

**THE KNOWLEDGE AND PERCEPTION OF GRADE 12
LEARNERS FROM SELECTED SECONDARY SCHOOLS
IN THE DURBAN METROPOLITAN REGION ON
THE CHIROPRACTIC PROFESSION.**

by

ARADHNA RATTAN

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**The knowledge and perception of Grade 12 learners
from selected secondary schools in the Durban
Metropolitan Region on the chiropractic
profession**

By

ARADHNA RATTAN

**Dissertation submitted in partial compliance with the requirements for the
Master's Degree in Technology: Chiropractic at Durban University
of Technology.**

**I, Aradhna Rattan, do solemnly declare that this dissertation is
representative of my own work in both conception and execution.**

Signed: _____ Date: _____

APPROVED FOR FINAL SUBMISSION:

Supervisor: Dr. C. Korporaal; M Tech: Chiropractic, CCFC, CCSP, ICSSD.

Signed: _____ Date: _____

Dedication

To my husband, Yasheen Nathoo, for his endless love.

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- Finally, to God Almighty for giving me the ability to become a chiropractor.

Glossary

Attitudes:

For the purpose of this research, attitudes refer to a way of thinking, which governs one's behavior towards something (Crowther, 1997).

Chiropractic:

The World Federation of Chiropractic (2001) defines the chiropractic profession as: “a health care 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 (<http://www.chiropractic.co.za>) and thus this definition applies to the use of the term chiropractic within this study.

Concurrent Validity:

This is measured when a particular tool produces similar results when compared with another tool already known to be trustworthy. This is also called *criterion* validity by Mouton (1996).

Construct Validity:

This measures how accurately answers to questions in a scale reflect theoretical predictions of a particular construct (Bernard, 2000).

Face Validity:

This is determined by an agreement between researchers and those with a vested interest in the questionnaire, that on “the face of it” the tool seems valid (Bernard, 2000).

Grade 12 Learner:

A Grade 12 learner or matriculant is a school learner who is at their final year of study in their academic career at school, here they are being taught, gain knowledge, experience and skill (Crowther, 1997).

Knowledge:

For the purpose of this research knowledge is a result or product of knowing; information or understanding acquired through experience; practical ability or skill (Crowther, 1997).

Manipulation:

Often referred to as adjustments, which are performed by hand and consist of a high velocity; low amplitude thrust being applied for specific vertebra in the spine (Bergmann, 2002).

Perceptions:

For the purpose of this research, perceptions refer to the way in which things are seen, understood to be like, and interpreted as (Crowther, 1997).

Abbreviations utilized in this dissertation

n	=	Number
n₁	=	Number of schools
n₂	=	Number of learners
%	=	Percentage
DUT	=	Durban University of Technology
CASA	=	Chiropractic Association of South Africa
WFC	=	World Federation of Chiropractic
GP	=	General Practitioner
ANOVA	=	Analysis of variance
P value	=	The probability of your results being due to chance or random error and if the p value is very small one can conclude that the results are significant (Hicks, 2004)
SD	=	Standard deviation
CGC	=	Career guidance counsellors/ school guidance counselors/ vocational counsellors

Abstract

Introduction: Choosing a career is something which all learners are expected to do between the ages of fifteen and eighteen. A school learner who is at their final year of study in their academic career will be required to think of career options for their future and it is generally assumed that the learner has sufficient information in order to make this often life changing decision.

Objective: To determine the current knowledge and perceptions of Grade 12 learners towards the chiropractic profession in Durban.

Methods: A survey was distributed to a stratified sample of twenty secondary schools ($n_1 = 20$), in all three educational districts of Durban. In total six hundred learners ($n_2 = 600$) were randomly handed a questionnaire, as there was approximately thirty learners per school ($n_1 \times 30 = n_2 [600]$); for completion and return.

Results: Of the 600 respondents, majority (58.8%) female. The mean age was 16.7 years. Majority were Asian (53. 6%) followed by Blacks (27. 9%), and Whites (12. 4%). The level of knowledge was on average low. Only 60.3% of the participants had heard of chiropractic ($n_2= 354$). There were 50 participants (8.9%) who had been treated by a chiropractor before. Participants who had seen a chiropractor before were mostly referred by a doctor (44%), or by family (40%). Sixty- six percent of participants knew what they wanted to do after leaving school ($n_2 =350$). Nearly half considered a career in health care ($n_2 =264$, 49.5%) while 117 (22.5%) considered a career as a chiropractor. Knowledge scores was highest in participants who were younger (16 or 17 years old), White or Asian and English speaking, whose fathers were in a healthcare field, who lived in their school area and who had been treated previously by a chiropractor. The knowledge score did significantly affect whether they had considered a career as a chiropractor ($p=0.008$). Those with higher knowledge scores were

more likely to consider a career as a chiropractor (mean score =45.96% compared with 40.69%).

Conclusion: This study has established a knowledge base that will facilitate greater understanding of the chiropractic profession for those learners who may be interested in a profession in the alternative health care industry, to join the chiropractic field as a learner with the intent to become a practitioner. These results therefore imply that information needs to be made more readily available for these learners.

Key words: knowledge, perceptions, learners, chiropractic and careers.

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CHAPTER ONE: INTRODUCTION

1.1 Introduction

A Grade 12 learner is a school learner who is in their final year of study in their academic career at school, where they are being taught, gain knowledge, experience and skills; prior to entering tertiary education of the working population / environment.

Therefore Grade 12 learners are required to be thinking of career options for their future and apply for such education / working positions. This requires that they make an informed decision about an area of their lives, which will affect them for the rest of their working lives.

The above presupposes that the schooling environment is supportive of this decision making process and that the learner is given the tools by which to make this informed decision about their future career. This support would help the learner in terms of providing the information that is necessary as well as access to the professions at career fairs / exhibitions or alternatively researching such professions through means of the internet or career guidance information provided to schools by the tertiary education institutions as well as professional associations and other work based learning / training companies (Lindhard, 1987).

These sources of information, in addition to the assistance from the CGC(s) (Van As, 2005) would be responsible in assisting the learner to gain knowledge about and formulate a perception of possible professions that they would like to pursue.

In this context knowledge is defined as a result or product of knowing; information or understanding acquired through experience; practical ability or skill (Crowther, 1997).

Perceptions are defined as the process by which people organize, select and interpret information to form a meaningful picture of the world (Chaffe, 1997).

Based on these definitions of knowledge and perceptions, it cannot be assumed that the learner necessarily sees the world as it is but rather as the information that they have available and therefore have assimilated (Kehoe, 2002 and Chaffe, 1997). Therefore the knowledge and perception of the learner with respect to chiropractic as a profession may differ vastly from the definition that has been ascribed to chiropractic by authors such as Haldemann (2000) and Gatterman as cited in WFC Identity Consultation: <http://www.wfc.org/doc>. These differences may be ascribed to amongst other factors as:

- Limited access to information (technological hindrances), socio-economic constraints of finance, language and geographic access to literature and / or proponents of the profession (Gale, 2005; Gaumer *et al*, 2002). Social considerations in terms of health care differences that have traditionally been associated with particular cultures may also limit access to practices outside of their culture (Dreyer, 2004).
- Limited exposure to chiropractic as a profession, that is by and larger a private health care provision (CASA, 2005) and therefore not exposed to the Grade 12 learner through the public health care sector (About South Africa > Health, 2006).
- Limited co-operation and interaction between chiropractic and other health care disciplines also limits the referral of Grade 12 learners to chiropractors, thereby decreasing their chances of exposure to the profession (Dreyer, 2004; Jamison, 1994).
- Parental influence may also be a limiting factor as most scholars are required to be treated as a minor in accordance with South African law

(Coovadia and Wittenberg, 2003). Therefore if parents have no or limited information about chiropractic, the chances of the scholar being exposed to chiropractic is diminished, as they are less likely to be taken to a chiropractor for assessment / treatment of their ailment (Sanchez, 1991).

- Lack of understanding of information provided due to the use of highly technical jargon (Barge, 2003).
- Lack of guidance by family, friends and / career guidance counselors, whose view is either limited to a stereotypical view of chiropractic as indicated by Coulter (1992) and Haldemann (2000) or completely non-existent or largely skewed (Van As, 2005).
- Limited tertiary education possibilities existed (Brantingham and Snyder, 1999) for chiropractic therefore limiting the exposure of Grade 12 learners to the likelihood of being exposed to the career option.

Based on the above constraints it is assumed that the Grade 12 learner has limited ability to make an informed choice about chiropractic as a future profession as the constraints seem to indicate that the information provided does not seem sufficient for an informed decision to be made. This however is an assumption as schooling has received increased funding from state and non-state organizations in order to allow for improved schooling facilities and therefore greater success in tertiary education and / or the workplace (Singh, 2005).

Thus this research was constructed in order to develop an understanding of the knowledge and perception of Chiropractic as a profession by Grade 12 learners in order to ascertain whether the above assumption stands firm or is flawed.

1.2 The problem statement

To determine the knowledge and perceptions of Grade 12 learners towards the chiropractic profession in the Durban Metropolitan Region.

1.3 Research Objectives

1. 3.1. To determine by means of a questionnaire a profile of Grade 12 learners with respect to demographic factors.
- 1.3.2. To determine by means of a questionnaire the level of knowledge of Grade 12 learners of chiropractic.
1. 3. 3. To determine by means of a questionnaire the perception of Grade 12 learners with respect to chiropractic.
1. 3. 4. To determine any statistical correlations between the demographic factors, knowledge of chiropractic and perceptions of chiropractic.

Hypothesis One:

There are no relationships between the demographic profile factors and the knowledge and perception of the grade 12 learner.

1. 4 Rationale for this study

1. 4. 1. Grade 12 learners will be thinking of career options for the future. This research was structured to assess how much Grade 12 learners know about and how they perceive the chiropractic profession which will indicate their level of knowledge and perceptions of the chiropractic profession.

1.4. 2. The perception of chiropractic amongst Grade 12 learners in Durban has not been researched and therefore the positive or negative effect on the learners regarding the perception of the profession can only be assumed.

1. 5 Delimitations

This study was limited to the secondary school Grade 12 learner, per randomly selected school, in the Durban Metropolitan Region. This type of recruitment for observation may have not fully represented the population group and may have lead to bias. It is inevitable that in any sampling process, no matter how carefully carried out, it will always result in a sample that is less than perfectly representative of the population (Dyer, 1997).

It is assumed that the responses to the questionnaires are open and honest and therefore reflect the current knowledge and perceptions about chiropractic, thus allowing the research to be the best approximation of knowledge and perception held by the Grade 12 learner in the sample.

This study was also limited to factors identified and noted as relevant by the focus group during the development of the questionnaire.

1.6 Conclusion

Several research studies have been initiated / completed at Durban University of Technology to assess the perceptions of various health professions perception of chiropractic for example Louw (2005), Hunter (2004) and Reubens (1996), in order to facilitate inter-professional relations.

However inter-professional relations mean very little if the profession has little scope for growth and development in the future and thus it has been noted that it is important to establish the perceptions and attitudes of non health persons and the impact these perceptions and attitudes have on the profession (Nelson, 1991). In this respect Van As (2005) completed a dissertation on the perceptions and attitudes of CGC in respect of chiropractic, to determine the extent to which CGC are able to guide learners towards the field of chiropractic. In congruence with this and on the recommendation of Van As (2005), this study therefore aimed to establish the perceptions and attitudes of Grade 12 learners in order to ascertain whether they are making informed or uninformed life changing decisions with respect to the applications to study or apply for working positions.

Furthermore this research was driven by the fact that at present, very little quantifiable information both in South Africa and globally is available on the younger generation's opinion and knowledge of the chiropractic profession. This is an area of concern as Grade 12 learners and the years of learners that follow them are potentially the future chiropractors in South Africa. They indirectly determine the future of the chiropractic profession. Thus this study was structured to shed light on the knowledge and perception amongst Grade 12 learners about the chiropractic profession in South Africa.

Therefore chapter two established what literature is available with respect to knowledge and perceptions and how these are affected as well as the context of the Grade 12 learner and how these factors influence them. Chapter three presents the materials and methods of this study and chapters four and five will highlight the results and discussion respectively with chapter six concluding the findings and suggesting recommendations.

CHAPTER TWO: REVIEW OF THE RELATED LITERATURE

Introduction

Chapter two establishes what literature is available with respect to knowledge and perceptions and how these are affected, as well as the context of the Grade 12 learner and how these factors influence them.

The Grade 12 learner and their career choices

A Grade 12 learner or matriculant is a school learner who is in their final year of study in their academic career at school, where they are being taught, gain knowledge, experience and skills; prior to entering tertiary education or the working population / environment (Crowther, 1997).

Based on the transition that the Grade 12 learners will be undergoing at the end of their academic year, they will be thinking of career / tertiary education options for the future and will need to make an informed decision that will have an affect on the rest of their lives (David, 2005). This final decision should come at an age of seventeen / eighteen for most young people. At that time, they should be able to combine the knowledge of their interests, abilities, values and opportunities with their self-knowledge: performance, personality and potential, and the amount of career information they have gathered, in order to realise a realistic and realisable career choice for themselves (Lindhard, 1987).

Therefore it follows that as the choice of a career is for many people a lifetime occupation, a responsible and accountable choice at school of an occupation or a field of study is imperative. There are several factors that mould this process and these factors are embedded in the character of careers and the character of choice as presented by Lindhard (1987), as follows:

- a) Careers choice begins at the age of four.
- b) Careers choice is an activity which may stretch over more than sixty years.
- c) Careers choice involves frequent decisions, as people are now mandated to change their jobs often.
- d) Careers choice involves education, training and retraining.
- e) The character of work will change over time.
- f) There will be permanent unemployment if changes in careers are not addressed.

Based on these factors it becomes evident that the nature of a career has changed from being one of the very stable aspects of life to becoming as changeable and uncertain as modern life is to us all (Lindhard, 1987). Thus it becomes incumbent on the learner to be adaptable and flexible in their approach to career choice (Gerler, 1991). However in a practical educational situation, every learner must then also receive education in accordance with their specific ability, and every learner should have the right to choose subjects and a field of study suited to their personal ability, skill and interest (Haasbroek, et. al. 1978). In order to effectively achieve this, learners thus need to know what skills, talents and qualifications are required for the career they wish to pursue (Haverly, 1998). It has however been assumed that learners are exposed to these educational and occupational matters at school and that the orientation of learners with respect to their individual potential has been maximised within the schooling system in order to enable them to choose fields of study that will correspond with wider occupational fields and that will serve as a meaningful introduction for a reasonable future choice of an occupation for them (Zunker, 2002).

It is in this respect that the knowledge and perception of varying career options by Grade 12 learners becomes vitally important (Haasbroek, et. al. 1978), where perception is the process by which people select, organize, and interpret information to form a meaningful picture of the world (Chaffe, 1997).

On the other hand knowledge is defined in the Oxford Paperback Dictionary and Thesaurus by Crowther (1997) as awareness or familiarity; a person's range of information, understanding (of the subject); information; and sum of what is known. Knowledge is thus

seen as the awareness and understanding of facts, truths or information gained in the form of experience or learning. Both knowledge and information has a purpose or use (<http://encyclopedia.laborlawtalk.com/Knowledge>) and when one applies a common definition that alludes to knowledge, it is defined as “justified true belief”. (<http://encyclopedia.laborlawtalk.com/Knowledge>).

Chiropractic and the Grade 12 learner

With respect to the Chiropractic profession, it is defined by the World Federation of Chiropractic (2001) as:

“A health care 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. (<http://www.chiropractic.co.za>).

With respect to the above definition of chiropractic several research studies have been completed at Durban University of Technology, where these have assessed the perceptions and knowledge of chiropractic by various health professions, in order to facilitate inter - professional relations. For example:

- Reubens (1996) looked at neurologists, neurosurgeons and orthopaedic surgeons,
- Hunter (2004) looked at physiotherapists and
- Louw (2005) looked at GP's.

The above studies showed that there was either a lack of understanding regarding chiropractic or if there is an understanding, it is limited in terms of the understood scope of practice. The perception of chiropractors as back specialists is evident in the research conducted by Hunter (2004), Reubens (1996) and Louw (2005).

However inter-professional relations mean very little if the profession has little scope for growth and development in the future and thus it has been noted that it is important to establish the perceptions and attitudes of non health persons and the impact these perceptions and attitudes have on the profession (Sanchez, 1991). In this respect Van As (2005) completed a dissertation on the perceptions and attitudes of counsellors in respect of chiropractic, to determine the extent to which counsellors are able to guide learners towards the field of chiropractic. The results achieved by Van As (2005) indicate that there is still a lack of awareness amongst CGC about the scope of practice of the chiropractic profession and there is a limited perception that chiropractors are back pain specialists. This study by Van As (2005) has shed light on the limitation of knowledge and perception amongst CGC about the chiropractic profession.

Thus based on the outcomes of the studies cited above [Van As (2005), Reubens (1996), Louw (2005) and Hunter (2004)] it would seem that there is a general trend towards a low level of understanding of the chiropractic profession within the confines of South Africa.

It is however interesting to note that the results obtained in the studies discussed above are not markedly different from those found internationally. In a study by Gaumer et al. (2002), most public consumers (in the USA) and other potential consumers view chiropractors as back specialists only (Gaumer et. al. 2002). Consumer perceptions of chiropractors as neuromusculoskeletal system specialists are a persistent barrier to expanding status (Gaumer et. al. 2002).

Greater awareness appears to be associated with increased levels of interprofessional acceptance and respect (Langworthy and Smink, 2000). With increasing emphasis on multidisciplinary health care, greater understanding and better communication is needed to optimize the benefits to patient management (Langworthy and Birkelid, 2001).

However, due to the unique nature of the Grade 12 learner, who is not exposed to the working world and who may not have access to information (as is seen in rural South African environments) as readily and is reliant on CGC for the majority of their information sources

(Van As, 2005), it cannot be assumed that their knowledge and perception will be similar to the general population findings [Van As (2005), Louw (2005), Hunter (2004), Reubens (1996), Langworthy and Smink (2000) and Langworthy and Birkfield (2001)].

Effect of knowledge and perception on the Grade 12 learner

Notwithstanding the lack of exposure to the working world and lack of access to information (Van As, 2005), the Grade 12 learner is still obliged to choose a career / learning path at the end of his / her schooling in order to attain viability in the adult world and to be able to sustain themselves in the future. This choice is influenced by what the Grade 12 learner knows and perceives at the time that the choice is to be made. This perception and level of knowledge are influenced by a number of factors (Gaumer, 2002), which will be discussed below:

1. Personal factors as they relate to the Grade 12 learner,
2. Schooling environment,
3. Medicine and its advances within the South African context,
4. Socio-economic conditions prevalent in South Africa, with respect to the general public,
5. History of Chiropractic and current professional standing,
6. Chiropractic education in South Africa,
7. Accessibility barriers,
8. Legal barriers and
9. Consumer preference and demand barriers.

To further elaborate on these factors, the following sections are dedicated to the 9 factors identified above.

1. Personal factors as they relate to the Grade 12 learner

A career choice is a search for work satisfaction. It requires a decision about the needs that must be satisfied by the job, such as good pay, helping people or intellectual work (Lindhard, 1987).

However these ideals are clouded by amongst other factors, the requirements for the course the Grade 12 learners want to choose.

Young people have little power or experience and limited knowledge, yet making decisions is a crucial part of their transition to adulthood. They need guidance, skills, and enough space to develop and acquire knowledge based on their own experiences. The decisions made in adolescence hold important and often irreversible consequences for occupational and social status in adulthood (Haverly, 1998).

Another factor that affects career choice is the competition for tertiary places together with a rise in the number of young people staying on at school because they are unable to make the required grades needed to progress into tertiary level and, due to declining employment opportunities which can produce more pressure on adolescents to compete with peers and achieve at school. The stakes for academic failure are higher than before, and doubts concerning the ability to attain career goals can generate substantial distress. (McNamara, 2000)

2. Schooling environment

We know that each individual has his or her own idiosyncratic pathway through adolescence, balancing the pressures of the external world with the influences of the past and present experience, and that throughout, the issue is how to live, how to develop and give expression to potentiality and how to be assertive and establish dignity and self- worth (Rice, 2002). Yet amid this turmoil, young people themselves know what it is that can make for a good life (Shertzer, 1981).

In this respect, stimulating school experiences count a great deal, as do supportive families, but, perhaps most important of all, are friends. For those less sure of their abilities, there is a great sense of pressure and distress, which, in varying degrees, is an inherent part of the developmental process. The strain of exams, the expectations of parents and the tensions of friendships all add to a sense of inevitable conflict and dissatisfaction, (Gordon and Grant, 1997). However these sources of support are also valuable sources of information and reference at that point in time when the Grade 12 learner is required to make a career choice.

One of the main 'tasks' for teenagers is to acquire an education, and, for most, this will happen in schools. Because parents and guardians of children are legally obliged to ensure this education is provided, young people have, in fact, little choice in the matter (Dusek, 1987). As adolescence, in particular, is a time when young people want to assert their free will and decision making capabilities, tensions may arise (Gordon and Grant, 1997). This assertiveness however will affect their career choices, in that the decisions they make during this time will be a developing process of their future.

The attitudes and actions of teachers in the classroom are a strong influence on how Grade 12 learners achieve in school (Rutter, 1983). When those in authority give praise, children/learners feel confident and good about themselves and enjoy what they are doing. However, much less attention has been paid to children's views (Dusek, 1987). One reason for this is that children have traditionally been seen only as adults in the making rather than as people in their own right, with their own feelings and views which make sense to them. In recent years, though, these ideas have started to change. We now recognise that children have the right to information and choices about issues that effect their lives and this has led to legal changes such as the Children Act, which places emphasis on children's and young people's views. (About South Africa > Health, 2006). This makes children more aware that they are capable of making their own choices in life, as well as career choice.

3. Medicine and its advances within the South African context

In addition most people would probably agree that the advances made in medical science are amongst the greatest achievements of the past fifty years (About South Africa > Health, 2006). A great deal is now known about the causes of ill-health and ways of treating it and we all benefit from this increase in knowledge (Haldeman, 2000). However, just as many medical treatments have side effects with which we have to cope; this increase in knowledge has had its own side effects. In particular, as medical and psychological knowledge has grown, we have become increasingly dependent on doctors and other professionals to help us in times of ill-health and to advise us about looking after our health (Hupkes, 1990). In turn, this means that professional views about what it means to be ill or healthy have come to dominate. Clearly, these views are valuable and important, but they are only one way of looking at health and ill-health (About South Africa > Health, 2006). These views on health care will encourage a Grade 12 learner to be part of the health care system, thus focusing their career choices towards health care.

A crisis in the delivery system has resulted from confounding factors, which include but are not limited to: a shortage of resources, the high cost of health care, a lack of interprofessional cooperation, and the under- utilization of more cost effective treatment (Hupkes, 1990).

4. Socio-economic conditions prevalent in South Africa, with respect to the general population and hence learners

An understanding of this factor is important as the socioeconomic circumstances surrounding health care in South Africa could influence Grade 12 learner's knowledge and perceptions of chiropractic.

According to Gale (2005) in *Transition from high school to college*, the economic status of an individual and the accessibility of health care infrastructure influence the exposure to various healthcare options and thus the attitude and understanding of those occupations. A limited access to information for example internet, TV and computers will also limit exposure to

various healthcare options. High levels of poverty and unemployment make it difficult for most people to pay for health services in South Africa (About South Africa> Health, 2006).

Since most chiropractors are in private practice in South Africa, Chiropractic care is unaffordable to the majority of the population of South Africa. South Africa's health system consists of a large public sector and a smaller but fast- growing private sector. Health care varies from basic primary health care, offered free by the state, to highly specialized technological health services available in the private sector for those who can afford it (About South Africa> Health, 2006). Thus, there is a polarization of the population in respect of their access to either side of the health care scale. The perception of the individual within that population will no doubt be biased or skewed in terms of the experiences associated with their point of entry into the health care system. This will affect one's career choice in health care with respect to the point of entry into health care system and it will be based on their personal experiences according to their entry point.

All medical aids provide reimbursement for Chiropractic care, most chiropractors in South Africa work in the private sector (CASA, 2005), which caters for middle and high income earners who tend to be members of medical schemes (18 % of the population) (About South Africa> Health, 2006). However, it depends on each person's payment plan as to the extent to which they are covered. There are currently about 200 Medical Aid Schemes, most of which (about 98 %) cover chiropractic care in part or in whole.

However, high levels of poverty (71 % in rural areas and 50 % overall) and unemployment (at least 38 %) make it difficult for most people to belong to a medical aid scheme or pay for health services in South Africa (About South Africa> Health, 2006). Majority of the South African population don't have medical aid therefore a large number of people are not even exposed to chiropractic due to affordability issues. Decreased exposure will result in fewer Grade 12 learners knowing of chiropractic, thus decreasing the number of Grade 12 learners wanting to choose chiropractic as a career option.

Since 1994, Chiropractic care has been covered by Workman's Compensation also known as Compensation for Occupational Injury and Disease (COIDS). Therefore any injury which

occurs whilst on duty may be treated by a Chiropractor without referral from another physician. All costs including X-rays, if necessary, will be reimbursed by COIDS (CASA, 2005). This allows for more people including the general public to become aware of chiropractic, and this awareness can spread to many other people including Grade 12 learners, thus making them know what chiropractic is about and whether they will choose it as a future career choice.

Therefore, it would be reasonable to conclude that since most chiropractors are in private practice in South Africa, chiropractic care is unaffordable to the majority of the population (which could include a large portion of Grade 12 learners) in South Africa.

Race and ethnicity are associated with consistent patterns of health services use and health outcomes, with minority groups frequently experiencing a substantial disadvantage. Noting the substantial economic differences between various racial and ethnic groups, income and health insurance coverage are frequently cited as potential explanations for these disparities (Van As, 2005). However, a growing body of research has demonstrated that these racial and ethnic differences persist even when differences in income and health insurance are held constant (About South Africa> Health, 2006). Previously disadvantaged individuals were / are not fully exposed to chiropractic therefore their choice of career regarding chiropractic will be clouded based economic differences.

5. History of Chiropractic and current professional standing

Chiropractic has a very long history dating back to 1895 when the first official manipulation / adjustment were given (CASA, 2005). Since its inception, Chiropractic has risen to become the third most used primary health care profession in the world after medicine and dentistry (CASA, 2005).

Since the inception of chiropractic over a century ago, various tenets of the profession have been questioned at length by other highly influential groups, most importantly medicine and sociology (Coulter, 1992 and Wardwell, 1994). Allopathic medicine, in particular has viewed

chiropractic with deep suspicion and concern (Curtis and Bove, 1992). Chiropractic was condemned, particularly because it lacked the scientific evidence to substantiate its claims (Curtis and Bove, 1992). However over approximately the last 30 years, chiropractic has become more accepted, and as a result all aspects of the profession are under continuous evaluation (Wardwell 1994). According to Coulter (1992:53-59), chiropractic has gained widespread social acceptance among the allopathic/ healthcare fraternity, and it is viewed as an alternative form of health care, or in some cases as a speciality.

Haldeman (2002) refers to the chiropractic profession as having now come to a crossroads between alternative and mainstream medicine. Although the biomedical paradigm has not fully accepted chiropractic as a mainstream form of health care, the next decade and the next generation should determine whether chiropractic maintains the trappings of an alternative health care profession or whether it becomes fully integrated into all health care systems.

But this cannot presuppose that the influence on the Grade 12 learners has been great. Grade 12 learners may have a low level of knowledge and a negative perception of the chiropractic profession due to the propaganda of highly influential groups to discredit and destroy chiropractic (CASA, 2005) and that there was no scientific evidence to substantiate the claims made by the chiropractic profession in the past (Brantingham and Snyder, 1999). This has however changed, as much chiropractic related research is published in more multidisciplinary/ mainstream publications (Langworthy and Smink, 2000) and the reading of such journals may be one way of increasing the awareness of chiropractic amongst Grade 12 learners in South Africa. However, the perceptions may still exist due to the scientific publications (Wardwell, 1994) not being read by the public at large in South Africa, misinformation or misinterpretation of the information or limited understanding of the same information. These misconceptions would affect career choice in that Grade 12 learners would be confused about the actual position of chiropractic in the health care system.

Chiropractic's acceptance within the health care system and its recognition as a unique profession has largely paralleled its successful management of musculoskeletal pain (Haldeman, 2000). However in some countries (for example Netherlands) it can be found that

better awareness education of what the chiropractic profession involves may be beneficial, as 'greater awareness appears to be associated with increased levels of professional acceptance and respect' (Langworthy and Smink, 2000). Thus, increased professional acceptance would mean that more people would be aware of chiropractic and hence Grade 12 learners would understand chiropractic more, making it a possible career choice.

6. Chiropractic education in South Africa

The first Chiropractic learners were accepted into Technikon Natal in 1989 (Till, 1997); therefore the profession has had less than twenty years to establish itself against mainstream medicine as an alternative health profession in South Africa. Therefore, before 1989, the public interested in studying chiropractic had to enrol in college's overseas (Brantingham and Snyder, 1999). Hence, the public and school learners may still be of the understanding that this is the status quo. This misinformation of the learners would reduce the acceptance of Chiropractic as an option of study within South Africa, as the learners would not be aware of the chiropractic courses available. The perception that chiropractic training is not offered in South Africa may contribute towards a lack interest and therefore also a lack of knowledge about the profession.

Learners need to be aware that the chiropractic course is available at Durban University of Technology and University of Johannesburg in South Africa (Boshoff, 2006). Education and training is spread over six years, after which a Masters Degree in Chiropractic is awarded. On the other hand those Grade 12 learners who know that chiropractic is offered at the Durban University of Technology and University of Johannesburg may have limited understanding of the chiropractic programmes at these institutions, this limited understanding would affect the Grade 12 learners career choice in that they would not know enough about the chiropractic programmes offered to make a career choice.

The first two years include a solid grounding in the general sciences after which time students are introduced to the clinically orientated subjects. At the end of the 4th year as well as in the 5th year, students are required to write and present a research project and

dissertation. In addition to the academic component, the fifth year learners receive training in the Chiropractic Day Clinic treating patients and thereby gaining experience. In the 6th year each student is required to take part in an internship, which includes a variety of practical applications in both the public and private sector. The final two years of the programme emphasize the holistic nature of the profession with particular attention to neuromusculoskeletal disorders (Faculty of Health, Department of Chiropractic, 2006).

Limited understanding of the entrance requirements of the chiropractic programmes at these institutions will influence the knowledge of Grade 12 learners towards the chiropractic course offered. This limited understanding would also affect career choice, as Grade 12 learners would not know the requirements they need to attain for the chiropractic course. Van As (2005) found very little knowledge or understanding of what chiropractic is at level of the CGC. If these counsellors have no or limited understanding how would students or scholars be encouraged to take up chiropractic as a profession. The entrance requirements include (Faculty of Health Sciences, 2006):

- Applicants must be over 17 years of age
- Physically fit and
- In possession of a senior certificate with matriculation exemption. Subjects must include Mathematics, Physical Science and/ or Biology (Faculty of Health Sciences, 2006)

However in the light of the growth, which has been slow and arduous, in chiropractic since the inception of the training institutions, it is also conceivable that there is increased exposure of chiropractic to the public, in that in theory there are more practitioners available to educate them. Increased education by chiropractic of the general public will allow for a greater understanding and knowledge, making chiropractic a career option for Grade 12 learners who will be thinking of careers for their future.

This is however contrasted when one assesses and compares the training programme at Durban University of Technology (DUT) to the University of KwaZulu Natal (UKZN) Medical School:

- The total number of applicants for UKZN Medical School has increased steadily in the past seven years. The number of applications for the MBCHB qualification in 1999 was 1448 and this figure rose to 2963 for the year 2006 (Vawda, 2006). However only 300 applicants are accepted per year into medical school (about 10% of application pool).
- The total number of applications for chiropractic only achieved around 300 applications in 2003 and about 420 applications in 2006 at DUT (Boshoff, 2006), with only 40 applicants being accepted (about 10% of application pool). However it must be noted that the applications may also be reflective of the percentage or number of people accepted, in that in both UKZN Medical School and DUT only 10% of applicants are being selected into the respective courses irrespective of the total number of initial applicants.

Thus it could be argued that even though there has been an increase in the number of practitioners over the time since the inception of the programme, these increased numbers have not been associated with a significant increase in the number of applications over the corresponding period. In addition, these statistics also lend credence to the fact that even with increased scientific validation; this information is not being translated into public knowledge. Thus, limiting the number of Grade 12 learners wanting join the chiropractic profession possibly due to information about chiropractic not being translated to them.

In this respect it must be seen that Chiropractic could be a good alternative to those learners who would like a career in the health care profession as primary contact practitioners. However, according to the trends discussed above, it would seem that learners are moving in the direction of mainstream medicine for a variety of reasons related or unrelated to the Chiropractic Profession as a whole. If learners were more aware of the chiropractic profession, then they will also be aware of other alternatives to mainstream medicine so the use of chiropractic in South Africa could become more widespread. Greater awareness of the chiropractic profession could then encourage more Grade 12 learners to consider chiropractic as a career option as opposed to mainstream medicine.

Gesler (1998) therefore states that chiropractic can be evaluated and investigated from medical, economic, social, cultural and geographic perspectives. As a result there is widespread debate and research into public utilization of chiropractic, its scope of practice, therapeutic efficacy and relations with other professions. Overlap between these perspectives occurs. However, chiropractic has become more accepted, and as a result, all aspects of the profession are under continuous evaluation (Wardwell, 1994). Nevertheless Haldeman (2002) refers to the chiropractic profession as having now come to a crossroads between alternative and mainstream medicine. Although the biomedical paradigm has not fully accepted chiropractic as a mainstream form of health care, the next decade should determine whether chiropractic maintains the trappings of an alternative health care profession or becomes fully integrated into all health care systems. It is thus important to repeat attitudes, views and perceptual studies in as many different contexts (Langworthy and Smink, 2000) as possible, as each country will vary considerably in its culture, health care delivery scheme, education of health care professionals, and interprofessional reactions (Hupkes, 1990). Repeating these studies will also help to educate the public about chiropractic. It will increase their exposure to / of chiropractic and for those that will be interested, and these studies will encourage them to gain further understanding of chiropractic.

This is particularly true in the South African context where training chiropractors are recruited from the school leaving population. The reference being that these scholars have been exposed to and understand the chiropractic profession. This does not seem likely, therefore it is important to establish the views of this future generation as their knowledge and perceptions will influence the future growth and development of chiropractic in South Africa. Lack of information about many opportunities available for persons who have reached a certain level of education is often a limitation of choice (Lindhard, 1987). This becomes problematic when one realizes that the choice of vocation is one of the most important choices that the learner has to make (Rice, 2002), as this career choice then becomes their future.

7. Accessibility barriers

Lack of affordability and accessibility will influence Grade 12 learner's knowledge of chiropractic care. Difficulty in accessing primary care in many locations may stem from shortages of providers in these areas (Gaumer et. al. 2002). Chiropractic services are not offered in hospital settings which are seen as the most accessible healthcare centres. This limited access to health care providers can be a barrier to expanded roles for chiropractors in places where there may be opportunity created due to poor access to medical doctors (Gaumer et al. 2002). Since most chiropractors in South Africa work in urban areas (CASA, 2005) lack of accessibility in rural parts of the country will influence the rural knowledge of chiropractic. Van As (2005) states that knowledge and awareness can be improved upon through advertising in the media for those individuals who lack access to chiropractic care. It is estimated that only 1% of the black population and only 10% of the white population, have any notion of what chiropractic is (www.chiroweb.com/worldnews-chiropracticinSouthAfrica, 2004). In this respect Louw (2005) stated that GP's felt that less than 15% of their patients and less than 15% of the South African population regularly saw chiropractors. There are about 200000 traditional healers in South Africa and about 80% of Africans use traditional medicines (About South Africa>Health, 2006). They are the first health care providers to be consulted in up to 80% of the cases (Dreyer, 2004). This high percentage of use of another, although complementary medical profession, would limit the need of these patients to source another health care professional for care. This would by default not expose these patients to the option of chiropractic care. This decrease in exposure of chiropractic care would not allow many to be aware of chiropractic and for those Grade 12 learners thinking of joining health care as a career option it would also limit their understanding and knowledge of chiropractic and thus not allowing them to choose chiropractic as a career option.

8. Legal barriers

A Grade 12 learner by law is considered a minor and therefore consent and the presence of a parent/ guardian is required for treatment. It is imperative that a written consent be obtained prior to treatment or care being rendered to a minor. The consent obtained from the

legal guardian of the patient must contain the same pre- requisites of the consent obtained in all other cases, i.e. informed and voluntary (Chiropractic Clinic Manual, 2007). The practitioner cannot merely rely upon a signed statement, as being an indication of the giving of consent; as such consent is not necessarily informed. The medical history is generally obtained indirectly from the parent and the medical examination is always performed while the parent is present (Coovadia and Wittenberg, 2003).

In certain schools where nurses/ doctors are present consent is given by the parents to treat their children if the need arises (About South Africa > Health, 2006). Exposure to healthcare options is governed by their parent's choice of treatment options. A minor of 14 is competent to consent independently to medical treatment (which would include therapeutic research), but not to non- therapeutic research. A minor must be at least 18 years to be able to do so. Proxy consent can be secured for the participation of minors under 18 in non-therapeutic research only if they assent, if their participation in the research is indispensable and the research carries no more than negligible risk. The law is reasonably tolerant as far as treatments on adults are concerned. The legal limits within which treatment on children, especially children of tender years, may take place are, however, far stricter (Mangione-Smith, et al. 2004).

The parent taking their sick child to the health professional expects help with the physical symptoms and problems that their child is experiencing. The medical practitioner who goes beyond these limits is liable to be attacked for legal indecorum (Coovadia and Wittenberg, 2003). Medical practitioners involved in paediatric research in the United Kingdom are concerned about the lack of certainty in the law, particularly on the application of consent rules to emergency treatment (About South Africa> Health, 2006).

Much of the business of children's medicine is inevitably conducted between parent and doctor. The contact between the parent and the chiropractor could limit the interaction between the chiropractor and the child, thus limiting the knowledge of chiropractic that should be passed on to the child. This lack or decrease in knowledge could further decrease interest for children to want to study chiropractic or pursue a career in it.

9. Consumer preference and demand barriers

Consumer preference is a primary driving force in the demand for chiropractic services and the potential for chiropractors to serve in primary care roles (Gaumer et. al 2002). This is however limited by the geographic location as well as the number of practitioners as both of these factors (decrease number of practitioners and decrease geographic location) negatively influence exposure and thus knowledge/ perception. The Allied Health Professions Council of South Africa (2006) stated that there are about 400 practicing chiropractors in South Africa and an estimated 2200 chiropractors are needed in the country. With so few practicing chiropractors in a population of over 45 million people, there is approximately one chiropractor to every 120 000 people in South Africa today. Gaps in the public knowledge have translated into non-utilization (Sanchez, 1991). This follows that the more unclear public understanding of the professions' scope of treatment is, the more likely they are not to identify a condition as one that can be treated by chiropractic (Sanchez, 1991).

Complementary medicine has been defined as that which works alongside and together with orthodox medicine (Langworthy and Birkelid, 2001). Patient use of and demand for complementary practitioners including chiropractors, have continued to increase over the last decade or so. Many patients are drawn towards complementary medicine because of its focus on holistic care, together with patient responsibility for health and well-being (Verhoef and Page, 1996). Of all the complementary and alternative medical therapies, chiropractic is the most used (Sherman, et al. 2004). It was also found that many patients with back pain especially, would be willing to try specific complementary and alternative medical therapies, especially if they thought them to be very useful (Sherman, et al. 2004). As a result an increasing number of Americans each year are seeking chiropractic care for their back problems (Eisenberg et al. 1998). Therefore it would seem that people with high expectations of the usefulness of chiropractic also have a high knowledge of chiropractic (Louw, 2005).

Many GP's are more comfortable referring to physiotherapists because they feel they have a better understanding and possibly experience of the treatment involved (Breen, et al. 2000). Even though chiropractic is a popular health care option in many countries, organised medicine remains sceptical of this health profession (Jamison, 1994). Majority of the public still consult GP's and physiotherapists even though chiropractic care is available. People are generally less aware of chiropractic as opposed to medicine and physiotherapy, therefore if considering a career in health care, medicine and physiotherapy would probably be first options, limiting chiropractic as a career option.

Summary

It could be stated that the general public as well as Grade 12 learners' perception and knowledge of the scope of chiropractic practice would have been influenced by personal factors, schooling environment, medicine, socio-economic conditions, chiropractic education in South Africa, history of chiropractic, the accessibility or geographic location of chiropractors, legal barriers as well as consumer preference and demand barriers.

Thus, it could be stated that the knowledge and perceptions of Grade 12 learners could be limited, incomplete, complete or biased based on each students/learners exposure to the various factors that have been discussed in this chapter.

In addition a review of the literature that does exist, a number of studies exploring the relationship between chiropractic, the public, and other health care professions (Reubens, 1996; Hunter, 2004; Louw, 2005; Van As, 2005 and Kew, 2006) reveal that there is either a lack of understanding regarding chiropractic or if there is an understanding, it is limited in terms of the understood scope of practice. Thus the current trends in the literature would mitigate against the development of an interactive milieu of cooperation between the public and chiropractors, based on the evidence suggesting limited or no understanding of chiropractic within the health care sector (Reubens, 1996; Hunter, 2004 and Louw, 2005).

At present, very little quantifiable information both in South Africa and globally on the younger generation's opinion and knowledge of the chiropractic profession exists, and no studies have determined the knowledge and perceptions of Grade 12 learners with regard to the chiropractic profession in South Africa. Grade 12 learners and the years of learners that follow them are the majority of the future chiropractors in South Africa. They indirectly determine the future of the chiropractic profession.

Therefore this research aims to establish the knowledge and perceptions of Grade 12 learners on the chiropractic profession.

CHAPTER THREE: METHODOLOGY

3.1 Introduction

This chapter covers the study design, methodology used, sampling procedures employed, inclusion and exclusion criteria, methods employed and data analysis.

3.2 Study Design

A population- based demographic study on Grade 12 learners' perceptions and knowledge with respect to the chiropractic profession in the Durban Region was conducted at 20 secondary schools. Therefore this study was a knowledge and perception survey (Wisker, 2001), quantitative in nature, and made use of a structured questionnaire (Appendix F) to collect data. A descriptive design was utilized in a quantitative questionnaire in order to evaluate in a structured manner the knowledge and perceptions of Grade 12 learners with respect to chiropractic (Wisker, 2001 and Dyer, 1997). In general, questionnaires are a good source of information, provided that the questionnaire has been proven reliable and valid (Mouton, 1996)

The study in its current design was approved by the Faculty of Health Sciences Research and Ethics Committee and fulfills the requirements of the Declaration of Helsinki 1975.

3.3 Methodology

Survey research is a way of collecting information from a large and dispersed group of people (Dyer, 1997). Thus the primary data for this research was collected by means of a questionnaire based upon previously published work (Fowler, 1995) and questionnaires from theses completed at Technikon Natal / Durban Institute of Technology / Durban University of Technology (Reubens, 1996; Hunter, 2004; Louw, 2005; Van As, 2005).

Grade 12 learners were targeted because they are a section of the general public, and because they are the future wave of health consumers and potential chiropractors. An increase in the level of awareness amongst Grade 12 learners of chiropractic as a complementary medical practice and as a possible career choice will be of benefit to the future of chiropractic in South Africa.

3. 4 Advertising/ Permission

No advertising was used by the researcher, as respondents were identified by means of the stated sampling procedure below. However permission for the conducting of the research at the school premises had to be obtained from the school head / Principal (Appendix A and B).

3. 5 Sampling procedure

3. 5. 1 School sampling

A list of secondary schools around Durban was obtained from the Department of Education, KwaZulu Natal. The schools were separated into their three respective educational districts. The sample was proportional to the size of the population of secondary schools in each educational district. Fifteen percent of the schools from each district were chosen and a list of 20 secondary schools was compiled. Twenty secondary schools were selected by means of stratified sampling (Mouton, 1996). The sampling procedure was as follows:

<i>DISTRICT</i>	<i>POPULATION OF SCHOOLS</i>	<i>SAMPLE OF SCHOOLS</i>
Umlazi	90	10
Pinetown	55	9
Ilembe	10	1
	155	20
	Total no. school	Total sample of schools

3. 5. 2 Participant Sampling

a) Sample size

All the schools on the list (i.e. referring to the table above) ($n_1 = 20$) were visited by the researcher.

b) Procedure

Permission to conduct the study at the school was obtained from the school head by the researcher (Appendix A and B) and the most available class at the school was chosen. This was done by convenience sampling (Mouton, 1996). The questionnaire (Appendix F) and the letter of information and explanation (Appendix C and D) were given out to the learners of the class that was chosen. This represented approximately 15% of the total school population enabling accurate statistical analysis of the results (Mouton, 1996; Hunter, 2004, Esterhuizen, 2007).

Utilizing the above procedure, a sample size of six hundred learners ($n_2 = 600$), in all twenty schools of the three educational districts, was obtained. The average number of respondents per school was approximately 30 learners.

c) Allocation

All respondents were allocated to one group with subgroup analysis being utilized for statistical analysis only.

d) Method

Total population ($n_2 = 600$) was affected by the researcher according to Mouton (1996) through a process of stratified sampling of 20 secondary schools.

3. 6 Inclusion and Exclusion criteria

Sample characteristics:

The secondary schools were incorporated into the sample provided they fitted the inclusion and exclusion criteria:

3. 6. 1. 1 Inclusion criteria:

1. The secondary school had to fall under one of the three educational districts which were Umlazi, Pinetown, Ilembe (Singh, 2005).
2. English had to be the first language at the school because no validation of the questionnaire in the Zulu / Afrikaans contexts were previously completed for the questionnaire, so comparable Zulu / Afrikaans translations were not available for use in this study. The most important concepts associated with the use of questionnaires in different languages is that of face validity, which may be lost when a questionnaire is translated, as the questions themselves might not be understood, thus errors could be introduced into the results (Hunter, 2004). With translation, or adaptation of a questionnaire there are inherent problems (Scollen and Scollen, 1995). Even if words are translated accurately, the meaning of a phrase or combination of words may be unclear, as meaning is not only determined by words or phrases, but also in their interpretation by others from different cultures, backgrounds and language capabilities (Scollen and Scollen, 1995). This is because when words are taken out of context they will lose their meaning (Baynham, 1995). This therefore also affects concurrent validity which minimizes the ability of the researcher to draw conclusions of a similar nature between two questionnaires that are only different with respect to their language.

Grade 12 learners were incorporated into the sample provided they fitted the inclusion and exclusion criteria:

3. 6. 2. 1 Inclusion criteria:

1. They had to be registered with the secondary school in the Durban Region.
2. They had to be residents of the Republic of South Africa.
3. The questionnaire was returned with the relevant information completed; the questionnaire was included in the sample.
4. Non respondents and incomplete questionnaires needed to be included in order to determine response rate, but data was not be analyzed.

3. 6. 2. 2 Exclusion criteria:

1. Not willing/ no informed consent obtained/ no assent obtained.

3. 7 Method of distribution/ Method of data collection

The questionnaire was distributed by the researcher to the stratified sample of 20 secondary schools ($n_1 = 20$ out of a population size $n_1 = 155$), divided into three educational districts, in order to ensure that all parts of the Durban Region were included (Hawk and Dusio, 1995).

Each selected head master of the secondary school received a cover letter of explanation and introduction (Appendix A and B).

Once permission had been granted, all Grade 12 learners received the letter of information (Appendix C), the questionnaire (Appendix F), instructions to the questionnaire (Appendix D), as well as the letter for informed consent (Appendix L).

To have ensured maximum compliance from the respondents by making the return of the questionnaires as simple as possible, the researcher collected the questionnaire once it had been completed by the learners on the day.

The researcher and the sample population met only once in the design of this study. This was at the outset when the researcher met with the students at the time when the questionnaires were handed out. This single meeting ensured that the study was statistically viable, in that all concerns, questions and areas where there was a lack of clarity for the respondents could be addressed. Generally however, surveys that used advance notices had higher response rates than those that did not use advance notices (Russell, et al. 2004); therefore if an advance notice was sent to the sample group, followed by the questionnaire, the response rate would have been higher according to the study by Russell et al. (2004). It will however only be apparent at the end of this study as to whether this lack of interaction had any affect on the response rate for this study.

It was requested that no names or any other form of identification was present on the questions (and it was requested that the respondents not place any identifying data on the questionnaire) to maintain the anonymous nature of the questionnaires and confidentiality of the subjects.

3. 8. Questionnaire Background and Design

Literature consulted with regard to the formulation of the research and design of the questionnaire included: Oppenheim (1992), which provided important insight into the design of descriptive surveys, the designing of attitude statements and data processing and statistical analysis; and Mouton and Marais (1990) which assisted with research design.

Existing questionnaires were used to assist in the formulation of questions (Fowler, 1995; Reubens, 1996; Hunter, 2004; Louw, 2005 and Van As, 2005), particularly those in Louw (2005) where perceptions and knowledge of general practitioners amongst chiropractors were measured; Van As (2005) where knowledge and perceptions of vocational counsellors with respect to chiropractic. Permission for the use of an existing questionnaire was obtained from Van As (2005) (Appendix P).

The questionnaire used in the study was then modified to suit the 'lay- persons' in the South African context. This was done by using simple language rather than highly confusing medical jargon, with the questionnaire being constructed of five sections consisting of the respondents' demographic details, their level of knowledge about chiropractic, their perceptions of chiropractic's role in the health care system, their perceptions of the scope of chiropractic as well as the respondents' exposure to chiropractic.

The questionnaire design employed a simple answering system using marking boxes and limited open- ended questions, which also facilitated fluent data collection (Fowler, 1995). Questionnaires were the tool of choice for a project such as this, as it ensured bias, on the side of the researcher, was kept to a minimum, and there was less chance of misinterpretation of results (Mouton, 1996).

The questionnaire as developed was then assessed by means of a focus group, which is discussed below.

3. 8. 1. Focus Group

In order to adapt the questionnaire to the South African context and ensure that the questionnaire met the minimum requirements as set out by Mouton (1996) and Bernard (2000), a focus group (n=8) was then set up in order to establish the face and construct validity of the adapted questionnaire. [Letter of permission from Van As (Appendix P)]

In order to have a group that would be representative of the stakeholders that would participate in the study and / or findings of the study, the group consisted of several participants:

1. Three Grade 12 learners.
2. Four Chiropractors.
3. One Statistician.
4. The researcher.

These participants were enlisted via word of mouth (Gibbs, 1997; Morgan, 1998), with eight respondents coming forward and expressing an interest in the focus group. The recommended number of people per focus group is usually six to ten (Macintosh, 1993), but some researchers have used up to fifteen people [Goss and Leinbach, 1996] or as few as four (Kitzinger, 1995) (cited in Gibbs, 1997). Further to face validity (Bernard, 2000), the focus groups' aim was to develop a questionnaire that limits potential misinterpretation by the respondents according to Scollen and Scollen (1995). Most importantly, it would ensure that the questionnaire would work effectively in the South African context, with the face validity adapted to the South African context and the construct validity unchanged (Mouton, 1996).

The focus group was selected in order to cover as broad a spectrum of Grade 12 learners as possible (Morgan [Vol. 2], 1998); however it is not always easy to identify the most appropriate participants for a focus group. If a group is too heterogeneous, whether in terms of gender or class, or in terms of professional and 'lay' perspectives, the differences between participants can make a considerable impact on their contributions (Gibbs, 1997; Morgan [Vol. 2], 1998). Alternatively, if a group is homogeneous with regard to specific characteristics, diverse opinions and experiences may not be revealed (Gibbs, 1997; Morgan [Vol. 2], 1998). In this study, the researcher had personal communication with various Grade 12 learners, some of whom were then requested to be a part of the focus group.

Before commencing the focus group, each participant was required to read an information letter (Appendix J), and sign an informed consent form (Appendix L), confidentiality statement (Appendix M) and a code of conduct statement (Appendix N). In the focus group, each participant was given copies of the knowledge and perception questionnaire. Comment was requested on how the questionnaire could be modified in order to accurately assess the Grade 12 learners' perception and knowledge of chiropractic in the Durban Region.

The questions were discussed in sequential order, following the procedure in *Moderating Focus Groups [Vol. 4]* by Morgan (1998). Following the discussion of each question, some questions were omitted, some questions were added and some minor changes were made to the questionnaire to enhance the understanding of a few of the questions. This established the face validity (Bernard, 2000) of the questionnaire, while still ensuring that the content of the questionnaire did not affect the measurement of the construct under study (Fowler, 1995). If inconsistencies were found or changes proposed, a unanimous vote was required to institute change. A video of the focus group proceedings was made (Gibbs, 1997) and is available as evidence of the individuals involved and the content of the discussion. A transcript of the taped recording of the focus group discussion is also available (Appendix Q).

3. 8. 2 Pilot Study

Once the questionnaire had been produced it was subjected to evaluation prior to it being used to collect data. A pilot study involved taking a very small sample from the population for which it had been intended to be used and administered the questionnaire exactly as it was administered to the main sample. The purpose of this would have been to see how long it takes to complete the questionnaire and to have identified problem areas in the questionnaire. The pilot study group was excluded from the main study (Appendix E).

Afterward a post- focus group questionnaire was developed and a pre-test evaluation (Appendix E) was conducted on one Grade 12 class of thirty learners, giving a chance for any comment on the questionnaire. No suggestions or comments were made regarding the questionnaire, yielding the version used in this study. The final questionnaire was developed and printed for use in this study (Appendix F).

3. 8. 3 Final Questionnaire

The cover page of the questionnaire, which was printed on an official DUT letterhead, consisted of an introduction that contained the basic information about the research project in general, and information about the questionnaire (Appendix C and D). The information included: the title of the research; the purpose of the research; the nature of the sample; the average time to complete the questionnaire and reassure all respondents of the confidentiality of the information. A translation to the letter of information for the Grade 12 learners (Appendix C) was available in Zulu (Isahluko C) for those learners who had difficulty understanding the English version.

The final questionnaire consists of 45 questions covering the following areas:

- The respondents demographic details (Questions1-4,9)
- Their level of knowledge about chiropractic (Questions15-19,23,24,26,30-34,40-42)
- And their perceptions of the scope of chiropractic (Questions22,27-29)
- As well as the respondents exposure to chiropractic (Questions5-8, 10-14, 20, 21, 25, 35-39, 43).

3. 9 Data Analysis

3. 9.1 Statistical package used

Data was entered and analyzed using SPSS version 13 (SPSS Inc. Chicago, III, USA).

3. 9.2 Scoring system

Knowledge questions were scored and the scores were totaled for all participants. Scores were expressed as a percentage of the total possible score.

Perception questions were also scored with higher scores representing more positive perceptions.

3. 9. 3 Descriptive analysis

Demographics, knowledge and perception scores were described using percentages, means and standard deviations as appropriate.

3. 9. 4 Analytical statistics

Hypothesis testing methodology was used to test the null hypotheses below. Associations between categorical variables were tested using Pearson's chi square test or Fisher's exact test as appropriate. Relationships between quantitative variables were assessed using Pearson's or Spearman's correlation coefficients as appropriate. Quantitative variables were compared between groups using t-tests or ANOVA, or equivalent non parametric tests if data was skewed.

3.10 Statistical methodology

Data were analysed using SPSS version 13 (SPSS Inc., Chicago, Illinois, USA). A p value of <0.05 was considered as statistically significant.

Responses to the questionnaire were described using frequency tables and bar charts in the case of categorical variables, and using mean, standard deviation (SD) and range in the case of quantitative variables.

Knowledge of chiropractic was scored and expressed as a percentage of the total possible score for each participant. Factors affecting to the knowledge of chiropractic were tested

using ANOVA tests, independent t-tests and Pearson's correlation coefficients, with knowledge percentage being a quantitative normal variable.

Factors associated with attitudes towards chiropractic were assessed with Pearson's chi square tests and independent t-tests.

CHAPTER FOUR: THE RESULTS AND DISCUSSIONS

Statistical Methodology and Results

4. 1 Introduction

Results of the statistical analysis of the data are presented in this section. Firstly, a descriptive analysis is presented, followed by analytical analysis, which reports proportions and means, with 95% confidence intervals in order to show how the data were distributed in all study subjects as a whole.

4. 1. 1 Primary Data:

The data collected from the questionnaire/ participant responses and the data obtained once the statistical analysis was complete.

4. 1. 2 Secondary Data:

The data in the literature, internet, books, journals etc with which to compare the outcome of the results in the research study.

4. 2 Response rate

Six hundred learners from twenty secondary schools in all three educational districts in the Durban Region were randomly chosen to participate in the survey. Of these, all six hundred learners returned the questionnaires to the researcher. Thus, the overall response rate was 100% (600/ 600), which was higher than that of other surveys conducted on the chiropractic profession in South Africa (Reubens, 1996; Hunter, 2004; Louw, 2005; Van As, 2005; Kew, 2006). This could have possibly been due to the sample size taken only from the area of Durban, compared to other surveys taken from within South Africa, which

required postage, e-mail and / or telefax communications to encourage the return of questionnaires (Reubens, 1996; Hunter, 2004; Louw, 2005; Van As, 2005).

A possible reason for the high response rate is that the learners had to complete the questionnaire at the school premises at a given time as they were not allowed to take the questionnaire out of the classroom. The researcher waited for the questionnaires to be completed on the day and collected it thereafter. Also, the researcher on all the occasions had direct contact with the person who administered the questionnaires to the learners, and this potentially would have resulted in an increase in the response rates. Due to the sample size of the schools, numerous telephonic calls and visits were personally made by the researcher to encourage the school principals and others to get involved and participate in the study. These prior arrangements made the process go on with ease at the schools.

Russell, et al. (2004), analyzed 62 surveys published between 1980 and 2000, where the number of contacts with the target population was identified as the strongest predictor of the response rate. "For every additional contact with the population, the response rate can increase by about 10%" (Russell, et al. 2004: 46). This could explain the high response rate achieved in this study.

Surveys that used advance notices had higher response rates than those that did not use advance notices (Russell, et al. 2004). In this study e-mails, where possible, and telephonic calls were made to each and every secondary school six to eight weeks beforehand informing the principal of the nature of the research and of their possible support in the study. One to two weeks before conducting the study, the interested participants were contacted again to make specific times to suit them on which the survey could be commenced. According to the study by Russell, et al. (2004), if an advance notice was sent to the sample group, followed by the questionnaire, the response rate would have been higher. This seemed to hold true for this particular study.

Another reason was that this study investigated the laypersons' (Grade 12 learners) perspective whereas Reubens (1996) looked at neurologists, neurosurgeons and orthopaedic surgeons; Hunter (2004) looked at physiotherapists and Louw (2005) looked at GP's. However Van As (2005) looked at CGC and Kew (2006) looked at personal trainers who were also considered as laypersons. At the time the questionnaire was handed to the learners they were at a stage of decision making regarding their career choices for their future, therefore this study may have been of importance to them as they would have been interested in anything regarding careers information. They would have felt comfortable with the content of the questionnaire.

According to Russell, et al. (2004), the key to obtaining good response rates is sound methodology including the use of personalized questionnaires and letters, advance notice and follow- up contact.

4. 3 Descriptive statistics

4.3.1 Demographics

Objective 1: To determine the demographic profile of Grade 12 learners in Durban Metropolitan Region.

Six hundred learners were randomly selected to participate in the survey from 20 schools around Durban.

4.3.1.1 Age

Their mean age was 16.7 years (SD 0.78 years), and ranged from 15 to 22 years

4.3.1.2 Gender

The gender distribution is shown in Table 1. The majority (58.8%) were female.

Table 1: Gender distribution of the sample

	Frequency	Percent
Female	353	58.8
Male	247	41.2
Total	600	100.0

4. 3. 1.3 Ethnicity

Ethnicity of the sample is shown in Figure 1. There were 12 missing responses regarding ethnicity, thus the sample size is 588. The majority were Asian (n=315 53.6%), followed by Black (n=164, 27.9%), and White (n=73, 12.4%). In the above study, Asian included Indian.

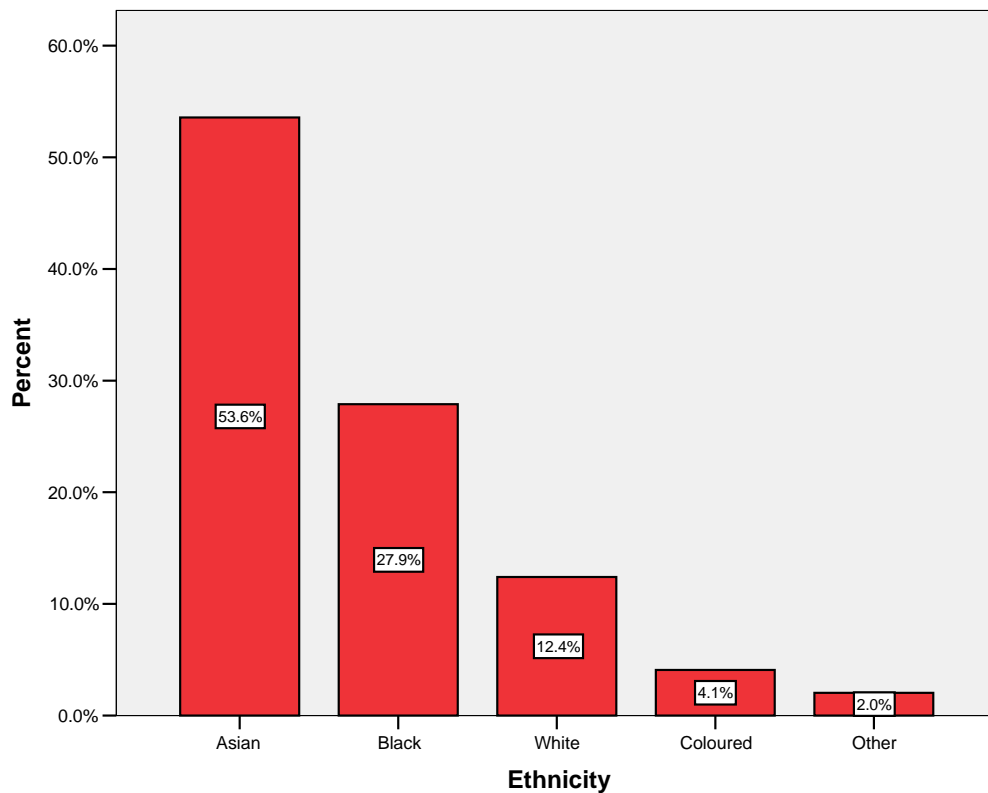


Figure 1: Ethnicity of the sample (n=588)

4.3.1.4 Home Languages

The participants' home languages are shown in Table 2, with English being the most common (72.1%), followed by Zulu and Afrikaans. Other languages included predominantly Xhosa, followed by Sesotho, German and French among others.

Table 2: Language of respondents (n=594)

	Frequency	Percent
English	428	72.1
Zulu	140	23.6
Other	21	3.5
Afrikaans	5	.8
Total	594	100.0

4.3.1.5 Occupational status of parents

Occupational status of the parents is shown in Table 3. The majority (83.4%) of fathers were employed and a further 7.1% were self employed. Nearly 5% of fathers were deceased. For mother's data, home executive was included in the unemployed category, which explains why there were such a high percentage of mothers in this category. Nevertheless, most mothers were also employed (63.7%).

Twelve fathers worked in the healthcare field (2.6% of those who reported their father's jobs) and 30 mothers worked in healthcare field (6% of those who reported their mother's jobs). Fathers in the health care field were mainly doctors (50%) while mothers were mainly nurses (77%).

Table 3: Father and Mother's occupational status

	Father		Mother	
	Frequency	Percent	Frequency	Percent
Employed	421	83.4	338	63.7
Self employed	36	7.1	11	2.1
Deceased	24	4.8	5	0.9
Unemployed / home executive	19	3.8	176	33.1
Retired	5	1.0	1	0.2
Total	505	100.0	531	100.0

Just over half the participants lived in the same area that they attended school (n=317, 53%) while 281 (47%) lived outside their school area.

4.3.1.6 Academic profile

The mean aggregate at the end of Grade 11 in the 367 participants who answered this question was 65.3% (SD 16.7%) with a range from 19 to 100%. Their symbols on selected key subjects are shown in Table 4.

Table 4: Participant's symbols on selected subjects

		Count	Column N %
Mathematics	A	63	14.3%
	B	80	18.1%
	C	92	20.9%
	D	88	20.0%
	E	48	10.9%
	F	41	9.3%
	G	11	2.5%
	H	18	4.1%
English	A	104	22.6%
	B	136	29.6%
	C	107	23.3%
	D	68	14.8%
	E	21	4.6%
	F	18	3.9%
	G	4	.9%
	H	2	.4%
Physics Sciences	A	63	20.1%
	B	65	20.7%
	C	77	24.5%
	D	55	17.5%
	E	23	7.3%
	F	10	3.2%
	G	11	3.5%
	H	10	3.2%

Biology	A	121	33.8%
	B	87	24.3%
	C	71	19.8%
	D	46	12.8%
	E	26	7.3%
	F	6	1.7%
	H	1	.3%

4. 3. 2 Knowledge of Chiropractic

Objective 2: To determine the level of knowledge of Grade 12 learners about chiropractic

Grade 12 learner's knowledge of the duration, qualification and content of the chiropractic course was very limited. Responses for the individual components of the knowledge score were as follows:

Responses to the first knowledge question on how long it takes to qualify as a chiropractor are shown in Figure 2. The majority of respondents answered "don't know", while 28.1% answered correctly.

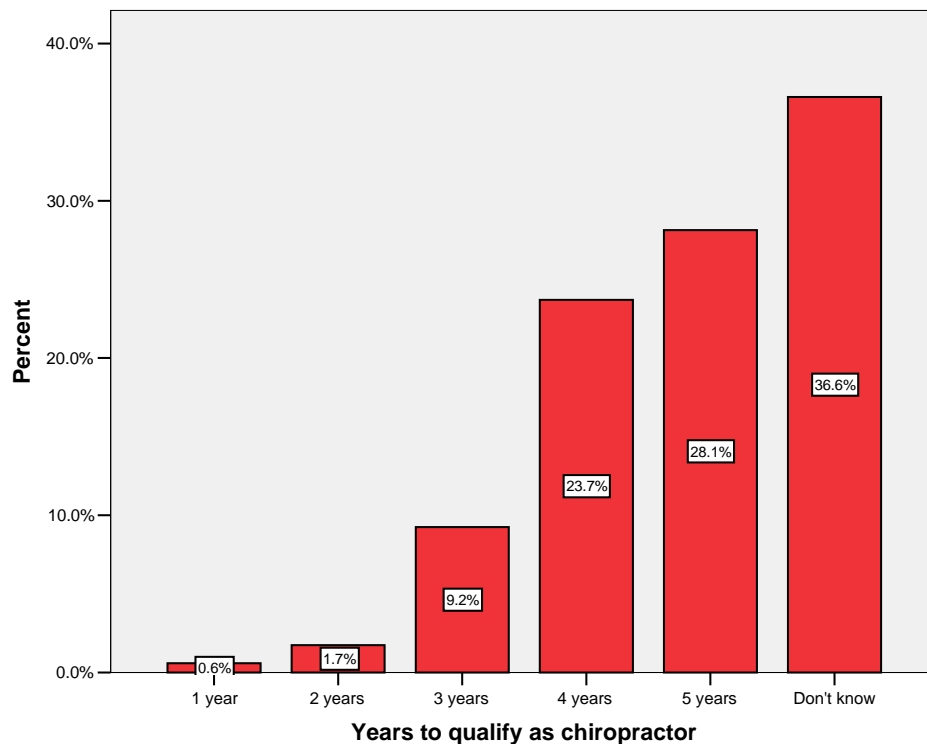


Figure 2: Percentage responses to “how long does it take a chiropractor to qualify?”

Table 5 below shows that the majority did not know what qualification chiropractors obtain (53.1%), while only 16.6% knew that the correct answer was a Masters Degree.

Similar studies have found the same lack of knowledge (Van As, 2005; Reubens, 1996) where the majority of CGC and neurologists, neurosurgeons and orthopedic surgeons were not well informed about the chiropractic course in South Africa in order to reliably identify the correct qualification. This was analogous to the findings of the WFC consultation of identity of chiropractic where it was concluded that there is a limited public awareness regarding the education of chiropractors (WFC, 2005).

Table 5: Responses to “What qualification do chiropractors obtain”

	Frequency	Percent
Certificate	20	3.9
National Diploma	29	5.6
Diploma	52	10.0
Bachelors	56	10.8
Masters	86	16.6
Don't know	275	53.1
Total	518	100.0

Only 32.8% of the respondents reported that they knew which institutions offered the chiropractic course. This is shown in Table 6.

The majority if not all of the participants were from Durban and hence had a greater chance of coming into contact with the DUT and knowing about the chiropractic course delivered at the site, as opposed to knowing that the University of Johannesburg also runs the course. A confounding factor within

higher education is the fact that the landscape in respect of higher education and training facilities has changed over the last few years as a result of the merger of institutions (Boshoff, 2005). Thus it is possible that the Grade 12 learners had an idea that there were two training programmes in respect of chiropractic.

However, 88.8% (n=445) knew that a matric exemption was necessary to study chiropractic (data not shown).

Table 6: Frequency of participants who knew which tertiary institutions offer the chiropractic course

	Frequency	Valid Percent
Yes	168	32.8
No	344	67.2
Total	512	100.0

Knowledge of the entrance requirements is very important to Grade 12 learners. This will enable them to choose fields of study at school that will link up with wider occupational fields and that will serve as a meaningful introduction for a reasonable future choice of an occupation (Haasbroek, et al. 1978)

Most respondents knew that Biology, Mathematics, English and Physical Sciences were required in order to study chiropractic. Responses are shown in Table 7. However, these are the general entrance requirements for most courses involving health care.

Table 7: Responses to compulsory matric subjects

	False		True	
	Count	Row N %	Count	Row N %
Biology	24	5.2%	436	94.8%
English	49	11.3%	383	88.7%
Mathematics	82	19.4%	341	80.6%
Physical Sciences	75	17.5%	354	82.5%
Accounting	304	86.9%	46	13.1%
Afrikaans	208	56.8%	158	43.2%
Computers	281	81.2%	65	18.8%
Art	318	94.6%	18	5.4%
Music	317	95.2%	16	4.8%
Speech and Drama	308	92.2%	26	7.8%
Geography	316	93.8%	21	6.2%

Grade 12 learners mostly thought that anatomy, diagnostics, physiology, physiotherapy, pharmacology and physics were included in the course. A low percentage of respondents knew that chemistry, microbiology, pathology, radiology and psychiatry were part of the course, while some incorrectly thought that surgery and chemotherapy was part of the course. Table 8 below shows the responses to the subjects which the participants thought were included in the chiropractic course.

In addition, respondents thought physiotherapy was a component of the chiropractic course, as it was a stated outcome in the questionnaire. This result is however interpreted with caution as the understanding as to what physiotherapy means could be misconstrued (Kew, 2006) as:

- The profession of physiotherapy, in which case the Grade 12 learner does not understand the difference between the profession

- The modalities which are commonly used by physiotherapists, which case the Grade 12 learner is not entirely clear on the distinction between the two professions
- The principals of soft tissue/muscle treatment are also used by physiotherapists, in which case the Grade 12 learner may have an understanding of the scope of practice of chiropractic independent of the profession of physiotherapy.

In this study there were 292 (53.5%) who did not know the difference between a chiropractor and a physiotherapist.

Table 8: Responses to which subjects are included in the chiropractic course

	False		True	
	Count	Row N %	Count	Row N %
Anatomy	76	20.1%	303	79.9%
Chemistry	156	44.6%	194	55.4%
Chemotherapy	150	45.7%	178	54.3%
Diagnostics	91	28.0%	234	72.0%
Microbiology	170	54.5%	142	45.5%
Pathology	150	50.2%	149	49.8%
Pharmacology	119	37.9%	195	62.1%
Physics	126	35.9%	225	64.1%
Physiology	63	17.8%	290	82.2%
Physiotherapy	41	10.6%	344	89.4%
Psychiatry	197	64.4%	109	35.6%
Radiology	168	52.7%	151	47.3%
Surgery	181	54.2%	153	45.8%

Grade 12 learners mostly thought that neuromusculoskeletal, extremities, sports injuries, sprains and paediatrics were covered during the course. A low percentage of respondents knew that colic, rehabilitation and emergency care were covered during the course, some incorrectly thought that podiatry, reflexology and surgery was covered during the course. These results and findings were similar to those found by Van As (2005) where CGC thought that neuromusculoskeletal, extremities, sports injuries and rehabilitation were covered during the course.

Table 9: Responses to which areas are covered during the chiropractic course

	False		True	
	Count	Row N %	Count	Row N %
Neuromusculoskeletal	26	5.9%	416	94.1%
Extremities	47	11.4%	367	88.6%
Paediatrics	140	42.7%	188	57.3%
Sports Injuries	42	10.3%	366	89.7%
Colic	179	56.1%	140	43.9%
Sprains	55	14.1%	335	85.9%
Rehabilitation	168	48.8%	176	51.2%
Surgery	131	35.0%	243	65.0%
Reflexology	103	30.2%	238	69.8%
Emergency Care	156	52.9%	139	47.1%
Podiatry	96	49.5%	98	50.5%

Grade 12 learners mostly thought that acupuncture, exercise therapy, foot care, heat therapy, massage, medicine, mobilization, needling, nutrition, stretching, traction, strapping and manipulation were the intervention methods covered in the course. A low percentage of respondents knew that electrotherapy and radiology were intervention methods covered in the course, some incorrectly

thought that manicures, minor surgery, hot stone therapy and crystal therapy was part of the intervention methods covered in the course.

Scope of practice is a crucial issue for the chiropractic profession (Hawk and Dusio, 1995). The level of Grade 12 learners (viz. public) knowledge reflects the presence of unclear boundaries in the scope of practice within the profession itself. Fewer Grade 12 learners perceive chiropractic as a primary contact profession than that of a neuromusculoskeletal specialist. These results are analogous to WFC consultation of identity findings (2005), where most chiropractors (91%) think the profession should be perceived by the general public as a form of primary health care with focused (55%) or broad (36%) scope. However, only four –in-ten (44%) believe this is how the profession is actually perceived by the general public (WFC, 2005).

Table 10: Responses to which intervention methods were covered in the chiropractic course

	False		True	
	Count	Row N %	Count	Row N %
Acupuncture	90	26.9%	245	73.1%
Electrotherapy	145	51.8%	135	48.2%
Radiology	143	48.6%	151	51.4%
Exercise therapy	39	10.3%	339	89.7%
Foot care	83	24.1%	261	75.9%
Heat	105	32.2%	221	67.8%
Manicures	225	77.9%	64	22.1%
Manipulation	133	43.9%	170	56.1%
Massage	69	20.5%	268	79.5%
Medicine	97	28.6%	242	71.4%
Minor surgery	137	45.4%	165	54.6%
Mobilization	119	40.5%	175	59.5%
Needling	116	38.9%	182	61.1%
Nutrition	107	36.1%	189	63.9%
Stretching	100	31.2%	221	68.8%
Traction	97	29.3%	234	70.7%
Strapping	110	35.1%	203	64.9%
Hot stone therapy	129	41.7%	180	58.3%
Crystal therapy	131	47.0%	148	53.0%

The responses to the knowledge questions were scored and presented as a percentage out of the total 58 knowledge questions. Participants' percentage scores ranged from 0% (mostly those participants who did not attempt any of these questions) to 84%, with a mean of 37.6% and a standard deviation of 22.8%. Thus the level of knowledge was on average very low.

The majority of Grade 12 learners are not well informed about the chiropractic course, which is similar to that of neurologists, neurosurgeons and orthopaedic surgeons (Reubens, 1996); and CGC (Van As, 2005). This was analogous to the findings of the WFC consultation of identity of chiropractic where it was concluded that there is a limited public awareness regarding the education of chiropractors (WFC, 2005). This is in keeping with the results from Kenneth Caplan and Associates (1994) which found that the Canadian public, including patients, understands very little about chiropractic education, qualifications and scope of practice.

These results send a clear signal that something is missing in the Grade 12 learners' knowledge about chiropractic and about how chiropractic has been reported to them. Chiropractic would be wise to improve public awareness by expounding upon what conditions it can treat, as gaps in the public knowledge have translated into non- utilization (Sanchez, 1991). It follows that the more unclear the respondents understanding of the professions scope of treatment, the more likely they are not to identify a condition as one that can be treated by chiropractic (Sanchez, 1991).

4. 3. 3 Perception of Chiropractic

Objective 3: To determine the perceptions of Grade 12 learners about chiropractic

In the questionnaire, the participants were asked to pick a statement that best reflected their perception on chiropractic. Participants were classified as having negative, neutral, limited and positive perceptions of chiropractic. In Canada, Kenneth Caplan and Associates (1994) said that most public perception of chiropractic is based on ignorance, bias and misinformation rather than fact. Chiropractic patients generally know little more about chiropractic than non-patients do. Generally, there is a lack of respect and trust, and this is true of younger as well as older persons.

Even in the face of low knowledge scores and thus it must be considered that the perception of the Grade 12 learner is based principally on the experiences they have had personally or experiences that have been relayed to them by others.

Only 60.3% of participants had heard of chiropractic (n=354). There were 50 participants (8.9%) who had been treated by a chiropractor before. Their responses to the questions on their experience with the chiropractor are shown in Table 11.

Table 11: Frequency of participants who had heard of chiropractic

	Frequency	Percent
Yes	354	60.3
No	233	39.7
Total	587	100.0

In Canada, it was found that people who did not use chiropractic treatment were uninformed about the level of education and treatment procedures within or of the profession (Criterion Research Corporation, 1999).

On the converse, there is a marked difference in how non- users and lapsed users (in Canada) view chiropractic. Non- users and users “generally have a positive image of chiropractic”. However, non- users are uninformed about the level of education and treatment procedures (Criterion Research Corporation, 1999). Sanchez (1991) had similar findings in New Jersey and reported that the more unclear the non-users’ understanding of the profession’s scope of treatment, the more likely they are not to identify a condition as one that can be treated by chiropractic.

This is in keeping with the results of Van As’s (2005) study on CGC(s) perception of chiropractic in South Africa and to the findings of the WFC consultation of identity report (2005), where many believe that chiropractic health care is more commonly perceived by the general public to be for the management of neck and back pain (WFC, 2005).

These findings further support Staton et al. (1990) who found that the Australian public in general felt that GPs were better trained and more effective than chiropractors. The one exception was for back pain, where the GPs were seen as ineffective, but chiropractors were seen as being good and effective in treatment. In New Zealand, the New Zealand Consumers’ Institute (1997) found that consumers most commonly quoted chiropractors as being more knowledgeable about the spine than GPs and felt they helped where the GP/physiotherapist could not.

Chiropractic would be wise to improve public awareness by expanding upon what conditions it can treat. Gaps in the public knowledge have translated into non-

utilization (Sanchez, 1991). This follows that the more unclear the respondents' understanding of the professions' scope of treatment, the more likely they are not to identify a condition as one that can be treated by chiropractic (Sanchez, 1991).

Participants who had seen a chiropractor before were mostly referred by a doctor (44%), or by family (40%). 43% were impressed with the care they received. Their responses are shown in Table 12 below.

Table 12: Responses of those who had been treated by a chiropractor before (n=50)

		Count	Column %
Refereed by Doctor	No	28	56.0%
	Yes	22	44.0%
Referred by Pharmacist	No	50	100.0%
	Yes	0	.0%
Referred by Family	No	30	60.0%
	Yes	20	40.0%
Referred by Friends	No	47	94.0%
	Yes	2	4.0%
Referred by Self	No	44	88.0%
	Yes	6	12.0%
Referred by Other	No	47	94.0%
	Yes	3	6.0%
How impressed were you with chiropractic care	Very unimpressed	0	.0%
	Unimpressed	2	4.1%
	Neutral	10	20.4%
	Impressed	21	42.9%
	Very impressed	16	32.7%
Did chiropractor explain how it works	Yes	30	61.2%
	No	19	38.8%
Did you discuss with doctor that you have consulted a chiropractor	Yes	23	46.9%
	No	26	53.1%

Thirty-eight percent of participants reported that their family members had consulted chiropractors (n=195). Perceptions on chiropractic are shown in Table 13 below.

Table 13: Responses to perception questions on chiropractic

	Agree		Disagree		Don't know	
	Count	%	Count	%	Count	%
Chiropractic is a method of healing not recognised by conventional medicine	146	25.7%	171	30.1%	251	44.2%
Chiropractic is medicine from a different cultural area	33	5.8%	305	53.5%	232	40.7%
Chiropractic is a treatment of healing	393	69.1%	18	3.2%	158	27.8%
Chiropractic is a useful supplement to conventional medicine	213	37.5%	73	12.9%	282	49.6%
Chiropractic is not a form of manual therapy	63	11.0%	252	44.1%	257	44.9%
Chiropractic is safe to use	329	57.7%	27	4.7%	214	37.5%
Chiropractic treatment is effective	287	50.3%	17	3.0%	267	46.8%

When participants were asked their opinion of chiropractic, nearly half reported that it was a supportive treatment (n=247), while 25.8% (n=131) though it was a recuperative treatment. Only 5.5% thought of it as a first choice treatment. This is shown in Figure 3. 65.3% thought that the public accepts chiropractic.

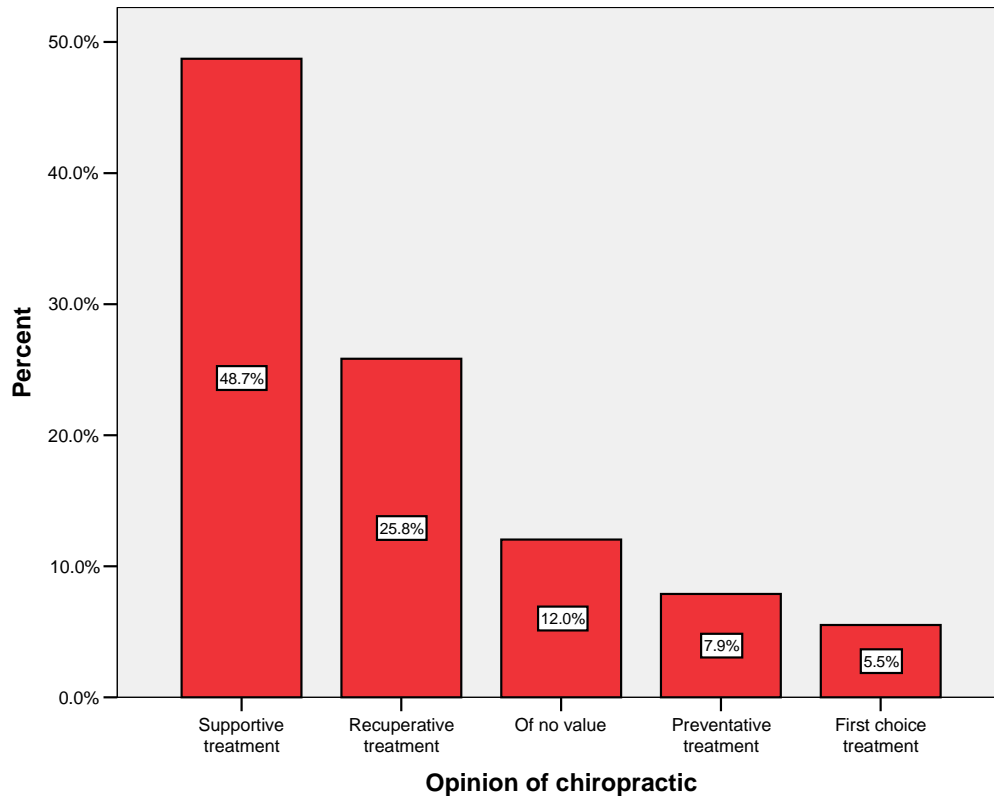


Figure 3: Participants' opinions of chiropractic

From those who answered 65.3% thought that the public accepts chiropractic. The remaining 34.7% (n=185) gave the following reasons for saying no.

Table 14: Reasons given by participants for chiropractic not being accepted by the public

	No		Yes	
	Count	Row N %	Count	Row N %
Lack of understanding of chiropractic	63	35.2%	116	64.8%
Dangerous or harmful treatment	172	96.1%	7	3.9%
Bad marketing of chiropractic	162	91.0%	16	9.0%
Excessive cost	168	94.4%	10	5.6%
Unproven effectiveness	169	94.4%	9	5.0%

Most participants thought chiropractors earned between R10 000 and R20 000 per month. There were however, 29 participants who thought they earned over R100 000 per month.

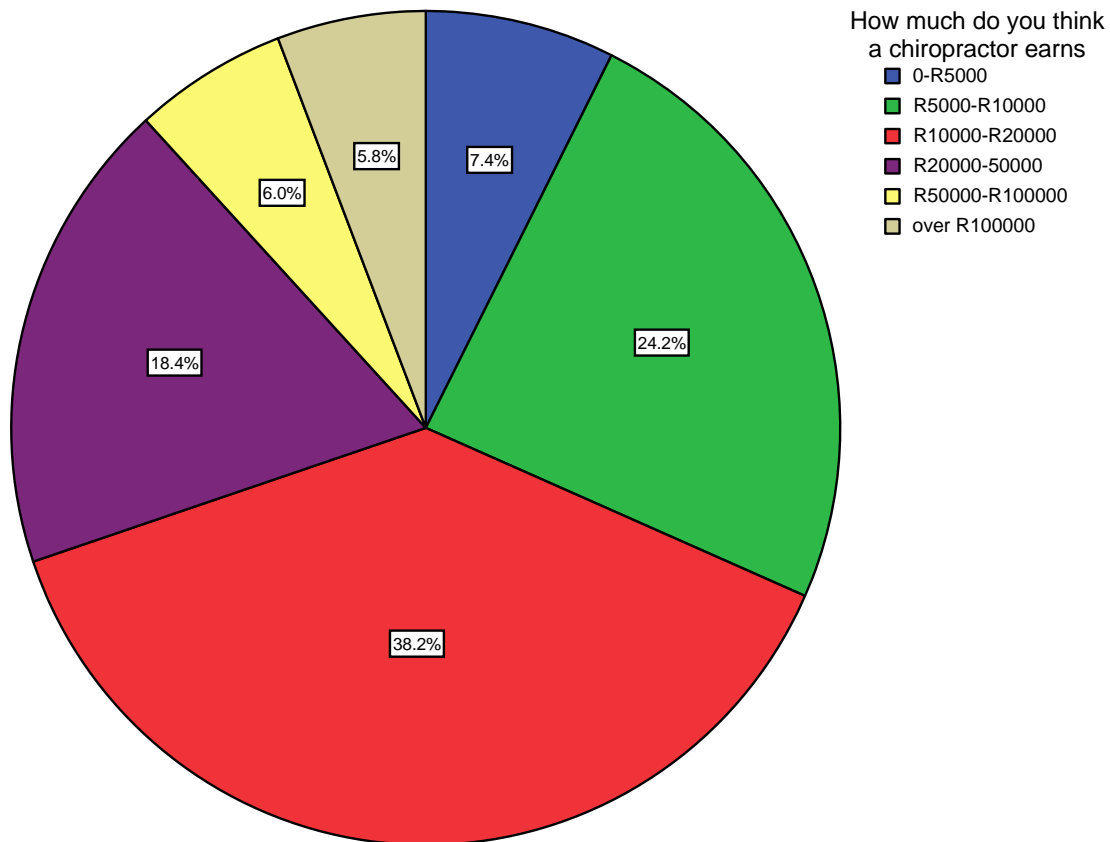


Figure 4: Pie chart showing percentage of responses on what chiropractors earn monthly

Sixty-six percent of participants knew what they wanted to do after leaving school (n=350). Nearly half had considered a career in health care (n=264, 49.5%), while 117 (22.5%) considered a career as a chiropractor. However, only 15.1% (n=79) said their CGC gave them information on chiropractic, and 62.2% said they would like more information on chiropractic (n=339).

4. 3. 4 Health seeking behaviour

Objective 4: To determine the health seeking behaviour of Grade 12 learners in Durban

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

Scope of practice is a crucial issue for the chiropractic profession (Hawk and Dusio, 1995). The level of Grade 12 learners (viz. public) knowledge reflects the presence of unclear boundaries in the scope of practice within the profession itself. Fewer Grade 12 learners perceive chiropractic as a primary contact profession than that of a neuromusculoskeletal specialist. These results are in contrast to WFC consultation of identity findings (2005), where most chiropractors (91%) think the profession should be perceived by the general public as a form of primary health care with focused (55%) or broad (36%) scope. However, only four-in-ten (44%) believe this is how the profession is actually perceived by the general public (WFC, 2005).

This is congruent with the view held by the majority of South African GP's, who felt that chiropractors were incompetent in the general medical management of patients (Louw, 2005), with the preventative and primary contact roles being seen as less important by the participating GP's (Louw, 2005). Thus the suggestion stands that chiropractic is limited to the focused scope (musculoskeletal or treatment scope) of practice which is based on musculoskeletal interventions.

This perception could stem from the age old tradition where GPs are considered the gatekeepers of primary healthcare (Hupkes, 1990), with the requisite knowledge and expertise for diagnosis and treatment of all conditions (Grumbach, 1995). This concurs with a large proportion of Canadian GPs who accept chiropractic as legitimate type of health care, mainly for musculoskeletal complaints (focused scope) (Curtis and Bove, 1992). Thus this would dictate that only 44% of the surveyed GPs actually referred patients to chiropractors (Verhoef and Page, 1996; Sanchez, 1991). In a study by Hunter (2004), 53% of physiotherapists said that chiropractic provides excellent treatment for some neuromusculoskeletal conditions. This would stand to reason, as the overlap between these professions is greater and there is greater understanding of patient referrals as well as increased commonality in terms of a focused scope. Both the GPs and the physiotherapists (allopathic medicine) seem to support this assertion. The above could be as a result of GPs being comfortable referring to physiotherapists because they had a greater understanding of the treatment involved (Breen, *et al.* 2000). One of the reasons may be the fact that GPs are aware of their scope of practice and are not sufficiently informed about chiropractic (Louw, 2005).

This is pertinently highlighted in Jamison's 1995 study, where significant medical opposition toward chiropractic referral for care of visceral conditions was shown. The only visceral condition that received support from Australian GPs as a referral option to chiropractors was migraine. GPs, who referred patients to chiropractors more frequently, were more in favour of considering chiropractic care appropriate for various musculoskeletal conditions (Jamison, 1995).

With respect to the general public this dichotomous picture also exists, as can be seen in the 61% of CGC that thought chiropractors were very competent to diagnose and treat neuromusculoskeletal disorders only (Van As, 2005). In a study in New Zealand (NZ), the NZ Consumers' Institute (1997) found that consumers most commonly quoted chiropractors as being more knowledgeable

about the spine than GPs. The public (in Australia) felt that, in general, GPs and physical therapists were better trained (broad scope) and more effective than chiropractors (focused scope), the one exception being for back pain, where GPs were seen as ineffective, but physical therapists and chiropractors as equally good (Straton et al. 1990, Meade et al. 1995, Skargren et al. 1997, Baldwin et al. 2001, Sherman et al. 2004, Haas et al. 2005).

Therefore it stands to reason that if the patient's primary source of information is the GP, as the health care gatekeeper, then the public perception would reflect that of the GP (Kenneth Caplan Associates, 1994). The general public heeds the advice or views taken by conventional mainstream medicine (Grumbach, 1995).

The effect of this transfer of information can be seen in the study by Langworthy and Birkelid (2001), where it was concluded that with increasing emphasis on multidisciplinary health care, greater understanding and better communication is needed in order for the patient to obtain optimum benefits. Therefore, it stands to reason that various health care providers should have increased access to information from sources other than conventional mainstream medicine. This view is supported by results found in the Netherlands and Norway where chiropractors were perceived as primary health care professionals (Langworthy and Smink, 2000; Langworthy and Birkelid, 2001), where extensive education of both conventional mainstream medicine and the general public has led to an increased understanding of chiropractic as a broad scope with respect to diagnostic procedures and a focused scope with respect to treatment.

The majority of learners rated their health as excellent (n=220, 37%). This is shown in Figure 5.

Over 80% reported that they consult a doctor when ill, while 10% consult a nurse. This is shown in Table 15. “Other” referred mostly to family members. Likewise, the majority consulted doctors when injured (90.6%), this is shown in Table 16.

Table 15: Frequency of responses to who participants consult when ill

	Frequency	Percent
Doctor	480	80.8
Pharmacist	16	2.7
Nurse	62	10.4
Traditional healer	11	1.9
Other	25	4.2
Total	594	100.0

Table 16: Frequency of responses to who participants consult when injured

	Frequency	Percent
Doctor	532	90.6
Chiropractor	9	1.5
Physiotherapist	11	1.9
Surgeon	12	2.0
Other	23	3.9
Total	587	100.0

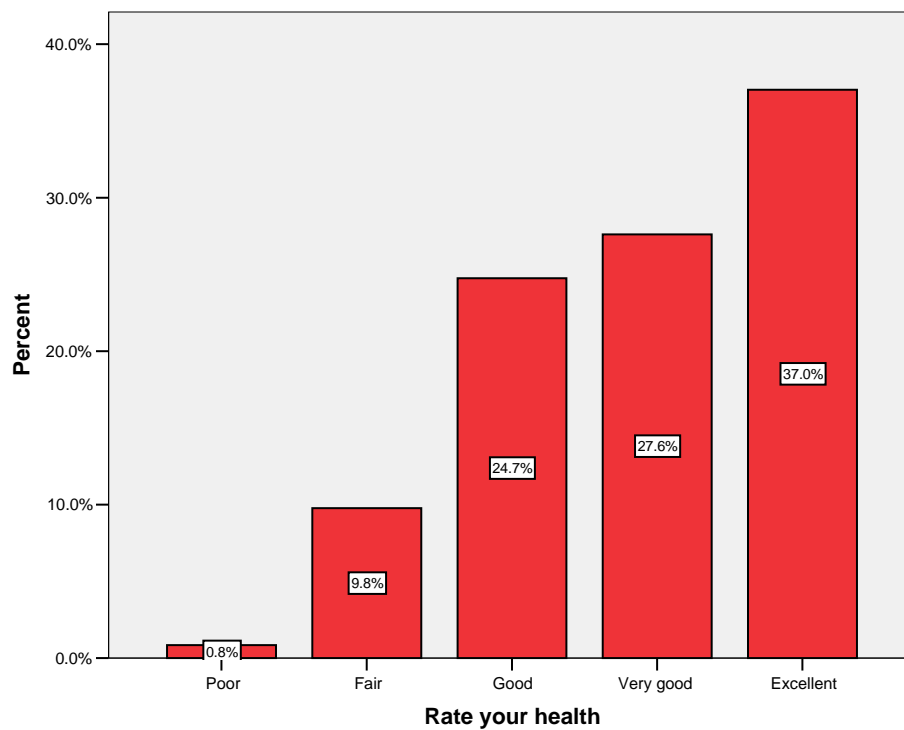


Figure 5: Participants' rating of their health status (n=594)

Respondents were mostly satisfied with the care they received from their regular health provider (41.6%), while 38 % were very satisfied. This is shown in Figure 6. There were 54.6% were on medical aid, 34.6% were not on medical aid, and 10.8% did not know.

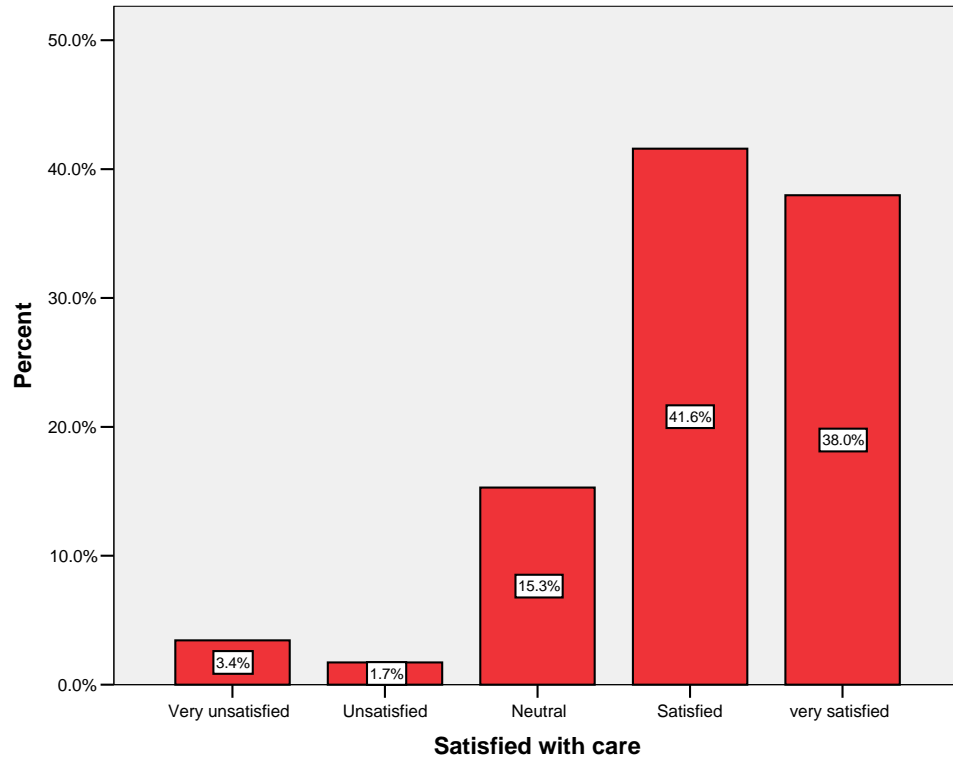


Figure 6: Participants' rating of their satisfaction with the care they received from their usual practitioner (n=582)

Fifty participants had been treated previously by a chiropractor (8.9%). They were mostly referred by doctors (44%), followed by family (40%). This is shown in Figure 7.

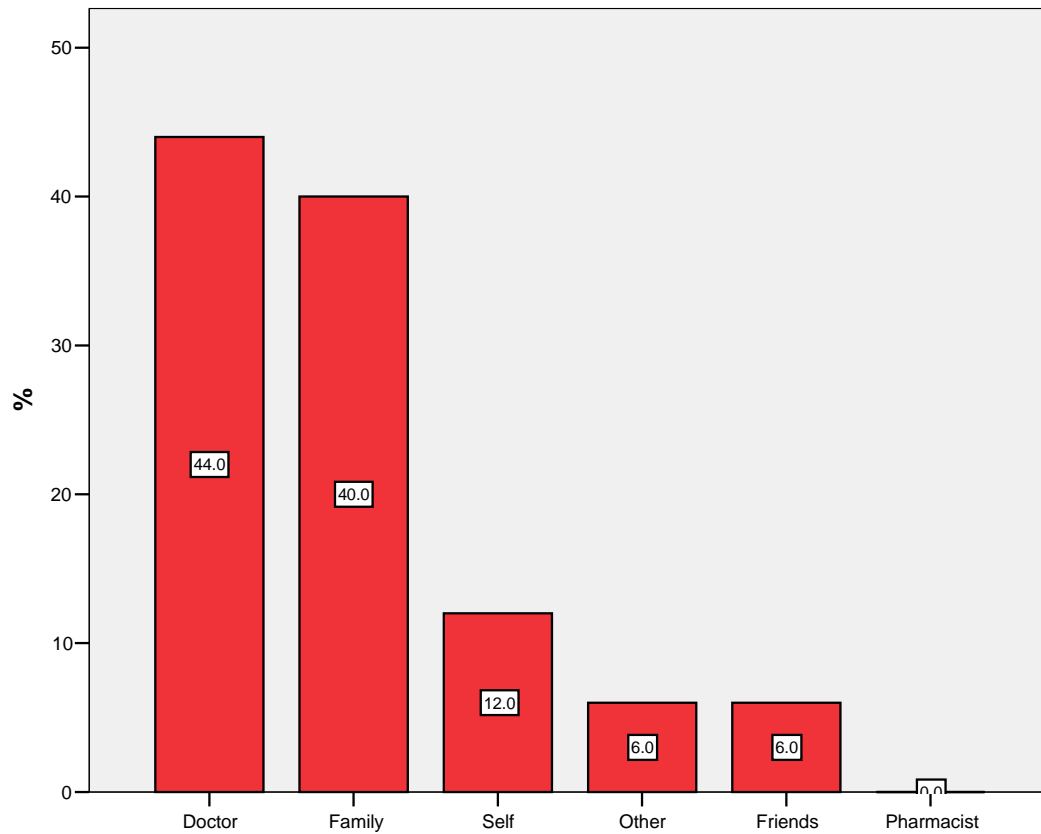


Figure 7: Percentage of participants ever treated by a chiropractor according to who referred them (n=50)

4. 4 Analytical statistics

4. 4. 1 Relationships between knowledge, perception and demographics in Grade 12 learners

Objective 5: To assess relationships between knowledge, perception and demographics in Grade 12 learners in Durban

Factors which significantly influenced knowledge score

Gender of the participants did not influence knowledge score significantly ($p=0.238$).

Age was a factor which significantly influenced the knowledge of chiropractic ($p<0.001$). When the mean knowledge score of the three age groups was compared using one way ANOVA, the 17 year olds were found to have the highest mean score (42.51%), followed closely by the ≤ 16 year olds (41.69%) and those 18 years or older had the lowest score (28.89%). The post hoc comparisons showed that the difference in mean score was significant between the 16 and 18 year olds ($p<0.001$) as well as between the 17 and 18 year olds ($p<0.001$), but there was no difference between the 16 and 17 year olds scores.

Table 17: Comparison of knowledge score between age groups

Knowledge percent

Age group	Mean	N	Std. Deviation
<=16	41.69	250	20.378
17	42.51	247	20.677
>=18	28.89	53	20.939
Total	40.82	550	20.900

ANOVA

Knowledge percent

	Sum of Squares	df	Mean Square	F	p value
Between Groups	8441.076	2	4220.538	9.978	<0.001
Within Groups	231368.788	547	422.978		
Total	239809.864	549			

Multiple Comparisons

Dependent Variable: Knowledge percent

Bonferroni

(I) Age group	(J) Age group	Mean Difference (I-J)	Std. Error	p value
<=16	17	-.820	1.845	1.000
	>=18	12.802(*)	3.110	<0.001
17	<=16	.820	1.845	1.000
	>=18	13.623(*)	3.113	<0.001
>=18	<=16	-12.802(*)	3.110	<0.001
	17	-13.623(*)	3.113	<0.001

* The mean difference is significant at the .05 level.

Ethnicity was also a factor which significantly influenced the knowledge score ($p < 0.001$). The White students had the highest knowledge scores, followed by the Asian students, and the Black students had the lowest scores. The post hoc tests showed that the significant differences were between the Asian and Black students ($p < 0.001$) and the White and Black students ($p < 0.001$) only.

The reasons for the above could be related to one or more of the following factors:

- Lack of exposure to a form of treatment developed outside of the cultural context of the vast majority of South Africans, with the Black population being the least exposed (Dunn, 2005).
- This lack of exposure is further limited by access to a limited number of practitioners in South Africa (0.01% i.e. 450 out of 45-55 million) (CASA, 2007 and www.statssa.gov.za/, 2007) of the population. In addition to which the majority of practitioners are based in private practice (CASA, 2007) which has greater limitations on accessibility as compared to public health care institutions such as hospitals or clinics.
- Furthermore outside of the above, patient expectations for treatment and care will dictate care seeking behavior. With the trend that the majority of South Africans expect a medicinal intervention (tablets, injection or something of the like), it becomes problematic when the health care profession does not provide such treatment as it is seen to be ineffective in dealing with the ailment presenting (Mouton, 1996).
- Since most chiropractors in South Africa work in urban areas (CASA, 2006) lack of accessibility in the rural parts of Durban will influence the rural knowledge of chiropractic, as most Blacks lived in these rural areas. However, Research Dimensions Inc. (1994) found that rural chiropractic patients (in USA) in medically underserved areas are demographically different from the overall US chiropractic patient population.

Table 18: Comparison of knowledge score between ethnic groups

Knowledge percent

Ethnicity	Mean	N	Std. Deviation
Asian	44.40	304	19.198
Black	29.37	143	21.269
Coloured	37.30	22	19.152
White	47.73	69	20.727
Other	37.16	9	21.311
Total	40.49	547	21.085

ANOVA

Knowledge percent

	Sum of Squares	df	Mean Square	F	p value.
Between Groups	26269.217	4	6567.304	16.444	<0.001
Within Groups	216461.417	542	399.375		
Total	242730.633	546			

Multiple Comparisons

Dependent Variable: Knowledge percent

Bonferroni

(I) Ethnicity	(J) Ethnicity	Mean Difference (I-J)	Std. Error	Sig.
Asian	Black	15.032(*)	2.026	<0.001
	Coloured	7.098	4.412	1.000
	White	-3.324	2.665	1.000
	Other	7.237	6.759	1.000
Black	Asian	-15.032(*)	2.026	<0.001
	Coloured	-7.933	4.577	.836
	White	-18.356(*)	2.929	.000
	Other	-7.794	6.868	1.000
Coloured	Asian	-7.098	4.412	1.000
	Black	7.933	4.577	.836
	White	-10.422	4.893	.336
	Other	.139	7.907	1.000
White	Asian	3.324	2.665	1.000
	Black	18.356(*)	2.929	.000
	Coloured	10.422	4.893	.336
	Other	10.561	7.083	1.000
Other	Asian	-7.237	6.759	1.000
	Black	7.794	6.868	1.000
	Coloured	-.139	7.907	1.000
	White	-10.561	7.083	1.000

* The mean difference is significant at the .05 level.

Language also influenced the knowledge of chiropractic ($p < 0.001$). This could have been confounded by ethnicity, though, as the main difference was between the English and Zulu speaking participants, reflecting the ethnic differences found earlier.

Table 19: Comparison of knowledge score between language groups

Knowledge percent

Language	Mean	N	Std. Deviation
Afrikaans	44.83	5	31.392
English	44.37	407	19.328
Zulu	28.95	120	20.959
Other	32.84	20	24.141
Total	40.60	552	20.971

ANOVA

Knowledge percent

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	23360.572	3	7786.857	19.489	<0.001
Within Groups	218953.874	548	399.551		
Total	242314.446	551			

Multiple Comparisons

Dependent Variable: Knowledge percent

Bonferroni

(I) Language	(J) Language	Mean Difference (I-J)	Std. Error	Sig.
Afrikaans	English	.458	8.994	1.000
	Zulu	15.876	9.124	.494
	Other	11.983	9.994	1.000
English	Afrikaans	-.458	8.994	1.000
	Zulu	15.419(*)	2.076	<0.001
	Other	11.525	4.578	.073
Zulu	Afrikaans	-15.876	9.124	.494
	English	-15.419(*)	2.076	<0.001
	Other	-3.894	4.828	1.000
Other	Afrikaans	-11.983	9.994	1.000
	English	-11.525	4.578	.073
	Zulu	3.894	4.828	1.000

* The mean difference is significant at the .05 level.

The father being in a healthcare field increased the level of knowledge about chiropractic significantly ($p=0.007$). Those whose fathers were in healthcare had a mean knowledge score of 58.62%, while those whose were not had a mean of 42.35%.

Table 20: Comparison of knowledge score between those who had a father in healthcare and those who did not

	Father in healthcare field	N	Mean	Std. Deviation	Std. Error Mean	p value
Knowledge percent	Yes	12	58.62	11.854	3.422	0.007
	No	422	42.35	20.750	1.010	

The father's employment status ($p=0.332$) and whether the mother was in a healthcare field ($p=0.185$) did not influence knowledge score.

If the participants lived in the area in which they went to school, their knowledge score was significantly higher than if they did not live in the area ($p=0.009$). This would be related to the number of chiropractors located within the radius/ suburb of the school, in that if a chiropractor was located within the radius/ suburb of the school the Grade 12 learner knowledge was higher due to the greater exposure of chiropractic.

Table 21: Comparison of knowledge score between those who lived in their school area and those who did not

	Live area	N	Mean	Std. Deviation	Std. Error Mean	p value
Knowledge percent	yes	290	42.69	20.791	1.221	0.009
	no	265	38.01	21.113	1.297	

The Grade 11 aggregate showed a significant positive correlation with knowledge of chiropractic ($r=0.435$, $p<0.001$). Thus, as the aggregate increased, so did their knowledge of chiropractic. This could be that those with better scores had better knowledge. These students can be motivated because they are aware of the admission criteria of the chiropractic course or they could just be more generally aware (greater general knowledge) than the students that do not do as well.

Table 22: Correlation between grade 11 aggregate and knowledge score

		Knowledge percent
Aggregate at end of Grade 11	Pearson Correlation	.435(**)
	p value (2-tailed)	>0.001
	N	350

** Correlation is significant at the 0.01 level (2-tailed).

Those who were treated by a chiropractor showed a significantly higher knowledge score than those who had not been treated in the past ($p=0.006$). This is in contrast to school CGC (Van As, 2005), as no significant association between having been previously treated by a chiropractor and knowledge score was shown. Kenneth Caplan and Associates (1994) said that chiropractic

patients generally know little more about chiropractic than non- patients do. This was not the case in this study where those Grade 12 learners treated by a chiropractor significantly had higher knowledge scores.

A trend that those who had not been treated by a chiropractor had a more negative perception whilst those who had been treated by a chiropractor had a positive perception arose from Van As (2005). Thus the implication is that this trend in perception could also be applicable to Grade 12 learners.

Table 23: Comparison of knowledge score between those who had been treated by a chiropractor and those who had not

	Treated by chiropractor	N	Mean	Std. Deviation	Std. Error Mean	p value
Knowledge percent	Yes	47	49.01	18.171	2.651	0.006
	No	482	40.28	20.912	.952	

Therefore knowledge score was highest in participants who were younger (16 or 17 years old), White or Asian and English speaking, whose fathers were in a healthcare field, who lived in their school area, and who had been treated previously by chiropractors.

In this respect GPs seemed to gain their knowledge of the profession in a similar manner, with almost 60% obtaining their information from patients who were treated by a chiropractor and more than 30% from being treated by a chiropractor themselves and thus experienced being a patient (Louw, 2005). In contrast, GCG seemed to gain their knowledge primarily through reading (35%) and then from being treated by a chiropractor at 27%. Only 6% had heard about chiropractic from their GP (Van As, 2005).

Factors which significantly influenced perception towards chiropractic

1. Have you considered a career as a chiropractor?

None of the demographic factors affected whether the respondent had considered a career as a chiropractor, and neither did their aggregate at the end of Grade 11. This re-enforces the fact that some Grade 12 learners are making uninformed career decisions.

However, the knowledge score did significantly affect whether they had considered a career as a chiropractor ($p = 0.008$). Those with higher knowledge scores were more likely to consider a career as a chiropractor (mean score = 45.96% compared with 40.69%). But this could also mean that as a result of their interest in chiropractic that they have a higher score for knowledge and therefore wish to pursue the career.

Table 24: Comparison of knowledge score by whether they had considered a career as a chiropractor

	Considered a career as a chiropractor	N	Mean	Std. Deviation	Std. Error Mean	P value
Knowledge percent	yes	116	45.96	17.587	1.633	0.008
	no	390	40.69	21.773	1.102	

4.5 Conclusion

Therefore, with respect to the hypothesis made in chapter one the following is applicable:

Aim One:

Aim one indicates that based on evidence presented in the study, there is at present a low level of knowledge among Grade 12 learners. This must however be taken in context to the sample size, which was small compared to the entire Grade 12 population.

Aim Two:

The perception of Chiropractic amongst Grade 12 learners does not seem to favour either a predominantly positive or negative slant, this is in line with the low level of knowledge. However, this must be taken with caution due to the sample size.

Hypothesis One:

- There are no relationships between the demographic profile factors and the knowledge and perception of the grade 12 learner.
- With respect to this hypothesis and based on the foregoing statistics presented;
 1. Age, must be rejected;
 2. Gender, must be accepted;
 3. Ethnicity, must be rejected;
 4. Home Language, must be rejected;
 5. Occupational status of parents, must be accepted with the exception of those instances in which the father was directly involved in health care and
 6. Academic profile must be rejected.

This study significantly shows that there is a relationship between the demographic profile factors and the knowledge and perception of the Grade 12 learner. However, this must be taken with caution due to the sample size.

In support of the above acceptance and non acceptance of the hypothesis it is important to note that the internal constructs of the questionnaire used in this study were valid and reliable as determined by the focus group, as the constructs used to measure certain parameters showed reliable and consistent trends irrespective of their position in the questionnaire of whether the response required were negative or positive.

CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS

5. 1 Conclusion

The knowledge and perception in Grade 12 learners in the Durban Region has been described in this study and has shed light on the limitations of such knowledge and perceptions. Knowledge and perceptions were related non-significantly to: demographics, use of chiropractors and each other.

There is still a lack of awareness amongst Grade 12 learners about the scope of practice of the chiropractic profession and there is a limited perception that chiropractors are back pain specialists. This follows that the more unclear the respondents' understanding of the professions' scope of treatment, the more likely they are not to identify a condition as one that can be treated by chiropractic. Although chiropractic is considered to be a viable means of treating certain disorders, there is still much confusion among prospective and existing patients about the exact role of chiropractic in the health care system.

There is evidence to suggest that their knowledge of chiropractic improves as individuals and family members are treated by chiropractors, thus as the profession gradually expands into wider acceptance and respect, both amongst individuals and other health care professionals. For those individuals who lack access to chiropractic care, their knowledge and awareness can be improved upon through advertising in the media, career fairs/ exhibitions and career magazines. This study provides useful information which could influence future career choices and collaboration between Grade 12 learners and the chiropractic profession in the South African health care system.

5. 2 Recommendations

5.2.1 Recommendations with respect to the study

1. Further studies should be done to assess the knowledge and perceptions of Grade 12 learners in other regions in South Africa to give a better indication of the overall perceptions and knowledge of Grade 12 learners nationally. The results from this study may not be representative of Grade 12 learners countrywide. The small sample size was a limitation to showing statistical significance in the hypothesis tested. The demonstration of trends suggests that this study should be repeated in a larger more representative sample. Perhaps a different method of questionnaire administration could be used to increase the response rate for questions that were not answered properly, such as face –to-face interviews.
2. If at all possible, numerous contacts between the researcher and the participants must take place. This can be done by sending an advance letter introducing the study.
3. In the survey certain questions were poorly answered possibly due to ambiguous or unclear explanations. This would have given incorrect response to this question, since some Grade 12 learners followed the instructions, while others appeared not to. This was the perception conveyed to the researcher in the manner in which the responses where noted.
4. Another detracting aspect with respect to the questionnaire was the fact that the blocks (For some questions (e. g. 34, 40-42) were very close together, causing the Grade 12 learners possible visual confusion and possibly resulting

in a block being erroneously marked. In a future study, revision of this questionnaire would be beneficial to gain the most accurate response.

5.2.2 Recommendations with respect to the results of the study and the profession.

1. Intervention programmes to educate and increase awareness of chiropractic amongst Grade 12 learners should take place. Talks on chiropractic could also be delivered to schools at career day functions. More articles should be published in educational journals, magazines and newspapers as these seem to be a common source of information to a wide variety of people. The success of such a programme should be measured through a similar means (as in this study) at a point several years after the educational drive has been completed.
2. One must take into account that the respondents who took part in the study may have only done so because they were interested in the topic at hand and had already formulated opinions on the subject. This could lead to respondent bias and therefore future studies should try to take steps to ensure a better response rate.
3. The survey should be repeated to get non-medical or “lay persons” perceptions and knowledge of chiropractic in South Africa. A comparative study, between Grade 12 learners’ perception and knowledge of the chiropractic profession in South Africa, could be performed.

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Appendix A

Date:

The Principal of -----High School

Dear Sir, Madam:

Welcome to my research study. Thank you for your interest.

Title: A knowledge and perception study of Grade 12 learners from selected secondary schools in the Durban Metropolitan Region on the Chiropractic profession.

Name of researcher: Aradhna Rattan (0837761717 or 032 -5333467)

Name of supervisor: Charmaine Korporaal (0832463562 or 031- 2042611)

Name of Institution: Durban University of Technology

Introduction:

Throughout the world there is an increase in the use of chiropractic as a complementary form of medical treatment. We do not know much about what the South African public know and think about chiropractic.

I have developed a research survey, which I wish to conduct among Grade 12 learners in your school to establish their perceptions of chiropractic. This survey will be for the completion of my Master's degree in Technology: Chiropractic at Durban University of Technology.

Grade 12 learners represent the future health consumers and medical practitioners of our country, and their opinions on this subject of complementary therapy will be of great value.

Procedure:

With your permission I would like to approach the Grade 12 learners of your school with the view to requesting their voluntary participation in this survey. Once permission has been granted I will set up a time and date with yourself or your career guidance counsellor to visit your school. Your school will be visited, the questionnaire will be introduced, and learners will be requested to complete the survey. Depending on the number of Grade 12 learners participating in the survey in your school, the survey should not take more than 30 minutes. It will be made clear to each learner that participating in this survey is not compulsory and that the responses of each individual and the school involved will remain confidential and anonymous.

Benefits:

The results of this study will be published in an article in a journal and a manuscript will be available in the Durban University of Technology library. Your participation will help in identifying what Grade 12 learners really perceive about chiropractic and ultimately in

giving learners a more informed perception of chiropractic. Your participation will help chiropractors in the field in eliminating any misconceptions the people may have about chiropractic and may also increase your personal awareness of what chiropractic is about.

Remuneration: None. Participation in this study is entirely voluntary.

Thank you for your most valuable time and participation in this survey.
Yours faithfully

Aradhna Rattan
Tel: 0837761717

Dr. Korporaal
Department of Chiropractic
Tel: 031-2042611

Appendix B

Confirmation of approval by Principal

Name of school:

Date of visit:

Name of contact at school:

I hereby confirm that I have approved that Miss A Rattan of the Department of Chiropractic of the Durban University of Technology may undertake a survey among the Grade 12 learners at the above mentioned school.

Principal/ Counsellor

Appendix C

Date:

Dear Grade 12 Learner

Welcome to my research study. Thank you for your interest.

Title: A knowledge and perception study of Grade 12 learners from selected secondary schools in the Durban Metropolitan Region on the Chiropractic profession.

Name of researcher: Aradhna Rattan (0837761717)

Name of supervisor: Charmaine Korporaal (0832463562 or 031- 2042611)

Name of Institution: Durban University of Technology

Introduction:

Throughout the world there is an increase in the use of chiropractic as a complementary form of medical treatment. We do not know much about what the South African public know and think about chiropractic.

You, as a Grade 12 learner, represent the future health consumers and medical practitioners of our country, and I value your opinion on this subject of complementary therapy. This has led me to develop a research survey among you, the Grade 12 learners in the Durban area to establish your perceptions of chiropractic. This survey will be for the completion of my Master's degree in Technology at Durban University of Technology.

Procedure:

Your decision to participate in this survey is greatly valued and voluntary. If you do choose to take part in the survey and assist me in my research your answers will be completely anonymous and strictly confidential.

I would like you to complete the attached questionnaire in full, which should not take longer than 10 minutes. Questions can be answered by placing an X in the block next to the answer of your choice, or by filling in the answer in the blank space provided.

Benefits:

The results of this study will be published in an article in a journal and a manuscript will be available in the Durban University of Technology library. Your answers will help us greatly to provide more information on chiropractic and to market the study of chiropractic in our area.

Remuneration: None. Participation in this study is entirely voluntary.

Thank you for your help in participating in this survey.

Yours faithfully

Aradhna Rattan

Charmaine Korporaal
Department of Chiropractic

Isahluko C

Mfundi webanga leshumi ohandekayo

Ngiyakwamukela kulolucwaningo lwami. Ngiyabonga ngentshisekelo yakho.

Isihloko: Ulwazi nokucabanga kwabafundi bebanga leshumi ezikoleni zamasekhondari kumasipala waseThekwini nge - Chiropractic.

Igama lomcwangini: Aradhna Rattan (083 776 1717)
Igama loengamele ucwangingo: Charmaine Korporeal (083 246 3562)
Igama lesikhungo: Durban University of Technology

Isandulelo:

Emhlabeni wonke liya ngokwenyuka lenyuka izinga lokusetseenziswa kwe - chiropractic njengenye yezindlela zokwelapha. Asazi ukuthi abantu baseMzansi Afrika bazini nokuthi bacabangani nge - chiropractic.

Wena, njengomfundi webanga leshumi, umele ikusasa labantu abasebenzisa eziphilo kanye nodokotela bezwe, ngiyawubungaza umbono wakho onawo ngalendlela yokwelapha. Yikho kanye lokhu okwenze ukuthi ngenze lolucwaningo kinina, abafundi bebanga leshumi eThekwini ukuthi nica bangani nge - chiropractic. Lolucwaningo ngilwenzela ukugeda iziqu zami (Master's Degree) e-Durban University of Technology.

Inqubo:

Ukuzibandakanya kwakho kulolucwaningo kuyabongeka kakhulu kanti futhi awuphohqiwe. Uma ukhethe ukuzibandakanya kulolucwaningo futhi usize mina kulolucwaningo lwami izimpendulo zakho akekho ozokwazi ukuthi zingezakho kanti futhi ziyimfihlo.

Ngizocela ukuthi ugcalise lemibuzo ngokugcwele, angeke kuthathe imizuzu engaphezulu kweyishumi. Imibuzo ingaphendulwa ngokubeka uphawu X ebhokisini eliseduzane nempendulo oyikhethehle, noma ugcalise esikhaleni esibekiwe.

Okuzwawo:

Impihumela yalolucwaningo izobhalwa emqulwini wencwadi kanti futhi incwadi enye izoba khona emtapweni wolwazi e- Durban University of Technology. Izimpendulo zakho zizosisiza ekutheni sinikeze ulwazi nge- chiropractic nanokuthi sazise abantu nge-chiropractic endaweni yethu.

Ukuhokhelwa:

Awukhokhelwa lutho. Kanti futhi awuphohqiwe ukuthi uzibandakanye.

Ngibongwe usizo lwakho ngokuzibandakanya kulolucwaningo.

Yimi ozithobayo

Aradhna Rattan

Charmaine Korporaal
Umanyango we-Chiropractic

Appendix D

Instructions to participants on how to complete the questionnaire

Questionnaire on Grade 12 learner's perceptions of Chiropractic

Instructions:

1. This questionnaire consists of 9 pages. Please answer all the questions on all the pages.
2. Please read each question carefully before you answer it.
3. Please mark the appropriate box in each question that best describes your answer with an X or a tick. (✓)
4. Your answers will be regarded as strictly confidential.

Appendix E

Pre-test Evaluation

1 What is your opinion of the subject presented in this questionnaire?

(Please mark the most appropriate box)

1.1 Extremely interesting

1.2 Interesting

1.3 Average

1.4 Boring

1.5 Very boring

2 Do you think the topics raised in this questionnaire were adequately covered?

2.1 Yes

2.2 No

3 What is your opinion about the covering letter?

(Please mark one box only)

3.1 Very clear

3.2 Clear

3.3 Adequate

3.4 Unclear

3.5 Needs revising

4 How would you describe the instructions accompanying each of the questions?

(Please mark one box only)

4.1 Very clear

4.2 Clear

4.3 Adequate

4.4 Unclear

4.5 Needs revising

5 Do you think the questionnaire is too long?

5.1 Yes

5.2 No

6 What is your opinion of the wording of the questionnaire?

(Please mark the appropriate box/es)

6.1 The meaning of **all questions** is absolutely clear

6.2 The meaning of **most** questions is clear

6.3 There is too much chiropractic/ medical jargon

6.4 The questions will not be understood by
lay persons

6.5 The questionnaire needs to be revised
because it is unclear

If you had any difficulty answering any question/s, please write the number/s of the question/s in the space below with a suggestion on how the question/s can be improved?

Thank you for your most valuable time in helping me with my research project.
Please be reminded that the topics discussed above are strictly confidential.

Appendix F

QUESTIONNAIRE

1. *Gender*

Female

☐

Male

☐

2. *Age (in years)*

3. *Ethnicity*

Asian

☐

Black

☐

Coloured

☐

White

☐

Other

☐

4. *Home language*

Afrikaans

☐

English

☐

Zulu

☐

Other(Please specify).....

5 a. *What is your fathers occupation ?*
(Please specify)

b. *What is your mothers occupation ?*
(Please specify)

6. *Do you live in the same area that you attend school?*

Yes

☐

No

☐

7. *If No, state where you live (specific suburb)*

.....
.....
.....

8. Name the school you attend

.....

.....

9. a. List your subject choices, the grade at which you do each subject (either higher grade(HG) OR standard grade(SG) and the mark/ symbol attained for each subject at your last results.

SUBJECT	HG OR SG GRADE	SYMBOL ATTAINED

9. b. What was your aggregate at the end of grade 11?

.....%.

10. How would you rate your health?

Poor ☐
Good ☐
Excellent ☐

Fair ☐
Very Good ☐

11. What extra curricular activity do you participate in?

(e.g. Sports, Cultural or Recreational)

Rugby ☐
Chess ☐
Art ☐
Swimming ☐
Tennis ☐

Choir ☐
Handcraft ☐
Soccer ☐
Dancing ☐
Other (please specify).....

12. a . Who you consult when you are feeling ill?

(Tick only one option)

Doctor ☐
Nurse at Clinic ☐
Other (please specify)

Pharmacist ☐
Traditional healer ☐

12. b. *Who do you consult when you are injured?*

(Tick only one option)

Doctor

☐

Chiropractor

☐

Physiotherapist

Surgeon

Other (please specify).....

13. *How satisfied are you with the care you received from this type of practitioner the last time you consulted them?*

Very Unsatisfied

☐

Unsatisfied

☐

Neutral

☐

Satisfied

☐

Very Satisfied

☐

14. *Are your health expenses currently covered by Medical Aid?*

Yes

☐

No

☐

Don't Know

☐

15. *Have you ever heard of Chiropractic?*

Yes

☐

No

☐

16. *If Yes, what word/s or terms would you associate with chiropractic?*
(Limit to 2-3 most important)

17. *If you have heard of Chiropractic treatment before, where did you hear about it?*

Referred by Doctor

☐

Media

☐

Family

☐

Friends

☐

Career guidance counsellors

☐

Career fairs

☐

Other (please specify).....

18. *Are you aware if there is a Chiropractor in your area?*

Yes

☐

No

☐

19. *Have you observed a chiropractor treating?*

Yes

☐

No

☐

20. Have you been treated by a Chiropractor?

Yes

☐

No

☐

If Yes, proceed to question 21. If No, proceed to question 25.

21. If Yes, who referred you to the Chiropractor?

Doctor

☐

Pharmacist

☐

Family

☐

Friends

Self

☐

Other (please specify).....

22. How impressed are you with the care you received from the Chiropractor the last time you consulted them?

Very Unimpressed

☐

Unimpressed

☐

Neutral

☐

Impressed

☐

Very Impressed

☐

23. Did the Chiropractor explain how Chiropractic works?

Yes

☐

No

☐

24. Do you discuss with your physician or doctor that you have consulted a chiropractor?

Yes

☐

No

☐

25. Has any other member in your family consulted a Chiropractor?

Yes

☐

No

☐

26. In each of the following statements, Place an X in the box to indicate whether you Agree, Disagree or Don't know.

*Chiropractic is a method of healing not recognized by conventional medicine.

Agree	Disagree	Don't know
-------	----------	------------

*Chiropractic is medicine from a different cultural area.

Agree	Disagree	Don't know
-------	----------	------------

*Chiropractic is a treatment of healing.

Agree	Disagree	Don't know
-------	----------	------------

*Chiropractic is a useful supplement to conventional medicine.

Agree	Disagree	Don't know
-------	----------	------------

*Chiropractic is not a form of manual therapy.

Agree	Disagree	Don't know
-------	----------	------------

*Chiropractic treatment is safe to use

Agree	Disagree	Don't know
-------	----------	------------

*Chiropractic treatment is effective

Agree	Disagree	Don't know
-------	----------	------------

27. In your opinion do you see chiropractic as?

(Tick only one option)

Preventative treatment

☐

First choice treatment

☐

Supportive treatment

☐

Recuperative treatment

☐

Of no value

☐

28. Do you feel that the public generally accepts chiropractic as a form of health care?

Yes

☐

No

☐

29. If No to the above question, mark which you think provides the best reason.

(Rank in order of importance)

Lack of understanding of Chiropractic

☐

Dangerous or harmful treatments

☐

Bad marketing of Chiropractic

☐

Excessive cost

☐

Unproven effectiveness

☐

30. Indicate how many years you think it takes to qualify as a Chiropractor

1 year

☐

2 years

☐

3 years

☐

4 years

☐

5 years

☐

Don't know

☐

31 a. What qualification is obtained once the chiropractic course is completed?

Certificate	<input type="text"/>	National Diploma	<input type="text"/>
Diploma	<input type="text"/>	Bachelors Degree	<input type="text"/>
Masters degree	<input type="text"/>	Don't know	<input type="text"/>

31 b How much you think a chiropractor earns per month in practice.

0 – R5000	<input type="text"/>	R5000 – R10000	<input type="text"/>
R10000 – R20000	<input type="text"/>	R20000 – R50000	<input type="text"/>
R 50000 – R100000	<input type="text"/>	Over R100000	<input type="text"/>

32. Do you know which tertiary institutions in South Africa offer the chiropractic course?

Yes	<input type="text"/>	No	<input type="text"/>
-----	----------------------	----	----------------------

33. Do learners require a matric exemption to study chiropractic in South Africa?

Yes	<input type="text"/>	No	<input type="text"/>
-----	----------------------	----	----------------------

34. The following subjects are compulsory, as part of the learners matric subjects, to be accepted into the chiropractic course in South Africa? Please place an "X" in the correct box to indicate "True" or "False".

(Leave out if you don't know the answer)

	T	F
• Biology	<input type="text"/>	<input type="text"/>
• English	<input type="text"/>	<input type="text"/>
• Mathematics	<input type="text"/>	<input type="text"/>
• Physical science and chemistry	<input type="text"/>	<input type="text"/>
• Accounting	<input type="text"/>	<input type="text"/>
• Afrikaans	<input type="text"/>	<input type="text"/>
• Computer science	<input type="text"/>	<input type="text"/>
• Art	<input type="text"/>	<input type="text"/>
• Music	<input type="text"/>	<input type="text"/>
• Speech and drama	<input type="text"/>	<input type="text"/>
• Geography	<input type="text"/>	<input type="text"/>

35. Do you know what you want to do next year?

Yes	<input type="text"/>	No	<input type="text"/>
-----	----------------------	----	----------------------

36. Have you ever considered a career in health care?

Yes	<input type="text"/>	No	<input type="text"/>
-----	----------------------	----	----------------------

If Yes to the above question, please specify which one

37. Would you consider a career as a Chiropractor?

Yes

☐

No

☐

38. Irrespective of the answer above, please give reasons.

39. What further research have you done to find out more about the chiropractic profession? Have you consulted with any of the following:

internet

☐
☐

practitioners

☐
☐

books

career guidance counsellors

career fairs

☐

educational / tertiary institutions

☐
☐

other (please specify).....

magazines

40. The chiropractic course includes grounding in the following subjects? Please place an "X" in the correct box to indicate "True" or "False".

(Leave out if you don't know the answer)

	T	F
• Anatomy	<input type="checkbox"/>	<input type="checkbox"/>
• Chemistry	<input type="checkbox"/>	<input type="checkbox"/>
• Chemotherapy	<input type="checkbox"/>	<input type="checkbox"/>
• Diagnostics	<input type="checkbox"/>	<input type="checkbox"/>
• Microbiology	<input type="checkbox"/>	<input type="checkbox"/>
• Pathology	<input type="checkbox"/>	<input type="checkbox"/>
• Pharmacology	<input type="checkbox"/>	<input type="checkbox"/>
• Physics	<input type="checkbox"/>	<input type="checkbox"/>
• Physiology	<input type="checkbox"/>	<input type="checkbox"/>
• Physiotherapy	<input type="checkbox"/>	<input type="checkbox"/>
• Psychiatry	<input type="checkbox"/>	<input type="checkbox"/>
• Radiology	<input type="checkbox"/>	<input type="checkbox"/>
• Surgery	<input type="checkbox"/>	<input type="checkbox"/>

41. During training of the chiropractic course, do you think that the following areas are covered? Please place an "X" in the correct box to indicate "True" or "False".
(Leave out if you don't know the answer)

	<u>T</u>	<u>F</u>
• Neuromusculoskeletal (nerves, muscles and bones) system	<input type="checkbox"/>	<input type="checkbox"/>
• Extremities(e.g. knee, elbow, wrist)	<input type="checkbox"/>	<input type="checkbox"/>
• Paediatrics	<input type="checkbox"/>	<input type="checkbox"/>
• Sports injuries	<input type="checkbox"/>	<input type="checkbox"/>
• Colic	<input type="checkbox"/>	<input type="checkbox"/>
• Sprains	<input type="checkbox"/>	<input type="checkbox"/>
• Rehabilitation	<input type="checkbox"/>	<input type="checkbox"/>
• Surgery	<input type="checkbox"/>	<input type="checkbox"/>
• Reflexology	<input type="checkbox"/>	<input type="checkbox"/>
• Emergency care	<input type="checkbox"/>	<input type="checkbox"/>
• Podiatry	<input type="checkbox"/>	<input type="checkbox"/>

42. The chiropractic course in South Africa includes training in the following treatment/intervention methods: Place an "X" in the correct box to indicate "True" or "False".
(Leave out if you don't know the answer)

	<u>T</u>	<u>F</u>
• Acupuncture	<input type="checkbox"/>	<input type="checkbox"/>
• Electrotherapy (IFC, TENS)	<input type="checkbox"/>	<input type="checkbox"/>
• Radiology	<input type="checkbox"/>	<input type="checkbox"/>
• Exercise therapy	<input type="checkbox"/>	<input type="checkbox"/>
• Foot care(orthotics)	<input type="checkbox"/>	<input type="checkbox"/>
• Heat & ice therapy	<input type="checkbox"/>	<input type="checkbox"/>
• Manicure	<input type="checkbox"/>	<input type="checkbox"/>
• Manipulation/ adjustments	<input type="checkbox"/>	<input type="checkbox"/>
• Massage	<input type="checkbox"/>	<input type="checkbox"/>
• Medicine	<input type="checkbox"/>	<input type="checkbox"/>
• Minor surgery	<input type="checkbox"/>	<input type="checkbox"/>
• Mobilization	<input type="checkbox"/>	<input type="checkbox"/>
• Needling tender spots	<input type="checkbox"/>	<input type="checkbox"/>
• Nutritional advice	<input type="checkbox"/>	<input type="checkbox"/>
• Stretching	<input type="checkbox"/>	<input type="checkbox"/>
• Traction	<input type="checkbox"/>	<input type="checkbox"/>
• Strapping	<input type="checkbox"/>	<input type="checkbox"/>
• hot stone therapy	<input type="checkbox"/>	<input type="checkbox"/>
• crystal therapy	<input type="checkbox"/>	<input type="checkbox"/>

43. *Does your career guidance counsellor give you enough information about the chiropractic course?*

- Yes ☐ No ☐

44. *Do you know the difference between Chiropractic and Physiotherapy?*

- Yes ☐ No ☐

45. *Would you be interested in finding out more about chiropractic?*

- Yes ☐ No ☐

Thank you for your time in answering this questionnaire.

Appendix G

Letter of thanks to participating schools

The Principal

I would like to take this opportunity to thank you most sincerely for your willingness and assistance in allowing me to address your Grade 12 learners about chiropractic, and for their participation in my survey on perceptions of chiropractic by Grade 12 learners of Durban.

I trust that this exercise was of value to your learners, and assure you that the information gleaned from the survey is of great significance.

The published results of the survey will be available to you in the library of the Durban University of Technology before the end of 2006.

Yours faithfully

Aradhna Rattan
Research student

Dr. Korporaal
Department of Chiropractic

Appendix H

List of 20 Secondary Schools in the Durban Metropolitan Region

1. Al Falaah College
2. Avoca Secondary
3. Brookdale Secondary
4. Burnwood Secondary
5. Dr A D Lazarus Secondary
6. Durban Girls Secondary
7. Effingham Secondary
8. Lakehaven Secondary
9. Mari Stella High School
10. Mountview Secondary
11. Northwood High
12. Overport Secondary
13. Reservoir Hills Secondary
14. Ridge Park College
15. Sastri College
16. Seatides Secondary
17. Ternance Park Secondary
18. Woodview Secondary
19. Westville Boys High
20. Westville Girls High

Appendix I

Schools in the Durban Metropolitan Region

<i>District</i>	<i>No. of Schools</i>	<i>15% of Schools</i>
Umlazi	90	10
Pinetown	55	9
Ilembe	10	1

Appendix J

LETTER OF INFORMATION – FOCUS GROUP

Dear Participant,

I would like to welcome you into the focus group of my study.

The title of my research project is:

A knowledge and perception study of Grade 12 learners from selected secondary schools in the Durban Metropolitan Region on the chiropractic profession.

Background to the study:

Chiropractic is a health profession specializing in the diagnosis, treatment and prevention of mechanical disorders of the musculoskeletal system and the affects of these disorders on the function of the nervous system and general health. Chiropractic practitioners essentially rely upon non-invasive treatment methods and will refer patients to medical practitioners should medication or surgery be indicated. This approach is further reinforced by chiropractors in their promotion of healthy lifestyles such as the avoidance of smoking and excess stress, proper diet and exercise.

Chiropractors are primary contact health physicians who can diagnose and treat patients for a range of conditions, but still a lot of confusion exists in society about what chiropractic really entails. The purpose of my study is to determine what Grade 12 learners know about the chiropractic profession in South Africa. My aim for this study is to determine the knowledge and perception of chiropractic amongst Grade 12 learners in South Africa as an indicator of a career path for school leavers.

This information is important to Grade 12 learners because school leavers will be thinking of career options for the future. These teenagers will have to make informed decisions that may have an affect on the rest of their life. This research will endeavour to prove how much Grade 12 learners know or perceive about the chiropractic profession. This research may help chiropractic professionals in the field in educating their patients about any misconceptions they may have about chiropractic.

Objective of the study:

The data obtained by means of this questionnaire will allow for further assessment of the role of chiropractic in the South African health care system. The questions are concerned with the Grade 12 learner's knowledge and perception of chiropractic, the role of chiropractic in the South African health care system, as well as the scope and market share of chiropractors in South Africa. The questionnaire will only take a few minutes to complete, as most of the

questions require you to tick or circle the appropriate answer. There are only a few short written responses that are required.

Your participation in this study is much appreciated and you are assured that your comments and contributions to the discussion will be kept confidential. The results of the discussion will only be used for research purposes.

If you have any further questions please feel free to contact either my supervisor/co-supervisor or myself.

Aradhna Rattan
Research student

Dr Charmaine Korporaal
Supervisor

Appendix K
INFORMED CONSENT/ ASSENT FORM
(TO BE COMPLETED BY THE PARTICIPANTS OF THE FOCUS GROUP)

DATE: _____

TITLE OF RESEARCH PROJECT: A knowledge and perception study of Grade 12 learners from selected secondary schools in the Durban Metropolitan Region on the chiropractic profession

NAME OF SUPERVISOR: Dr. Korporaal

NAME OF RESEARCH STUDENT: Aradhna Rattan

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 the study at any time, without reasons given	Yes	No
c) withdraw from the 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 regarding this study?		

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:

Focus Group Member: _____ Signature: _____

Witness Name: _____ Signature: _____

Researcher's Name: _____ Signature: _____

Supervisor's Name: _____ Signature: _____

Appendix L
INFORMED CONSENT/ ASSENT FORM

(TO BE COMPLETED BY THE PARTICIPANTS OF THE RESPONDENTS)

DATE: _____

TITLE OF RESEARCH PROJECT: A knowledge and perception study of Grade 12 learners from selected secondary schools in the Durban Metropolitan Region on the chiropractic profession

NAME OF SUPERVISOR: Dr. Korporaal

NAME OF RESEARCH STUDENT: Aradhna Rattan

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 the study at any time, without reasons given	Yes	No
c) withdraw from the study at any time without affecting your future health care or relationship with the Chiropractic day clinic at the Durban Institute of Technology.	Yes	No
8. Do you agree to voluntarily participate in this study	Yes	No
9. Who have you spoken to regarding this study?		

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:

Learners Name: _____ Signature: _____

Witness Name: _____ Signature: _____

Researcher's Name: _____ Signature: _____

Supervisor's Name: _____ Signature: _____

APPENDIX M

IMPORTANT NOTICE:

THIS FORM IS TO BE READ AND FILLED IN BY EVERY MEMBER PARTICIPATING IN THE FOCUS GROUP, BEFORE THE FOCUS GROUP MEETING CONVENES.

CONFIDENTIALITY STATEMENT – FOCUS GROUP DECLARATION

1. All information contained in the research documents and any information discussed during the focus group meeting will be kept private and confidential. This is especially binding to any information that may identify any of the participants in the research process.
2. The returned questionnaires will be coded and kept anonymous in the research process.
3. None of the information shall be communicated to any other individual or organisation outside of this specific focus group as to the decisions of this focus group.
4. The information from this focus group will be made public in terms of a journal publication, which will in no way identify any participants of this research.

Once this form has been read and agreed to, please fill in the appropriate information below and sign to acknowledge agreement.

Please Print in block letters:

Focus Group Member: _____ Signature: _____

Witness Name: _____ Signature: _____

Researcher's Name: _____ Signature: _____

Supervisor's /
Co-supervisor's Name: _____ Signature: _____

Appendix N

CODE OF CONDUCT

This form needs to be completed by every member of the Focus Group prior to the commencement of the focus group meeting.

As a member of this committee I agree to abide by the following conditions:

1. All information contained in the research documents and any information discussed during the focus group meeting will be kept private and confidential. This is especially binding to any information that may identify any of the participants in the research process.
2. None of the information shall be communicated to any other individual or organisation outside of this specific focus group as to the decisions of this focus group.
3. The information from this focus group will be made public in terms of a journal publication, which will in no way identify any participants of this research.

Member represents	Member's Name	Signature	Contact Details

Appendix O

Region: Ethekwini/ Durban

District: Umlazi

*** - English medium schools**

1. A J Mwelase Sec
2. Adams College
3. Al Falaah College *
4. Amanzimtoti High *
5. Apollo Sec *
6. Arena Park Sec *
7. Asoka Sec *
8. Bechet Sec *
9. Brettenwood High *
10. Bonella Sec
11. Brindhaven High *
12. Burnwood Sec *
13. Centenary Sec *
14. Charles Sabelo High
15. Chatsworth Sec *
16. Chesterville Ext Sec *
17. Chesterville Sen Sec
18. Christian High *
19. Clairwood High *
20. Clairwood N3 *
21. Crawford College Durban *
22. Crawford College La Lucia *
23. Crescent Girls High *
24. Crossmoor Sec *
25. Danville Park High *
26. Dloko High
27. Dr Nembula High
28. Durban Academy *
29. Durban Girls High *
30. Durban Girls Sec *
31. Durban High *
32. Durban Noord Koll *
33. Effingham Sec *
34. Ekwazini High
35. Embizweni High
36. Enaleni High
37. Esizibeni Sec
38. Fairvale Sec *
39. Folweni Sec
40. Fundinduka Sec
41. Futura High *
42. Ganges Sec *
43. George Campbell Tech *
44. Glenover Sec *
45. Glenwood High *
46. Grosvenor Boys High *

47. Grosvenor Girls High*
48. Hamilton Makhanya High
49. Hillgrove Sec *
50. Hlengiwe Com High
51. Hunt Road Sec *
52. Igagasi High
53. Interfellowship Christ Pri
54. Isipingo Sec *
55. Isisusa Sec
56. Isolemamba Sen Sec
57. Kenmont High
58. Kharwastan Sec *
59. Khulbebuca Sec
60. Kingsway High *
61. Kuswag School
62. Kwamakhuta Comp High
63. Kwamathanda Sec
64. Kwa mgaga High
65. Kwasanti High
66. Kwashaka High
67. Lakehaven Sec *
68. Lamontville Sec *
69. Lugobe High
70. Mafumbuka High
71. Makhumbuza High
72. Margot Fonteyn Sec
73. Marklands Sec *
74. Masakhanaeni Sec
75. Mason Lincoln Special
76. Mayville Sec *
77. Mbanbangwe Hugh
78. Mcothoyi High
79. Meadowlands N3 *
80. Meadowlands Sec *
81. Menzi High
82. Merebank High *
83. Mhawu High
84. Mnganiwakhe High
85. Montarena Sec *
86. Mowat Park High *
87. Mthambo High
88. Mzwamanda High
89. Nathaniel Sabelo Sec
90. Ndeya Zebnex Sec
91. Ndonyela Sec
92. Ndukwenhle Sec
93. New Forest High *
94. New West Sec *
95. Newhaven Sec *
96. Nomavimbela Sec
97. Northlands Girls High *
98. Northwood Boys*
99. Ntwenhle Sec
100. Nwabi High
101. Oakridge College *
102. Ogwini Comp Tech

103. Okumhlope High
104. Open Air High *
105. Orient Islamic High *
106. Overport Sec *
107. P R Pather Sec*
108. Parkhill Sec*
109. Phambili Sec
110. Port Natal High *
111. Proeta Sec *
112. Qhilika High
113. Queensburgh Boyss *
114. Queensburgh Girls *
115. Reunion Sec *
116. Ridge Park College *
117. Risecliff Sec *
118. Riverdene Sec *
119. Rosburgh High *
120. Sastri College*
121. Savannah Park Sec *
122. Sea Cow Lake Sec *
123. Shallcross Sec*
124. Shumayela Sec
125. Sibambanzulu Sec
126. Sibusisiwe High
127. Sidelile High
128. Sikhwana Ses
129. Sishosinke Sec
130. Siyabonga Sec
131. Sobonakhona Sec
132. Southlands Sec*
133. Sparks Estate Sec*
134. St James College *
135. Strelitzia Sec*
136. Swelihle Sec
137. Umbelbele High
138. Umbilo Sec School *
139. Umkumbi High
140. Umkomaas Sec*
141. Umlazi Com High*
142. Umlazi Com Tech*
143. Umlazi Sen Sec*
144. Umthente Sec
145. V N Naik Special*
146. Vewlabahleke High
147. Vikingozi Sec
148. Vukuzakhe Sec
149. Welbedene Sec*
150. Wentworth Sec*
151. Werda Sec*
152. Westcliffe Sec*
153. Wiggins Sec*
154. Wingen Heights Sec*
155. Witteklip Sec*
156. Woodhurst Sec*
157. Zamakahle Sec
158. Zimele High

- 159. Zuzumqhele Sec
- 160. Zwelethu High
- 161. Zwelibbanzi Sen Sec
- 162. Zwelilhe High

District: Pinetown

1. Albini Girls High*
2. Amandlethu Sec
3. Amaoti N3 Combined
4. Amatshezulu High
5. Avoca Sec*
6. Avonford Sec*
7. Belverton Sec*
8. Bhekisisa High
9. Brookdale Sec *
10. Buffelsdale Sec*
11. Buhlebemfundo Sec
12. Crawford College North Coast*
13. Crystal Point Sec*
14. Dabeka Sec
15. Daleview Sec*
16. Dassenhoek High
17. Dick Ndlovu High
18. Dr A D Lazarus Sec*
19. Dr J L Dbe Sec
20. Dumehlezi Sec
21. Earlington Sec*
22. Eartbury sec
23. Ekuthuleni Comb
24. Fairbreeze Sec*
25. Ferndale Comb*
26. Foresthaven sec*
27. Fulton School for Deaf
28. Gabigabi High
29. Gelofte High*
30. Glenhaven Sec*
31. Greenbury Sec*
32. Grove end Sec*
33. Haven Park Ses*
34. Hillcrest Sec*
35. Hillview Sec*
36. Hlahlindlela High
37. Igugilabasha High
38. Ilanga High
39. Imbeka High
40. Inanda N2
41. Inanda Newton Comb
42. Inanda Seminary
43. Ingqungqulu High
44. Inhlakanipho High
45. Instisekelo High
46. Isibonela High
47. Isibukosezwe Sec
48. Isizinda Sec
49. J E Ndlovu High
50. Khabazela High
51. Khamamgwa Sec
52. Kloof High*

53. Kwabazothini Sec
54. Kwadinabakubo Sec
55. Kwantebeni Sec
56. Kwavutha Sec
57. Kwesethu High
58. Lenarea Sec*
59. Lockhat High
60. Luphappe Sec
61. Luthayi High
62. Magqibagqiba Sec
63. Mandleksosi High
64. Maphinda Sec
65. Maqhutshana Sec
66. Marainhill Sec
67. Marainridge Sen Sec
68. Mathinta Sec
69. Mbheki Sec
70. Mdhawe High
71. Mnyameni Zenex Sec
72. Mountview Sec*
73. Mqhawe High
74. Mt Edgecombe Independent*
75. Myeka Sec
76. Mvaba High
77. Mzuvele High
78. Ndegetho Sec
79. Newlands East Sec*
80. Nhlanhlayethu
81. Nilgirl Sec
82. Nkosibomvu Sec
83. Nkosinathi High
84. Nogunjwa Sec
85. Northmead Sec*
86. Nqabakazulu Comp
87. Ntee Sec
88. Ohlange High
89. Palmview Sec*
90. Phembizizwe High
91. Phezulu Sec
92. Phoenix Sec*
93. Phoenix Tech N3*
94. Phoenix Tech Sec*
95. Pinehill Private*
96. Pinetown Girls High*
97. Pinetown Boys High*
98. Reservoir Hills Sec*
99. Rietvallei Comb
100. Rydalpark Sec*
101. Sacred Heart Sec*
102. Sastri Park Sec*
103. Senzokwethu High
104. Shekembula Sec
105. Sikhethuxolo High
106. Siphesihle Sec
107. Siphesihle High
108. Sithabile Sec

109.	Sithengile Sec
110.	Sithokozile Sec
111.	Sivananda Tech High
112.	Siyajabula High
113.	Siyathuthuka Sec
114.	Solvista Sec*
115.	St Julius Sec
116.	Stanmore Sec*
117.	Suleman Patel Sec
118.	Temple Valley Sec*
119.	Thabela Sec
120.	Thandaza High
121.	Thokozamnganga High
122.	Tholulwazi High
123.	Tornwood Sec
124.	Thubalethu High
125.	Tongaat Sec*
126.	Trenence Manor Sec*
127.	Trenence Park Sec*
128.	Ukusa Sen Sec
129.	Umqhele Sec
130.	Umtappho High
131.	Usethubeni Sec
132.	Uxolophambili Sec
133.	Verulam Independent*
134.	Verulam Islamic*
135.	Verulam Sec*
136.	Vuyiswa Sec
137.	Waterloo Sec
138.	Westham Sec*
139.	Westville Boys High*
140.	Westville Girls High*
141.	Woodview Sec*
142.	Wzamoyo Sec
143.	Wyebank Sec*
144.	Zakhe High
145.	Zeph Dlomo High
146.	Ziphathele Sec
147.	Zifkele High
148.	Ziphembelenini High
149.	Zizamele Sec
150.	Zwelinjani Sec

District: Ilembe

1. A M Moolla Sec
2. Amaphuphesizwe
3. Amatigulu Sen Sec
4. Banguni Sec
5. Chief Ngonyama Sec
6. Darnall Sec*
7. Dumane Commercial
8. Esiqhoghweni Sec
9. Ezithabeni Sec
10. Gcinimfunda Sec
11. Gcinokuhle Sec
12. Gezwayo Sec
13. Gijimani Sec
14. Glenhills Sec*
15. Groutville Sec*
16. Hlangabeza Sec
17. Hloniphani Sec
18. Hlonono High
19. Ikhusana Comb
20. Imbuyiselo Sec
21. Impoqabulungu Sec
22. Indukwentsha Sec
23. Ingobamakhosi Sec
24. Inhlokozi High
25. Inkonjane Sec
26. Isbanisethu High
27. Isinyabusi Sed
28. Isifissosethu Sec
29. Jonase High
30. Khanyisa High
31. Khetimfunda High
32. Kranzkop High
33. Kwa Vusumunzi High
34. Lethithemba Sec
35. Lethuxolo High
36. Lihlithemba High
37. Lukhasa Sec
38. Mabayana High
39. Macaphuna High
40. Madlanga Sec
41. Maggudwini Sec
42. Mahlube Sec
43. Manaba Sec
44. Mandini Academy
45. Mangcengza Sec
46. Manzini Sec
47. Mashiyaamahle High
48. Masiwela High
49. Mathubeszizwe Sen Sec
50. Mbhekaphansi Sec
51. Mbuyiselo Sec

52. Mehlomlundu High
53. Menyezwayo Sec
54. Mgandeni High
55. ML Sultan*
56. ML Sultan N3*
57. Mqungebe Sed
58. Mshiyane High
59. Mthengeni High
60. Mzingezwi High
61. Mzobanzi Sec
62. Ndondakusuka High
63. Ngcolosi High
64. Ngconganglonga High
65. Ngqokwane Sec
66. Ngungwini Sec
67. Njubanjuba High
68. Nkwenkezi High
69. Nombika High
70. Nonhlevu High
71. Nqakathela Sec
72. Nsungwini High
73. Ntabinamafutha Sec
74. Ntuli Combined
75. Lady Of Rosary Sec
76. Phakathwayo Sec
77. Phezukomkhono High
78. Phuzulwazi High
79. Qalakakhle High
80. Qinisani Sec
81. Qoqulwazi Sec
82. Qwabe Sec
83. Sabuyaze High
84. Sakhisizwe High
85. Seatides Sec*
86. Shachakaskraal Sec
87. Siboginhlanhla Sec
88. Sikhuthele Sec
89. Sikonjwa Sec
90. Simunye Sec
91. Sinenhlanhla High
92. Siphinhlanhla High
93. Sippiwe Sec
94. Sisebenzile Sec
95. Siyaphumula High
96. Sizamiseni Sec
97. Somshoko High
98. Sondoda High
99. Sotobe High
100. Stanger High*
101. Stanger Manor*
102. Stanger Sec*
103. Stanger South High*
104. Theohlalanthi Sec
105. Thukela High
106. Tshana High
107. Tshelenkosi Sec

- 108. Tshutshutshu High
- 109. Tugela Sec
- 110. Ubuhlbesizwe Sec
- 111. Ubuhlembembiza Sec
- 112. Udumo High
- 113. Ukukhanyakwezwe Sec
- 114. Umzwangedwa High
- 115. Ukikhulu High
- 116. Velangezwi Sec
- 117. Vukile High
- 118. Wosiyane High
- 119. Zakariyya Muslim
- 120. Zephania Sec

Appendix P

Letter from R. Van As

P. O. Box 900
Verulam
4340
20 May 2005

To Whom It May Concern:

I hereby give Aradhna Rattan permission to use my questionnaire as a base from which to design her own to be used in her relevant study. I adapted and developed this questionnaire from one originally designed by Jannie Louw (Master's Learner: Chiropractic).

Regards

Ron Van As
Master's Learner (Chiropractic)

Appendix Q

Focus Group Discussion

Transcript of the taped recordings

Date: 8 June 2006, 5. 00pm

Welcome,

Has everyone signed their informed consent form, confidentiality statement and code of conduct?

The topic of my research is the knowledge and perception of grade 12 learners in the Durban area towards the chiropractic profession. Basically I'm just wanting to gather what grade 12 learners know about chiropractic, what they think the scope of practice is and whether they would consider chiropractic as a career choice and also the profile of grade 12 learners, their level of knowledge as well as their perceptions with respect to chiropractic.

Are there any questions?

What's your sample size?

My sample size is roughly 700. Twenty secondary schools were chosen in Durban area, these schools are divided into 3 educational districts. This is 15 of the total number of schools. One class per school will be handed the questionnaire. Only English first language schools are targeted. Each class has about 35 learners. I got all this information from the department of education, KwaZulu Natal.

In order to save place and shorten the questionnaire, it would be better if you used the blocks side by side, instead of one below the other. Do you agree?

Yes, that makes sense

I think that wherever you have “other” as an option, you should rather have “other”, please specify, in that way you get more information out of the question

Ok

Add in parent’s occupation under demographic questions, this will help you when trying to find out socio-economic status

Ok

I don’t understand the question “What class do you belong to?” . I don’t think there’s a need for this question, after you have explained your sampling procedure.

Ok

I feel that you should add a table/ grid that will allow you to know the subjects they do, the grade on which they do the subject as well as the symbol attained in their last set of results.

Must I still ask them for their Grade 11 results?

Yes, ask their aggregate at the end of Grade 11

Ask what extra curricular activities they participate in, in order to gage their fitness as well as to determine the injuries they would have faced, while being

interactive with activities. Add in sports, recreational as well as cultural activities, if adding “other”, please specify.

Add a question as to how do they consult when injured, as it will not necessarily be the same as who they consult when feeling ill, also ask them to tick only one option to the responses given. Add more responses e.g. “Self”

Change care you received from this “person” to “practitioner”

Ask the learners what terms/ words they would associate chiropractic with?

Should I limit the number of words?

Yes 2-3 most important.

The question about learners being interested in finding out more about chiropractic should be the last question

Add more options to where learners would have heard about chiropractic

Ask if they have observed a chiropractor treating

Change Chemist to Pharmacist and add more options to who would have referred them to a chiropractor, again add” Self”. For “other”, please specify

Change “satisfied” to “impresses”.

Your use of chiropractic treatment may be confusing, rather word it as do you discuss with your physician that you have consulted a chiropractor.

Change any member to any other member in your family

“Official medicine” should be changed to “conventional medicine”.

“No opinion” should be altered to “Don’t know”

It is better if you say chiropractic is a form of healing.

“Regular medicine” should be changed to “conventional medicine”

Don’t use the sentence that states placebo effect, as the learners will not know what this is, rather change the sentence to “chiropractic is a form of manual therapy”

Check for spelling and grammar errors

Change “medicine” to “treatment” and “recuperation” to “recuperative”.

I think it sounds better to say chiropractic treatment as a form of health care.
Rank this question in order of importance.

Separate the number of years and qualification, make this into two different questions. For both add the option of “Don’t know”.

Add a question to gauge if the learners know how much a chiropractor earns, give them different ranges of incomes

Ask them if they know which tertiary institutions in South Africa offer the chiropractic course

Try and find out if they know if a matric exemption is needed to study the course

Ask all school related questions in this section

In subject choices that are compulsory, as part of the learners matric subjects, to be accepted into the chiropractic course in South Africa, add more options, including incorrect options.

Bring in the questions about what they want to do next year in here

If they reply yes to considering a career in health care, ask them to specify which one.

Lastly, ask them if they would consider a career as chiropractor, and they must give a reason irrespective of their answer.

Try and find out what further research they have done to find out more about the profession. Give options, and for “other”, please specify.

Now bring in questions regarding the chiropractic course

Add more incorrect responses to the subjects required for grounding of the chiropractic course. Specify leave out if they don't know the answers to these questions.

Change the wording to “during the training of the course, the following areas are covered”. Add more incorrect responses as well.

The course includes training in the following treatment/ intervention methods, add more incorrect responses.

To try and incorporate Van As's study do you think we should ask if they getting enough information from their career guidance counselors?

Yes that will be good

Since there is always confusion I think it is best to ask if they know the difference between chiropractic and physiotherapy

Yes, that's important

Also, ask if they will be interested in finding out more about chiropractic.

Check numbering again, after moving some of the questions as we discussed.

Add a thank you note at the end for thanking the learners for answering the questionnaire.

I think that the suggestions you have been given will help you come up with something that is excellent, you need to shuffle a couple of questions around and rephrase a couple of questions.

I think that's about it, we have covered everything.

Yes that's seems good.

Thank you very much for your input and your time to help me in this focus group meeting, I really appreciate it.

Please help yourselves to all provided, once again...Thank you..