student is also like very attitudinal, so I think that in clinical instruction, yes, we can understand that we get a case and you have to come present it, but I think it needs to change a little bit towards more bedside manner, because there certain days where you will get a patient that will come to you that may not necessarily come to you for treatment, but will just want to come to talk to you, and because the student had so much like attitude and I feel like 50% of the students, they don't have that empathy or that patience. They won't be able to handle those cases like that in clinical practice where people don't necessarily want to think about pain or be treated that could be better, but just want to talk to you as a practitioner and maybe as, like a confidant, so you going to need to establish and I don't think its homed in a lot, in terms of clinical skill, I know you cannot learn bedside manner, but there are certain characteristics that I think clinical instructors can motivate and instill in students. Even if you have to enforce it one or two times by giving them difficult cases. Maybe if it's a language barrier, patient that has psychological issues how they come and discuss this patient with you, can actually help them to become a better practitioner, because I think sometimes as clinical instructors we a little bit dismissive, some people may say, oh no, don't worry about the people that are like psychologically imbalanced, they depressed, they tell you about their problems. Maybe you should worry about their problems because there was even a scenario here where a student's patient committed suicide and it could be that if the student related. (Break) what was I saying?

Interviewer: Ok so um we were talking about your reflection on your Clinical Instruction.

Interviewee: Yeah, so I was thinking I was just saying that the student came and told me, oh my God my patient committed suicide, and that she knew that her student/ her patient was suffering with psychological issues and she actually felt remorseful, to be honest and I didn't expect that particular student to feel remorseful, but she did, and so did a few of the other students who knew this particular patient, but she even said if she knew I could have like encouraged her to come for another follow up. But I was very dismissive of her because she came and spoke about being depressed, and she spoke about her stress, and anxiety, and that she is a model, and she is this, and she is that, which made me think maybe when students come to us as clinical instructors, we need to stop thinking

only about the clinical picture, and the pain, and the adjustment, and whatever, but think of the patients as people, because they engaging with you. I mean if each student has to see 350 follow ups, maybe you see one patient weekly, you see this patient for an entire year. This patient is a patient to the student, but it becomes a part of your life, and if they gone, like this girl just committed suicide you can have an influence, and you can help to change things. So, I think bedside manner is very important to introduce into clinical instruction and looking at a patient more holistically rather than as a number. Also, um, if you feel that you cannot help your patient, students should learn when they need to just refer or not, they often don't know that. They often come to you and they like should I refer to this or should I refer to somebody else if you feel like your patient has seen you 15 times and they haven't improved, you need to seek multi-disciplinary approach, because sometimes you could be missing something. I feel like a lot of students and maybe even us as Chiros, we become so proud and we think Chiros are the be all, and the end all of all. Sometimes maybe a patient just needs to see a Physiotherapist, maybe they just need to just see a Bio, maybe they asking to see an Orthopedic Surgeon, and we need to be a little bit realistic in multidisciplinary approach. We like to keep the patients coming here, we like to keep our patience for follow ups, but it becomes redundant after a while, so I think the students need to learn how to work multidisciplinary.

Interviewer: Thank you Dr. Fantastic, and then can you talk to me about ideas you might have for changing the way clinical instruction is done at DUT, also in terms of the relationship with other clinicians if you would benefit from a support group or additional teaching course.

Interviewee: I think in terms of changing, the 5th year competency book, whatever it is called isn't working, and it won't work, because the students will go to Clinicians that they like just to get a signature, and a lot of the Clinicians I don't think personally they don't take it seriously. I think that if you are competent, and if you want to de-competency of the student, there is a lot that comes with the word competent. We checking the skill, but we also checking the depth of knowledge. So, you as a clinician maybe you are on duty, maybe time constraints might be difficult, but when you are on duty to check the competence of a student with a patient, walk into the room. Walk into the room, and stand in the room for 15 minutes, and watch to see that the patient or the student is doing what they actually said to you in the SOAPE note, because we sign it off, but how

often do we know, how often can we see that the student is adjusting, but the student will leave here as a good Chiropractor being able to adjust, or are they going to leave here because they can simply massage or they can put a patient in IFC. So competence should be, that we walk into a room at random without the student knowing and we sit there when they are going through their case with the patient, whether they nervous or not, and being able to help them, and we can see their short falls, and also being able to tell them you need to work on this, and maybe at another stage I will be able to come in and assess you again, that should be intermittent levels of the year where you will be able to say that you can say this student knows what going on and this student doesn't know what's going on. Because I can bet 110%, 90% of student don't know their entire physical they wait for Osce to learn how to do cranial nerves, and cranial nerves are so important, and I think that's how we should approach it or even if we are doing something at random, if the students know the student shouldn't know. They come in for their shift, we have a room where there is a screen they won't know that they are being watched, either because some student they get anxious, and they have anxiety attacks. They shouldn't know that they are being watched, they put into that room and that room should be rotated, and that room shouldn't be known to be an assessment room, and they are being watched what they are actually doing with the patient. Verses what they come in and say to you, because I know Homeopathy has that system. Then we will know if a student is competent, a student is lacking in this. There a general thing amongst the class that you will notice, cause I also think that in OSCE that you have beginning of the year, mid-year, end of the year, you gonna learn there is groupies that go around. Its fake patients, it's not really a patient that you gonna continue dealing with all the time, so I think we need to instill more practical Clinician moving about and also maybe we should have one Clinician on duty that is an academic staff, and one Clinician that is external, so a Clinician duty should be shared, cause it's a balance of knowledge. You shouldn't have to sit with an academic for 5 hours on Clinician duty by yourself, because I myself can learn from somebody for example, who is practicing NIP if they are on duty with me, cause when I ask to engage with them, because we are all so busy with our jobs. So, if I'm on duty with somebody who is in practice, it would be good to get a balance of knowledge, and students would be able to engage with different styles of practicing. I don't think that one person should be on duty for 5 or 6 hours if you found the external part because there are certain things that you also may not know about the Clinic processes, may not know about paperwork, and

may not know just in general that we can learn from each other. I don't think we need a support group, but I do think that we need workshops. I think that we need skilled development for example, the world is changing, dynamic tape came about, kinesio tape came about, because not every clinician goes to these workshops. You can't sign it off as students because it's not allowed, but when students got into practice, the students they even taping in secret to be honest, because it's new, its trendy, it's working, so anything that comes out that is knowledgeable, not saying every course we have to do. But for example, kinesio taping is something that not every Clinician has done, but everyone tapes.

Excessive new dry needling techniques because it's a modality that is Chiropractic, Grafton tool even the use of new modalities if the student (break). I think also just on courses, we need to talk about stuff like Grafton Technique, we need to also have workshops where we are regularly familiarized with the modalities, because the modalities in the clinic change, often or they aren't used often, also with the modalities in terms of attraction and all of that, that they have we should also be trained, because the students aren't trained so when they come to us we sign off traction, but your traction in your practice could be different from the traction here. So, we need to be trained more. More skills development, relationship with other clinicians, I don't, to be honest, majority of the external ones are not from the department. I don't really get to see, I don't really get to engage with, except for if I see them at an examination like in OSCE and even in that scenario it is more of a, "Hello how are you, how is life?" It is not necessarily in the form of professional development because we not shifted together, and there is no rotation of shifts, everything is standard from the time I have been here. I have been here on a Wednesday morning from 8 till 12. Nothing has changed. I that's why I am saying even in this I can't even speak with the 5th years because I have never engaged with them, I will only engage with them when they come into 6th year. So maybe we need to think about, as I said previously, put in someone part time and full time together, so that we can actually engage, and maybe rotate with shifts, so that we getting a balance of 5th years, we getting balance of 6th years, we not just stuck with the same people.

Interviewer: Thank you so much for your answers is there anything you would like to add, to any of the questions, to any of the probes?

Interviewee: Oh yeah, just as a whole the clinical experience, it is quite fulfilling. Um, it's quite enjoyable, however, there are you know with every organization,

every place there will be shortfalls, there will be negatives, but I think the positives outweigh the negatives. I mean our Clinical environment as well is good. You've got this, quite a posh Clinic, for the University facilities. We have got all the amenities that we do need and that the students need, and we have access to it. I just think that maybe, we need to get our community engagement. It's about benefit to the student to make them good Clinical Instructors. Particularly I think Cato Ridge, I think Marburg caters to a good population because a lot of people make it geriatrics in Clinical practice. But I'm not sure if the community engagement that we are doing in Cato Ridge is of benefit. We may say we going out into a rural area, and we are going there to treat. But the knowledge, and the perception of why we are there lacks, because even though we are treating when we are there, the patients still ask you for medication. They don't actually know what chiro is about. We should start at a level that is not so rural. Maybe like a more local township via Kwamashu, Umlazi, where you have that middle social economic bracket for understanding purposes, and then we should filter further down to rural, then I think chiro will be more on the map.

Thank you so much.

Appendix K – Interview transcription with William

Interviewer: Enya Elizabeth Vogl

Date of Interview: 18th October 2017

Interview Topic: Clinical Education Experience of Clinical Instructor's

Location of Interview: DUT Chiropractic Teaching Clinic in KwaZulu-Natal

Convention: Non-italic sections are where the interviewer is speaking, and italic sections are where the participant is speaking. Transcribed as verbatim

Transcription:

Interviewer: Hi Doctor. I'd like to thank you for partaking in my study. I'd also like to remind you that everything is completely confidential and the only people that will have access to the recorders is myself and my supervisor.

Interviewee: Who is your supervisor (laughs)?

Interviewer: Dr Penny Orton, not a Chiropractic supervisor (laughter). I would also like to remind you that if you would like to withdraw at any point, you are welcome to do so. So, I'd like you to begin, when you are ready by talking about your experience of Clinical Instruction at DUT from your own perspective. So, your first probe is please talk to me about how you understand the model of Clinical Instruction used at DUT to be?

Interviewee: So obviously, um, one important thing about being a clinician here is to keep things in line with policies at DUT because we are a little bit limited by what we can do here because of insurance reasons and because we always have to bear in mind the experience of the people that we are teaching. Um, so that is definitely one role that us, as clinicians, have to undertake. Then apart from that, so for example in clinical practice we have freedom to make certain decisions that here there is no freedom.

Interviewer: Do you feel like the model was made quite clear to you when you started at DUT?

Interviewee: Well having been a student here and having been through the system, it was pretty clear as a student and um, in terms of those things - nothing has changed. So, I think for anybody who came through that system, I think there is no, uh, reason not to understand it because as a student it's all made blatantly clear and I think, almost everybody that works here and performs this role has been through that. And then the other important thing is that book knowledge and the practical application of knowledge is not the same thing so a pretty important role is to sometimes take things that people have learnt on, out of books and on paper and stuff like that and convert it to actual practical knowledge that you can apply and actually understand and use because a lot of the students arrive at the beginning of fifth year unable to, uh, and I would say incompetent in that respect, where they might have passed all their exams to get here but they can't apply to a real world situation.

Ok so you said those are important roles of a clinical instructor, do you feel like that's your role as a Chiropractic clinical instructor within this specific clinic?

Interviewee: Um, yeah - I would say those are the two most important things, we also spend quite a lot of time, directing thinking, um I'd describe it a lot of students with a shotgun approach where they just, uh, their thinking isn't necessarily directed, um, and they don't know how to draw a conclusion from a wide-ranging field of information. Um, and I also think it's because of the people that have taught them that they kind of instead of applying a sniper's rifle to the bullseye of a target they want to kind of use a shotgun kind of approach (laughs) and um, yeah. That's definitely, because a lot of the lecturers here that teach you guys do not have very much clinical experience in the real world at all.

Interviewer: Ok. And then what do you understand by a clinical instructor?

Interviewee: So, uh, guiding thinking, um sometimes helping with techniques and things like that. Sometimes, uh, sometimes actually taken blinkers off when people are not thinking correctly, sort of pointing them in a different direction. Making them aware of things that they aren't aware of. A lot of the time, a lot of the knowledge that student's kind of learn comes out of books and uh, a lot of the time there is a lot more recent information that may be applicable to a situation that they haven't learnt about yet and hasn't become part of a structured syllabus. Um, that we make them aware of although we do always stay within the boundaries that are set of, uh, clinical allowable practice. So, can't teach techniques and methods that are outside of the syllabus, but we can kind of adjust little things that are being done, for example: cross friction and recommend longitudinal friction - that's an example that comes up a lot. Um and yeah, let's leave it at that - I'd say.

Interviewee: And what do you feel are the most important characteristics of a Clinical Instructor?

Interviewee: Okay, so, I think one very important characteristic is um, a natural inclination towards teaching. Um, yeah, I think that's very important. Um, then it's quite important to um... to have experience. Clinical experience; real world experience, so to have worked, so basically to have seen patients and worked in a practice in terms of the people that sit behind a desk. Uh, I wouldn't say its restricted to a period of time, a lot of people can gain a lot of experience very quickly by being exposed to the right people. Um, whereas if you don't have that advantage - it could take you a lot longer to gain that experience. For example, I will give you a direct example - so when I was a student here, we had people like a diagnostics lecture at the time - Dr, who had been in practice for a very long time, was a natural gifted teacher and was very good at teaching us how to sift and discern information very quickly and in a very efficient way. Uh, and then we had two American lecturers at that stage, who also had a lot of experience with teaching, had been exposed to a lot of knowledge over a long period of time and had the clinical experience at the same time. Uh, that kind of gave them that ability to sift information and a lot of academic staff here, I don't think have spent enough time being exposed to people from other environments who have had other teaching influences and they all kind of (pause) it's kind of like an inbreed situation where someone who's been through the system at DUT or DIT or Technikon Natal then taught somebody else who then comes in to teaching in the institution and they all kind of, it's like an inbreed kind of situation so there's not an exposure to to outside thinking and

outside knowledge and sometimes that knowledge gets diluted uh along the lines, kind of like a broken telephone effect, where it loses a lot of the nuances and a lot of the details along the way.

Interviewer: Ok, and um, what do you feel the most important characteristics of a Clinical Instructor?

Interviewee: It would be experience, knowledge, a passion to teach, a good rapport with students. Also, being helpful.

Interviewer: So, Dr. what do you feel makes a competent clinical instructor?

Interviewee: Um, so a lot of what I referred to earlier. Uh, would add to competence, I also think it's important to be able to... you get people who have like a head for it. Um, and people who don't. So, for example; I was taught protocols and ways of doing things when I was a student and if someone stood up in the front of the room and taught me how to do something - I would remember how to do it forever so when I'm in an OSCE for example and I am given a particular protocol to test I can remember exactly how it's supposed to be done according to protocol in a book like Bates from having learnt it in, I don't know, how long ago - maybe 15 years ago - where as you get people who don't sort of retain information in that way so I think um, that is something that makes me feel competent um... and (pause)

Interviewer: So would you say you feel fairly competent as a clinical instructor?

Interviewee: Yeah, I would say I am pretty competent, I'm a good teacher, I know I'm a good teacher, I have I I just (pause) yeah, I just have the ability to teach.

Interviewer: Perfect, and then please describe your experience as a Clinical Instructor with regards to the actual Chiropractic student?

Interviewee: Um (pause). Sorry just what question are we on again quickly?

Interviewer: This would be H

Interviewee: So, my experience. So, with time obviously the kind of confidence has grown a lot and obviously also learning, you know, after a few years where you see the same thing in the beginning of the year and then you learn to deal with and you also you uh for example a lack of self confidence in a student who arrives in the beginning of the year - it tends to be quite a common factor that happens all the time and you learn how to kind of uplift that in different ways depending on the person and then you also get you gung-ho over confident, generally guys, uh who need to be reined in um, and yeah over the years you kind of learn to identify that quickly and to guide the students appropriately.

Interviewer: Has it been an overall good experience though?

Interviewee: Yeah, I mean, yeah, I definitely, I enjoy it. I will do it as long as I have the capacity. I'm not worried really about how much they pay me per hour um, I'll, I'll always keep doing it as long as I live in the area and work nearby and can get here.

Ok. And how competent do you feel the Chiropractic students are when they enter the Clinic?

Interviewee: Um, I do think there could be a great deal of improvement. Um, I think the students should be exposed more to part-time lecturers while they are in their academic portion of their course because the way it stands at the moment with the way that things are in the institution um, a lot of the lecturing load has been taken off part time lecturers and has been put onto those people who are I mentioned earlier have very little clinical experience and do things according to the books and yeah the students definitely lack exposure to outside influences when they get here and I don't think it's enough influence that they come enough in the clinicians office and in the clinic, bearing in mind that a proportion of the clinicians that sit here are permanent staff members who have not worked in practice. So, the exposure to outside influence is relatively limited and I think something needs to be done about that, um, which basically means budget.

Interviewer: Ok. And then how would you describe your relationship with the Chiropractic student?

Interviewee: I think, most of them, have a good amount of respect for me, uh I think that a lot of them they appreciate my honesty um, because I am very honest with them. Um, when I feel that they are not up to scratch I tell them that they need to work on things, I don't, um sugar-coat it or whatever. Um, and a lot of them come to me with problems related to patients that they don't even have coming in on a day that I'm here and they know that I'm here on that day and they will come to speak to me specifically so yeah, I think I have a good respect from the students as they come through.

Interviewee: So, one thing I think I should add about the competence thing is, and the reason why I think maybe the students kind of respect me is if I know something, I will tell them straight and I will be honest with them and tell them the way it is and try not to do it in a belittling way but just make them aware that their horizons need to widened but if I don't know something, I'm also not afraid to tell a student that I don't know and we need to find a way of checking it up or whatever and yeah I think that also helps uh, with the respect thing.

Interviewer: You have answered this question quite a bit but how would you describe your teaching style and then what you base this teaching style on?

Interviewee: Um, so my teaching style obviously uh, I think being kind of a natural teacher as I went along all the way through all the sports I played and all the teachers I was exposed to, all the way through school and university and everything, you pick up uh, ways of kind of imparting and sharing information that works and other ways that definitely don't work um, and yeah I would just say that it's been influenced by people that I have been exposed to.

Interviewer: Okay and then can you describe your relationship with the other clinicians for me?

Interviewee: Um, so, I would say aside from the very odd meeting, and we probably average about two a year, I would say because they get cancelled a lot, we supposed to have four a year, and we probably average two a year aside from those clinician meetings um, we don't really interact much to do with things that happen at tech. So, I may meet somebody here when I walk in the door, when I leave I'm the last to leave so there's nobody who's coming in after me, um and we don't really interact much and as a result there are, if

there was more interaction, I think there would be less double standards because there are definitely double standards. For example; today we have had an example where students have brought case summaries which are supposed to be written out in full, in English words, and that is a standard policy and it's clear that other clinicians allow people to abbreviate things and write diagrams and stuff like that and you know, that's just a simple illustration of a problem I do feel exists here, as a result of there not being enough standards.

Interviewer: You spoke about the clinician meetings; do you feel like it's a positive platform where things actually get discussed and go about changing or do you feel like it's not really a platform like that?

Interviewee: Um (pause), I would say it is a, it is a platform for suggestion and change and it's also a means of the department communicating to us which is essential. Um, so, it's necessary and I think, I think there are enough of us there who kind of have been around for long enough that if we need to give it stick, we not afraid to, um, so I do think they are pretty constructive although it has to be said that sometimes we are like hamsters on a wheel just going round in circles but a lot of that, a lot of that limitation, I would say has got to do with the institution as a whole and they was the institution works inefficiently and a lot of the time due to the way the budget of the institution works and constraints things.

Interviewer: Then Dr, do you ever reflect of your clinical instruction and does this ever assist you in changing the way you actually experience and go about instructing students?

Interviewee: So, I have made the odd clanger of an error, um, where you maybe unintentionally break a student down sometimes um (pause) and every time that you realise that you've done that, you learn from it um and how to better go about it so yeah, because obviously all, if you're breaking a student down generally it's because you are trying to make them aware of where they are falling short. So, you know, you can still achieve the same outcome but not go about it that breaks them down, um, but still have the same result.

Interviewer: Do you do this only when something bad happens or do you feel like you reflect regardless of the situation, on a more regular basis, think about how the clinical instruction went, go through a specific process?

Interviewee: Um...I would say that the negative things like sometimes you miss stuff as well and you go home and you realise oh flip I was kind of, sometimes you're distracted by a particular um, thing that you are trying to get across and you ignore other things um, and you, yeah you definitely when something negative happens like that, it makes you aware of it, um, I'd also say clinician meetings do help with that because sometimes the students will have problems and they will go to, sort of trusted members of staff who they may have spent a bit more time with and have a bit more, uh, solid relationship with then the kind of relationship they would have with us, for example in the beginning of a fifth year and yeah, I would definitely say we learn, it may not have been a situation that applied directly to me as a person but when we get presented with an example of stuff in a meeting and how it was dealt with, it definitely does make you reflect.

Perfect, and then, can you talk to me about any ideas you might have for changing the way Clinical Instruction is done at DUT CDC?

Interviewee: So, the things that I would change are (pause), I would have, and some of this is going to apply to the department as a whole, I would have less permanent staff members in the department and have more part timers coming in uh, all through the course, um, to teach the students and basically redistribute the budget in that way. It would put more administrative load on a smaller number of staff who were permanent staff members um, but I do think that it's a huge weakness of this department over the last (pause) I'd say probably since the early 2000's actually, so that's more than fifteen years. Um, that for example: Yeah (pause) there is no example because they are all examples, where somebody has been a student at this institution, qualifies at this institution and has generally been employed as a staff member before they have even qualified, goes straight into lecturing and then stays in lecturing and then all the lecturing load and teaching load and clinician load because of the way the budget works at the institution then gets put on those people and the exposure to outside influence is therefore minimised and we breed students who have a very blinkered approach uh, to, suppose you can call it medicine although its musculoskeletal medicine and you can see, having sat in the clinicians office over the years, you can see how particular lectures influence on students has influenced the way those students turn out and that influence is in my opinion quite a limited influence because those people who are influencing those students don't have a kind of a wide uh, range of influences on, they haven't had a wide range of influences on themselves so yeah, they, they doing the best they can but if there were other people to help them, it would be better for the students at the end of the line.

Interviewer: And what would make things better for you as a clinical instructor?

Interviewee: I would love more time here. I'd love there to be two clinicians at once um, which would enable uh, a, for example, an interaction with a student would be less rushed because you wouldn't be as pressured to get students back to their patients. Um, it was that way when I worked as a student and we had a lot more scope for discussion and talking and learning as a result. Um, (pause)

Interviewer: Do you think you would benefit from a support group that all the clinicians were on where you could discuss things or additional courses that focused on clinical instructing and identifying different personalities with the students?

Interviewee: I think it would be very helpful um, to a lot of people to learn how to teach better because yeah, teaching is an art and just because you have knowledge or skills doesn't mean you can teach it to somebody else. So, I definitely, if those opportunities were available - I definitely would take them up and I do, one comment I would also add to that is that a lot of the opportunities that we are offered are, most of us turn them down, because they are not really helpful or relevant to what we actually do and what we actually are interested in.

Interviewer: Perfect, and then Doctor, looking back at all the questions you have answered, is there anything you would like to add, any other points you would like to bring across?

Interviewee: Sho [sic], that might take me a little while to think about, um, so I would like to have, personally, I would like to be exposed to the students before they get to the clinic. That is (pause) a big thing, so, yeah, I really do feel that if the sort of first year students arriving at clinic in the beginning of the year, yeah, I really think that if they were exposed to more part-timers, um, along the way to get into the end of their fourth year um, whether

they be, like I remember, when we were at that stage, we would have the main, in practical classes for example, we would always have the main lecturer, who would be kind of the lecturer responsible for that subject and would be the one who would write and set all the tests and whatever and then they would always have an assistant with them and that, in my day as a student, that assistant would always have been a qualified practitioner from out in the field and I know that that role changed significantly again, largely restricted by budget and other complicated issues um, but often it wouldn't even be a qualified practitioner who was assisting in lectures, you know, a lot of time it may have been an intern or a very freshly qualified person who wasn't working in practice yet or things like that and yeah, I really do think that the students would benefit from, I know that's not clinic instruction, but it is clinical instruction, you know, it would broaden their horizons, give them more exposure, teach them to think better um, it might help them not be sort of soldiers marching in line doing exactly the same thing as everyone who has marched before them in the same way um, it might sort out some the weaknesses we commonly see in the clinic uh, when the students arrive in the beginning of fifth year, sometimes we are still trying to work with them when they're in their sixth year and beyond um, yeah that's a big that I can think of.

Interviewer: Thank you so much for partaking.