A Retrospective Survey of the Career Paths and Demographics of Durban University of Technology (DUT) Chiropractic Graduates.

by

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I, Elmi Black do declare that this dissertation is representative of my own work.

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DEDICATION

Everything in my life is for the glory of our God Almighty. I give praise to Him for all the precious gifs and works He has done in and through me. A special thanks to my parents, Jan and Irma van Zyl and family for being a solid rock of foundation and love, and to my husband, Shaun Black for your unconditional love and support.

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ABSTRACT

Aims and Objectives: To assess the demographics, career paths and factors affecting chiropractic graduates of Durban University of Technology (DUT) from June 1994 to June 2007.

Method: A retrospective qualitative survey was conducted on 62 chiropractic graduates of DUT. The sample represented 25.5% of the total chiropractic population. Raw data regarding the demographics, respondents' perception of their education, current career paths, the factors responsible for affecting these career paths, as well as a profile of chiropractic practices in South Africa (SA) was obtained. All data acquired was assessed using SAS (Statistical Analysis System) version 9.1.3. The data was purely descriptive, describing respondents' career paths and their experiences, and no specific hypothesis was investigated.

Results: The average respondent was found to be a married, white male who started his chiropractic career at age 25-26 years. A total of 98.4% (*n* = 61) of the respondents were currently in practice, with 80.6% (*n* = 50) indicating career satisfaction. The majority (62.9%; *n* = 39) of respondents perceived there to be a growing acceptance of chiropractic within the medical community, whilst 98.4% (*n* = 61) stated that they are currently part of an active referral system between various other medical practitioners. 46% (*n* = 23) listed DUT as their preferred choice of chiropractic institution.

Conclusion and Recommendations: The majority of respondents' indicated DUT as the preferred choice of chiropractic institution due to its location and the system of chiropractic taught (diversified). However, shortcomings in the education were highlighted to be a lack of practically applicable knowledge taught at undergraduate level, most especially business skills and speciality areas and that respondents' perceived the qualification not to be as versatile and widely accepted as other international chiropractic qualifications. Factors responsible for positively affecting the career paths of chiropractic graduates were indicated to be the personality type of the graduate, the means to finance a practice, support from parents and spouse or partner and the level of acceptance graduates received from the public and other professions within the medical sector. A recommendation for future studies is that a longer time period be given for questionnaires to be returned and a larger sample group be established in order to ensure that the sample group and total population is homogenous.

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LIST OF ABBREVIATIONS

AHPCSA:	Allied Health Professions Council of South Africa
CASA:	Chiropractic Association of South Africa
CCE*:*	Council on Chiropractic Education
DIT:	Durban Institute of Technology
DUT:	Durban University of Technology
e.g.:	For example
GP:	General Practitioner
i.e.:	In other words
MIS:	Management Information / Sapse
NZ:	New Zealand
SA:	South Africa
SAS:	Statistical Analysis System
TN:	Technikon Natal
US:	United States
vs:	Versus
***viz*:**	That is
WFC:	World Federation of Chiropractic
WHO:	World Health Organization

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CHAPTER ONE

INTRODUCTION

1.1 INTRODUCTION TO THE PROBLEM

The chiropractic profession is officially recognized, acknowledged and practiced in South Africa (SA), empowering chiropractors in the medical field (De Boer and Waagen, 1986). The aim of the profession over the past few decades has been to embrace the values and behaviours of a mainstream profession, strengthening its educational system, increasing its market share of satisfied patients as well as initiating collaborations with other disciplines in practice. Furthermore, to concentrate on research that validates spinal manipulation, and effectively using political, legislative and legal measures to secure its role in the healthcare system (Meeker and Haldeman, 2002).

There are currently 479 chiropractors registered with the Allied Health Professions Council of South Africa [AHPCSA] (AHPCSA, 2007a), with an estimated 2,700 chiropractic practitioners needed in SA according to the Chiropractic Diplomatic Corps (2007). The total number of graduates who qualified from DUT from the first graduate in June 1994 to 30 June 2007, is 254 (Management Information / Sapse [MIS] Department DUT, 2007). A large proportion of these graduates are suspected to be practicing internationally, and an estimated 16 chiropractic graduates are known to no longer be practicing, with the reasons still being unclear (Korporaal, 2007).

Practitioners have various options available regarding career opportunities. Most chiropractors go into practice, either in a local or international private practice, partnership or multidisciplinary setting, with further locum possibilities available to them. Participation in further research, education and professional development are further career opportunities (Young, 2007). There are many factors that may influence and affect the career paths of a graduate. Education with regards to the extent, depth, quality and validity of the chiropractic educational programmes (Curtis and Bove, 1992) being one such factor. Socio-

economic factors such as domestic and financial circumstances of the graduate (Sukovieff, 1989), the availability of job opportunities in the chiropractic profession (Ososki *et al.*, 2006), personality traits of the graduate (Jamison, 1996; Gardner, 2004) and work related factors (Rubin and Riekeman, 2004) play a vital role in graduates pursuing chiropractic as their choice of career path.

The World Health Organization (WHO) stated that self-assessment of medical schools and healthcare institutions was the beginning step towards ensuring a high standard of medical education and training of successful healthcare professionals (Mets *et al*., 2004). Practicing chiropractors were questioned in the US on how well their undergraduate education had prepared them for practice and its challenges (Mayer *et al*., 1999; Saranchuk and Watkins, 2000). In both studies respondents felt that their undergraduate education prepared them well for practice. In contrast, a study done by Bradley (2001) on graduates in the US revealed that their tertiary institutions did not adequately prepare students for the careers they embarked on and they often struggled to make the transition out of the academic world into the working environment. The study identified a mismatch between student goals, their education and their actual careers.

Although there have been previously published studies regarding such factors as demographics and career paths of other professions and of chiropractic graduates in other countries as well as their perception of the education they received, there remains a scarcity of current literature available in the context of chiropractic graduates from DUT (SA). Therefore, this research aims to investigate the afore-mentioned factors to provide a better knowledge and understanding of the challenges facing these graduates in pursuing chiropractic as their career path.

1.2 AIM AND OBJECTIVES OF THE STUDY

The primary aim of this study was to assess the demographics and career paths of DUT chiropractic graduates from 1 June 1994 to 30 June 2007.

The specific objectives of the study included the following:

a) To describe the demographical profile of the chiropractic graduates.
b) To determine the proportion of DUT chiropractic graduates who currently practice chiropractic.
c) To describe the profile of career paths of the graduates.
d) To investigate the factors responsible for affecting the career paths of graduates.

1.3 SCOPE OF THE STUDY

The study was that of a retrospective survey of a quantitative nature. Although there was 254 registered graduates, eleven were excluded due to their participation in formulating the questionnaire and therefore a self-administered questionnaire was sent to 243 chiropractic graduates from DUT. The questionnaire was distributed via e-mail or post to the graduates and an eight week time lapse was given for the return of the completed questionnaires and the signed Informed Consent Forms.

A 25% response rate from the 243 questionnaires sent was considered satisfactory for a valid research sample (Grobler, 2007). All data acquired were assessed using SAS (statistical analysis systems), version 9.1.3. The primary aim of the statistical analysis was to describe the data collected. The data were descriptive and no specific hypothesis was investigated. Percentages for each specific question were calculated according to the number of respondents who responded to each question. Categorical data were described in frequency tables and continuous data grouped into categories and given frequency tables or summarized as mean, standard deviation, minimum and maximum.

In conclusion, there exist no previous published studies in a South African context regarding the demographics, career paths and perceptions of chiropractic graduates. This research aims to provide the profession with a better knowledge and understanding of the demographics and factors affecting chiropractic graduates, in the context of those graduates of a South African chiropractic college.

CHAPTER TWO

LITERATURE REVIEW

The chiropractic profession is officially recognized, acknowledged and practiced in SA, empowering chiropractors in the medical field (De Boer and Waagen, 1986). Chiropractic is one of the largest, most regulated and best recognized of the professions that have traditionally functioned outside of mainstream medical institutions and have fallen into the category of "complementary and alternative medicine" (Meeker and Haldeman, 2002). As a healthcare profession, chiropractic has been ever evolving and has taken on many of the attributes of an established profession, improving its educational and accrediting systems.

2.1 THE HISTORY OF CHIROPRACTIC

The legitimacy of chiropractic has been undermined by sociological writings from early 1950 to mid-1970, describing the profession to be a "marginal profession", "alternative profession" and "pseudo profession". Since chiropractic traditionally claimed to "cure all by spinal manipulation" (Sidley, 1994), it became a target to orthodox medicine, with chiropractic philosophy appearing to lay in direct opposition to the mainstream medical philosophy and therefore creating skepticism about the validity of chiropractic as a healthcare profession (Stranack, 1995).

Coulter (1992) believed that although chiropractic is slowly becoming an established part of the healthcare system, there is still opposition from mainstream medicine based on the previous philosophical grounds of the profession. This is also the view held by Stranack (1995) who investigated the issue of philosophical dogma threatening chiropractic in South Africa. Stranack (1995) believed that these preposterous claims made by some chiropractors had alienated the profession from mainstream medical healthcare. In 1978, a turning point in chiropractic occurred when previous theories were found illegitimate (Coulter, 1992) and chiropractic philosophies such as the "law of the

nerve" were replaced with a more acceptable scientific model (Paris, 2000), aligning it more to the orthodox medical paradigm.

In recent years, the acceleration of chiropractic as a healthcare profession has been due to the focus on research, especially in the areas of chiropractic education and practice (Kelner *et al*., 1980). Chiropractors are expected to undergo the required training in order to qualify as Doctors of Chiropractic. In SA, chiropractors are registered with the AHPCSA, whose function it is to protect the health of the public; set the ethical and practice guidelines for the profession; deal with misconduct of professionals and focus on the education and training of intending practitioners (AHPCSA, 2007b). The World Federation of Chiropractic [WFC] (WFC, 2001) defined the chiropractic profession as "a healthcare profession concerned with the diagnosis, treatment and prevention of disorders of the musculoskeletal system and the effects of these disorders on the function of the nervous system and general health." This is in congruence with the definition as available from the Chiropractic Association of South Africa [CASA] (CASA, 2007). Chiropractic is currently covered by the majority of medical aid schemes, as well as the compensation for occupational injuries and diseases act and road accident fund (Curtis and Bove, 1992).

Over the past 40 years a radical transformation in the perception of chiropractic has occurred, with chiropractic now being viewed as an alternative form of healthcare or as a speciality within the healthcare system (Coulter, 1992). Coulehan (1985) stated that chiropractic is no longer perceived as a politically or socially deviant system. In the struggle for legitimization, chiropractic has evolved from its position as an "unscientific alternative profession" to a recognized member of the healthcare system (Haldeman, 1992).

Coulter (1992) believed that although chiropractic is becoming an established part of the healthcare system, there is still opposition from other healthcare professions. He believed that the future role of chiropractic could follow two general options, either as a healthcare specialist or as a broad based alternative healthcare. Chiropractors have been expanding their interests to wellness care, which may influence which direction the profession will take in the future (Coulter, 1992). Jekel (1991) suggested that "to some extent, the opportunities

for chiropractic are the failures of medicine because medicine is less concerned with preventative care than treatment care, and people are seeing the importance of prevention and health promotion".

The option may be for chiropractic to compromise its original principles and become a limited scope medical profession (Wardwell, 1994). The possible advantages include less opposition from orthodox medicine, increased recognition and perhaps greater public utilization, as well as more medical referrals (Coulter, 1992). This view is also held by Sidley (1994) who stated that many individuals believed that if chiropractors limited themselves to treating back pain and other musculoskeletal problems, they may achieve greater recognition from the medical profession. Sanchez (1991) suggested that chiropractors should embrace the role of being a primary care provider and a neuromuscular specialist simultaneously, with the willingness to recognize their limitations. He further stated that the chiropractic profession would be wise to establish itself as a primary care speciality, neither in competition with general medical care, nor an alternative to it, but as an integral and organic part of the healthcare network.

2.2 A GLOBAL OVERVIEW OF CHIROPRACTIC

Chiropractic has survived its uncertain history and has begun to embrace the values and behaviors of a mainstream profession. In the past few decades, chiropractic has strengthened its educational system, increased its market share of satisfied patients, initiated collaborations with other disciplines in practice and other professional settings, concentrated on research that has validated spinal manipulation, and effectively used political, legislative and legal measures to secure its role as a valid healthcare profession (Meeker and Haldeman, 2002).

Chiropractic remains a young profession (Stano *et al.*, 1992) and during the past two decades there has been a marked change in the manner in which chiropractic is viewed, not only by mainstream medical practitioners (Astin *et al.*, 1998) and institutions (Baird and Pammer, 1996; Gordon *et al.*, 1998) but also by the members of the profession (Mootz *et al.*, 1997). The medical establishments have not yet fully accepted chiropractic as a form of mainstream

care and therefore its acceptance and even future role in the overall healthcare system remains controversial (Shekelle, 1998; Morley *et al.*, 2001).

According to Meeker and Haldeman (2002) the future of chiropractic will most likely be determined by its commitment to interdisciplinary cooperation and evidence-based practice. They believe the next decade will determine whether chiropractic remains as an alternative healthcare profession or becomes fully integrated into all healthcare systems.

In June 2005 the chiropractic profession was practiced in a total of 109 countries, with 41 countries having their own chiropractic laws and 83 countries having their own official chiropractic associations regulating the profession. The estimated number of practicing chiropractors globally was 76,000, with an additional 320,000 practitioners needed in the profession world wide. A further 37 chiropractic colleges in nine different languages were established and dedicated to the education and training of intending practitioners (Chiropractic Diplomatic Corps, 2007).

2.2.1 International Statistics

Table 2.1 International chiropractic statistics for 2005 (adapted from Chiropractic Diplomatic Corps, 2007).

Country	Number of practicing chiropractors	Number of chiropractors needed	Official Chiropractic Association	Laws governing the profession	Number of chiropractic colleges
Australia	3,000	3,000	Yes	Yes	3
Brazil	60	8,300	Yes	No	2
Canada	6,000	5,700	Yes	Yes	2
Denmark	375	930	Yes	Yes	1
France	430	9,600	Yes	Yes	1
Germany	60	12,600	Yes	No	None
Japan	220	20,500	Yes	No	1
New Zealand	350	500	Yes	Yes	1
South Africa	310	2,700	Yes	Yes	2
United Kingdom	2,000	10,000	Yes	Yes	3
United States	61,000	65,000	Yes	Yes	17

Table 2.1 illustrates the number of practicing chiropractors in various countries world wide, as well as whether the country has an association, a college and laws regulating its practice.

2.2.2 United States

Chiropractic is an important component of the healthcare system in the United States (US) and the largest alternative healthcare profession (Kaptchuk and Eisenberg, 1998). According to Kaptchuk and Eisenberg (1998) the chiropractic profession has been licensed in all fifty states, which highlights the acceptance of the profession in the US. The chiropractic profession is regulated by the country's own official chiropractic association and all 50 states have their own independent chiropractic law. In comparison to the medical profession, chiropractic was expected to double in the number of practitioners from 1996 to 2010, whereas the number of physicians was expected to increase by an estimated 16% (Cooper and Stoflet, 1996).

According to Logan College of Chiropractic in America (2007), the typical chiropractor is in private practice, practicing an average of five days each week and has approximately a 109 appointments per week. The average annual income was estimated at US $85, 000 (approximately R637 500) and chiropractors generally remained in practice until they retired. Although, despite such impressive credentials and many successes within the profession, the primary healthcare sector (orthodox medicine) still regards chiropractic with skepticism (Kaptchuk and Eisenberg, 1998).

Chiropractic, however, has endured, grown, and thrived in the US, despite internal contentions and external opposition. Its persistence suggests it will continue to endure as an important component of healthcare in the US (Kaptchuk and Eisenberg, 1998).

2.2.3 South Africa

Today there are a total of 479 registered chiropractors in SA (CASA, 2007) with a continuous growth in numbers, although the number of practitioners only account for 0.1% of the total South African population (Chiropractic Diplomatic

Corps, 2007). The chiropractic profession is regulated by the country's own chiropractic law and association (CASA) and has two chiropractic colleges for the training of intending practitioners, Durban University of Technology (DUT) and University of Johannesburg.

There is a scarcity of literature available regarding chiropractic practice profiles in SA. The closest related literature is the Babaletakis (2006) study which focused on homoeopathic graduates in SA, as they share the first three years of education with chiropractic students. The results of this study indicated that 67% of graduates were currently in homeopathic practice, only 10% had never practiced and 23% of graduates had previously been in practice, highlighting an interest in starting a practice. Factors that contributed to practices not being sustainable were related to the education students received at their tertiary institutions and to homoeopathy as a "marginal profession" being their career choice.

Babaletakis (2006) indicated the profile of the homoeopathic graduate that continued to practice is likely to be a married, white female, aged 31 to 35. These practitioners saw an average of 20 patients per week and had an income of R200 001 to R300 000 per annum. About 77% of the group stated that their practice income was however supplemented. Speculated explanations by Babaletakis (2006) for the above results were poor awareness of homoeopathy by the general public and other medical professions, small patient numbers and the lengthy time it takes to build up a viable practice, as well as marketing constraints that were placed on practitioners by the Allied Health Professions Council. Despite the latter, 91% of the current homoeopathic practitioners reported being satisfied with their choice of career. Babaletakis (2006) concluded that "overall the intrinsic factors of a rewarding profession out weigh the extrinsic factors of mainly financial difficulties and these motivate this group of professionals to continue practicing".

2.2.3.1 Durban University of Technology

In order to cope with the greater needs of society, chiropractic in SA is aiming at becoming a primary healthcare profession, as per the mission statement of its

educational programme at DUT (DUT, 2007). The first students enrolled for the chiropractic course at Technikon Natal (currently DUT) in 1989. The total number of graduates that qualified from DUT from the first graduate in June 1994 to 30 June 2007 was 254 (MIS Department DUT, 2007). According to Young (2007), the head of the chiropractic department at DUT, the vision of the chiropractic department is to produce quality chiropractors that are orientated towards achieving excellence in their professional and personal capacities. She further stated that DUT is committed to educate and train chiropractors that strive for excellence in their professional environment with regard to ethics, patient care, business practice, as well as their personal development.

2.3 THE KNOWLEDGE AND PERCEPTIONS REGARDING CHIROPRACTIC IN SOUTH AFRICA

Sanchez (1991) suggested that studies should focus on exploring inter-professional relationships between chiropractic and other relevant healthcare practitioners because the legitimacy and status of chiropractic is greatly dependant upon its acceptance by, and collaboration with other healthcare professions. According to Wardwell (1994) differences in professions usually result in the ranking of these professions, especially in terms of desirability and prestige. Since organized medicine is so strong and prestigious, other healthcare professions benefit from being related to it, including those subordinate to it and the so called “specialized professions” such as dentistry, podiatry, optometry and psychology.

With today’s focus on multidisciplinary healthcare, it is emphasized that chiropractors must be able to interact and effectively communicate their patients’ needs with other practitioners (Pena, 2002). A good knowledge and perception and increased awareness of chiropractic in the general public and other medical health professions is essential for the growth of this profession in South Africa.

Mets *et al*. (2004) performed a data analysis of claims from a managed healthcare plan in the US. The results revealed that chiropractors are being used as a direct substitute to medical care, specifically in neuromusculoskeletal related conditions. Mets *et al*. (2004) also stated that the chiropractic profession

should strive to form a more integrated part of multidisciplinary healthcare, thus improving the level of communication and co-operation with various other medical professions as well as establishing better referral patterns between chiropractors and those professions.

It is often assumed that a perception about something or someone is that which is actually taking place, where in actual fact it is merely a personal view of that around us which is normally derived from an individual's own experiences, expectations and believes (Kehoe, 1998). In order for chiropractic to form part of an integrated multidisciplinary healthcare system, it is therefore important that they be fully aware of the perceptions that the general public and other closely related medical professions have towards the profession.

2.3.1 General Public

According to Coulter (1992), chiropractic has gained widespread social acceptance and it is viewed as an alternative form of healthcare, or in some cases as a speciality. Van As (2005) in a survey of school guidance counselors concluded that 61% perceived chiropractors as very competent in diagnosing and treating neuromusculoskeletal conditions only. In a New Zealand (NZ) survey it was found that the general public most commonly quoted chiropractors as being more knowledgeable about the spine than general practitioners (GP). This was contradicted by the Australian general public who perceived GP's and physiotherapists to be better trained and more effective than chiropractors. The only exception was in the case of back pain where GP's were viewed as ineffective, but physiotherapists and chiropractors as equally effective (Skargren *et al*., 1997; Baldwin *et al.*, 2001; Sherman *et al.*, 2004; Haas *et al*., 2005).

Nevertheless it has been suggested that the public's perception of chiropractic is often based on ignorance, bias and misinformation rather than fact (Kew, 2006). It stands to reason that if the patient's primary source of information is the GP, and since the general public largely relies on the advice and views taken by conventional mainstream medicine (Grumbach *et al*., 1995), then the public's perception of chiropractic would reflect that of the GP.

2.3.2 General Practitioners

Sidley (1994) stated that in the South African context, few doctors were found to be knowledgeable about chiropractic or have dealt with chiropractors. Family physicians should therefore re-evaluate their relationship with chiropractors (Curtis and Bove, 1992).

In a recent survey of GP's and chiropractors in North Carolina (US), it was found that two thirds of the GP's believed they were "moderately" or "well" informed about chiropractic. A total of 65% of GP's referred patients to chiropractors, and 98% of chiropractors made routine referrals to GP's (Mainous *et al.*, 2000).

In a study conducted by Louw (2005), the majority of South African GP's (80.5%) knew something about chiropractic, but the extent and understanding of the profession was limited. He concluded that GP's placed chiropractic in a referral and rehabilitation role and excluded them from primary contact and preventative roles. This study contradicted results from the Netherlands and Norway where chiropractors were perceived as primary healthcare professionals (Langworthy and Smink, 2000; Langworthy and Birkelid, 2001). Only half of the GP's that had communicated with chiropractors in South Africa had found it a positive experience (Louw, 2005), a lesser percentage than was found in the Langworthy and Birkelid (2001) study, where 67% of the Norwegian GP's reported positive experiences.

Healthcare integration is very important in the development of a balanced healthcare system. This integration is strongly associated with the levels of interprofessional communication. In a South African context, Louw (2005) found 35% of GP's were not interested in communicating and interacting with chiropractors. Norwegian and Dutch GP's showed more interest in interacting and referring patients to chiropractors, with only seven and eight percent respectively showing a lack of interest (Brussee *et al*., 2001; Langworthy and Birkelid, 2001). Louw (2005) and previous European studies (Brussee *et al*., 2001; Langworthy and Birkelid, 2001) concluded that there was a great desire to improve communication between chiropractors and GP's.

2.3.3 Neurologists, Neurosurgeons and Orthopedic surgeons

In a study conducted by Rubens (1996), only 38% of South African neurologists, neurosurgeons and orthopedic surgeons were “moderately” to “well” informed about the chiropractic profession as opposed to 83% in the US (Cherkin *et al*., 1989). Rubens (1996) speculated the above results to be due to a much larger chiropractic profession in the US with a greater number of chiropractors per capita. Neurosurgeons were found to have a more positive view and were more informed about chiropractic than neurologists and orthopedic surgeons.

Furthermore, Rubens (1996) found that although many South African neurologists, neurosurgeons and orthopedic surgeons believed chiropractors to be effective for some patients (with 30% stating that chiropractic provide excellent treatment for some musculoskeletal conditions), a high percentage were still “uncomfortable” with the profession. This may be 50% of these surgeons felt a lack of competence in the chiropractor’s neuromusculoskeletal examination and diagnosis. According to Curtis and Bove (1992), however, chiropractors are highly trained in musculoskeletal diagnosis and treatment techniques, although the majority (79%) of neurologists, neurosurgeons and orthopedic surgeons stated physiotherapists as their first choice of referral for neuromusculoskeletal conditions (Rubens, 2006; Cherkin *et al*., 1995).

The majority of these medical respondents in the Rubens (2006) study believed chiropractic should occupy supportive and rehabilitative roles to a much greater extent than primary or preventative care. Although, their responses indicated that chiropractors could increase their scope of practice within the field of limited medical specialities by performing minor surgeries and reductions of dislocations, intra-articular injections and prescription of medicine to patients with neuromusculoskeletal conditions.

Rubens (2006) highlighted that 32% neurologists, 86% neurosurgeons and 43% orthopedic surgeons had referred patients to chiropractors. This occurred despite the fact that 50% of the above respondents were still “uncomfortable” with chiropractic. Furthermore, 36% neurologists, 82% neurosurgeons and 61% orthopedic surgeons had received referrals from chiropractors, with the majority

being greatly satisfied with the nature of referrals and the chiropractor's professionalism.

2.3.4 Physiotherapists

Chiropractors and physiotherapists are both healthcare professions that specialize in the treatment of disorders pertaining to the neuromusculoskeletal system, therefore treating a common pool of patients.

Hunter (2004) concluded that South African physiotherapists were inadequately informed about the chiropractic profession, however, the majority (82%) showed an interest in knowing more about the profession, especially pertaining to the scope of practice, treatment protocols and the education chiropractors received. Their views regarding the chiropractic profession revealed that 17% of physiotherapists were not well-informed, 44% believed chiropractic to provide excellent treatment, 38% felt "uncomfortable" with the profession and only 1% perceived chiropractic to be "quackery". However, overall 80% of physiotherapists considered chiropractors to be skilled medical practitioners. Physiotherapists were found to believe chiropractic to be an alternative healthcare profession and a profession complementary and not competitive to physiotherapy.

Poor to non-existent co-operation (74%), communication (83%) and patient referrals (37%) from both physiotherapists and chiropractors indicated poor interprofessional interaction (Hunter, 2004). However, in contradiction, the vast majority (88%) of respondents from the Hunter (2004) study believed that good co-operation between chiropractors and physiotherapists would be beneficial to both professions as well as their patients.

2.3.5 Other chiropractors

According to Kaptchuk and Eisenberg (1998) contradictions and tension not only exist between chiropractic and mainstream medicine, but also within the chiropractic profession itself. In other nations chiropractors not only disagree about the definition of chiropractic and scope of practice, but also compete in the different adjustment techniques and for dominance within the profession.

Due to the precise role of chiropractic in healthcare being under continual dispute (Jamison, 1995), it has been the impression of the government, private industry policymakers, many healthcare professions, the general public and some within the chiropractic profession itself that chiropractic practice is not a primary healthcare profession and should be utilized for the management of neuromusculoskeletal or musculoskeletal conditions only (Duenas, 2003).

According to the WFC (2001) most chiropractors (91%) believed the profession should be viewed by the general public as a form of primary healthcare, with 55% of chiropractors perceiving the scope of practice for chiropractors to be "focused" on musculoskeletal conditions only, and 36% perceiving the scope of practice as "broad", including both musculoskeletal and non-musculoskeletal conditions. This indicates that the scope of practice is a crucial issue for the chiropractic profession (Hawk and Dusio, 1995), as it determines both the perception and the perceived identity of the profession (WFC, 2001).

2.4 MEDICAL AID COVERAGE FOR CHIROPRACTIC

In the 1990's, Americans had spent an estimated $27 billion (approximately R69 billion) on complementary and alternative medicine, most of these expenses being paid by the patients due to health insurers not providing financial coverage (Tillman, 2002). The reluctance for coverage appears to be based on three factors: "a lack of scientific evidence supporting alternative medicine's efficacy, the absence of credentialing standards for many of the alternative professions, and difficulties fitting alternative treatments into typological schemes that determine levels of reimbursement by health insurers" (Tillman, 2002).

In a data analysis of medical claims in the US it was revealed that patients with neuromusculoskeletal complaints preferred chiropractic care and that it was used as a substitute to medical care and not in addition to it (Mets *et al*. 2004). It was also found that chiropractic benefits in medical schemes did not lead to an increase in total number of patient consultations; neither did those patients who received chiropractic in addition to medical care receive more treatments.

2.5 CURRENT CAREER OPPORTUNITIES

Practitioners have various options available regarding career opportunities. Most chiropractors go into practice, either private, partnership or multidisciplinary practice with further locum possibilities and international practice opportunities. Participation in research, education and professional development are further career opportunities (Young, 2007).

Unfortunately, chiropractic has been limited to the private practice with little to no access into hospitals and other healthcare centers. In the US chiropractors have only been permitted to treat inpatients in a few small hospitals, with university-affiliated teaching centers not yet granting chiropractors the privileges to train and perform manipulations on patients (Plamondon, 1993; Pelletier *et al.*, 1997). In SA, Kimberley Government Hospital has been the only hospital to have a chiropractic department, the value of which has been purported by some to be “immeasurable to the community” (Till and Till, 2000).

2.6 FACTORS AFFECTING CAREER PATHS AFTER GRADUATION

Many factors may influence and affect career paths after graduation (Lambert *et al*., 1996; Robinson, 1999; Bradley, 2001; Pena, 2002; Hoffman, 2003), the most influential of these being:

2.6.1 Education

Silver (1980) stated that there are many complex factors relating to history, attitudes, beliefs and professional distrust that contribute to the differences in behaviour between chiropractic and medicine. One of allopathic medicine’s most powerful perceptions regarding chiropractic involves suspicion regarding the extent, depth, and validity of chiropractic educational programmes, in particular the possibility of misdiagnosing or overlooking a serious disease (Curtis and Bove, 1992). This perception should be re-evaluated since chiropractic training in SA consists of six years of training at an accredited tertiary institution (DUT Rule Book, 2007). Sanchez (1991) reported that the

majority of respondents from a telephonic survey stated the level of education for medical students to be more demanding and their qualifications more impressive and legitimate than those of the chiropractor.

The WHO stated that self-assessment of medical schools and healthcare institutions was the beginning step towards ensuring a high standard of medical education and training of successful healthcare professionals (Mets *et al*., 2004). Mayer *et al*. (1999) and Saranchuk and Watkins (2000) questioned practicing chiropractors in the US on how well their undergraduate education had prepared them for practice and its challenges. In both these studies respondents felt that their undergraduate education had in fact prepared them well for practice. In contrast, a study done by Bradley (2001) on PhD graduates in the US revealed that the tertiary institutions did not adequately prepare students for the careers they embarked on and that these PhD holders often struggled to make the transition out of the academic world into the working environment. The study identified a mismatch between student goals, their education and their actual careers (Bradley, 2001).

Mrozek *et al*. (2006) compared the practice of medicine with that of chiropractic and emphasized the importance of curricular adjustments and a high standard of educational and practical training in order for students to cope with the rapidly changing health system and patient expectations, and be confident and competent doctors in their field. While the Council on Chiropractic Education (CCE) has requested that chiropractic institutions "educate and train a competent doctor of chiropractic who will provide quality patient care and serve as a primary care physician" as a requirement for accreditation (Evans and Rupert, 2006). As a relatively young healthcare profession in SA, chiropractic has been ever evolving and has taken on many of the attributes of an established profession by improving and strengthening its educational and accrediting systems and by focusing on patient healthcare.

2.6.2 Cultural factors

2.6.2.1 Race and Culture

According to Statistics South Africa (2007) 79.6% of the total South African population is Black, 8.9% Coloured, 2.5 % Indian and 9.1% White. A US based study by Singaravelu *et al.* (2005) on ethnic minorities revealed that environmental factors such as family, culture and community significantly influenced their career paths and development.

2.6.2.2 Gender

Morgan *et al.* (2001) stated that although women are equally or more likely to graduate from a tertiary institution than men, they remain underrepresented in many previously male dominated professions, particularly that of science, maths and technology. It was further stated that gender differences in professions may be attributed to the level of interest and perceived competence in a particular field and to the difference in personal goals between these two gender groups.

In a study done by Risser and Laskin (1996) it was found that women in specialized medical fields perceived a bias against their gender regarding their level of competency, mentally and physically. Risser and Laskin (1996) concluded that “whenever there is a minority gender in a field, there is bound to be biases and stereotypes”. In the chiropractic profession the majority of practitioners are still male, although, female practitioners are rapidly increasing and earning their “right and value” in this specialized medical field.

2.6.3 Socio-economic factors

2.6.3.1 Domestic and financial circumstances

The Sukovieff (1989) study on high school graduates revealed that poor domestic circumstances, a lack of finance for further studies (Kortlik and Harrison, 1987) and starting out in the working environment limited career choices and negatively influenced their chosen career paths. Therefore, a lack of finances or domestic obligations and family responsibilities are seen as a stumbling block to graduates setting up a practice which usually requires a

significant amount of financial aid and sacrifice in personal time (Risser and Laskin, 1996).

2.6.3.2 Job opportunities and social needs

A research aimed at identifying the factors that determine the attractiveness of physiotherapy as a career choice revealed that the variety of work available and social needs in the profession was one of the most attractive factors (Park *et al*., 2003). Similiar conclusions were reached by Wilkinson (1996) and Willcockson and Thelts (2004) respectively. In contrast, a study by *Ososki et al.* (2006) revealed that students viewed teaching as a career that offers limited opportunities, poor career progression and limited promotion opportunities. However, many other careers and professions can be viewed in the same light by different individuals, with different personalities and interests, having different opinions of various careers.

Chiropractic is a specialized profession which forms part of the healthcare system. Specialized fields are often limited to their specific avenues due to their specialized training in a particular field, therefore being subjected to limited job opportunities (Ososki *et al*., 2006). Career progression and promotion opportunities often vary according to the success and commitment of an individual to their profession.

According to the social needs of an area, a profession can get saturated if professionals from the same specialized field are working in close proximity, therefore decreasing the need in that particular area and leading to an even greater challenge for any new graduate to get established in the profession. For this reason alone, many chiropractors and other professionals are often forced to explore other job opportunities and career paths (Ososki *et al*., 2006).

2.6.4 Past experiences and level of interest in the profession

Jacobs *et al.* (1998) stated that an individual's experience and level of interest in a profession to be a major predictor in their choice of career path. This view is consistent with Morgan *et al.* (2001) who had found that an individual's interest in a profession such as science and medicine to be an even more significant

influence in their career paths than other factors such as competence and gender. Although, an individual's level of interest in a profession develops from their feelings of competency and control in a specific environment, self-efficacy and confidence (Lent *et al*., 1994).

Harackiewics and Sansone (1991) suggested that an individual's interest in a profession may be directly related to congruence between their personal goals (interpersonal and extrinsic reward goals) and successes achieved in the working environment. It is also believed that personal and / or working experiences in a profession to the best source of information to that particular profession (Cooperstein and Schwartz; 1992). Soethout *et al.* (2004) linked the factors affecting medical students' choice of speciality to their direct working experience in healthcare as well as their clinical experiences obtained in the working environment.

2.6.5 Personal factors

2.6.5.1 Personality type

Certain behavioural characteristics of the healthcare practitioner have been found to affect patient satisfaction (Sawyer and Kassak, 1993; Gardner, 2004). In discussing chiropractic behavioural styles, Jamison (1997) categorized these characteristics into "verbal interaction" and "non-verbal interaction". Verbal interaction relates to communication characteristics such as genuine concern for the patient and providing an easy explanation of the patient's condition and treatment. Non-verbal interaction, however, relates to the confidence with which the practitioner interacts and treats the patient, caring for the patient, showing respect and courtesy, empowering and increasing the patient's self-esteem, time spent listening to the patient, physical or hands-on time with the patient and the practitioner's friendliness to their patient. Chiropractors in particular require these characteristics in practice (Jamison, 1996). Gardner (2004) noted that those who naturally possess good social interaction skills and the desired practice behaviour were found to have a distinct advantage in achieving the desirable patient satisfaction, quality of care and ultimately clinical outcome to that of other practitioners.

2.6.5.2 Self-belief and confidence

The International Health Experience is a programme developed for medical students where they are sent to developing countries to gain field experience and develop as healthcare professionals. According to Ramsey *et al*. (2004) participants in this programme believed that through experience and interaction with other healthcare professionals they gained a higher level of confidence and self-belief which resulted in becoming more competent doctors. Jamison (1998) believes that chiropractors in particular obtain their confidence from the personal experience they have received from previous patient successes and a good record of patient satisfaction.

2.6.5.8 Enthusiasm

Excitement and enthusiasm for a profession are of the most significant factors affecting career choice as well as the perseverance in pursuing and successfully completing ones education (Risser and Laskin, 1996, Kerka, 2003). A study by Soethout *et al*. (2004) revealed that between 62% and 68% of postgraduate medical students considered their enthusiasm in a specific area of medicine the most significant factor in choosing their area of speciality. Excitement and enthusiasm of the profession can be directly proportional to the attitude of the practitioner therefore resulting in the level of patient satisfaction (Jamison, 1998).

2.6.5.4 Prestige of a career

Careers such as medicine, engineering and other specialities generally have a much higher status and prestige linked to them than careers such as teaching (Ososki *et al*., 2006). Baxter *et al*. (1996) revealed that both male and female students ranked intellectual challenge as an aspect of prestige in a career. In african-american communities, academic excellence in courses such as medicine is known to bring honour to their family whereas shorter courses such as teaching do not hold the same prestige (Singaravelu *et al*., 2005). It is also generally believed that the lengthiness and level of difficulty of a profession's training determines the level of prestige and achievement.

2.6.5.5 Motivation to help others

In a study investigating the characteristics of occupational and speech therapy students, Holmstorm (1975) concluded that the two most influential factors in choosing a medical profession were the opportunities to work with people and help others, as well as the chance to make a contribution to society. Studies of various other professions also revealed that common motivating factors were based on the need to help and work with people (Holmstorm, 1975; Cooperstein and Schwartz, 1992). Coulehan (1991) suggested that the process of interacting with patients is in itself a therapeutic modality, and that this doctor-patient interaction serves as the basis for therapy.

Personal satisfaction and fulfillment is one of the most desirable factors in any profession. In a medical profession or a profession such as teaching the motivation to help others most often result in a higher level of career satisfaction. In a study conducted by Ososki *et al.* (2006) it was revealed that many people in an already established profession left their often higher paid jobs to pursue a career they enjoyed and that satisfied their altruistic need to help others. Gardner (2004) showed these altruistic characteristics to be caring, compassion, empathy, trustworthiness and understanding of the patient's health. Rubin and Riekeman (2004) confirmed in his study that the desire to help others emerged as an important and central factor in choosing the chiropractic profession. Since the chiropractic consultation is dominated by communication and involves a hands-on approach, our biggest asset and tool in helping others is our hands. Gardner (2004) concluded that "the importance of touch should not be overlooked in a touch-starved Western culture".

2.6.5.6 Ability to define personal goals

In a study by Cooperstein and Schwartz (1992) it was revealed that factors such as challenge, variety in profession and the ability to define personal goals were some of the primary reasons for occupational therapists pursuing their careers. The ability to define ones personal income goals contributed to students choosing chiropractic as a career path and continuing practicing after graduation (Rubin and Riekeman, 2004).

2.6.5.7 Lifestyle preference

A number of female graduates, especially in their thirties, take time out to raise their children and often prefer settling for family life, whereas their male counterparts most often carry the responsibility of the primary income and have to pursue and continue their careers (Allen, 1999). It was found that in the medical field, the unpredictability of working hours and monthly income as well as intensity of running a practice often leads to a shift in career path, satisfying the desire of a more stable and reliable income and greater positive feedback on success. Allen (1999) revealed that wrong career choices can often lead to individuals, whether male or female, feeling trapped and unhappy about their occupation and future prospects in their field, although individuals choosing the correct career tend to be more prosperous in their field.

2.6.5.8 Parental and family support

Parental and family support is the most important source of external influence on a graduate's educational and occupational decision (Sukovieff, 1989; Young *et al*., 1997). These studies revealed that mothers had a slightly greater influence on their children than fathers. Influential family members who worked in a certain field also played a vital role in a child's career choice and continuing in the career path (Young *et al*., 1997), with teachers being the second most influential individuals (Sukovieff, 1989).

Ferry *et al*. (2000) conducted a study on psychology students at two universities in the US. The effects of family on learning experiences and goals were examined. Parental and family encouragement was reported to significantly influence an individual's learning experiences and the career paths they follow after graduation.

2.6.5.9 Health factors

Physical well-being is considered of great significance in the academic and practicing chiropractor (Grant, 2006). The lack of well-being can manifest itself in terms of psychological (bulimia, anorexia nervosa), emotional (depression) and / or physical (dietary, acute or chronic diseases) disease (WHO, 2007).

Therefore, any loss of well-being can lead to a deterioration in general health and affect the psychological and physical abilities of the practitioner, resulting in a negative impact on his or her work.

2.6.6 Work related factors

Work related factors that were found to be key influences in an individual's choice of career path were: expected income of career and financial reward (Fleming *et al*., 2005), job security (Allen, 1999), the working atmosphere and conditions such as a pension plan (Wilkinson, 1996) and desirable working hours especially in the female professional (Chan and Willett, 2004). Other factors included whether an individual preferred being an employer or employee, determining ones own work schedule or having a set work schedule to keep, and being flexible in their work (Allen, 1999). A study by Rubin and Riekeman (2004) revealed that most students believed that the chiropractic profession provides the opportunity to be their "own boss", design their own work schedule and run an office exactly the way they envisioned.

Misconceptions of a profession and the unrevealed reality of what actually takes place in the working environment are often due to a lack of knowledge from the individual during their choice of career or poor career advice from schools and other career advisors (Sukovieff, 1989). Chiropractic like all other professions possess appealing and unappealing factors that either contribute to an individual following the career path or not. Research has shown that personal interests, satisfactory career information and a realistic view of a profession are the most important factors to consider in the process of choosing a career path and making a life-time commitment (Sukovieff, 1989).

CHAPTER THREE

METHOD AND PROCEDURES

3.1 THE DESIGN

The design of the study was that of a retrospective survey of a quantitative nature, conducted on 62 chiropractic graduates from DUT. A self-administered questionnaire was completed by each subject.

3.1.1 Ethical clearance and subjects

Clearance for this study (Appendix A) was obtained from the Ethics Committee of DUT on 22 October 2007 (Clearance number: FHSEC 030/07).

There were a total of 254 chiropractic graduates who qualified from the DUT chiropractic department from 1 June 1994 to 30 June 2007, 11 of whom were excluded from the study as they were involved in the process of developing the questionnaire (including the focus group, pilot study and research committee members). Thus, 243 chiropractic graduates were eligible for the study, however only 62 graduates completed and returned the signed Informed Consent Form (Appendix C) and questionnaire (Appendix D). The sample therefore represented roughly 25.5% of the population of chiropractic graduates of DUT for this time period.

3.2 INCLUSION AND EXCLUSION CRITERIA

3.2.1 Inclusion criteria

Participants had to have:

a. Graduated from the DUT chiropractic department from 1 June 1994 to 30 June 2007.
b. Given their informed consent.

3.2.2 Exclusion criteria

Participants did not qualify for the study if they:

a. Had not qualified from the DUT chiropractic department during the stipulated time period.
b. Had no contact details and could not be reached either telephonically, via email or the postal service.
c. Could not receive the questionnaire either via email, fax or post.
d. Were part of the Focus Group or departmental research committee regarding this questionnaire.
e. Did not return the questionnaire within the specified time period of eight weeks.

3.3 PROTOCOL AND PROCEDURE

In order to develop and refine the questionnaire, a rough draft was subjected to a Focus Group on 23 April 2007 to determine face and construct validity (Mouton, 2002) and to ensure that it served its purpose as an accurate and reliable measurement tool. Thereafter three chiropractors were asked to fill in the questionnaire and state any difficulties or suggestions they had to improve the questionnaire.

A list of all the graduates and their contact details was then obtained from the DUT Chiropractic Department. Each graduate was then contacted either telephonically or via e-mail in order to confirm their details.

All questionnaires were then distributed either by e-mail or post to the graduates, for the purposes of tracking, the questionnaires were numbered. Participants received a Letter of Information (Appendix B) and an Informed Consent Form (Appendix C) with every questionnaire (Appendix D). The Letter of Information was to provide details, explain the research process and give instructions on how the questionnaire had to be filled in as this was a self-administered questionnaire (Bourque and Fielder, 1995), as well as thanking graduates for their participation.

An eight week time lapse was given for the return of the completed questionnaires and signed Informed Consent Forms. After initial contact the participants were contacted again by telephone or e-mail to confirm that they had received the questionnaire and as a reminder to return the questionnaire timeously. A second round of questionnaires were posted, emailed or faxed after the minimum of 25% of the sample size had not responded.

Those respondents who had replied via the postal service, used the self-addressed envelope supplied to them for returning the questionnaire. The researcher then collected these envelopes from the research administrator. Those respondents, who e-mailed their completed questionnaires back to the researcher, had to return their Informed Consent Forms via fax or post.

Names on the Informed Consent Forms and correlating codes on the questionnaires were ticked off against a list of graduates by the researcher to determine the response rate achieved. Only the researcher and research supervisor had access to the returned questionnaires so that confidentiality could be assured. Those participants, who had not responded when the allocated time had expired, were excluded from the study and data analysis was then completed.

3.4 THE DATA

3.4.1 The Primary Data

The primary data consisted of the raw data provided from the completed questionnaires, in the form of an excel spread sheet.

3.4.2 Statistical Analysis

A 25% response rate from the 243 questionnaires sent was considered satisfactory for a valid research sample (Grobler, 2007). The primary aim of the statistical analysis was to describe the data collected. All data acquired was assessed using SAS (statistical analysis systems) version 9.1.3. Percentages for each specific question were calculated according to the number of respondents who responded to each question. The majority of data collected

were categorical and these were described in frequency tables. Continuous data were either grouped into categories and given in frequency tables, or were summarised by the mean, standard deviation, minimum and maximum. Bar graphs were used to visually illustrate frequencies.

The data was purely descriptive and no specific hypothesis was investigated.
The goal of this study was not to compare different groups of respondents or to test for a specific hypothesis, but rather to describe the career paths and experiences of respondents. The only statistical test used was a t-test, which was used to compare the ages of the males and females who responded to the questionnaires respectively, with a p-value of $p < 0.05$ being considered statistically significant.

CHAPTER FOUR

RESULTS

4.1 INTRODUCTION

This chapter presents the results of descriptive and analytical statistical analyses of the quantitative data obtained from DUT chiropractic graduates who responded to the questionnaire sent out. An initial description of the demographic profile of subjects is followed by a profile of career paths and the possible factors that may have affected these career paths. Thereafter, the profile of chiropractic practices of respondents are examined in order to provide the profession with a better knowledge and understanding of the challenges facing chiropractic graduates in pursuing chiropractic as their profession.

4.2 DEMOGRAPHICAL PROFILE OF RESPONDENTS

The data of 62 chiropractic graduates were obtained during a retrospective survey, as they met the inclusion and exclusion criteria set for the purpose of this study. They therefore formed the study sample and represented 25.5% (*n* = 62) of the total population (*N* = 243) of chiropractic graduates, who were eligible for this study.

4.2.1 Gender

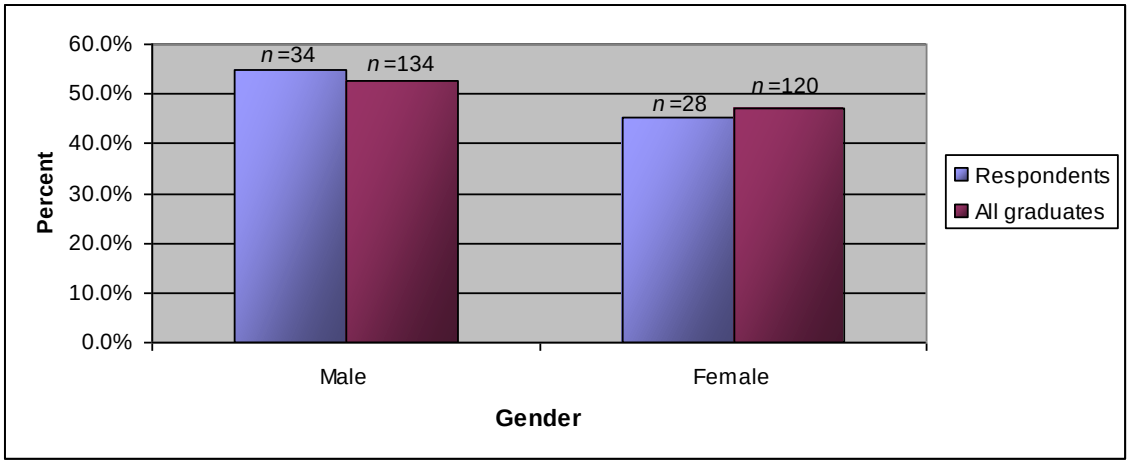

Figure 4.1: Gender of respondents (*n* = 62) vs all chiropractic graduates (n = 254) of DUT (1994-2007)

Figure 4.1 illustrates the percentages of males and females amongst the respondents and the total chiropractic population of chiropractic graduates. The sample appears to be generalizable to the population of chiropractic graduates from DUT (1994-2007) as the percentages of both groups were similar.

4.2.2 Age

In the study the mean age and standard deviation was 31.7 years (±4.17 years). It is important to note that only 60 respondents indicated their age, with the age range being 25 to 40 years, whilst the average age of respondents was 31 years. A t-test was done to compare the ages of males and females which was found not to be statistically significant (p = 0.23) and indicated there was no difference between the ages of males and females. The average age of respondents were 25-26 years when they first started in practice, whilst the average age of the population (i.e. all chiropractic graduates form DUT from 1994 to 2007) was indicated to be 26 (MIS Department DUT, 2008).

4.2.3 Marital Status

The majority of respondents were married (53.2%; n = 33), whilst 45.2% (n = 28) were single and one (1.6%) respondent was separated.

4.2.4 Number of dependants

Table 4.1: Number of dependants per respondent (n = 61)

Number of dependents	*n* (%)
0	38 (62.3%)
1	9 (14.8%)
2	10 (16.4%)
3	3 (4.9%)
4	1 (1.6%)

Table 4.1 highlights that 62.3% (n = 38) of all the respondents had no dependants, even though the majority of respondents were married.

4.2.5 Ethnic Group

Figure 4.2 compares the ethnicity of the respondents and the total population of chiropractic graduates from DUT, with the majority of respondents and graduates being white.

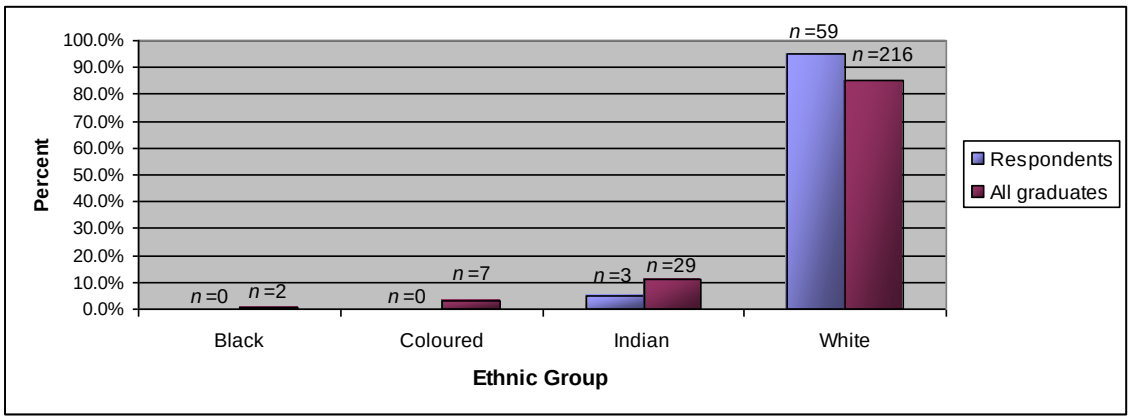

Figure 4.2: Ethnic groups of respondents (*n* = 62) vs all chiropractic graduates (n = 254) of DUT (1994-2007)

4.2.6 Nationality and South African demographics

A total of 98.4% (*n* = 61) of the respondents were South African, whilst only one respondent (1.6%) was Namibian.

Table 4.2 below illustrates the distribution of the South African residents (*n* = 54) by province and city, with the majority of respondents residing in KwaZulu-Natal.

Table 4.2: Distribution of respondents' practice by province and city in SA (*n* = 54)

Province	*n* (%)	City	*n* (%)
Eastern Cape	8 (14.8%)	East London	1 (1.9%)
		George	1 (1.9%)
		Port Alfred	1 (1.9%)
		Port Elizabeth	5 (9.3%)
Gauteng	6 (11.1%)	Bedfordview	1 (1.9%)
		Johannesburg	3 (5.6%)
		Midrand	1 (1.9%)
		Pretoria	1 (1.9%)
KwaZulu-Natal	33 (61.1%)	Durban	27 (50.0%)
		Pietermatizburg	6 (11.1%)
Northern Cape	1 (1.9%)	Kimberley	1 (1.9%)
Western Cape	6 (11.1%)	Cape Town	3 (5.6%)
		Hermanus	2 (3.7%)
		Paarl	1 (1.9%)

4.2.7 International demographics

Of the South African nationals seven respondents currently reside and practice in the UK. The three main reasons for residing internationally as shown in Table 4.3 below were traveling opportunities, better financial stability or family locations and responsibilities.

Table 4.3: Reasons for respondents practicing internationally (UK and Namibia) (*n* = 8)

Reasons	*n*
Travel	3
Financial	3
Family	2
Boredom	1
Employment opportunity	1
Namibian	1
Educational opportunities	1
Experience	1
Safety	1
Need for chiropractors	1
Spiritual growth	1

*More than one answer could be given to each of the above

4.3 CHIROPRACTIC EDUCATION

4.3.1 Year of first registration

Table 4.4: Year (range) of first registration of respondents (*n* = 62)

Year of registration	*n* (%)
1989-1994	20 (32.3%)
1998-1995	20 (32.3%)
1999-2000	16 (25.8%)
2001-2005	6 (9.7%)

The majority of respondents first registered between 1989 and 1995. This is shown in Table 4.4 above.

4.3.2 Year of graduation

Figure 4.3 illustrates the number of respondents vs the number of total graduates who graduated during each year range from DUT. The majority of chiropractors graduated between 2000 and 2003, however, the majority of respondents had graduated more recently (2004-2007).

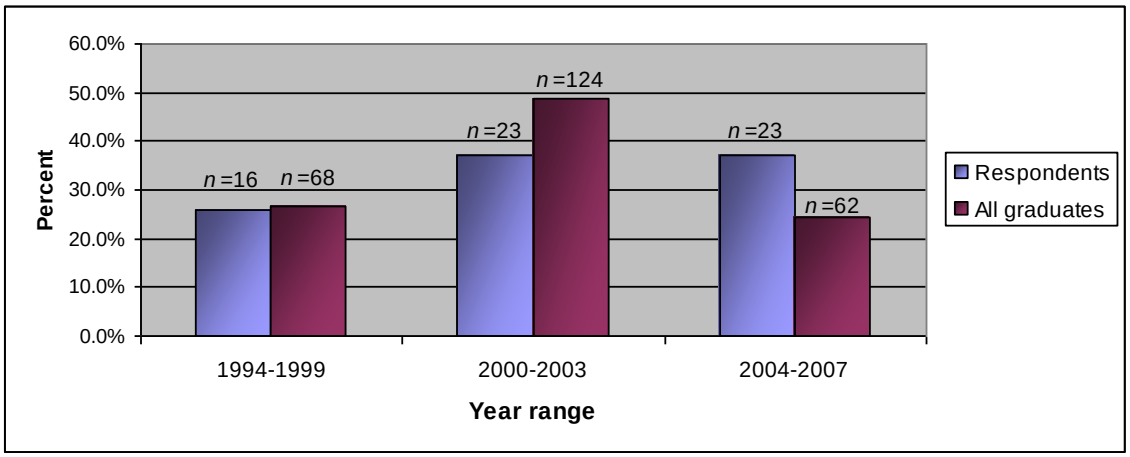

Figure 4.3: Year (range) of graduation of respondents (*n* = 62) vs all chiropractic graduates (n = 254) of DUT (1994-2007)

4.3.3 Duration of studies

The largest group of respondents (41.9%; *n* = 26) completed their chiropractic education within the allocated six years, although 12.9% (*n* = 8) completed their education within five years. All the other respondents (45.2%; *n* = 28) completed their training in seven years or longer, the maximum being 15 years.

4.3.4 Previous education

A matric exemption (72.6%; *n* = 45) was indicated as being the majority of respondents highest level of previous education prior to chiropractic, whilst 27.4% (*n* = 17) had pursued further tertiary education prior to the chiropractic course. These tertiary degrees are illustrated in Table 4.5 below.

Table 4.5: Level of education other than a matric exemption prior to chiropractic (*n* = 17)

Degree		***n***
B.Com	Law / Other	2
BSc	Started	3
	Completed	6
BSoc Science		1
Human Movement Science		2
Human Resources		1
Not specified		2

4.3.5 Post chiropractic education qualifications

From the total number of respondents, 32.3% (*n* = 20) obtained further qualifications after completing their chiropractic degree. An even further 80% (*n* = 16) of these respondents had obtained qualifications within the chiropractic field.

Table 4.6: Qualifications obtained by respondents post chiropractic education (*n* = 20)

Field of study	Qualification	*n*
Alternative Medicine		2
Law		1
Chiropractic	Biopuncture	1
	Certified Chiropractic Foot Care	5
	Certified Chiropractic Sports Physician	3
	Chiropractic Extremity Practitioner	1
	International Chiropractic Sports Science Diploma	2
	MSc Paediatrics	2
Not specified		4

*More than one qualification could be stated by each respondent

4.3.6 Subjects deemed most useful in the chiropractic education by respondents

Table 4.7: List of subjects categorized by year that respondents deemed most useful in practice (*n* = 62)

Year 1	*n* (%)	Year 2	*n* (%)
Anatomy I	57 (91.9%)	Anatomy II	59 (95.2%)
Biology	14 (22.6%)	Biochemistry	10 (16.1%)
Chemistry	5 (8.1%)	Epidemiology	17 (27.4%)
Computer Skills	13 (21.0%)	General Pathology	43 (69.4%)
Philosophy / Principles & History	18 (29.0%)	Medical Microbiology	13 (21.0%)
Physics	6 (9.7%)	Physiology II	49 (79.0%)
Physiology I / A&P	47 (75.8%)	Social Studies	15 (24.2%)
Year 3		**Year 4**	
Auxiliary Therapeutics III	52 (83.9%)	Clinical Biomechanics & Kinesiology IV	59 (95.2%)
Chiropractic Principles & Practice III	52 (83.9%)	Clinical Chiropractic IV	58 (93.5%)
Diagnostics III	57 (91.9%)	Chiropractic Principles & Practice IV / Manipulative Therapeutics	58 (93.5%)
Psychopathology II / Psychology	28 (45.2%)	Diagnostics IV	57 (91.9%)
Systemic Pathology III	42 (67.7%)	Radiology	57 (91.9%)
		Research Methods & Techniques	11 (17.7%)
Year 5			
Clinical Biomechanics & Kinesiology V	57 (91.9%)		
Clinical Chiropractic V	57 (91.9%)		
Chiropractic Principles & Practice V	55 (88.7%)		
Practice Management & Jurisprudence V	19 (30.6%)		
Research Project & Dissertation	30 (48.4%)		

*More than one answer could be given to each of the above

Table 4.7 highlighted the subjects respondents found most useful in practice. These included Anatomy II and Clinical Biomechanics and Kinesiology IV (95.2%; *n* = 59) as well as Clinical Chiropractic IV and Chiropractic Principles and Practice IV (93.5%; *n* = 58).

4.3.7 Areas lacking in education

Of the total number of respondents 85.5% (*n* = 53) felt that their chiropractic education was lacking in certain aspects. The three main areas as shown in Table 4.8 being business and economic skills (75.5%; *n* = 40), as well as speciality areas such as sports and paediatrics (73.6%; *n* = 39) and other chiropractic techniques taught (66%; *n* = 35).

Table 4.8: Areas found lacking in the chiropractic education (*n* = 53)

	***n* (%)**
Business / economic skills	40 (75.5%)
Clinical / practical experience regarding the medical aspect of consultation	16 (30.2%)
Clinical / practical experience regarding the chiropractic aspect of consultation	17 (32.1%)
Diagnostic skills & techniques	6 (11.3%)
Diagnostic tests & investigations	13 (24.5%)
Inexperienced lecturers / clinicians	28 (52.8%)
Integration of theoretical & practical knowledge	16 (30.2%)
Other chiropractic techniques e.g. Sacro-occipital technique	35 (66.0%)
Post graduate support	23 (43.4%)
Speciality areas e.g. Sports, Paediatrics	39 (73.6%)
Other	8 (15.1%)

*More than one answer could be given to each of the above

Areas that respondents indicated under *other* in Table 4.8 included neurology, patient management, philosophy, practical instruction of adjustments and radiology.

4.3.8 Choice in chiropractic institution

Of the 50 positive respondents to the question “would you choose chiropractic as a career path again?” 23 (46%) indicated DUT to be their preferred institution for chiropractic training, with international institutions (30%; *n* = 15) being the second most preferred choice. 20% (*n* = 10) of respondents had no preference to the institution where they received their education and 4% (*n* = 2) indicated that their choice solely rested on the location of the institution.

Table 4.9: Reasons for the choice of chiropractic institution (*n* = 38)

	DUT (*n* (%)) (*n* = 23)	International (*n* (%)) (*n* = 15)
Lecturers / staff	8 (34.8%)	9 (60.0%)
More convenient location	12 (52.2%)	0
More post graduate support	1 (4.3%)	5 (33.3%)
More versatile and accepted qualification	6 (26.1%)	12 (80.0%)
No knowledge about other institutions	3 (13.0%)	0
Practical experience and skills	6 (26.1%)	7 (46.7%)
Prefer system of chiropractic taught	12 (52.2%)	5 (33.3%)
Standard of education	10 (43.5%)	3 (20.0%)
Wider variety of modalities taught	7 (30.4%)	5 (33.3%)
Other	2 (8.7%)	3 (20.0%)

*More than one answer could be given to each of the above

As shown in Table 4.9 above, the majority of respondents that chose DUT as their preferred chiropractic institution stated that it was a more convenient location (52.2%; *n* = 12) and that they preferred the system of chiropractic taught (52.2%; *n* = 12) as well as the high standard of education (43.5%; *n* = 10).

Those respondents who chose international institutions as their preferred choice indicated that they provided a more versatile and accepted qualification (80%; *n* = 12), the lecturers and staff were more experienced (60%; *n* = 9) and greater practical experience and skills could be obtained at these institutions (46.7%; *n* = 7).

4.4 PROFILE OF CAREER PATHS

4.4.1 Current occupation

Table 4.10: List of current occupations (*n* = 62)

	n (%)
Chiropractor	61 (98.4%)
Full-time homemaker	1 (1.6%)
Homoeopath	1 (1.6%)
Medical representative	0
Studying for a further qualification	1 (1.6%)
Unemployed	0
Working in chiropractic related field e.g. chiropractic assistant	0
Working in health professions field e.g. pharmacy, health shop assistant	0
Working in totally unrelated field	1 (1.6%)

*More than one answer could be given to each of the above

Of all the respondents, 98.4% (*n* = 61) were practicing chiropractors, with only one respondent (1.6%) being a full-time homemaker and involved in pastoral

work at a church. One of the respondents simultaneously also practiced homoeopathy, whilst another was in the process of studying for another degree.

4.4.2 Respondents' views of chiropractic as a career path

If given the choice, 80.6% (*n* = 50) of the respondents would have chosen chiropractic as their career path again. Of those respondents who would not have chosen chiropractic again (19.4%; *n* = 12), their main reasons were that they felt there is a lack of recognition of the chiropractic education and chiropractic as a profession (66.7%; *n* = 8), that chiropractic is not a very versatile or flexible career (50%; *n* = 6) and that the duration of the chiropractic course was too lengthy (25%; *n* = 3), as illustrated in Table 4.11 below. The one respondent that chose 'other' stated the reason for not choosing chiropractic as career path again to be due to a lack of passion for the profession.

Table 4.11: Reasons given by respondents for not choosing chiropractic as their career path again (*n* = 12)

Reasons	***n* (%)**
Difficult / stressful work in practice	2 (16.7%)
Duration of the chiropractic course too long	3 (25.0%)
Not rewarding career / no or little job satisfaction	2 (16.7%)
Not versatile / flexible career	6 (50.0%)
No or little recognition of education and / or profession	8 (66.7%)
Other	1 (8.3%)

*More than one answer could be given to each of the above

Table 4.12 indicates the main disciplines those respondents who would not have chosen chiropractic as a career path again (*n* = 12), would have rather pursued. Commerce and economics (41.7%; *n* = 5) and other medical fields (33.3%; *n* = 4) were found to be the most common disciplines.

Table 4.12: Disciplines respondents would rather have pursued if not choosing chiropractic as a career path again (*n* = 12)

Disciplines	***n* (%)**
Accounting	3 (25.0%)
Arts	0
Commerce or Economics	5 (41.7%)
Education	0
Health	2 (16.7%)
Law	1 (8.3%)
Medicine	3 (25.0%)
Other medical fields	4 (33.3%)
Performing Arts	0
Physiotherapy	1 (8.3%)
Science	3 (25.0%)
Social Science	0
Other	3 (25.0%)

*More than one answer could be given to each of the above

4.5 FACTORS RESPONSIBLE FOR AFFECTING CHIROPRACTIC AS A CAREER PATH

4.5.1 Personality type

In Table 4.13 below respondents indicated their personality types according to how they perceive themselves sociably.

Table 4.13: Respondents' description of their type of personality (*n* = 62)

Personality	*n* (%)
Extrovert	15 (24.2%)
Good social skills	50 (80.6%)
Introvert	9 (14.5%)
Optimistic	35 (56.5%)
Pessimistic	0
Poor social skills	0

*More than one answer could be given to each of the above

4.5.2 Starting up a chiropractic practice

Respondents were questioned on the level of difficulty in starting up a chiropractic practice or finding employment. Of the total number of respondents, 61.3% (*n* = 38) indicated that they did not find it difficult, whilst 38.7% (*n* = 24) found it more challenging.

As illustrated in Table 4.14 below, of the 38 respondents that did not find it difficult to start up a practice or to find employment, the three main positive factors were emotional stability and positive attitudes (57.9%; *n* = 22), a good level of experience and self-confidence and good acquired skills (47.4%; *n* = 18) and the advantage of having fewer chiropractors in their local areas (39.4%; *n* = 15).

From the 24 respondents that found it more challenging to start up practice, it was found that too few patient numbers and the lengthy time it takes to establish a patient base (79.2%; *n* = 19), as well as financial difficulties (54.2%; *n* = 13) and marketing restraints (54.2%; *n* = 13) were the major stumbling blocks during the beginning stages of practicing chiropractic.

Table 4.14: Statements regarding the level of difficulty starting up a chiropractic practice or finding employment (*n* = 62)

Positive factors (*n* = 38)	*n* (%)	Negative factors (*n* = 24)	*n* (%)
Good financial support	7 (18.4%)	Financial difficulties	13 (54.2%)
Had a good business plan	10 (26.3%)	Poor / no business or practice management skills	10 (41.7%)
Had a good marketing strategy	6 (15.8%)	Marketing difficulties and restraints	13 (54.2%)
Good public awareness of chiropractic	11 (28.9%)	Poor public awareness of chiropractic	12 (50.0%)
Good, well established patient numbers	7 (18.4%)	Few patient numbers / long time to establish patient base	19 (79.2%)
Good support network	13 (34.2%)	Poor / no support network	4 (16.7%)
Employed directly / joined existing practice	14 (36.8%)	Few / no employment opportunities	1 (4.2%)
Few chiropractors in local area	15 (39.4%)	Too many chiropractors in local area	3 (12.5%)
Good skills / experience / self-confidence	18 (47.4%)	Poor skills / lack of experience / lack of self confidence	2 (8.3%)
Emotionally stable and positive attitude	22 (57.9%)	Emotionally difficult	2 (8.3%)
Fortune / "lucky" personal circumstances	10 (26.3%)	Difficult personal circumstances	0
Other	4 (10.5%)	Other	1 (4.2%)

*More than one answer could be given to each of the statements above

4.5.3 CASA's support system to graduates

CASA was found to be a strong support system to chiropractic graduates since a total of 72.6% (*n* = 45) indicated they had the organisation's support, whilst only 27.4% (*n* = 17) were not satisfied with level of support.

Table 4.15: Positive and negative statements regarding the CASA support system to graduates (*n* = 62)

Positive factors (*n* = 45)	*n* (%)	Negative factors (*n* = 17)	*n* (%)
Good functioning representative body and leadership	29 (64.4%)	No / poor functioning representative body and leadership	8 (47.1%)
Good sharing of information and communication with other practitioners / colleagues	20 (44.4%)	No / poor sharing of information and communication with other practitioners / colleagues	3 (17.6%)
Good assistance from other practitioners	18 (40.0%)	No / poor assistance from other practitioners	5 (29.4%)
Good post graduate support	5 (11.1%)	No / poor post graduate support	9 (52.9%)
Good assistance from CASA	21 (46.7%)	No / poor assistance from CASA	9 (52.9%)
Other	4 (8.9%)	Other	5 (29.4%)

*More than one answer could be given to each of the statements above

Table 4.15 highlights a good functioning representative body and leadership (64.4%; *n* = 29), good assistance provided by CASA (46.7%; *n* = 21) and the sharing of information and proper communication with other practitioners and colleagues (44.4%; *n* = 20) were the main positive factors that indicated

satisfactory support to graduates. Negative factors such as a lack of post graduate support (52.9%; *n* = 9) and assistance (52.9%; *n* = 9), as well as a poor functioning representative body and leadership from CASA (47.1%; *n* = 8) indicated insufficient support to graduates.

4.5.4 Acceptance of chiropractic within the medical community

62.9% (*n* = 39) of respondents felt accepted within the medical community, whilst 37.1% (*n* = 23) of respondents felt excluded.

Table 4.16: Statements regarding the acceptance of chiropractic within the medical community (*n* = 62)

Felt accepted (*n* = 39)	***n* (%)**	**Did not feel accepted (*n* = 23)**	***n* (%)**
I am part of a mutual active referral system	27 (69.2%)	I am not part of a mutual active referral system	7 (30.4%)
Have access to medical infrastructures	21 (53.8%)	Have no access to medical infrastructures	1 (4.3%)
There is a growing positive awareness and acceptance of chiropractic	36 (92.3%)	Chiropractic is seen as dangerous by the medical profession or public	12 (52.2%)
The medical profession recognises and respects the level of knowledge and training of chiropractors	13 (33.3%)	Chiropractors are not respected or taken seriously by the medical profession	20 (87.0%)
Other	5 (12.8%)	Other	1 (4.3%)

*More than one answer could be given to each of the statements above

Respondents who felt accepted within the medical community stated that there is a growing positive awareness and acceptance of chiropractic in the public and medical community (92.3%; *n* = 36) and that they are part of a mutual active referral system (69.2%; *n* = 27) and have the access to medical infrastructures (53.8%; *n* = 21). Respondents who did not feel accepted stated this due to chiropractors not being respected or taken seriously by the medical profession (87%; *n* = 20), the fact that chiropractic are often seen as dangerous (52.2%; *n* = 12) and chiropractors not being part of a mutual active referral system (30.4%; *n* = 7).

4.5.5 Financing a practice

Table 4.17: Ways respondents financed the set-up of a chiropractic practice (*n* = 62)

	***n* (%)**
Loan	30 (48.4%)
Minimised practice set-up costs	34 (54.8%)
No set-up costs	3 (4.8%)
Part time work / second income in health related field	8 (12.9%)
Part time work / second income in non-health related field	5 (8.1%)
Personal savings	22 (35.5%)
Support from parents	18 (29.0%)
Support from spouse / partner	10 (16.1%)
Not applicable	6 (9.7%)
Other	0

*More than one answer could be given to each of the above

Table 4.17 illustrates that the majority of respondents financed their chiropractic practices by minimizing costs where possible (54.8%; *n* = 34) and by taking out a loan (48.4%; *n* = 30). Personal savings (35.5%; *n* = 22) and support from parents (29.0%; *n* = 18) were other means of financing their set-up costs.

4.6 PRACTICE PROFILES

4.6.1 Age when started practicing chiropractic

The majority of respondents (54.8%; *n* = 34) were 25 to 26 years of age when they first started to practice chiropractic, although 17.7% (*n* = 11) of the respondents were younger than 25. All other respondents were between 27 and 30 years of age (19.4%; *n* = 12), and 8.1% (*n* = 5) being older than the age of 30.

4.6.2 Time period between obtaining a qualification and practicing chiropractic

Most of the respondents started to practice chiropractic within one month (38.7%, *n* = 24) or within weeks (30.7%; *n* = 19) of graduating from DUT, whilst 24.2% (*n* = 15) of the respondents started practicing within two and six months and 6.5% (*n* = 4) in a time period longer than six months. Table 4.18 shows the activities or occupation respondents were involved in between the time of graduation and first practicing chiropractic.

Table 4.18: Activities or occupation from the time of graduation until first practicing chiropractic (*n* = 62)

	***n* (%)**
Family / Home maker	1 (1.6%)
Set up practice	23 (37.1%)
Studied	2 (3.2%)
Travel / holiday	19 (30.6%)
Worked as a lecturer / clinician at a tertiary institution	3 (4.8%)
Worked in another health related field e.g. medical repping	2 (3.2%)
Worked in health unrelated field	3 (4.8%)
Not applicable	14 (22.6%)
Locum	3 (4.8%)
Other	3 (4.8%)

*More than one answer could be given to each of the above

4.6.3 Duration of respondents being in practice

Of the total number of respondents, 12.9% (*n* = 8) had been in chiropractic practice for less than one year, whilst the majority (50%; *n* = 31) had been in practice for a period of two to five years. 21% (*n* = 13) of respondents had been in practice for six to ten years and 16.1% (*n* = 10) for more than ten years.

4.6.4 Working in a chiropractic clinic

Regarding the employment status of respondents, 90.3% (*n* = 56) were self-employed, 8.1% (*n* = 5) were employees and only one respondent (1.6%) was involved in part time work.

Table 4.19 reflects that group multidisciplinary (53.2%; *n* = 33) and private practice (33.9%; *n* = 21) were the most common practice settings for chiropractors in the profession, with chiropractors practicing together (22.6%; *n* = 14) being another popular setting.

Table 4.19: Type of setting in which respondents were practicing chiropractic (past and present) (*n* = 62)

Practice settings	***n* (%)**
Private practice	21 (33.9%)
Group – Chiropractic	14 (22.6%)
Group – Multidisciplinary	33 (53.2%)
Locum work	0
Other	1 (1.6%)

*More than one answer could be given to each of the above

Table 4.20 indicates that the majority of those respondents in a multidisciplinary setting (*n* = 33) were found to be in association with other chiropractic

practitioners (*n* = 28), with massage therapists (*n* = 22), as well as general practitioners (*n* = 15) and homoeopaths (*n* = 15) being the second and third biggest groups. The group other (*n* = 11) consisted of an acupuncturist, BEST practitioner, cranio-sacral therapist, dental therapist, naturopath, nutritionist, orthopaedist, pathology, pharmacist, prosthetist and psychiatrist.

Table 4.20: List of practitioners who are part of the multi-disciplinary setup in which respondents worked (*n* = 33)

Practitioners	***n***
Beauty Therapist	7
Biokineticist	9
Chiropractor	28
Dentist	9
General Practitioner	15
Homoeopath	15
Kinesiologist	2
Massage Therapist	22
Midwife	2
Not applicable	6
Optometrist	3
Orthotist	2
Personal Trainer	6
Physiotherapist	13
Podiatrist	6
Psychologist	4
Relflexology	2
Specialist e.g. Neurosurgeon, Paediatrician	6
Pilates and Yoga	3
Other	11

*More than one answer could be given to each of the above

Table 4.21 illustrates the number of clinics that a respondent had or was currently working in, with the majority of respondents having only worked in one chiropractic clinic (66.1%; *n* = 41).

Table 4.21: Number of chiropractic clinics respondents worked in (past and present) (*n* = 62)

	***n* (%)**
One	41 (66.1%)
Two	15 (24.2%)
Three	2 (3.2%)
More than three	4 (6.5%)

On determining whether chiropractors carry out home visits, 56.5% (*n* = 35) of the respondents indicated that they did carry out home visits, whilst 43.5% (*n* = 27) did not.

4.6.5 Number of patients per week

Table 4.22: The number of new (*n* = 56) and follow-up (*n* = 59) patients treated per week

Number of NEW patients per week	*n* (%)	Number of FOLLOW-UP patients per week	*n* (%)
0 – 4	19 (33.9%)	0 – 14	5 (8.5%)
5 – 9	19 (33.9%)	15 – 29	12 (20.3%)
10 – 14	11 (19.6%)	30 – 44	10 (16.9%)
15 – 19	5 (8.9%)	45 – 59	9 (15.3%)
20 – 24	2 (3.6%)	60 – 74	13 (22.0%)
25 – 29	0	75 – 99	4 (6.8%)
More than 30	0	More than 100	6 (10.2%)

Table 4.22 above indicated that two groups of equal percentages (33.9%; *n* = 19) of respondents treated zero to four and five to nine new patients per week, whilst 22.0% (*n* = 13) of the respondents treated 60 to 74 follow-up patients and 20.3% (*n* = 12) treated 15 to 29 follow-up patients per week.

4.6.6 Time spent on consultations

Table 4.23: Duration of consultation for new (*n* = 62) and follow-up (*n* = 61) patients respectively

Minutes: NEW patient consultation	*n* (%)	Minutes: FOLLOW-UP consultation	*n* (%)
0 – 15	0	0 – 10	3 (4.9%)
15 – 30	11 (17.7%)	10 – 20	18 (29.5%)
30 – 45	33 (53.2%)	20 – 30	35 (57.4%)
45 – 60	17 (27.4%)	30 – 40	5 (8.2%)
More than 60 minutes	1 (1.6%)	More than 40 minutes	0

The majority of respondents indicated that they spent between 30 and 45 minutes (53.2%; *n* = 33) on new patient consultations and between 20 and 30 minutes (57.4%; *n* = 35) on follow-up consultations (Table 4.23).

4.6.7 Consultation fees

Table 4.24: Consultation fees for new (*n* = 55) and follow-up (*n* = 54) patients respectively

Consultation fee: NEW patient	*n* (%)	Consultation fee: FOLLOW-UP patient	*n* (%)
R50 – R100	0	R50 – R100	0
R100 – R150	3 (5.5%)	R100 – R120	2 (3.7%)
R150 – R200	20 (36.4%)	R130 – R150	15 (27.8%)
R200 – R250	24 (43.6%)	R160 – R180	21 (38.9%)
R250 – R300	7 (12.7%)	R180 – R200	13 (24.1%)
More than R300	1 (1.8%)	More than R200	3 (5.6%)

The most common consultation fee for a new patient ranged from R150 to R200 (36.4%; *n* = 20) and R200 to R250 (43.6%; *n* = 24), whilst the most common

consultation fee for a follow-up patient ranged from R130 to R150 (27.8%; *n* = 15) and R160 to R180 (38.9%; *n* = 21). It should be noted that the seven respondents who were practicing chiropractic in the UK would have inflated these figures, therefore they have not been included in Table 4.24. The majority of these practitioners did however fall in the more than R300 per new patient consultation bracket (85.7%; *n* = 6) and the more than R200 per follow-up patient consultation bracket (85.7%; *n* = 6).

4.6.8 Nett income per annum

Table 4.25: Nett income per annum of all respondents (*n* = 58) as well as South African respondents only (*n* = 51)

	All respondents (*n* (%))	SA respondents (*n* (%))
Less than R100 000	10 (17.2%)	10 (19.6%)
R100 000 – R159 999	8 (13.8%)	8 (15.7%)
R160 000 – R219 999	10 (17.2%)	9 (17.7%)
R220 000 – R299 999	11 (19.0%)	11 (21.6%)
R300 000 – R399 999	5 (8.6%)	2 (3.9%)
R400 000 or more	14 (24.1%)	11 (21.6%)

Table 4.25 reflects the nett income per annum of all respondents (middle column) as well as the nett income of the South African respondents alone (right-hand column), in order to minimise the effects of converting UK pounds into SA rands.

4.6.9 Supplementing income

Only 21% (*n* = 13) of respondents supplemented their income within the chiropractic practice, whilst 32.3% (*n* = 20) supplemented their income outside of the chiropractic practice. The table below (Table 4.26) illustrates the ways in which chiropractors supplemented their income.

Table 4.26: Ways of supplementing income within (*n* = 13) and outside of (*n* = 20) the chiropractic practice

Supplemented within the chiropractic practice	*n* (%)	Supplemented outside the chiropractic practice	*n* (%)
Ergonomic devises e.g. braces, chairs, pillows	10 (76.9%)	Support from spouse or partner	5 (25.0%)
Vitamins, minerals, supplements	5 (38.5%)	Teaching / lecturing to students of chiropractic	8 (40.0%)
X-rays	2 (15.4%)	Teaching / lecturing to students other than chiropractic	1 (5.0%)
Other	1 (7.7%)	Work in health related industry	2 (10.0%)
		Work in unrelated field to the healthcare industry	3 (15.0%)
		Other	5 (25.0%)

*More than one answer could be given to each of the above

Five respondents (25%) indicated *other* means of supplementing their income outside of the chiropractic practice, which included coaching sports, property or supplementation by their parents.

4.6.10 Patient referrals

A hundred percent (*n* = 62) of respondents indicated that they have referred patients to other medical or healthcare practitioners if required to and if in the best interest of the patient.

A total of 98.4% (*n* = 61) of the respondents indicated that they have received patient referrals from other healthcare professionals, with only one respondents (1.6%) indicating they did not receive outside referrals in their practice.

Table 4.27: List of practitioners from which respondents received referrals (*n* = 61)

	***n* (%)**
Beauty Therapist	28 (45.9%)
Biokineticist	22 (36.1%)
General Practitioner	55 (90.2%)
Homoeopath	29 (47.5%)
Personal Trainer	29 (47.5%)
Physiotherapist	31 (50.8%)
Neurosurgeon / Neurologist	16 (26.2%)
Nurses / Sisters	18 (29.5%)
Orthopaedic surgeon	12 (19.7%)
Other Chiropractors	38 (62.3%)
Other	11 (18.0%)

*More than one answer could be given to each of the above

From the 18% (*n* = 11) of respondents who chose the option *other* in the table above (Table 4.27) mentioned practitioners such as massage therapists and pharmacists more than once.

4.6.11 Sourcing of patients

Of all the methods used in sourcing patients in the chiropractic practice, word of mouth (100%; *n* = 62) was indicated as the primary method, whilst an additional 62.9% (*n* = 39) of respondents also indicated referrals from other disciplines and 51.6% (*n* = 32) indicated having their practice details in a telephone directory. Other methods included talks at baby clinics, local gyms and sport clubs, the

usage of a notice board as well as clear signage and a good location of the practice (Table 4.28).

Table 4.28: Ways in which respondents source patients (*n* = 62)

	***n* (%)**
Internet	9 (14.5%)
Interviews on radio / TV / other forms of media	1 (1.6%)
Leaflets	13 (21.0%)
Newspaper / Magazine adverts	16 (25.8%)
Referrals from other disciplines	39 (62.9%)
Telephone directory	32 (51.6%)
Word of mouth	62 (100.0%)
Other	6 (9.7%)

*More than one answer could be given to each of the above

CHAPTER FIVE

DISCUSSION

5.1 INTRODUCTION

In this chapter, five aspects of chiropractic will be discussed:

1. The demographics of chiropractic graduates
2. The chiropractic education at DUT
3. The profile of career paths of chiropractic graduates
4. Factors responsible for affecting chiropractic as a career path
5. Chiropractic practice profiles

Issues relevant to each aspect will be approached and discussed using the statistical data obtained and illustrated in chapter four.

5.2 DEMOGRAPHICAL PROFILE OF RESPONDENTS

The majority of respondents were white males, who started in practice at the age of 25-26, which corresponds with the average age of the population at graduation (26 years) who were also white males (MIS Department DUT, 2008). Morgan *et al.* (2001) stated that although women are equally or more likely to graduate from a tertiary institution than men, they remain underrepresented in many previously male dominated professions. In the current research 45.2% (*n* = 28) of respondents were female, thus having pursued tertiary education in a more traditionally male dominated profession.

In terms of ethnicity, a greater percentage of white graduates (95.2%; *n* = 59) responded to the questionnaire in comparison to the total percentage of white graduates (85%; *n* = 216). A relatively small percentage of other ethnic groups responded to the questionnaire (4.8%; *n* = 3) and also formed a small percentage

of the total chiropractic population (15%; *n* = 39). The large gap in the graduate ethnicity is an area of concern due to statistics of the South African population indicating that the White ethnic group only constituted 9.1% of the total population and that the majority of the population is Black (79.6%), 8.9% Coloured and 2.5% Indian (Statistics South Africa, 2007). Singaravelu *et al.* (2005) revealed that ethnic minorities in a particular field may be due to environmental factors such as family, culture and community. Poor domestic circumstances (Sukovieff; 1989), a lack of finance for further studies and facing the pressures of a working environment (Kortlik and Harrison, 1987) also limit an individual's career choice and may negatively influence their chosen career path.

The majority of respondents were married, although 62.3% (*n* = 38) had no dependants. This is supported by Babaletakis (2006) who also found the majority of homoeopathic respondents in practice to be married. According to Ferry *et al.* (2000) it cannot be underestimated the influence that family and spousal support can have on a graduate.

98.4% (*n* = 61) of the respondents were of South African nationality, with only one (1.6%) respondent being Namibian. The majority of respondents were residing in KwaZulu-Natal. It can be speculated that this is due to either graduates originally being from KwaZulu-Natal and therefore residing in the province after their studies, or graduates originally being from other parts of the country but due to the lengthy course, personal or other environmental factors these graduates have remained in the province.

5.3 THE CHIROPRACTIC EDUCATION AT DUT

According to Mets *et al.* (2004) the self-assessment of medical schools and healthcare institutions is the beginning step in the process towards ensuring and maintaining the high standard of education in the medical field and in the training of successful healthcare professionals. In recent years, the acceleration of

chiropractic as a profession has been due to the focus on research, especially in the areas of chiropractic education and practice (Kelner *et al*., 1980).

Chiropractic remains a young profession (Stano *et al.*, 1992). In SA the first students enrolled for the chiropractic course at Technikon Natal (DUT) in 1989. The first chiropractic graduate graduated in June 1994, but most of the respondents to this questionnaire graduated between 2000 and 2007, possibly suggesting that the more recent graduates have remained in closer contact with the DUT Chiropractic Department.

Many graduates completed their chiropractic education within the allocated six years (41.9%; *n* = 26), whilst the maximum time taken by a respondent was 15 years. Today, the maximum time available to complete the chiropractic programme is 12 years, consisting of a maximum of six years for the three year national diploma, a maximum of two years for the one year B.Tech degree and a maximum of four years to complete the two year M.Tech degree (DUT Rulebook, 2007). It can be speculated that the 27.4% (*n* = 17) of respondents who had pursued further tertiary education prior to the chiropractic programme may have had an advantage over the 72.6% (n = 45) of respondents who only had a matric exemption, in coping with the intensity and pressures of a tertiary education environment.

In keeping with the findings of Bradley (2001), 85.5% (*n* = 53) of respondents found their chiropractic education to be lacking in certain specific aspects e.g. business skills. Most respondents deemed subjects from their fourth and fifth years e.g. clinical biomechanics and kinesiology to be more important and useful than subjects from lower years e.g. chemistry, as these subjects were more practically applicable to their career. It must be noted that two higher level subjects, namely research methods and techniques and the research project and dissertation, were deemed useful by only 17.7% (*n* = 11) and 48.4% (*n* = 30) of respondents respectively. Comments received by respondents suggested that these two subjects were not found to be practically useful in their professions.

Mrozek *et al*. (2006) emphasized the importance of curricular adjustments and a high standard of educational and practical training in order for students to cope with the rapidly changing health system and patient expectations, as well as to be confident and competent doctors in their field. It is interesting to note that a fairly similar percentage of respondents stated that the subject practice management and jurisprudence was of little to no use in their practice and this may highlight a shortcoming in the curriculum. Other areas that were found lacking were speciality areas such as paediatrics and sport medicine (73.6%; *n* = 39), as well as other chiropractic techniques e.g. sacro-occipital technique (66%; n = 35).

32.3% (*n* = 20) of the respondents obtained further qualifications after graduation with 80% (*n* = 16) of these qualifications being in the field of chiropractic, highlighting the need for further post graduate chiropractic education to be available in SA. An issue raised by some respondents was the limited post graduate chiropractic specific courses available in SA. For example, for a graduate to study for a diplomat in chiropractic one is required to study overseas.

Although the chiropractic education was deemed lacking in certain areas by respondents, 46% (n = 23) stated that their preferred choice of chiropractic institution was DUT. This may be due to the more convenient location (52.2%; *n* = 12) and the fact that respondents preferred the system of chiropractic taught (52.2%; *n* = 12). Of those respondents who would have preferred to study overseas (30%; *n* = 15), 80% (*n* = 12) indicated this being due to the more versatile and accepted qualifications that they believed could be obtained internationally.

5.4 THE PROFILE OF CAREER PATHS OF CHIROPRACTIC GRADUATES

There are many factors that may influence and affect career paths after graduation (Lambert *et al*., 1996). Of all the respondents, 98.4% (*n* = 61) are currently in chiropractic practice, and 80.6% (*n* = 50) of respondents indicated career satisfaction in chiropractic, which is in keeping with the findings of Logan College of Chiropractic (2007) where the majority of chiropractors were found to stay within

the practice until they retired. This is in contrast to the Babeletakis (2006) study done on homoeopathic graduates from the same institution (DUT), where only 67% were currently in practice.

Reasons for respondents' dissatisfaction (19.4%; *n* = 12) with chiropractic as a career choice were the lack of recognition of the education and / or chiropractic as a profession (66.7%; *n* = 8) and the lack of versatility and flexibility of the career (50%; *n* = 6). This lack of recognition of the education was highlighted by Curtis and Bove (1992) who found that perceptions regarding chiropractic from allopathic medicine to involve suspicion regarding the extent, depth, and validity of chiropractic educational programmes.

Fleming (2005) stated that income and financial reward, and Allen (1999) highlighted that job security as well as flexibility in a career were found to be some of the most significant influences in an individual's choice of career path. These could be speculated as the reason for those respondents that were not satisfied with chiropractic as their career choice choosing commerce and economics (41.7%; *n* = 5) or other medical fields (33.3%; *n* = 4).

5.5 FACTORS RESPONSIBLE FOR AFFECTING CHIROPRACTIC AS A CAREER PATH

Certain personality types and behavioural characteristics of the healthcare practitioner have been found to affect patient satisfaction (Sawyer and Kassak, 1993; Gardner, 2004). The majority of respondents described themselves as having good social skills (80.6%; *n* = 50), being optimistic (56.5%; *n* = 35) as well as being extroverted (24.2%; *n* = 15). Although this could be an indication of social desirability *viz* people try to show themselves in a good light, and therefore respondents would be unlikely to describe themselves as having poor social skills or being pessimistic. Chiropractors in particular, however, require good social characteristics in practice (Jamison, 1996). Gardner (2004) noted that those who naturally possess good social interaction skills and the desired practice behaviour

were found to have a distinct advantage in patient communication and practicing of chiropractic.

Respondents found that the level of difficulty starting up a chiropractic practice or finding employment had a direct influence on their career path. In keeping with Jamison (1998) and Ramsey *et al*. (2004), emotional stability and a positive attitude (57.9%), good social skills, experience and self-confidence (47.4%), as well as having few other chiropractors in the local areas (39.5%) were found to be positive factors in respondents successfully starting their career. According to Ososki *et al.* (2006) saturation of a profession in one particular area may force chiropractors and other professionals to explore other job opportunities and career paths, however only 12.5% of respondents stated that too many chiropractors in their area were making practice difficult. It was also found that few patient numbers and the extended time it takes to establish a patient base were the reasons responsible for their difficulties. Other difficulties included financial and marketing difficulties and finally respondents complained about marketing restraints that are put on chiropractors by the AHPCSA.

In this study, results showed there to be a growing positive public awareness and acceptance of chiropractic, with 62.9% (n = 39) of respondents indicating that they felt accepted within the medical community. This is in contrast to Coulter (1992) and Stranack (1995) who stated that although chiropractic is an established part of the healthcare system, there is still some degree of opposition and scepticism (Kaptchuk and Eisenberg, 1998) from mainstream medicine, however, this can be reflected by the small percentage of the respondents who stated that chiropractic is viewed as dangerous by some amongst the medical profession.

Financing a practice was considered another major factor determining chiropractic as a career path. According to Risser and Laskin (1996), a lack of finances were seen as a major stumbling block in graduates setting up a chiropractic practice, although by taking out a loan (48.4%) or having personal savings (35.5%) as well as minimizing the set-up costs (54.8%), the majority of respondents were able to

set-up a practice. Support from parents (29%) and spouse or partner (9.7%) were other means of financial aid. Ferry *et al.* (2000) stated parental and family support and encouragement to be one of the most significant influences during a student's education and their career path after graduation.

5.6 CHIROPRACTIC PRACTICE PROFILES

The average respondent was found to be a married white male who started practicing within weeks to a month of graduating, at the age of 25-26 years, and had currently been in practice for a period of two to five years. They had worked in one or two chiropractic clinics, within private practice, treating between five to nine new patients, and 60 to 74 follow-up patients per week. The average duration of a consultation for a new patient was 30 to 40 minutes and for a follow-up patient 20 to 30 minutes. The average consultation fee charged for a new patient was R200 to R250, and for a follow-up patient R160 to R180, with an estimated annual income of R220 000 to R299 999 and more than R400 000 respectively. This is in comparison with the Logan College of Chiropractic in the US, who described the typical chiropractor to be in private practice, practicing an average of five days each week and having approximately 109 appointments per week. The average annual income was estimated at US $85, 000 (approximately R637 500) and these chiropractors generally remained in practice until they retired (Logan College of Chiropractic, 2007).

Supplementation of respondents' annual income either within or outside of the chiropractic practice, applied to 53.2% (*n* = 33) of the respondents. The majority of respondents that supplemented their income within the chiropractic practice (*n* = 13) did so through supplying their patients with ergonomic devises and orthotics (76.9%), as well as vitamins, minerals and other supplements (38.5%). Supplementation outside of the chiropractic practice (*n* = 20) included lecturing (40%), support from their spouse or parents (25%) or working in an unrelated field to the healthcare industry (15%). The support received from parents and family has

been considered the most important source of external influence in a graduate's career path (Sukovieff, 1989; Young *et al.*, 1997).

Ramsey *et al*. (2004) concluded that healthcare practitioners achieve a higher level of confidence in their careers and a better self-belief through communication and interaction with other healthcare professionals. It was found that a 100% of the respondents had been in the habit of referring patients to other medical or healthcare practitioners if required to and if in the best interest of the patient. A total of 98.4% (*n* = 61) of the respondents indicated that they do receive patient referrals on a regular basis from other healthcare professionals such as GP's (90.2%), other chiropractors (62.3%), physiotherapists (50.8%), homoeopaths (47.5%), and personal trainers (47.5%). Of the more specialized professions, 26.2% of respondents received referrals from neurosurgeons or neurologists and 19.7% from orthopaedic surgeons. The above can be correlated to the Hunter (2004), Louw (2005) and Rubens (2006) studies where 37% of physiotherapists, 65% of GP's, 32% neurologists, 86% neurosurgeons and 43% of orthopaedic surgeons had stated that they do refer their patients to chiropractors.

In addition to this, it was indicated that 53.2% (*n* = 33) of the respondents were practicing chiropractic within a group multidisciplinary practice. Of the 33 respondents that stated that they are part of a multidisciplinary practice, 28 were in practice with other chiropractors, 22 with massage therapists, 15 with GP's, 15 with homoeopaths, 13 with physiotherapists, nine with biokineticists and nine with dentists. Other professions that were included were beauty therapists, personal trainers, podiatrists, and specialists such as neurosurgeons and paediatricians. Therefore it would appear that there is a growing interprofessional relationship that has developed through the years between chiropractors and other healthcare professions. According to Sanchez (1991), interprofessional relationships between chiropractic and other relevant healthcare practitioners in terms of collaboration and acceptance, is one of the determining factors for the status of chiropractic as a healthcare profession.

In conclusion, 98.4% (*n* = 61) of respondents were currently in practice, with 80.6% (*n* = 50) indicating that given the choice they would follow this career path again, highlighting career satisfaction in these respondents, and that they felt a growing acceptance within the medical community. The majority of respondents found it relatively easy going into practice and felt that DUT had prepared them well for the challenges facing graduates in practice. Shortcomings of the education, however, were highlighted to be a lack of practical applicable knowledge taught at undergraduate level, most especially business skills and speciality areas. The majority of respondents stated they would study at DUT again due to its location and the system of chiropractic taught, despite some respondents indicating that they perceived the qualification not to be as versatile and widely accepted as other international chiropractic qualifications.

CHAPTER SIX

CONCLUSION

It was found that the average respondent to this research was a married, white male who started his chiropractic career at age 25-26 years, and had currently been in practice for a period of two to five years. The majority of respondents practiced within a private practice and treated an average of five to nine new patients, and 60 to 74 follow-up patients per week. The average duration of a consultation for a new patient was 30 to 40 minutes and for a follow-up patient 20 to 30 minutes. Consultation fees were most commonly R160 to R180 for a follow-up patient and R200 to R250 for a new patient, with the most common annual income of R220 000 to R299 999 and more than R400 000 respectively.

98.4% (*n* = 61) of all respondents were currently in practice with 80.6% (*n* = 50) indicating a high level of satisfaction in their choice of career. Most respondents entered the chiropractic program with a matric exemption as their highest level of previous education and deemed subjects from their fourth and fifth years to be more important and practical applicable in their careers than subjects from the lower years. The majority of respondents stated that they would study at DUT again due to its location and the system of chiropractic taught, although a small percentage of respondents questioned the versatility and acceptance of the education internationally.

Factors responsible for positively affecting chiropractic as a career path were indicated to be the personality type of the graduate (the majority of respondents described themselves as having good social skills, being optimistic and extroverted), a graduate's attitude towards pursuing their career (being optimistic and emotionally stable) as well as their level of self-confidence and experience within their profession. Financing a practice was considered to be a stumbling block to some respondents when setting up in practice, although the majority received financing through loans (48.4%), personal savings (35.5%) and minimizing

set-up costs (54.8%). Support from parents (29%) and spouse or partner (9.7%) were another significant means of financial aid.

The major factor that was found to influence a graduate's career path and determining their attitude regarding chiropractic as a profession, was the level of acceptance these graduates felt from the public and other professions within the medical sector. Although a small percentage of respondents to this research stated that chiropractic may still be viewed as dangerous by some amongst the medical profession, the majority of respondents stated that there is a growing positive public awareness and acceptance of chiropractic, and that they enjoyed good interprofessional relationships within the medical community.

RECOMMENDATIONS

Recommendations arising from the findings of this study are that:

- A longer time period be given for questionnaires to be returned to the researcher in order to have a larger sample group to work with.
- A bigger sample group be established in order to ensure that the sample group and total population are homogenous.
- The questionnaire target more specific areas in a greater detail e.g. to have asked 'why' to question 2.13 for those respondents who stated that they would have studied another discipline if they could choose a career path again.
- Multivariate analysis be done to ensure a more in depth study that can obtain further information regarding the intricacies of the sample.
- The same research be done on chiropractic graduates of the University of Johannesburg in order to establish a more global view of chiropractic and the education students receive in South Africa.
- Future studies can be strengthened by interviewing staff at DUT and government health officials to determine the status and acceptance of chiropractic in South Africa.

- Curriculum changes be made in terms of PMJ and business skills, the requirement of a research dissertation and the length of time it takes to complete as well as issues such as inexperienced lecturers which the DUT chiropractic department could benefit from addressing.

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APPENDIX A

DURBAN UNIVERSITY OF TECHNOLOGY

ETHICS CLEARANCE CERTIFICATE

Student Name	**Mrs Elmi Black**	**Student No**	**20100752**
Ethics Reference Number	FHSEC 030/07	**Date of FRC Approval**	**2007/10/22**
Qualification	**M-Tech: Chiropractic**		
Research Title:	**A Retrospective Survey Of The Career Paths And Demographics Of Durban University Of Technology (DUT) Chiropractic Graduates.**		

In terms of the ethical considerations for the conduct of research in the Faculty of Health Sciences, Durban University of Technology, this proposal meets with Institutional requirements and confirms the following ethical obligations:

1. The researcher has read and understood the research ethics policy and procedures as endorsed by the Durban University of Technology, has sufficiently answered all questions pertaining to ethics in the DUT 186 and agrees to comply with them.
2. The researcher will report any serious adverse events pertaining to the research to the Faculty of Health Sciences Research Ethics Committee.
3. The researcher will submit any major additions or changes to the research proposal after approval has been granted to the Faculty of Health Sciences Research Committee for consideration.
4. The researcher, with the supervisor and co-researchers will take full responsibility in ensuring that the protocol is adhered to.
5. ***The following section must be completed if the research involves human participants:***

	YES	NO	N/A
❖ Provision has been made to obtain informed consent of the participants	✓		
❖ Potential psychological and physical risks have been considered and minimised			✓
❖ Provision has been made to avoid undue intrusion with regard to participants and community	✓		
❖ Rights of participants will be safe-guarded in relation to: - Measures for the protection of anonymity and the maintenance of Confidentiality.	✓		
- Access to research information and findings.	✓		
- Termination of involvement without compromise	✓		
- Misleading promises regarding benefits of the research			✓

E Black — 29·01·2008

SIGNATURE OF STUDENT/RESEARCHER — DATE

Natalie Bussey — 29.01.08

SIGNATURE OF SUPERVISOR/S — DATE

K Uys — 30.01.08

SIGNATURE OF HEAD OF DEPARTMENT — DATE

5/02/08

SIGNATURE: CHAIRPERSON OF RESEARCH ETHICS COMMITTEE — DATE

APPENDIX B

The Research Administrator
Department of Chiropractic
P.O. Box 1334
Durban 4000

Dear Participant

I am a student currently pursuing my M.Tech: Chiropractic qualification at the Durban University of Technology.

Study Title:
A Retrospective Survey of the Career Paths and Demographics of Durban University of Technology (DUT) Chiropractic Graduates.

Objective of Study:
There is a paucity of literature available regarding post-graduation career opportunities, financial stability and viability, and other demographics in terms of chiropractic in South Africa. The objective of this research is to determine the demographics of chiropractic graduates from the first graduate in June 1994 to 30 June 2007. It also aims to identify certain factors that may affect career paths after graduation and highlight strengths and weaknesses of the chiropractic course as experienced by the graduates. By completing this questionnaire, you as a graduate have the opportunity to help identify these factors, and will provide a helping hand into the improvement of chiropractic in South Africa.

Confidentiality:
As with all survey studies, the information you furnish will be treated with the utmost of confidence.

The questionnaire needs to be returned with the signed informed consent form, which can either be faxed to: 031-2023632 or e-mailed to: chiro.research@gmail.com or posted to the Department of Chiropractic (as above).

Your time, opinion and assistance with this project are invaluable and greatly appreciated.

Yours sincerely

Elmi Black
Research Student
0829440500

Dr. Nikki de Busser, M.Tech: Chiropractic
Supervisor
031-3732533

APPENDIX C

Date	**:02.11.2007**
Title of research project	**: A retrospective study of the career paths and demographics of the Durban University of Technology (DUT) Chiropractic Graduates.**
Name of supervisor	**: Dr Nikki de Busser, M.Tech: Chiropractic**
Tel	**: 031 3732244**
Name of research student	**: Elmi Black**
Tel	**: 0829440500**

Please circle the appropriate answer **YES /NO**

1. Have you read the research information sheet?	Yes	No
2. Have you had an opportunity to ask questions regarding this study?	Yes	No
3. Have you received satisfactory answers to your questions?	Yes	No
4. Have you had an opportunity to discuss this study?	Yes	No
5. Have you received enough information about this study?	Yes	No
6. Do you understand the implications of your involvement in this study?	Yes	No
7. Do you understand that you are free to		
a.) withdraw from this study at any time ?	Yes	No
b.) withdraw from this study at any time, without reasons given ?	Yes	No
c.) withdraw from this study at any time, without affecting your future health care or relationship with the Chiropractic Day Clinic at the Durban University of Technology ?	Yes	No
8. Do you agree to voluntarily participate in this study	Yes	No
9. Who have you spoken to?	Yes	No

If you have answered NO to any of the above, please obtain the necessary information from the researcher and / or supervisor before signing. Thank you.

Please Print in block letters:

Patient /Subject Name:_____ Signature: _____

Please ensure to fax or post the completed Informed Consent Forms back to Elmi Black c/o The Research Administrator at:
Fax : + 27 (0) 31 2023632
Postal Address: Dept Chiropractic, D.U.T., P.O. Box 1334, Durban 4001

APPENDIX D

Part A:

1. PERSONAL INFORMATION

1.1 Gender: (Please cross the relevant block)

Female	1	Male	2

1. 2 Age: [ ] Years of age

1.3 Marital Status: (Please cross the relevant block)

Single	1	Married	2
Divorced	3	Widowed	4
Other(specify)	5		

1.4 Number of dependants: [ ] Dependants

(Anyone financially dependant on respondent)

1.5 Ethnic Group: (Please cross the relevant block)

Asian	1	Black	2	
Coloured	3	Indian	4	
White	5	Other (specify)	6	

1.6 What nationality are you? _____

∗ Please answer question 1.7 and 1.8 if currently residing in South Africa.

1.7 Province of residence in South Africa: (Please cross the relevant block)

Province in RSA	
EC – Eastern Cape	1
Freestate	2
GAU – Gauteng	3
KZN – Kwazulu Natal	4
Limpopo	5
Mpumalanga	6
NC – Northern Cape	7
NW – North West	8
WC – Western Cape	9
Not applicable	10

1.8 City of residence in South Africa: _____

∗Please answer question 1.9 and 1.10 if NOT currently residing in South Africa or have emigrated.

1.9 Place of residence if not currently residing in South Africa:

a) Country of residence: _____

b) City of residence: _____

1.10 Reasons for emigrating or leaving South Africa?

a) _____

b) _____

1.11 How would you best describe your personality?
(Please cross the most relevant blocks)

Extrovert	1
Good social skills	2
Introvert	3
Optimistic	4
Pessimistic	5
Poor social skills	6

2. EDUCATION:

For the purpose of this research **DUT** refers to the Durban University of Technology, Durban Institute of Technology and Technikon Natal.

Year of first registration? _____

Year of graduation? _____

What was the field of previous education? _____

Any qualifications obtained post chiropractic education? _____

Is your chiropractic education directly useful in your current work?

YES	1	NO	2

Which subjects do you find most useful in your current work?
(Please cross the most relevant blocks)

Year 1

Anatomy I	1
Biology	2
Chemistry	3
Computer Skills	4
Philosophy / Principles & History	5
Physics	6
Physiology I / A&P	7

Year 2

Anatomy II	8
Biochemistry	9
Epidemiology	10
General Pathology	11
Medical Microbiology	12
Physiology II	13
Social Studies	14

Year 3

Auxiliary Therapeutics III	15
Chiropractic Principles & Practice III	16
Diagnostics III	17
Psychopathology II / Psychology	18
Systemic Pathology III	19

Year 4

Clinical Biomechanics & Kinesiology IV	20
Clinical Chiropractic IV	21
Chiropractic Principles & Practice IV / Manipulative Therapeutics	22
Diagnostics IV	23
Radiology	24
Research Methods & Techniques	25

Year 5

Clinical Biomechanics & Kinesiology V	26
Clinical Chiropractic V	27
Chiropractic Principles & Practice V	28
Practice Management & Jurisprudence V	29
Research Project & Dissertation	30

Do you feel the chiropractic education you received was lacking in any way?

YES	1		NO	2

*** If answered NO to question 2.7 please SKIP to question 2.9**

What aspects of the chiropractic education did you find lacking?
(Please cross the most relevant blocks)

Business / economic skills	1	
Clinical / practical experience regarding the medical aspect of consultation	2	
Clinical / practical experience regarding the chiropractic aspect of consultation	3	
Diagnostic skills & techniques	4	
Diagnostic tests & investigations	5	
Inexperienced lecturers / clinicians	6	
Integration of theoretical & practical knowledge	7	
Other chiropractic techniques e.g. SOT	8	
Post graduate support	9	
Speciality areas e.g. Sports, Paediatrics	10	
Not applicable	11	
Other, please specify	12	

If given the choice, would you again choose chiropractic as your career path?

YES	1		NO	2

***If answered NO to question 2.9 please SKIP to question 2.12**

Where would you choose to study chiropractic?
(Please cross the relevant block)

Durban University of Technology (formerly DIT, TN)	1	
Technikon Witwatersrand	2	
Internationally	3	
No preference to tertiary institutions	4	
Other, please specify	5	

What would be the reason for your choice?
(Please cross the most relevant blocks)

Lecturers / staff	1	
More convenient location	2	
More post graduate support	3	
More versatile and accepted qualification	4	
No knowledge about other institutions	5	
Practical experience and skills	6	
Prefer system of chiropractic taught	7	
Standard of education	8	
Wider variety of modalities taught	9	
Other, please specify	10	

*** If answered NO to question 2.9 please answer the following 2 questions**

What would be the main reasons for not choosing chiropractic as your career path again?
(Please cross the most relevant blocks)

Difficult / stressful work in practice	1	
Duration of the chiropractic course too long	2	
Not rewarding career / no or little job satisfaction	3	
Not versatile / flexible career	4	
No or little recognition of education and / or profession	5	
Other, please specify	6	

What disciplines would you rather have pursued?
(Please cross the most relevant blocks)

Accounting	1	
Arts	2	
Commerce / Economics	3	
Education	4	
Health	5	
Law	6	
Medicine	7	
Other medical fields	8	
Performing Arts	9	
Physiotherapy	10	
Science	11	
Social Science	12	
Other, please specify	13	

3. PRACTICE INFORMATION:

3.1 What is your current occupation?
(Please cross the most relevant blocks)

Chiropractor	1
Full-time homemaker	2
Homoeopath	3
Medical representative	4
Studying for a further qualification **specify:**	5
Unemployed	6
Working in chiropractic related field e.g. chiropractic assistant	7
Working in health professions field e.g. pharmacy, health shop assistant	8
Working in totally unrelated field **specify:**	9

*** If you are currently practicing chiropractic, please SKIP to question 3.3**

3.2 If not currently practicing chiropractic, what are the possible reasons?
(Please cross the most relevant blocks)

Burnt out	1	
Emigration	2	
Family commitments	3	
Financial reasons	4	
Lack of interest in chiropractic from the public	5	
Lack of personal interest in chiropractic	6	
No / lack of confidence	7	
Studying part / full time	8	
Travel	9	
Not applicable	10	
Other, please specify	11	

3.3 Did you find it easy to start up a chiropractic practice or find employment?

YES	1	NO	2

3.4 Please elaborate on question 3.3
(Please cross the most relevant blocks)

If answered YES		If answered NO	
Good financial support	1	Financial difficulties	13
Had a good business plan	2	Poor / no business or practice management skills	14
Had a good marketing strategy	3	Marketing difficulties and restraints	15
Good public awareness of chiropractic	4	Poor public awareness of chiropractic	16
Good, well established patient numbers	5	Few patient numbers / long time to establish patient base	17
Good support network	6	Poor / no support network	18
Employed directly / joined existing practice	7	Few / no employment opportunities	19
Few chiropractors in local area	8	Too many chiropractors in local area	20
Good skills / experience / self-confidence	9	Poor skills / lack of experience / lack of self confidence	21
Emotionally stable and positive attitude	10	Emotionally difficult	22
Fortune / "lucky" personal circumstances	11	Difficult personal circumstances	23
Other, please specify *	12	Other, please specify *	24

3.5 Do / did you feel that you have / had the support of the Chiropractic Association of South Africa?

YES	1	NO	2

3.6 Please elaborate on question 3.5
(Please cross the most relevant blocks)

If answered YES		If answered NO	
Good functioning representative body and leadership	1	No / poor functioning representative body and leadership	7
Good sharing of information and communication with other practitioners / colleagues	2	No / poor sharing of information and communication with other practitioners / colleagues	8
Good assistance from other practitioners	3	No / poor assistance from other practitioners	9
Good post graduate support	4	No / poor post graduate support	10
Good assistance from the Chiropractic Association of South Africa	5	No / poor assistance from the Chiropractic Association of South Africa	11
Other, please specify *	6	Other, please specify *	12

3.7 Do / did you feel part of or accepted within the medical community?

YES	1	NO	2

3.8 Please elaborate on question 3.7
(Please cross the most relevant blocks)

If answered YES		If answered NO	
I am part of a mutual active referral system	1	I am not part of a mutual active referral system	6
Have access to medical infrastructures	2	Have no access to medical infrastructures	7
There is a growing positive awareness and acceptance of chiropractic	3	Chiropractic is seen as dangerous by the medical profession or public	8
The medical profession recognises and respects the level of knowledge and training of chiropractors	4	Chiropractors are not respected or taken seriously by the medical profession	9
Other, please specify *	5	Other, please specify *	10

3.9 How did you finance the set-up of your own practice?
(Please cross the most relevant blocks)

Loan	1	
Minimised practice set-up costs	2	
No set-up costs	3	
Own savings	4	
Part time work / second income in health related field	5	
Part time work / second income in non-health related field	6	
Support from parents	7	
Support from spouse / partner	8	
Not applicable	9	
Other, please specify	10	

PLEASE CONTINUE TO THE NEXT PAGE IF YOU WERE PREVIOUSLY IN PRACTICE OR ARE CURRENTLY PRACTICING CHIROPRACTIC.

IF YOU HAVE NEVER PRACTICED AS A CHIROPRACTOR, THANK YOU FOR YOUR TIME IN COMPLETING THIS QUESTIONNAIRE.

All participants that were previously in practice or are currently practicing, please complete Part B.

Part B: Practice Details and Status

1.1 How long after you qualified did you start to practice chiropractic?

_____ Months

1.2 What did you do between the time of graduation and practicing chiropractic?
(Please cross the most relevant blocks)

Family / Home maker	1	
Set up practice	2	
Studied	3	
Travel / holiday	4	
Worked as a lecturer / clinician at a tertiary institution	5	
Worked in another health related field e.g. medical repping	6	
Worked in health unrelated field	7	
Not applicable	8	
Other, please specify	9	

1.3 At what age did you start to practice chiropractic?

_____ Years of age

1.4 How long have you / were you practicing chiropractic?

0 – 1 years	1
2 – 5 years	2
6 – 10 years	3
More than 10 years	4

1.5 What is / was your employment status in the main clinic in which you work?

Self-employed	1
Employee	2
Part-time working	3

1.6 In what setting do you currently practice / did you practice?
(Please cross the most relevant blocks)

Sole practice	1	
Group – Chiropractic	2	
Group – Multidisciplinary	3	
Locum work	4	
Other, please specify	5	

1.7 If you are / were practicing in a multi-disciplinary setup or work in the same building as other practitioners, state which ones are applicable.
(Please cross the most relevant blocks)

Beauty Therapist	1	
Biokineticist	2	
Chiropractor	3	
Dentist	4	
General Practitioner	5	
Homoeopath	6	
Massage Therapist	7	
Optometrist	8	
Personal Trainer	9	
Physiotherapist	10	
Podiatrist	11	
Specialist e.g. Neurosurgeon, Orthopaedic surgeon, Paediatrician	12	
Not applicable	13	
Other, please specify	14	

1.8 How many clinics do you currently / did you work in?

One	1
Two	2
Three	3
More than three	4

1.9 Do / did you ever carry out home visits?

YES	1	NO	2

1.10 On average, how many patients do / did you treat per week?
(Please cross the relevant block in each column)

Number of NEW patients per week		Number of FOLLOW-UP patients per week	
0 – 4	1	0 – 14	8
5 – 9	2	15 – 29	9
10 – 14	3	30 – 44	10
15 – 19	4	45 – 59	11
20 – 24	5	60 – 74	12
25 – 29	6	75 – 99	13
More than 30	7	More than 100	14

1.11 On average, how much time do / did you spend on the following consultations?
(Please cross the relevant block in each column)

Minutes on NEW patient consultations		Minutes on FOLLOW-UP consultations	
0 – 15	1	0 – 10	6
15 – 30	2	10 – 20	7
30 – 45	3	20 – 30	8
45 – 60	4	30 – 40	9
More than 60 minutes	5	More than 40 minutes	10

1.12 In your main clinic, what fees are / were typically charged for the following consultations? (In SA Rand)
(Please cross the relevant block in each column)

Consultation fees for NEW patients		Consultation fees for FOLLOW-UP patients	
R50 – R100	1	R50 – R100	7
R100 – R150	2	R100 – R120	8
R150 – R200	3	R130 – R150	9
R200 – R250	4	R160 – R180	10
R250 – R300	5	R180 – R200	11
More than R300	6	More than R200	12

1.13 What is / was your NETT income per annum?
(Please cross the relevant block)

Less than R100 000	1
R100 000 – R159 999	2
R160 000 – R219 999	3
R220 000 – R299 999	4
R300 000 – R399 999	5
R400 000 or more	6

1.14 Do / did you supplement your income?

YES	1	NO	2

1.15 Please elaborate on question 1.14 if answered YES.
(Please cross the most relevant blocks)

Ergonomic devises e.g. braces, chairs, pillows	1	
Vitamins, minerals, supplements	2	
X-rays	3	
Other, please specify	4	

1.16 Do / did you supplement your income outside the chiropractic practice?

YES	1	NO	2

1.17 Please elaborate on question 1.16 if answered YES.
(Please cross the most relevant blocks)

Support from spouse or partner	1	
Teaching / lecturing to students of chiropractic	2	
Teaching / lecturing to students other than chiropractic	3	
Work in health related industry	4	
Work in unrelated field to the healthcare industry	5	
Other, please specify	6	

1.18 Do / did you receive referrals from other medical or healthcare practitioners?

YES	1	NO	2

1.19 If answered YES to question 1.18, from whom?
(Please cross the most relevant blocks)

Beauty Therapist	1	
Biokineticist	2	
General Practitioner	3	
Homoeopath	4	
Personal Trainer	5	
Physiotherapist	6	
Neurosurgeon / Neurologist	7	
Nurses / Sisters	8	
Orthopaedic surgeon	9	
Other Chiropractors	10	
Not applicable	11	
Other, please specify	12	

1.20 Do / did you refer patients to other medical or healthcare practitioners if required?

YES	1	NO	2

1.21 How do / did you source your patients?
(Please cross the most relevant blocks)

Internet	1	
Interviews on radio / TV / other forms of media	2	
Leaflets	3	
Newspaper / Magazine adverts	4	
Referrals from other disciplines	5	
Telephone directory	6	
Word of mouth	7	
Other, please specify	8	

THANK YOU VERY MUCH FOR YOUR TIME AND CO-OPERATION IN COMPLETING THIS QUESTIONNAIRE.