

ORTHOPAEDIC SURGEONS, NEUROLOGISTS AND NEUROSURGEONS
VIEWS OF THE CHIROPRACTIC PROFESSION IN SOUTH AFRICA.

A dissertation presented to the Faculty of
Health Services, Technikon Natal, in partial fulfilment of the
requirements for the Master's Degree in Technology:
Chiropractic.

by

Brent-Nolan Rubens

I, Brent-Nolan Rubens, do hereby declare that the following
dissertation represents my own work, both in conception and
in execution.

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Approved for final submission.

Dr H. Kretzmann, M.Dip.C (S.A).

Supervisor

Date : 3-09-96

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Abstract

The purpose of this study was to determine the views of orthopaedic surgeons, neurosurgeons and neurologists with regard to the chiropractic profession in South Africa, in order to establish a knowledge base to facilitate greater understanding and thus co-operation between orthodox medicine and chiropractic. A greater understanding of the effectiveness and benefits of chiropractic by the medical profession could lead to greater co-operation between the two professions. This would allow chiropractic to better administer its' services to the public via unprejudiced free market access to patients and organised patient referral systems.

A questionnaire with an introductory letter was mailed to the entire population of orthopaedic surgeons, neurosurgeons and neurologists resident in South Africa who were registered with the South African Medical and Dental Council as at 30 June 1995 (N=619). 164 questionnaires were returned in total, constituting a response rate of 26,5%. The survey consisted of questions regarding the respondents general views on chiropractic, chiropractic therapeutic efficacy, chiropractic scope of practice, inter-professional relations, and chiropractic utilization.

The results were statistically analyzed using cross-tabulation and chi-square analysis. The results were represented by means of frequency tables and cross-tabulation and graphically represented using bar graphs.

The majority of South African neurologists, neurosurgeons and orthopaedic surgeons who responded to the survey were not well informed about chiropractic. Although many respondents believed chiropractic to be effective for some patients, a high percentage were still uncomfortable with chiropractic. Significantly, neurosurgeons who responded to the survey were informed to a greater extent about chiropractic and believed it to be more effective than did neurologists and orthopaedic surgeons ($p=0,0105728$). A meaningful number of inter-referrals occurs between chiropractors and neurologists, neurosurgeons and orthopaedic surgeons in South Africa. Neurosurgeons also refer more patients to and receive more referrals from chiropractors than do neurologists or orthopaedic surgeons. The majority of respondents to the survey believed that chiropractic is not important in serving in a primary health care capacity and should adopt a supportive and rehabilitative role in the South African health care system. The majority of respondents to the survey also believed that chiropractic is limited to treating neuro-musculo-skeletal problems and that chiropractic should exist either under medical supervision or as a limited medical profession.

The sample size ($n=164$) of this survey negatively affected the statistical significance of the study. Any similar studies conducted in the future should attempt to increase the sample size so as to avoid under-representation of results.

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TABLE OF ABBREVIATIONS

MASA - Medical Association of South Africa

SAMDC - South African Medical and Dental Council

ORTHOPOD - Orthopaedic Surgeon

Chapter 1. Introduction

The medical profession in the past has generally been opposed to the theories and practice of chiropractic, for a variety of reasons, including lack of scientific validity as well as unsubstantiated claims made by some chiropractors (Silver 1980). Neuro-musculo-skeletal disorders are extremely prevalent (Stano 1993) , and a large pool of patients exist, common to both chiropractic and medicine. The chiropractic profession is attempting to improve co-operation with the medical profession via the scientific validation of its theories and practice through research. Rule 7.(2), which prohibited doctors registered with the South African Medical and Dental Council from co-operating with chiropractors, has recently been removed from the statutes of the South African Medical and Dental Council which opens the way for greater co-operation between the medical profession and chiropractic (Sidley 1994).

A review of the related literature reveals a number of studies exploring the relationship between chiropractic, the public and other health care professions (Steenkamp, 1984; Shekelle and Brook, 1991; Sanchez, 1991). A few reports examine medical doctors views on alternative medicine, including chiropractic and spinal manipulation in general (Reilly 1983, Wharton and Lewith 1986). At present, very little quantifiable information on the medical profession's opinion and knowledge of chiropractic exists, and no studies have determined the views of orthopaedic surgeons, neurologists and neurosurgeons with regard to the chiropractic profession in South Africa.

A study by Cherkin et al. (1989), examined family physicians views and knowledge about chiropractic and found the views of that particular group to be less negative than those of organised medicine in general. The authors noted that if this trend of medical doctors decreasing negativity towards chiropractic continued, chiropractors and medical doctors may reach a point of peaceful coexistence. Curtis and Bove (1992) state that chiropractic is playing an increasing role in the primary care of musculoskeletal problems and they suggest that medical doctors should therefore re-evaluate their relationship with chiropractors as health care providers. Neff (1989) presents a paper on the taxonomy (the science of classification) of the neurosciences, and he comments on the importance of why chiropractors should review this taxonomy, stating that an improved understanding of the neurosciences will facilitate a preferential relationship with neurologists or neurosurgeons, improving professional relations. He also demonstrates practical and efficient methods of co-operation between neurologists and the referring chiropractor, a link that has eluded these professions for nearly a century.

According to Hupkes (1990), the health care delivery system in South Africa is in a state of crisis. He notes that contributing factors include a shortage of resources and the high costs of health care, as well as a lack of interprofessional cooperation and the under-utilization of more cost effective treatment. He also notes that over-servicing has led to an increase in health care costs due to more biomedical testing, specialist referrals, treatment and hospitalizations. Greater co-operation between allopathic (orthodox) medicine, its neuromusculoskeletal specialities, and the chiropractic profession may enhance the cost effectiveness of treatment pertaining to neuromusculoskeletal conditions by decreasing over-servicing.

There are still elements within organised medicine that are strongly opposed to the principles and practice of chiropractic (Wardwell 1992). An investigation into those medical speciality fields closely related to chiropractic, namely orthopaedics, neurosurgery and neurology, should identify misconceptions and misinformation within the orthodox medical fraternity. From this, a plan of action can be drawn to facilitate improved interprofessional relations and a greater understanding between orthodox medicine and chiropractic.

This study is feasible from a financial point of view as the costs of a postal survey are relatively inexpensive considering the volume of information obtained. As this is a pilot study, information gathered could generate new studies, and at a later stage a similar survey may be undertaken to show changes over time.

A greater understanding of the effectiveness and benefits of chiropractic by the medical profession could lead to greater co-operation between the two professions. This would allow chiropractic to better administer its services to the public via unprejudiced free market access to patients and organised patient referral systems.

With this in mind, the purpose of this study is to determine the views of orthopaedic surgeons, neurosurgeons and neurologists with regard to the chiropractic profession in South Africa, in order to establish a knowledge base to facilitate greater understanding and co-operation between orthodox medicine and chiropractic.

Chapter 2. Review of the Related Literature

2.1 Introduction

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. 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. Over approximately the last twenty five years, however, 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, and it is viewed as an alternative form of health care, or in some cases as a speciality.

Gesler (1988) states that chiropractic can be evaluated from medical, economic, social, cultural and geographic perspectives. As a result there is widespread debate and research into the public utilization of chiropractic, its scope of practice, therapeutic efficacy and relations with other professions, although overlap between these perspectives occurs. A vast amount of information and data needs to be gathered, and no studies have been published determining the views of orthopaedic surgeons, neurologists and neurosurgeons with regard to the chiropractic profession in South Africa.

2.2 The status of chiropractic

Sociological writings on chiropractic, from the early 1950's through to the mid-1970's, concentrated on cultural prejudice against chiropractic. Descriptions such as marginal profession, alternative profession and pseudoprofession negatively affected chiropractic by undermining its legitimacy (Coulter 1992: 53-59). The writings of sociologists are extremely influential, and the way chiropractic has been portrayed has greatly influenced its history and the struggle to become a legitimate health care profession. (Coulter 1992: 53-59)

Walter Wardwell, during the early 1950's, was the first to introduce chiropractic as a serious subject for sociological study, and the early writings focused on the assumed marginality of chiropractic, its cultism, its professionalism or lack of it and its deviant theory of disease. This conceptualization was adopted by virtually all sociologists examining chiropractic. (Coulter 1992: 53-59)

Coulter (1992: 53-59) states that the body of literature in the social sciences contains very little factual information about chiropractic, due to the lack of empirical data . He states that instead sociology theorized about the conceptualization of the role of chiropractic in society and the marginality and cultism of the profession became an accepted fact, reinforcing the negative role of chiropractic. This resulted in the impression that chiropractic was not a profession, and that chiropractic was unorthodox, deviant or caste. (Coulter 1992: 53-59.)

A turning point in the writings on chiropractic occurred in 1978 when sociologists began to appreciate that previous theorizations were not based on empirical data. Research began to focus on chiropractic education and practice, as well as on patients who consulted chiropractors. Random samples and extensive participation surveys came into use and studies also looked at the evidence for considering chiropractic as an alternative paradigm of health care by focusing on the doctor patient health encounter and on the model of education (Kelner et al. 1980).

Medical writings on chiropractic also adopted a new perspective although Wardwell (1980: 25-41) at that time stated that it was too early to predict whether organised medicine would ever give up its active opposition to chiropractors and promote co-operation on a professional level. Nevertheless, Silver (1980) noted that it was increasingly important for public health planners and administrators to become acquainted with chiropractic, although he stated that orthodox medicine was resistant and that most physicians were opposed to chiropractic, a view also held by Wardwell (1980: 25-41) and Coulter (1992: 53-59). The deviant status of chiropractic was largely as a result of labelling by influential groups, most importantly the American Medical Association (Gesler 1988). In 1987 the United States Courts ruled that the American Medical Association, the American College of Radiology and the American College of Surgeons had conspired to prevent their members from associating with chiropractors on a professional, research or educational basis.

It was also ruled that the medical profession had engaged "in a long-standing campaign to contain and eliminate chiropractic", holding that this was contrary to United States antitrust laws. An injunction was issued against these associations to discontinue such actions (Gevitz 1989). National chiropractic associations were only able to achieve full acceptance as a clinical discipline through winning this historic lawsuit against the American Medical Association (Curtis and Bove 1992).

Not unlike the American situation, the constraints imposed by rule 7.2 of the South African Medical and Dental Council, which also sought to prevent interaction between medicine and chiropractic in South Africa, "engendered distrust, ignorance and protectionism" (Sidley 1994). This rule has recently been removed from the statutes of the council.

Silver (1980) states that there are many complex factors relating to history, attitudes, beliefs and professional distrust that contribute to the differences in behaviour between chiropractic and medicine. One of allopathic medicine's most powerful perceptions regarding chiropractic involves suspicion regarding the extent, depth, and validity of chiropractic educational programs, in particular the possibility of misdiagnosing or overlooking a serious disease (Curtis and Bove 1992). Allopathic medicine should re-evaluate this perception as chiropractic education involves a minimum of 4 years of training that includes basic medical sciences, general diagnostics, radiology, physical therapy and manipulative therapy.

The basic medical sciences taught at chiropractic schools are believed to be on a par with those taught at medical schools (Hupkes 1990). According to Curtis and Bove (1992) chiropractors are highly trained in musculoskeletal diagnosis and treatment techniques. Chiropractors in South Africa are registered with a statutory body and are by law required to undergo a minimum training period, practice according to certain ethical and practical guidelines, and are subjected to disciplinary action should they transgress these laws (Sidley 1994).

In an exploratory study examining key aspects relating to the chiropractic profession as it is practised in New Jersey in the United States, the overwhelming majority of respondents to a telephone survey reported the education of the medical doctor as being more demanding and their qualifications more impressive and legitimate than those of the chiropractor (Sanchez 1991), although programs of study in chiropractic colleges parallel those in medical colleges except that chiropractic theory and practice replace surgery and the materia medica (Wardwell 1980: 25-41).

Coulter (1992: 53-59) states that the amount of good reliable sociological data on chiropractic, despite more than thirty years of writing, is extremely modest. This is a view also held by Silver (1980). However over the last forty years a major change is evident. A radical transformation has occurred in the perception of chiropractic, which has achieved widespread social acceptance, and is now viewed as an alternative form of health care or as a speciality within the health care system.

Chiropractic is covered by health insurance and medical aid schemes, as well as workers compensation (Curtis and Bove 1992). Coulehan (1985) states that chiropractic is no longer perceived as a politically or socially deviant system.

2.2.1 Scope of practice: Possible developments

Chiropractic presently finds itself in the predicament of establishing its effectiveness and role in the health care system as society begins to limit the resources that it is willing to put into the total health expenditure. As these funds become limited there will be increased competition between chiropractic and medicine (Jekel 1991).

Coulter (1992: 53-59) believes that although chiropractic is an established part of the health care system, there is still opposition from powerful groups, including allopathic medicine. He believes the future role of chiropractic could follow two general options, either as a health care specialist or as a broad based alternative health care. The option for chiropractic to compromise its original principles and become a limited medical profession is in agreement with Wardwell (1994). The possible advantages include less opposition from organised medicine, increased recognition and perhaps greater public utilization, as well as more medical referrals (Coulter 1992: 53-59). This view is also held by Sidley (1994) who states that many individuals believe that if chiropractors limited themselves to treating back pain and other musculoskeletal problems they may achieve greater recognition from the medical profession.

By limiting their expertise to a particular part of the human body and to a relatively narrow range of techniques, the limited medical professions have avoided threatening organised medicine, and hence have been able to survive through being accepted and tolerated in their limited roles (Wardwell 1980: 25-41). Although they are not primary care providers, limited medical practitioners are portals of entry to the health care system, since they are characteristically the first point of contact for patients who have not undergone a medical diagnosis. Hence these practitioners must be able to recognise conditions beyond their competence to treat and be willing to refer them to someone who can, and in the case of chiropractors, this is usually a general practitioner or a specialist such as a neurologist, neurosurgeon or orthopaedic surgeon. (Wardwell 1980: 25-41)

Coulter (1992: 53-59) also states that the health care system does not function independently of society, and is influenced by both economic as well as sociocultural factors including the consumer and holistic health movements. The paradigm of chiropractic as a holistic healing profession is appealing to these movements, and is a topic under investigation by both chiropractic and society at large. Chiropractors are expanding their interests to wellness care, which may influence which direction the profession takes in the future. (Coulter 1992: 53-59). To some extent, the opportunities for chiropractic are the failures of medicine because medicine is less concerned with prevention rather than treatment, and people are seeing the importance of prevention and health promotion (Jekel 1991).

According to Sokoloff (1994), the public perceives chiropractic to be a drugfree health care profession involved in the wellness, holistic health care delivery system, and chiropractic should not miss the opportunity to take this role in the evolving health care system.

Coulehan (1991) suggests that the process of interacting with patients is in itself a therapeutic modality, and that this doctor-patient interaction serves as the basis for therapy in both medicine and chiropractic. While this is beginning to receive some serious attention in medical research and education, these efforts are currently obscured in the total context of specialised, invasive high tech medicine.

Coulehan (1991) also writes that by focusing almost exclusively on diagnosis and treatment of disease, medical education and research fails to take seriously the role of personal factors in illness, suffering, disability and health seeking behaviour. This may ultimately determine the positive or negative outcomes of medical care. Gesler (1988) states that from a cultural perspective, the scientific validity of chiropractic treatment is not as important as the perceived efficacy of the treatment from an empirical point of view. According to Hadler et al. (1987), most clinicians are dubious about the validity of control measures in research that does not take into account the intimacy involved in spinal manipulation. There is also a questioning attitude in chiropractic that supports methodologically sound research and an awareness of the importance of psychosocial issues relevant to chiropractic (Coulehan 1991).

According to Jekel (1991), the position of the chiropractic profession in health care system may retrogress if it maintains it's status quo, and if the commitment to research is weak. Medicine will begin to use the best techniques of chiropractic, and through research will develop new techniques of its own, thus depriving chiropractic of much of its uniqueness. He states that an important concern is how education in manipulative therapeutics will be accomplished, in what kind of schools, and for what kind of health professions. The issue is wether the separate profession of chiropractic will survive, or wether manipulative therapeutics will become another medical speciality.

Wardwell (1980: 25-41) states that it is unlikely that many medical doctors or specialists will themselves want to become skilled in chiropractic adjusting, although a few small select groups practising spinal manipulation exist throughout the world. Renowned medical practitioners such as Cyriax, Mennel, Maigne and Greenman have advocated the use of spinal manipulation in the conservative management of spinal pain, although they expressed that this was not a cure all for all spinal problems (Laban and Taylor 1992). The medical curriculum is already so overcrowded that there is simply not enough time to develop manipulative skills in the average physician. The alternative of training orthopaedists, neurologists or physiatrists (physical therapists) as competent manipulators would not only be a diversion for them but the small numbers of those specialists would not comprise enough practitioners to treat more than a small fraction of the patients who need manipulative therapy (Wardwell 1980: 25-41).

Jekel (1991) also suggests the possibility of a rebellion within chiropractic against sharing its techniques with medicine, for fear that chiropractic will be overwhelmed by medicine. Wardwell (1980: 25-41) agrees, stating that this could result in chiropractic being swamped by medicine and this is what many chiropractors fear and struggle against so valiantly. Jekel (1991) does not believe that this approach will attract many patients or compete successfully for public resources. It is his opinion that knowledge that will benefit mankind should be used as widely as possible and that constant development within the profession will lead to the strengthening of chiropractic, both economically and in terms of scientific prestige in which it is regarded by physicians and the public. To achieve this, Jekel (1991) believes the chiropractic profession should orientate itself towards prevention as well as therapy.

Sanchez (1991) believes that the role of the chiropractor is a contradiction where the chiropractor is simultaneously a primary care provider and a specialist. Rather than reject this contradiction, chiropractors should embrace the uniqueness of their role and provide clear and scientific evidence to themselves, to the public and to the health care establishment of their ability to heal and of their willingness to recognise their limitations (Sanchez 1991).

Sanchez (1991) also states that attempts to depict the chiropractor as a family physician or other comparisons with medical doctors are likely to miscarry. Instead the creation of positive public image of chiropractic will not only encourage the public, but will also weaken stereotypes created and sustained by the medical profession.

In fact such efforts may result in greater confidence and increased referrals from medical practitioners. Sanchez (1991) suggests that chiropractic would be wise to establish itself as a primary care speciality, neither in competition with general medical care, nor an alternative to it, but as an integral and organic part of the health professions network. According to Sanchez, in addition to improving their public and professional image, increased entry level and licensing requirements for future chiropractors will also slow down competition between practitioners.

Sidley (1994) reported on chiropractic in South Africa, stating that chiropractors tend to see themselves as primary health care providers, a view which contradicts that of a prominent government health council official in South Africa. Sidley states that this split reflects a widespread divergence in the profession between those who are inclined to make a medical diagnosis and who are prepared to co-operate when necessary with medical doctors and include other therapies in their treatment like ultrasound and massage. The other faction is committed to correcting spinal misalignments, in the belief that the body will heal itself. This reflects the dichotomy between the 'mixers' and the 'straights', a topic also discussed by Coulehan (1985).

Sidley (1994) states that alarm bells ring even among members of the profession when some chiropractors claim to be able to cure everything from asthma to cancers. This is a view held by Stranack (1995), who discusses how philosophical dogma is threatening chiropractic in South Africa.

He believes that preposterous claims made by chiropractors have alienated the profession from the main stream of medical health care and that other health professionals do not wish to associate with chiropractors who believe and practice a theory of health care delivery which is not compatible with accepted basic clinical science. In addition, chiropractors see themselves as primary health care providers, who can cure a wide range of illness from colic to bedwetting. He states that "Chiropractic is a philosophical belief system which uses manipulation to effect every illness of mankind on the premise of innate." This approach has marginalised chiropractic and made it an outcast, resulting in mistrust and severe scepticism on the part of the medical profession and the scientific world in general (Stranack 1995).

While many family physicians believe chiropractors can help some patients with musculoskeletal problems and are reluctant to dismiss chiropractors as mere quacks, a large proportion of physicians are uncomfortable with some chiropractors activities (Cherkin et al. 1989). Most would probably not be comfortable having chiropractors care for patients with such problems as gall bladder disease or diabetes (Sidely 1994). Interestingly, according to the 1986 American Chiropractic Association report, the proportion of chiropractic patients who were seen for non-neuromusculoskeletal problems decreased from 21% in 1979 to 13% in 1985. Chiropractors therefore seem to be increasingly limiting their practices to those health problems which are less likely to cause opposition from the medical profession.

2.3 Therapeutic efficacy

According to Curtis and Bove (1992) low back pain, dysfunction, and work disability in the United States are moving toward epidemic proportions, and the context in which back problems occur most often results in presentation to primary care physicians. Deyo and Tsui-Wu (1987) analyzed data on patients with low back pain to determine which health care professionals were most commonly consulted for this problem. Results showed that general practitioners were most commonly consulted, followed in descending order by orthopaedists, chiropractors, osteopaths, internists and rheumatologists. In a study excluding chiropractors, visits for adult back pain were most commonly to the general specialities of family medicine, general internal medicine and osteopathic family physicians (56%). The next largest segment of visits was to orthopaedic surgeons, followed by neurosurgeons and then neurologists. (Hart et al. 1995)

Chiropractic is playing an increasing role in the primary care of musculoskeletal problems and many researchers are calling for, because of the high rates of chiropractic utilization, more data on the efficacy of spinal manipulation, as this is the mainstay of chiropractic treatment (Deyo and Tsui-Wu 1987). Sidley (1994) states that in the South African context few doctors are actually knowledgeable about chiropractic or have dealt with chiropractors so "they are on shaky ground when they criticise it". Family physicians should therefore reevaluate their relationship with chiropractors (Curtis and Bove 1992).

Clinical trials of spinal manipulation reveal conflicting evidence as to the therapeutic efficacy of spinal manipulation. The methodological criteria of these studies have been evaluated in several studies, including meta-analyses with disappointing results. (Deyo, 1983; Ottenbacher and Difabro, 1985; Koes et al., 1991; Assendelft et al., 1992; Koes et al., 1995). Both positive and negative outcomes have been criticized because of inadequate controls, improper patient selection, non-standardized treatment and inappropriate statistical evaluation (LaBan and Taylor 1992). According to Silver (1980), there is no doubt that spinal manipulation is useful. Assendelft et al. (1992) stated that chiropractic treatment appears to be effective for back pain . To what extent and under which circumstances needs further study. LaBan and Taylor (1992) believe that economic and political factors influence scientific judgement when the efficacy of spinal manipulation is evaluated.

To illustrate this inconsistency in results, the benefit of spinal manipulation for acute low back pain was demonstrated by Hadler et al. (1987) in a stratified controlled study, although the authors were cautious about the results, demanding more studies to support their results. In contrast, a randomized trial of manipulation for low back pain in a medical setting by Godfrey et al. (1984) showed that manipulative treatment of acute mechanical low back pain was not more effective than two physiotherapeutic manoeuvres (minimal massage and low level electro-stimulation) that the authors believed to be ineffective treatments.

In a recent randomized clinical trial by Koes et al. (1992), the effectiveness of manual therapy, physiotherapy, extended treatment by the general practitioner and placebo therapy were compared for 256 patients with nonspecific back and neck complaints. Results showed that both manual therapy and physiotherapy were more effective in decreasing the severity of complaints when compared to extended treatment by general practitioners. Differences in effectiveness between physiotherapy and manual therapy could not be demonstrated, and the authors noted that a substantial part of the effect of these two treatments appeared to be due to nonspecific (placebo) effects. A study by Meade et al. (1990) compared chiropractic and hospital outpatient treatment for managing low back pain of mechanical origin and found that chiropractic offers worthwhile long term benefits in comparison with hospital outpatient management.

According to Hurwitz (1994), there is a shortage of research assessing the effectiveness of chiropractic management relative to medical management of low back pain. Cherkin et al. (1988) examined how family physicians and chiropractors provide care for patients with back pain and how patients respond to the care they receive from these practitioners, because of concerns about the costs and quality of care given to patients with back pain. They compared the beliefs and attitudes about back pain of family physicians and chiropractors and their clinical responses to patients with back pain. The results showed that family physicians and chiropractors have greatly divergent beliefs about back pain and use different clinical strategies for managing back pain.

Family physicians were much less likely than chiropractors to believe that:

- i) they were adequately trained to manage low back pain;
- ii) low back pain was caused by vertebral subluxations;
- iii) radiographs were important for establishing a diagnosis;
- iv) appropriate therapy required a precise diagnosis;
- v) patients with low back pain can be benefited by professional help;
- vi) acute low back pain can be prevented from developing into chronic back pain;
- vii) their patients were satisfied with the care they received.

General practitioners were also more likely than chiropractors to think that there is nothing physically wrong with many patients who complain of back pain and often feel frustrated by these patients. The study also revealed differing practice styles that are clearly associated with their beliefs about back pain. Chiropractors were significantly more likely to think that they could hasten a patients recovery and that their patients were satisfied with their care. Hurwitz (1994) compared chiropractic management and medical management of mechanical low back pain in a multi-speciality group practice and found that chiropractic care was at least as effective as medical care in reducing the severity of low back pain and the resultant disability. Chiropractic patients were also more likely to perceive the treatment as successful in reducing their pain.

In another study by Cherkin et al. (1989), family physicians in the state of Washington in the United States were surveyed about their knowledge and views about chiropractors. 79% of the sample responded, with 66% indicating discomfort with what they believed chiropractors do while acknowledging their effectiveness for some patients; 25% viewed chiropractors as an excellent source of care for some musculoskeletal problems and only 3% dismissed chiropractors as quacks that patients should avoid; 57% admitted having encouraged patients to see a chiropractor. According to Cherkin et al. (1989), these views are less negative than those of organised medicine.

Curtis and Bove (1992) reviewed the results of Cherkin et al. (1988) and Cherkin et al. (1989) and stated that those family physicians who saw chiropractors as an excellent source of care for certain musculoskeletal problems were also the younger family physicians who were also the most knowledgeable about chiropractors and more likely to have encouraged patients to see them.

Many physicians, probably a majority, are still reluctant to make specific referrals to chiropractors (Curtis and Bove 1992). In a survey of 25% random sample of chiropractors in 1973, respondents indicated that 90% referred patients to physicians and 65% received referrals from physicians (Wardwell 1980: 25-41). A more recent study showed that less than 1% of patients were referred to chiropractors by other health care providers, including physicians and other chiropractors (Shekelle and Brook 1991).

According to Cherkin et al. (1995), little is known about physician beliefs regarding the efficacy of specific back pain treatments and as a result physicians were surveyed on their views of effective treatments for low back pain. A national random sample of 2897 physicians in the United States were surveyed with a response rate of nearly 1200. The sample included orthopaedic surgeons, neurologists and neurosurgeons, as well as doctors of osteopathy, internal medicine, emergency medicine and rheumatology, as well as doctors of physical medicine (physiatrists). Fewer than half of the respondents believed spinal manipulation to be effective for low back pain, although 80% believed physical therapy to be effective. No consensus was reached for other treatments including traction, corsets and epidural steroid injections. There was a poor correlation between the treatments physicians believed to be effective and those that have found to be effective by well deigned studies, especially concerning spinal manipulation. The lack of consensus could be due to a deficiency of clear clinical evidence of treatment effectiveness, ignorance and rejection of existing scientific evidence, commitment to a particular form of therapy and the tendency to discount the efficacy of competing treatments. This is in keeping with Deyo and Tsui-Wu (1987) who state that treatment for low back pain is poorly standardised, and Koes et al. (1995) who state that no single therapeutic intervention for low back pain is clearly superior to any other. In addition, a recent review of sixty nine different randomized clinical trials to evaluate the efficacy of treatment interventions in low back pain revealed a disappointingly low methodological quality (Koes et al. 1995).

2.3.1. Chiropractic and physiotherapy

Manipulation is not the exclusive domain of chiropractic. Other professions, including physiotherapists, use manipulation, despite differences in technique and reasons for use. Wardwell (1980: 25-41) suggests that the majority of medical physicians would probably prefer manipulative treatment to be carried out by physiotherapists under medical supervision. He states that this could not occur because physicians would have to become proficient in areas they are unfamiliar with, such as the indications and contraindications for manipulative therapy. Only if physicians had as much knowledge as chiropractors would they be qualified to make such judgements (Wardwell 1980: 25-41).

Wardwell (1980: 25-41) also believes that chiropractors have been autonomous practitioners and have functioned at a much higher level than physiotherapists in the diagnosis and treatment of illness. Chiropractors would not be willing to regress to the lower status of physiotherapists and therefore would not practice under the medical umbrella as physiotherapists do. As for physiotherapists, if they were to make such decisions under the loose kind of medical supervision that they now function under, they would need more expertise than they typically acquire in their present undergraduate educational programs. They would need to acquire much more diagnostic, clinical, and manipulative skills that in effect they would be chiropractors. Although physiotherapists are moving in this direction, it has yet to become a major trend in physiotherapy education or practice.

Michaeli (1991) conducted a survey to establish, amongst other things, how extensively spinal manipulation is used by physiotherapists in South Africa. A questionnaire was submitted to those physiotherapists who had successfully completed a post graduate course in South Africa on manipulative physiotherapy based on the Maitland concept. 67% of the respondents used manipulation as a treatment technique. Those who did not use manipulation as a treatment technique gave reasons including lack of skill and confidence and aspects related to the training of manipulation, such as too few practical sessions, too many manipulations taught per session and inadequate supervision. Other reasons for not using manipulation were not enough knowledge of application, and a belief that other modalities gave better results. Less important reasons for not using manipulation were the inability to obtain a 'click', manipulation was considered ineffective and the fact that manipulation required intimate patient-doctor contact. The fear of possible complications was also important reason for not manipulating. According to Michaeli (1991), physiotherapists, especially those who manipulate, are concerned about increasing competition from chiropractors. Research evaluating the efficacy of chiropractic and physiotherapy is important in view of the increased interest in the use of manipulative therapy as a conservative method of treating musculoskeletal disorders.

Meade et al. (1990) in a randomised controlled 'pragmatic' trial evaluating treatments for low back pain concluded that " chiropractic treatment was more effective than hospital outpatient management (physiotherapy), mainly for patients with chronic or severe back pain".

2.4 Chiropractic utilization and the costs of care

There are a number of studies on the subject of chiropractic utilization and the role that chiropractic plays in health care costs. In this review of the literature, the majority of studies contain data relevant to the United States unless otherwise mentioned, as there is a lack of research of this kind in South Africa. According to Stano (1993), the need for research within the chiropractic profession is becoming increasingly important because of the prevalence of neuromusculoskeletal disorders and the need for the United States to contain costs through patient outcomes and cost-effectiveness analysis. Back pain was the fifth most common reason for all physician visits in the United States in 1990, totalling almost 15 million office visits for mechanical low back pain. In a study by Hart et al. (1995), the most common diagnosis for these patients were (in descending order):

- i) non specific backache (56,8%);
- ii) probable degenerative changes (12,5%);
- iii) herniated disc (11.1%).

The United States health care delivery system has changed significantly over the last few decades, influenced by health care costs that have risen faster than inflation as well as questions concerning the safety and efficacy of biomedicine by health care consumers (Gesler 1998).

Although it accounts for only a small share of total health care spending, the speedy growth of the chiropractic profession and the high rates of use of chiropractic care necessitates a strong need to evaluate the clinical and economic efficacy of its care (Stano, 1993; Deyo and Tsui-Wu, 1987).

A retrospective statistical analysis of two years of claims data on various categories of utilization and insurance payments for a large national sample of patients numbering 395,641, showed that chiropractic patients with common musculoskeletal disorders had substantially lower costs, especially inpatient costs, than patients treated solely by medical physicians (Stano 1993). Although the differences in outpatient costs (excluding drug costs) were smaller, the differences tended to be statistically significant. The study can be criticized in that it had only incomplete controls for severity and other co-morbidities, and there is the issue of what severity of conditions chiropractors treat. Shekelle et al. (1995) states that comparisons between medical and chiropractic care have been made without respect to severity of illness, and that no quality data exists with respect to severity of illness for back pain. Waddell and Main (1984) state that no satisfactory or accepted method for assessing the severity of low back disorders exists. It is also debated whether chiropractors treat patients with fewer or less severe conditions, thereby increasing treatment cost effectiveness (Stano 1993).

In a recent analysis of data from the RAND health insurance experiment by Shekelle et al. (1995), chiropractors (40%) and general practitioners (26%) were the most common primary care providers for episodes of back pain care. An 'episode' is defined as a series of visits that 'belong' together. Chiropractors had a significantly greater number of average office visits, 10,4 per episode, as opposed to other practitioners, while orthopaedic and other allopathic physicians were more costly on a per visit basis. Orthopaedic surgeons had the highest average cost per episode of back pain, and general practitioners the lowest. Chiropractors had the highest and general practitioners the lowest average outpatient cost per episode. When hospital costs are removed from all episodes, chiropractors become the highest cost providers along with orthopaedic surgeons and osteopaths. There were also significant drug costs (prescription drugs from pharmacies) associated with some episodes of chiropractic care. A proportion of these were purchased during medical doctor visits included in a series of chiropractic treatments, although it was observed that during some episodes the chiropractor was the only health professional consulted.

A study by Deyo and Tsui-Wu (1987) also revealed extreme racial differences in the use of chiropractors, possibly due to marketing strategies and cultural differences between race groups in the perceptions of chiropractors. Studies by Gesler (1988) and Shekelle and Brook (1991) revealed that chiropractic utilization had a strong correlation with the white population group and higher incomes. This holds strong implications for chiropractic in South Africa.

2.5 The need for improved interprofessional relations

Sanchez (1991) suggests that studies should explore the interprofessional relationships between chiropractic and other relevant health care practitioners because the legitimacy and status of chiropractic is greatly dependent upon its acceptance by, and collaboration with, other health professions. According to Wardwell (1980: 25-41), differences in professions usually result in the ranking of these professions, especially in terms of desirability and prestige. Since organised medicine is so strong and prestigious, other health professions benefit from being related to it, including those subordinated to it and the so called limited medical professions such as dentistry, podiatry, optometry and psychology.

Neff (1991) states that when communications are required in the neurosciences, a broad overview of the chiropractic profession demonstrates a weakness in understanding the taxonomy (the science of classification) of the neurosciences. He states that a greater understanding of the neurosciences will facilitate an improved relationship with consulting neurologists or neurosurgeons, with enhanced professional relations. He demonstrates practical and efficient methods of cooperation between neurologists and the referring chiropractor. Expediency in diagnostic procedures yields efficiency in treatment procedures, which precipitates a swifter return to health, resulting in cost containment at a time when costs are escalating. Neff states that these actions will prove that doctors of chiropractic are functioning team members of the health delivery system.

This will generate respect for all doctors of chiropractic and the entire chiropractic profession. Chiropractors also treat a definite percentage of patients who have had back surgery and may suffer failed back surgical syndrome (FBSS) . It is therefore important that chiropractors are knowledgeable regarding the types of surgery, effects of disc pathology, effect of surgery and commonly used diagnostic procedures in order to properly manage these patients (Aspergen 1994). Knowledge of common diagnostic procedures is in keeping with the views of Neff (1991).

2.6 Summary

Medicine and chiropractic are both facing crises at present. Demand exceeds supply of services and costs exceed the resources of society. The medical professions are frequently not able to perform up to the level that society expects from them at a cost society can tolerate. This is a crisis common to all healing professions (Jekel 1991). In the struggle for legitimation, chiropractic has evolved from its position as an unscientific cult to a recognised member of the health professions. This is in part due to formal chiropractic research, which is only a decade old. This research, according to Haldeman (1992), is influencing both the theory and practice of chiropractic and medicine, and both parties are increasingly co-operating in this field. It is essential that all parties begin to co-operate in all spheres in order to create an efficient and effective health care system. It is therefore imperative to determine the views of allopathic medicine towards chiropractic in order to facilitate greater understanding and co-operation between the two professions.

Chapter 3. Materials and Methods

3.1 Questionnaire Design

The primary data in this project was collected by means of a questionnaire (Appendix B), based upon previously published questionnaires and research projects. (Cherkin, MacCornack and Berg 1989, Reilly 1983, Wharton and Lewith 1986, Steenkamp 1984, Sanchez 1991). A questionnaire pretest was undertaken involving the sampling of three orthopaedic surgeons, three neurosurgeons and three neurologists who completed the questionnaire and a selection of pretest questions (Appendix C). The pretest evaluation and the respondents comments and suggestions revealed no difficulties concerning syntax and ambiguity within the questionnaire. The questionnaire design employed a simple answering system using marking boxes and limited open ended questions, which also facilitated fluent data collection. The questionnaire comprised the following:

3.1.1 Identifying details.

This section established the type of speciality, namely neurology, neurosurgery or orthopaedic surgery, as well as the number of years in practice for each practitioner.

3.1.2 General views on chiropractic.

Respondents were questioned on how well informed they were about chiropractic; which statements best reflected their views of chiropractic and to what extent various sources had aided in forming these views.

3.1.3 Therapeutic efficacy.

Respondents were questioned on their beliefs about the competency of chiropractors in neuro-musculo-skeletal examination and diagnosis; severity of conditions that chiropractors can treat; types of conditions that can effectively be treated by chiropractors and the examination of patients harmed by chiropractic treatment.

3.1.4 Scope of practice.

Respondents were questioned on the difference between chiropractic and physiotherapy; practices that given the appropriate training chiropractors should be able to perform; what chiropractic claims to treat as well as the future direction of chiropractic.

3.1.5 Inter-professional relations.

Respondents were questioned on what they believed chiropractic would have to do to encourage greater interaction with medicine and its specialities and what factors would encourage them to use chiropractic more in the future.

3.1.6 Chiropractic utilization.

Respondents were questioned on the extent to which they may refer to various disciplines for neuro-musculo-skeletal problems; various professions importance in primary health care and the type of role and extent to which chiropractic should occupy a role in the South African health care system as well as referrals to and from chiropractors.

3.2 Survey Procedures.

A register of orthopaedic surgeons, neurologists and neurosurgeons was obtained from the South African Medical and Dental Council in order to construct a mailing list. The register contained the names of the above mentioned specialists registered with the council as at 30 June 1995. The list included many associate members resident overseas. The sample size of specialists resident in South Africa decreased considerably as a result of this.

Address changes, as well as the fact that a number of specialists had left South Africa after June 1995 (due to immigration, sabbatical, extended holidays), also decreased the sample size. A number of doctors had also died after June 1995. This left the final sample at 449 orthopaedic surgeons, 78 neurologists and 92 neurosurgeons, totalling 619 specialists in all.

The survey instruments consisted of the questionnaire and a letter of introduction (Appendix A) which included a list of instructions on how to complete the questionnaire correctly. The anonymous questionnaire was accompanied by a self addressed stamped envelope to facilitate questionnaire return. The questionnaire was mailed to the entire population of orthopaedic surgeons, neurosurgeons and neurologists resident in South Africa who were registered with the South African Medical and Dental Council as at 30 June 1995 (N=619).

164 questionnaires were returned in total, constituting a response rate of 26,5%. The possible bias of the non-respondents (n=455) must be considered when interpreting the results of the survey. Every attempt was made to avoid sample bias by surveying the entire population. It was impossible to obtain the remaining sample of non-respondents as the questionnaire was anonymous.

3.3 Data analysis

The analysis of all questions consisted of simple frequency counts with results being expressed as percentages. The data was analyzed to show trends, employing cross tabular analysis and chi square statistical evaluation, and data was displayed using frequency tables and bar graphs. In this dissertation, a p-value of less than 0,05 was considered to be statistically significant. Where possible, the results were compared with any related data available.

The chi square statistical test is probably the most frequently used test of hypothesis in the social sciences (Healey 1993). The test is nonparametric and requires only nominally measured variables where the model assumptions are easily satisfied. The chi square test for independence is used in situations where variables have been organised into table format. The null hypothesis states that the variables are independent. In this research project if the exceedance probability value (p-value) was greater than 0.05 the null hypothesis was accepted at a so called 5% level of significance. If the p-value was less than or equal to 0.05 the null hypothesis was rejected at the 5% level of significance and the alternate hypothesis was then accepted as true. The chi square test becomes less powerful with very large or very small sample sizes. As a general rule, statistical significance is a necessary but not sufficient condition for theoretical or practical importance. (Healey 1993)

The statistical software package STATGRAPHICS PLUS version 6.0 by Manugistics Inc. was used to process the data from the questionnaires.

Chapter 4. The Results

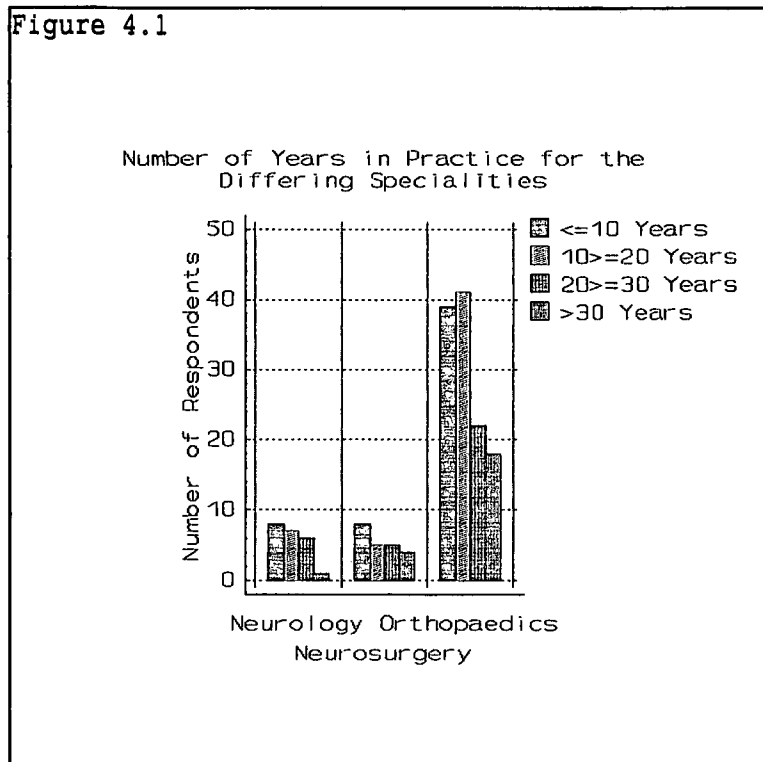
4.1 Sample Characteristics.

The number of respondents from each speciality as well as the total number of respondents is expressed in Table 4.1.

Table 4.1 QUESTIONNAIRE RESPONSE RATE

	NUMBER OF RESPONSES	POPULATION NUMBER
NEUROLOGISTS	22 (28,2%)	78
NEUROSURGEONS	22 (23,9%)	92
ORTHOPAEDIC SURGEONS	120 (26,7%)	449
TOTAL	164 (26,5%)	619

Figure 4.1



The majority of respondents, 55 (33,5%), were in practice for 10 years or less; 53 (32,3%) were in practice for 20 years or less, but more than 10 years; 33 (20,1%) were in practice for 30 years or less but more than 20 years and the remainder, 23 (14%), were in practice for more than 30 years. (see figure 4.1)

4.2 To what extent do neurologists, neurosurgeons and orthopaedic surgeons feel informed as to what chiropractors do?

Table 4.2 WHAT DO CHIROPRACTORS DO?

	Greatly Informed	Moderately Informed	Slightly Informed	Not at all Informed	Row Total
Neurology	1 4.5	7 31.8	7 31.8	7 31.8	22 13.4
Neuro-surgery	3 13.6	10 45.5	9 40.9	0 .0	22 13.4
Ortho-paedics	6 5.0	45 37.5	49 40.8	20 16.7	120 73.2
Column Total	10 6.1	62 37.8	65 39.6	27 16.5	164 100.0

10 (6,1%) of the total sample believed that they were greatly informed as to what chiropractors do; 62 (37,8%) were moderately informed; 65 (39,6%) were slightly informed and 27 (16,5%) were not at all informed. When categorising the responses into those who felt greatly or moderately informed as opposed to those who felt slightly or not at all informed, neurosurgeons (59,1%) were the most well informed and neurologists (63,6%) were the least informed as to what chiropractors do. These differences between groups were not statistically significant. (See table 4.2)

4.3 Statements best reflecting neurologists, neurosurgeons and orthopaedic surgeons views of chiropractic.

Table 4.3 STATEMENTS BEST REFLECTING VIEWS OF CHIROPRACTIC

	Statement 1	Statement 2	Statement 3	Statement 4	Row Total
Neurology	13 59.1	1 4.5	1 4.5	7 31.8	22 13.4
Neuro- surgery	7 31.8	12 54.5	0 .0	3 13.6	22 13.4
Ortho- paedics	62 51.7	35 29.2	7 5.8	16 13.3	120 73.2
Column Total	82 50.0	48 29.3	8 4.9	26 15.9	164 100.0

KEY: Statement 1: 'I am uncomfortable with it but it is effective for some patients.'

Statement 2: 'Chiropractic provides excellent treatment for some musculoskeletal conditions.'

Statement 3: 'Chiropractic is quackery and does more harm than good.'

Statement 4: 'Not informed enough to comment.'

82 (50,0%) of the total sample were uncomfortable with chiropractic but believed it to be effective for some patients; 48 (29,3%) believed that chiropractic provides excellent treatment for some musculoskeletal conditions; 8 (4,9%) responded that chiropractic is quackery and does more harm than good. The remaining 26 respondents (15,9%) were not informed enough to comment.

The majority of neurologists 13 (59,1%) and orthopaedic surgeons 62 (51,7%) were uncomfortable with chiropractic but believed it to be effective for some patients while the majority of neurosurgeons 12 (54,5%) believed that chiropractic provides excellent treatment for some musculoskeletal conditions. Chi-square analysis demonstrated these differences to be statistically significant ($p=0,0105728$). It can therefore be concluded, at a 5% level of significance, that the neurosurgeons who responded to this survey have a greater belief in the effectiveness of chiropractic than do the neurologists and orthopaedic surgeons who responded to this survey. (See table 4.3)

4.4 How competent do neurologists, neurosurgeons and orthopaedic surgeons believe chiropractors to be in neuro-musculo-skeletal examination and diagnosis?

Table 4.4 COMPETENCY IN NEURO-MUSCULO-SKELETAL EXAMINATION AND DIAGNOSIS

	Greatly competent	Moderately competent	Slightly competent	Not at all competent	No Comment	Row Total
Neurology	0 .0	2 9.1	5 22.7	3 13.6	12 54.5	22 13.5
Neuro-surgery	1 4.8	10 47.6	7 33.3	1 4.8	2 9.5	21 12.9
Ortho-paedics	5 4.2	24 20.0	37 30.8	29 24.2	25 20.8	120 73.6
Column Total	6 3.7	36 22.1	49 30.1	33 20.2	39 23.9	163 100.0

6 (3,7%) respondents stated that they believed chiropractors to be greatly competent in neuro-musculo-skeletal examination and diagnosis; 36 (22,1%) stated moderately competent; 49 (30,1%) stated slightly competent and 33 (20,2%) stated not at all competent. 39 (23,9%) of respondents were not informed enough to comment. 52,4% of neurosurgeons believed chiropractors to be greatly or moderately competent in neuro-musculo-skeletal examination and diagnosis while 55,0% of orthopaedic surgeons stated that chiropractors were slightly or not at all competent. These differences between groups were not statistically significant. (See table 4.4)

4.5 What severity of conditions do neurologists, neurosurgeons and orthopaedic surgeons think chiropractors can treat?

Table 4.5 SEVERITY OF CONDITIONS THAT CHIROPRACTORS CAN TREAT

	Mild conditions	Moderate conditions	None of the above	Don't know	Row Total
Neurology	9 45.0	3 15.0	1 5.0	7 35.0	20 12.7
Neuro-surgery	6 30.0	10 50.0	1 5.0	3 15.0	20 12.7
Ortho-paedics	49 41.5	47 39.8	4 3.4	18 15.3	118 74.6
Column Total	64 40.5	60 38.0	6 3.8	28 17.7	158 100.0

64 (40,5)% of respondents believed that chiropractors can effectively treat mild conditions only; 60 (38,0%) stated moderate conditions while none stated serious conditions. 6 (3,8%) stated none of the above and 28 (17,7%) did not know what severity of conditions chiropractors treat. These differences between groups were not statistically significant. (See table 4.5)

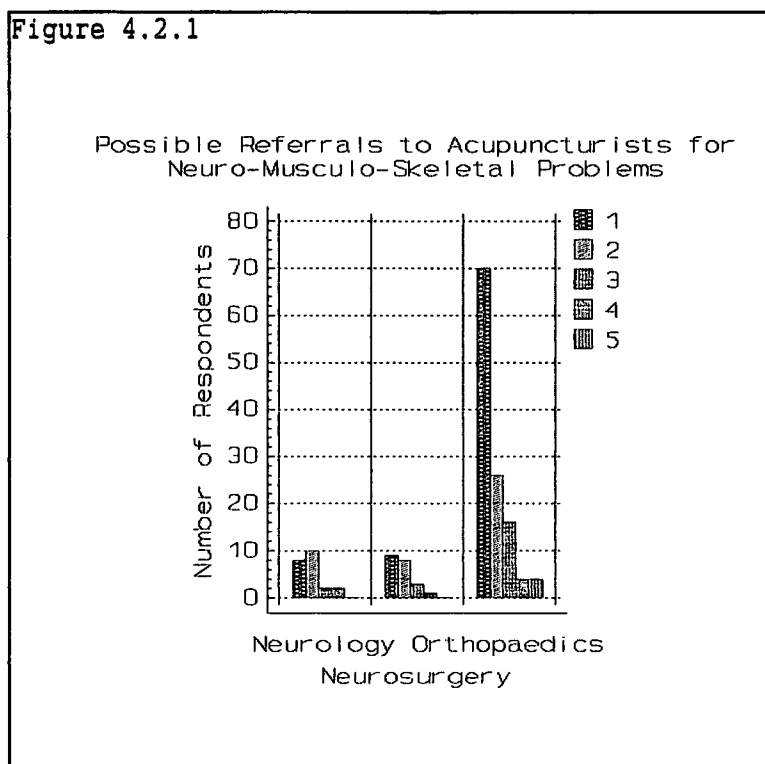
4.6 Do neurologists, neurosurgeons and orthopaedic surgeons believe that there is sufficient difference between chiropractic and physiotherapy to justify the existence of two separate professions?

Table 4.6 CHIROPRACTIC AND PHYSIOTHERAPY

	Yes	No	Don't Know	Row Total
Neurology	10 45.5	1 4.5	11 50.0	22 13.6
Neuro-surgery	18 85.7	1 4.8	2 9.5	21 13.0
Ortho-paedics	68 57.1	25 21.0	26 21.9	119 73.4
Column Total	96 59.3	27 16.7	39 24.0	162 100.0

Cross tabulation between the type of specialist and whether they believe there is sufficient difference between chiropractic and physiotherapy to justify the existence of two separate professions revealed that 96 (59,3%) stated 'Yes' while 27 (16,7%) responded 'No'. 39 (24,0%) claimed they did not know. These differences were not statistically significant. (See table 4.6)

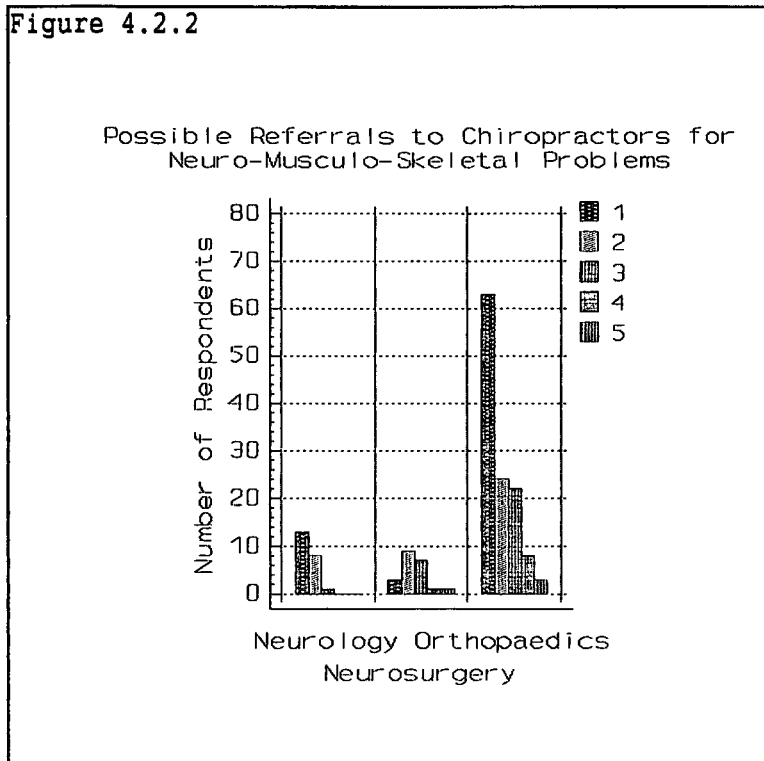
4.7 Disciplines that neurologists, neurosurgeons and orthopaedic surgeons might refer patients to for neuro-musculo-skeletal problems.



Cross tabulation of the type of specialist and to what extent they may refer patients to acupuncturists for neuro-musculo-skeletal problems revealed that 8 (36,4%) neurologists, 9 (42,9%) neurosurgeons and 70 (58,3%) orthopaedic surgeons responded '1' on the scale which equates with least extent; 10 (45,5%) neurologists, 8 (38,1%) neurosurgeons and 26 (21,7%) orthopaedic surgeons responded '2' on the scale which equates with lesser extent; 2 (9,1%) neurologists, 3 (14,3%) neurosurgeons and 16 (13,3%) orthopaedic surgeons responded '3' on the scale which equates with neither greatest nor least extent;

2 (9,1%) neurologists, 1 (4,1%) neurosurgeons and 4 (3,3%) orthopaedic surgeons responded '4' on the scale which equates with greater extent and no neurologists or neurosurgeons and 4 (3,3%) orthopaedic surgeons responded '5' on the scale which equates with greatest extent. These differences between groups were not statistically significant. (see figure 4.2.1)

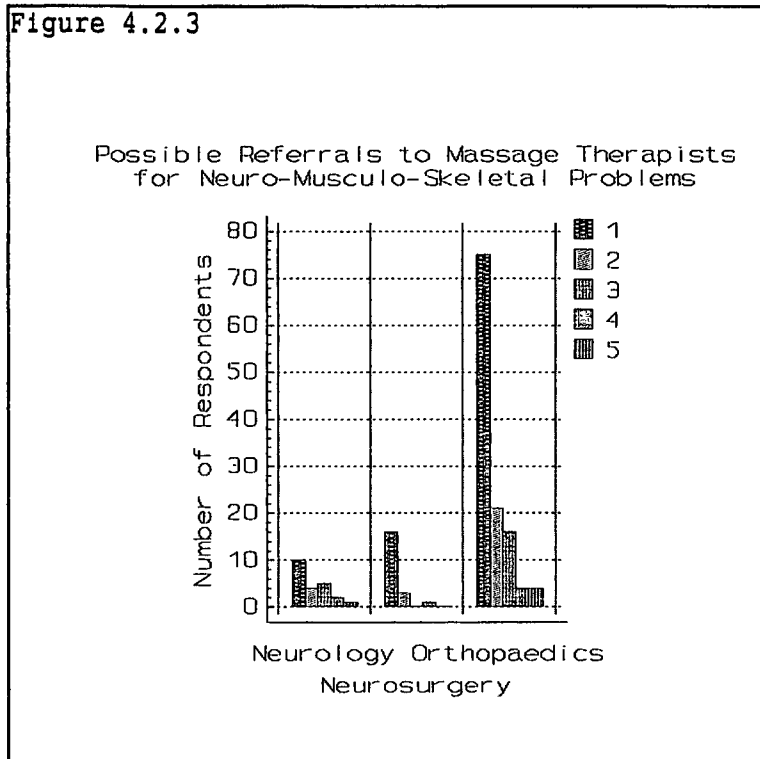
Figure 4.2.2



Cross tabulation of the type of specialist and to what extent they may refer patients to chiropractors for neuro-musculo-skeletal problems revealed that 13 (59,1%) neurologists, 3 (14,3%) neurosurgeons and 63 (52,5%) orthopaedic surgeons responded '1' on the scale which equates with least extent; 8 (36,4%) neurologists, 9 (42,9%) neurosurgeons and 24 orthopaedic surgeons(20,0%) responded '2' on the scale which equates with lesser extent; 1 (4,5%) neurologists, 7 (33,3%) neurosurgeons and 22 (18,3%) orthopaedic surgeons responded '3' on the scale which equates with neither greatest nor least extent; no neurologists, 1 (4,8%) neurosurgeon and 8 (6,7%) orthopaedic surgeons responded '4' on the scale which equates with greater extent and no neurologists, 1 (4,5%) neurosurgeons and 3 (2,5%) orthopaedic surgeons responded '5' on the scale which equates with greatest extent.

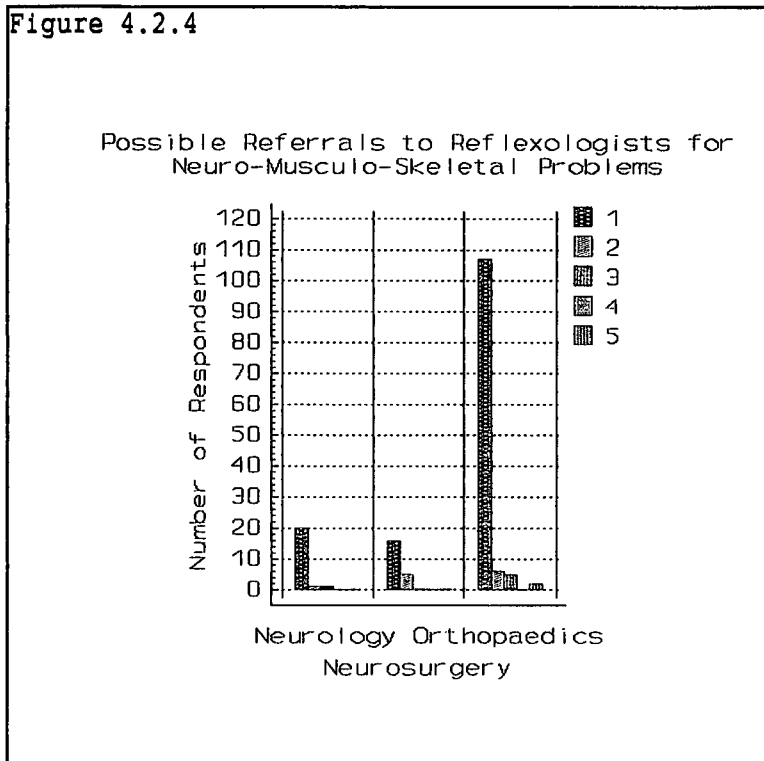
Chi-square analysis demonstrated these differences to be statistically significant ($p=0,0189655$). It can therefore be concluded, at a 5% level of significance, that neurosurgeons would possibly refer to chiropractors for neuromusculoskeletal problems to a greater extent than neurologists or orthopaedic surgeons. (see figure 4.2.2)

Figure 4.2.3



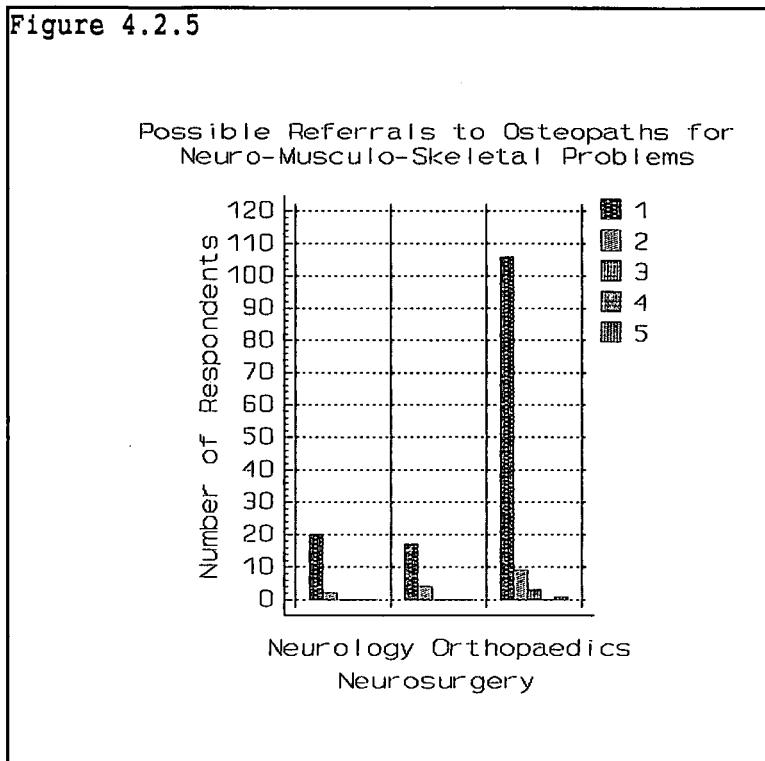
Cross tabulation of the type of specialist and to what extent they may refer patients to massage therapists for neuro-musculo-skeletal problems revealed that 10 (45,5%) neurologists, 16 (80,0%) neurosurgeons and 75 (62,5%) orthopaedic surgeons responded '1' on the scale which equates with least extent; 4 (18,2%) neurologists, 3 (15,0%) neurosurgeons and 21 orthopaedic surgeons (17,5%) responded '2' on the scale which equates with lesser extent; 5 (22,7%) neurologists, no neurosurgeons and 6 orthopaedic surgeons (5,0%) responded '3' on the scale which equates with neither greatest nor least extent; 2 (9,1%) neurologists, 1 (5,0%) neurosurgeon and 4 (3,3%) orthopaedic surgeons responded '4' on the scale which equates with greater extent and 1 (4,5%) neurologists, no neurosurgeons and 4 (3,3%) orthopaedic surgeons responded '5' on the scale which equates with greatest extent. These differences between groups were not statistically significant. (see figure 4.2.3)

Figure 4.2.4



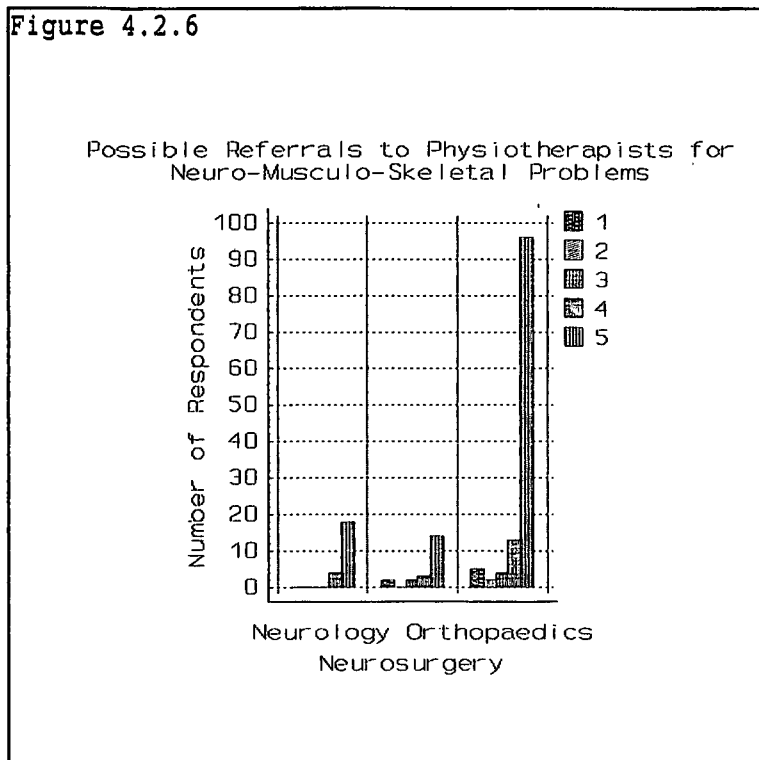
Cross tabulation of the type of specialist and to what extent they may refer patients to reflexologists for neuro-musculo-skeletal problems revealed that 20 (90,9%) neurologists, 16 (76,2%) neurosurgeons and 107 (89,2%) orthopaedic surgeons responded '1' on the scale which equates with least extent; 1 (4,5%) neurologist, 5 (23,8%) neurosurgeons and 6 (5,0%) orthopaedic surgeons responded '2' on the scale which equates with lesser extent; 1 (4,5%) neurologist, no neurosurgeons and 5 (4,2%) orthopaedic surgeons responded '3' on the scale which equates with neither greatest nor least extent; no neurologists, neurosurgeons or orthopaedic surgeons responded '4' on the scale which equates with greater extent and no neurologists or neurosurgeons and 2 (1,7%) orthopaedic surgeons responded '5' on the scale which equates with greatest extent. These differences between groups were not statistically significant. (see figure 4.2.4)

Figure 4.2.5



Cross tabulation of the type of specialist and to what extent they may refer patients to osteopaths for neuro-musculo-skeletal problems revealed that 20 (90,9%) neurologists, 17 (81,0%) neurosurgeons and 106 (89,1%) orthopaedic surgeons responded '1' on the scale which equates with least extent; 2 (9,1%) neurologists, 4 (19,0%) neurosurgeons and 9 (7,6%) orthopaedic surgeons responded '2' on the scale which equates with lesser extent; no neurologists, no neurosurgeons and 3 orthopaedic surgeons (2,5%) responded '3' on the scale which equates with neither greatest nor least extent; no neurologists, neurosurgeons or orthopaedic surgeons responded '4' on the scale which equates with greater extent and no neurologists or neurosurgeons and 1 (0,8%) orthopaedic surgeon responded '5' on the scale which equates with greatest extent. These differences between groups were not statistically significant. (see figure 4.2.5)

Figure 4.2.6



Cross tabulation of the type of specialist and to what extent they may refer patients to physiotherapists for neuro-musculo-skeletal problems revealed that no neurologists, 2 (9,5%) neurosurgeons and 5 (4,2%) orthopaedic surgeons responded '1' on the scale which equates with least extent; no neurologists or neurosurgeons and 2 orthopaedic surgeons (1,7%) responded '2' on the scale which equates with lesser extent; no neurologists, 2 (9,5%) neurosurgeons and 4 (3,3%) orthopaedic surgeons responded '3' on the scale which equates with neither greatest nor least extent; 4 (18,2%) neurologists, 3 (14,3%) neurosurgeons and 13 (10,8%) orthopaedic surgeons responded '4' on the scale which equates with greater extent and 18 (81,8%) neurologists, 14 (66,7%) neurosurgeons and 96 (80,0%) orthopaedic surgeons responded '5' on the scale which equates with greatest extent. These differences between groups were not statistically significant. (see figure 4.2.6)

In response to question 7.7, an open-ended question as to which disciplines other than those listed may be referred to for neuro-musculo-skeletal problems, 2 (9,1%) neurologists, 1 (4,5%) neurosurgeon and 11 (9,2%) orthopaedic surgeons, totalling 14 (8,5%) of the sample, responded. 10 disciplines were identified, and are listed in table 4.7 along with the type of specialist and the frequency count of each response.

Table 4.7 OTHER REFERRALS FOR NEURO-MUSCULO-SKELETAL PROBLEMS

	Neurologist	Neurosurgeon	Orthopod
Biokinetic Rehabilitation	-	-	5
Podiatry	-	-	1
Neurology	-	-	1
Neurosurgery	-	-	1
Radiology	-	-	1
Occupational Therapy	1	1	2
Psychotherapy	-	-	1
Music Therapy	1	-	-
'Manipulatory Therapy For Chronic Back Pathology'	-	-	1
Physiotherapists Who Specialise In The Maitland Technique	-	-	1

4.8 Conditions that neurologists, neurosurgeons and orthopaedic surgeons think chiropractors can treat.

Table 4.8 CONDITIONS THAT CHIROPRACTORS CAN TREAT

	Always	Usually	Sometimes	Never
Allergies	0	2 (1,3%)	11 (7,0%)	144 (91,7%)
Asthma	0	2 (1,3%)	10 (6,3%)	145 (92,4%)
Bacterial infections	0	1 (0,6%)	3 (1,9%)	153 (97,5%)
Depression	2 (1,3%)	10 (6,3%)	69 (43,7%)	77 (48,7%)
Diabetes mellitus	0	1 (0,6%)	2 (1,3%)	154 (98,1%)
Disc herniation	1 (0,6%)	20 (12,7%)	68 (43,3%)	68 (43,3%)
General back pain	10 (6,3%)	66 (42,0%)	75 (47,8%)	6 (3,8%)
High blood pressure	0	1 (0,7%)	13 (8,3%)	142 (91,0%)
Insomnia	1 (0,6%)	7 (4,5%)	55 (35,3%)	93 (59,6%)
Hip pain	0	14 (8,9%)	98 (62,4%)	45 (28,7%)
Knee pain	0	15 (9,6%)	91 (58,0%)	51 (32,4%)
Low back pain	8 (5,1%)	50 (31,9%)	90 (57,3%)	9 (5,7%)
Low blood pressure	0	5 (3,2%)	10 (6,4%)	141 (90,4%)
Malnutrition	0	2 (1,3%)	7 (4,5%)	147 (94,2%)
Migraine	0	9 (5,8%)	55 (35,2%)	92 (59,0%)
Myalgia	3 (1,9%)	33 (21,0%)	89 (56,7%)	32 (20,4%)
Neck pain	5 (3,2%)	50 (31,9%)	89 (56,7%)	13 (8,3%)
Nerve root pain	3 (1,9%)	21 (13,4%)	62 (39,5%)	71 (45,2%)
Nervous tension	3 (1,9%)	29 (18,6%)	77 (49,4%)	47 (30,1%)
Obesity	1 (0,6%)	6 (3,8%)	28 (17,8%)	122 (77,8%)

Osteoarthritis	0	12 (7,6%)	94 (59,9%)	51 (32,5%)
Peptic ulcer	0	1 (0,6%)	9 (5,8%)	146 (93,6%)
Rheumatism	0	19 (12,1%)	77 (49,0%)	61 (38,9%)
Sciatica	2 (1,3%)	29 (18,5%)	74 (47,1%)	52 (33,1%)
Shoulder pain	1 (0,6%)	34 (21,7%)	86 (54,8%)	36 (23,0%)
Tension type headache	4 (2,6%)	36 (23,1%)	88 (56,4%)	28 (17,9%)
Viral infections	0	1 (0,6%)	6 (3,9%)	149 (95,5%)
Whiplash	2 (1,3%)	29 (18,5%)	72 (45,9%)	54 (34,4%)

If the mode (the value that occurs most often) is analyzed for each condition, neurologists, neurosurgeons and orthopaedic surgeons believe that chiropractors can never treat allergies, asthma, bacterial infections, depression, diabetes mellitus, high blood pressure, insomnia, low blood pressure, malnutrition, migraine, nerve root pain, obesity, peptic ulcer and viral infections. Neurologists, neurosurgeons and orthopaedic surgeons believe that chiropractors can sometimes treat disc herniations, general back pain, hip pain, knee pain, low back pain, myalgia, neck pain, nervous tension, osteoarthritis, rheumatism, sciatica, shoulder pain, tension type headache and whiplash. (see table 4.8)

4.9 Neurologists, neurosurgeons and orthopaedic surgeons views on various professions importance in primary health care.

Table 4.9 VARIOUS PROFESSIONS IMPORTANCE IN PRIMARY HEALTH CARE

Key: 1= Least Important and 5= Most Important

	1	2	3	4	5	Total(n)
Chiropractic	61 (38,4%)	47 (29,6%)	39 (24,5%)	5 (3,1%)	7 (4,4%)	159
Dentistry	4 (2,5%)	3 (1,9%)	4 (2,5%)	22 (13,7%)	128 (79,5%)	161
Herbalism	83 (51,6%)	53 (32,9%)	19 (11,8%)	5 (3,1%)	1 (0,6%)	161
Homoeopathy	83 (51,9%)	45 (28,1%)	21 (13,1%)	7 (4,4%)	4 (2,5%)	160
Medicine	7 (4,3%)	1 (0,6%)	0	24 (14,8%)	130 (80,2%)	162
Naturopathy	104 (64,6%)	28 (17,4%)	20 (12,4%)	4 (2,5%)	5 (3,1%)	161
Nursing	3 (1,9%)	1 (0,6%)	2 (1,2%)	19 (11,7%)	137 (84,6%)	162
Optometry	11 (6,8%)	4 (2,5%)	23 (14,3%)	39 (24,2%)	84 (52,2%)	161

Pharmacy	7 (4,3%)	8 (4,9%)	29 (17,9%)	35 (21,6%)	83 (51,2%)	162
Physiotherapy	9 (5,6%)	12 (7,4%)	45 (27,8%)	35 (21,6%)	61 (37,7%)	162
Traditional Healing	57 (35,4%)	37 (23,0%)	41 (25,5%)	17 (10,6%)	9 (5,6%)	161

If the mode (the value that occurs most often) is analyzed for each condition, neurologists, neurosurgeons and orthopaedic surgeons rated chiropractic, herbalism, homoeopathy, naturopathy and traditional healing as being least important in terms of serving in a primary health care capacity (mode = '1'). Dentistry, medicine, nursing, optometry, pharmacy and physiotherapy all scored a mode of '5', indicating most important in serving in a primary health care capacity. (see table 4.9)

In response to question 9.12, an open ended question as to which other professions in addition to those listed have a role in serving in a primary health care capacity, 1 (4,5%) neurologist, 1 (4,5%) neurosurgeon and 1 (0,8%) orthopaedic surgeon, totalling 3 (1,8%) of the sample, responded.

The neurosurgeon stated 'psychiatry', the neurologist stated 'education' and the orthopaedic surgeon responded 'clinical diagnostician'.

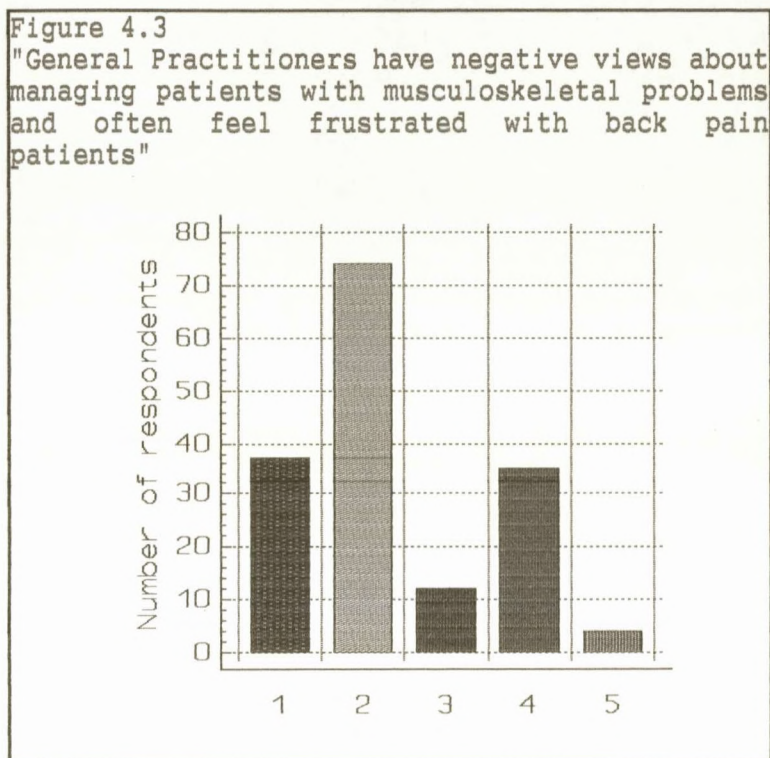
4.10 Which medical practices do neurologists, neurosurgeons and orthopaedic surgeons believe chiropractors should be able to perform given the appropriate training.

Table 4.10 MEDICAL PRACTICES CHIROPRACTORS SHOULD BE ABLE TO PERFORM

	Neurology		Neurosurgery		Orthopody		Total	
	Yes	No	Yes	No	Yes	No	Yes	No
Minor surgery	1 4,8	20 95,2	0	22 100	4 3,4	115 96,6	5 3,1	157 96,9
Intra-articular injection	4 19,1	17 80,9	3 13,6	19 86,4	18 15,1	101 84,9	25 15,4	137 84,6
Prescribe scheduled medicines related to neuro-musculo-skeletal conditions	7 33,3	14 66,7	7 31,8	15 68,2	23 19,3	96 80,7	37 22,9	125 77,1
Draw blood for diagnostic purposes	8 38,1	13 61,9	8 36,4	14 63,6	26 21,8	93 78,2	42 25,9	120 74,1
Reduce minor fracture/dislocations	6 28,6	15 71,4	4 18,2	18 81,8	12 10,1	107 89,9	22 13,6	140 86,4
None of the above	12 57,1	9 42,9	13 59,1	9 40,9	82 68,9	37 31,1	107 66,1	55 33,9

Of the total number of respondents, 5 (3,1%) stated that given the appropriate training, chiropractors should be able to perform minor surgery; 25 (15,4%) stated intra-articular injection; 37 (22,9%) stated prescription of scheduled medicines related to neuro-musculo-skeletal conditions; 42 (25,9%) stated the drawing of blood for diagnostic purposes; 22 (13,6%) stated the reduction of minor fracture/dislocations and 107 (66,1%) stated none of the above. These differences between groups were not statistically significant. (see table 4.10)

4.11 To what extent do neurologists, neurosurgeons and orthopaedic surgeons agree or disagree with the statement that "General practitioners have negative views about managing patients with musculoskeletal problems and often feel frustrated with back pain patients."



KEY: 1=Strongly agree. 2=Agree. 3=Undecided. 4=Disagree. 5=Strongly disagree.

37 respondents (22,8%) of the total sample strongly agreed; 74 (45,7%) agreed; 12 (7,4%) were undecided; 35 (21,6%) disagreed and 4 (2,5%) strongly disagreed. (see figure 4.3)

4.12 Which direction would neurologists, neurosurgeons and orthopaedic surgeons like to see Chiropractic take in the future.

Table 4.11 THE FUTURE DIRECTION OF CHIROPRACTIC

	Statement 1	Statement 2	Statement 3	Statement 4	Statement 5	Row Total
Neurology	4 19.1	8 38.1	3 14.2	6 28.6	0 .0	21 13.0
Neuro- surgery	1 4.5	8 36.4	3 13.6	10 45.5	0 .0	22 13.7
Ortho- paedics	10 8.5	54 45.8	23 19.5	27 22.9	4 3.4	118 73.3
Column Total	15 9.3	70 43.5	29 18.0	43 26.7	4 2.5	161 100.0

Key: Statement 1: Chiropractic should fuse with medicine.

Statement 2: Chiropractic should exist under medical supervision

Statement 3: Chiropractic should retain its present status as marginal to medicine.

Statement 4: Chiropractic should become a limited medical profession similar to dentistry or optometry.

Statement 5: Chiropractic should disappear.

Cross tabulation of the type of specialist and the direction they would like to see chiropractic take in the future revealed that 4 (19,1%) neurologists , 1 (4,5%) neurosurgeon and 10 (8,5%) orthopaedic surgeons representing a total of 15 (9,3%) of the entire sample responded that chiropractic should fuse with medicine. (See table 4.11)

8 (38,1%) neurologists , 8 (36,4%) neurosurgeons and 54 (45,8%) orthopaedic surgeons representing a total 70 (43,5%) of the entire sample responded that chiropractic should exist under medical supervision. (See table 4.11)

3 (14,2%) neurologists , 3 (13,6%) neurosurgeons and 23 (19,5%) orthopaedic surgeons representing a total of 29 (18%) of the entire sample responded that chiropractic should retain its present status as marginal to medicine. (See table 4.11)

6 (28,6%) neurologists , 10 (45,5%) neurosurgeons and 27 (22,9%) orthopaedic surgeons representing a total of 43 (26,7%) of the entire sample responded that chiropractic should become a limited medical profession similar to dentistry or optometry. (See table 4.11)

No neurologists or neurosurgeons and only 4 (3,4%) orthopaedic surgeons representing a total of 4 (2,5%) of the entire sample responded that chiropractic should disappear. (See table 4.11)

Differences between groups were not statistically significant.

4.13 What would Chiropractic have to do to encourage greater interaction with medicine and its' specialities?

The following categories were identified from 126 responses:

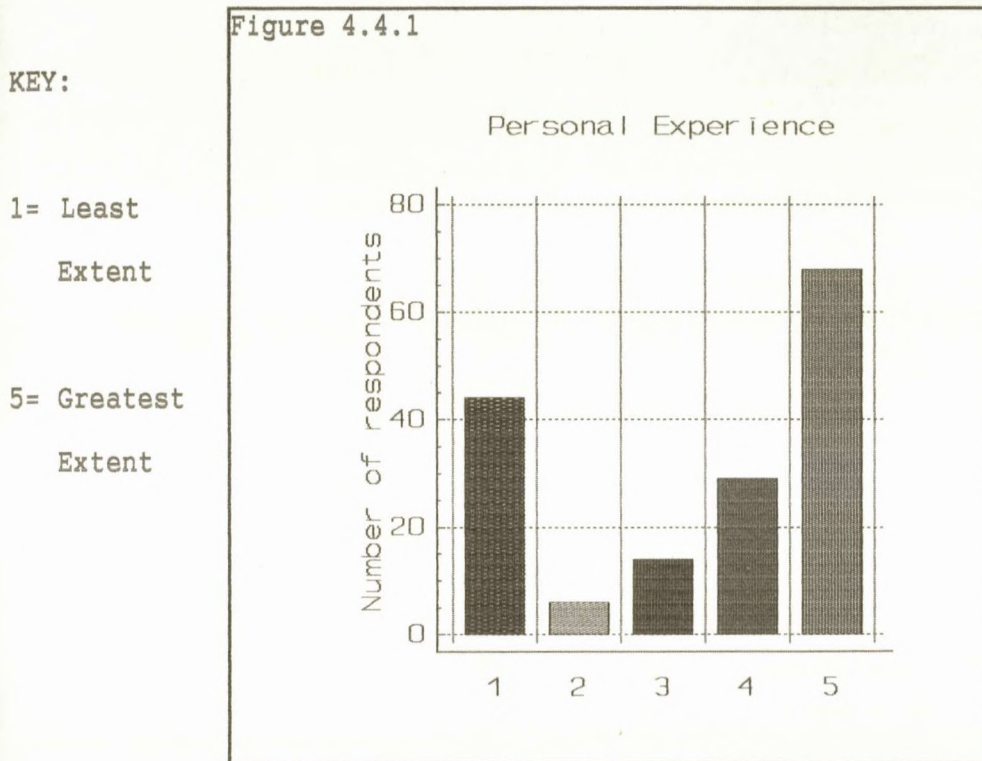
(The frequency of each response is stated in brackets)

- Lecture medical students about their activities (6)
- Inform doctors about training and methods of treatment (30)
- Improve training (19) based on basic medical sciences
- Proper scientific research (15)
- Establish dialogue with medicine and specialities (10)
- Move toward common council (3)
- Open itself to instruction
- Chiropractic to see medicine/surgery in action eg to assist at surgery
- Develop some form of internship training under supervision (medical and chiropractic) before obtaining license to practice
- Show better judgement eg don't treat tumour as backache
- Learn to make a valid diagnosis
- Establish formal relations with medical schools (3)
- Establish pro to educate the public and the medical profession (6)
- Study first four years at medical school
- Integrate chiropractic with a medical degree (10)
- Not claim to care and treat illness that it cannot (5)
- Hold symposia/seminars were medical profession invited (4)
- Train and practice under medical supervision (2)
- Be transparent
- Standardized training with a central registration of chiropractors (8)

- Referral system should be better with report back compulsory to referring practitioner (3)
- All patients must be referred by medical practitioner after a definite diagnosis has been made (3)
- Chiropractic x-rays should be of a higher quality
- Don't treat patients with conditions beyond their scope (4)
- Greater knowledge and a more sound basis of medicine (3)
- Fuse with physiotherapy
- Better cooperation with physiotherapy
- Chiropractic should be more scientific (6)
- Subject chiropractors to strict peer review
- Attend medical meetings and state their case (2)
- Get rid of poorly trained chiropractors

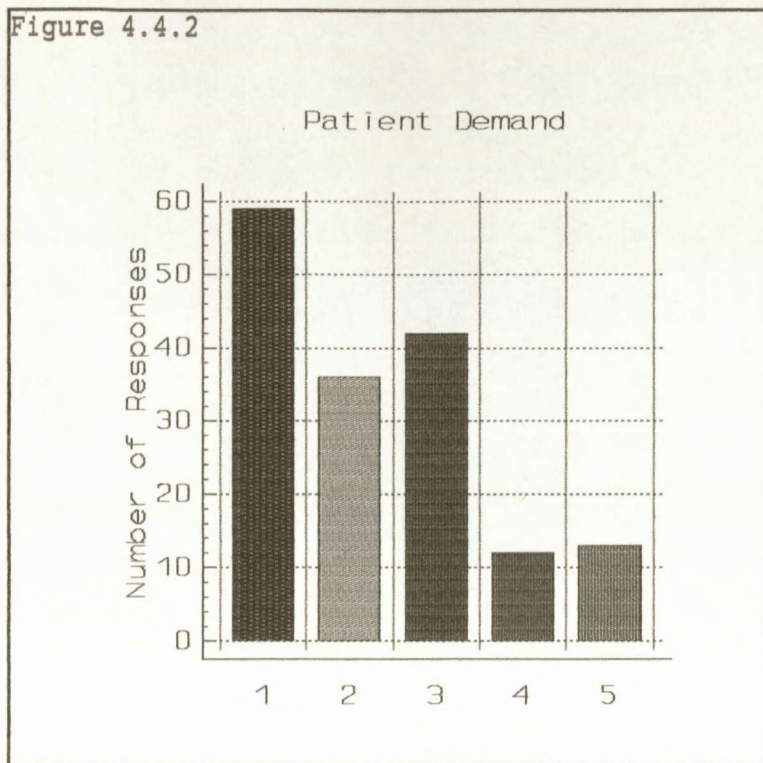
4.14 Factors that would encourage neurologists, neurosurgeons and orthopaedic surgeons to use chiropractic more in the future.

Figures 4.4.1 to 4.4.4 illustrate to what extent personal experience, patient demand, colleagues experience and colleagues recommendation would encourage the specialists to use chiropractic more in the future.



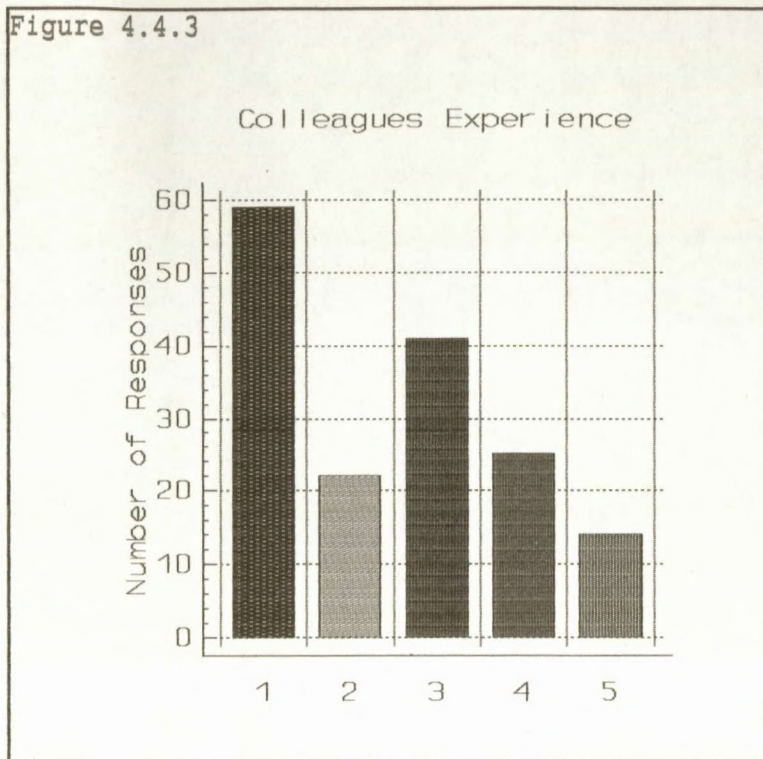
Frequency tabulation of to what extent personal experience would encourage the specialists to use chiropractic more in the future revealed that of the entire sample (n=161) 44 (27,3%) responded '1' on the scale which equates with least extent; 6 (3,7%) responded '2' on the scale which equates with lesser extent, 14 (8,7%) responded '3' on the scale which equates with neither greatest nor least extent, 29 (18,0%) responded '4' on the scale which equates with greater extent and 68 (42,2%) responded '5' on the scale which equates with greatest extent. (see figure 4.4.1)

Figure 4.4.2



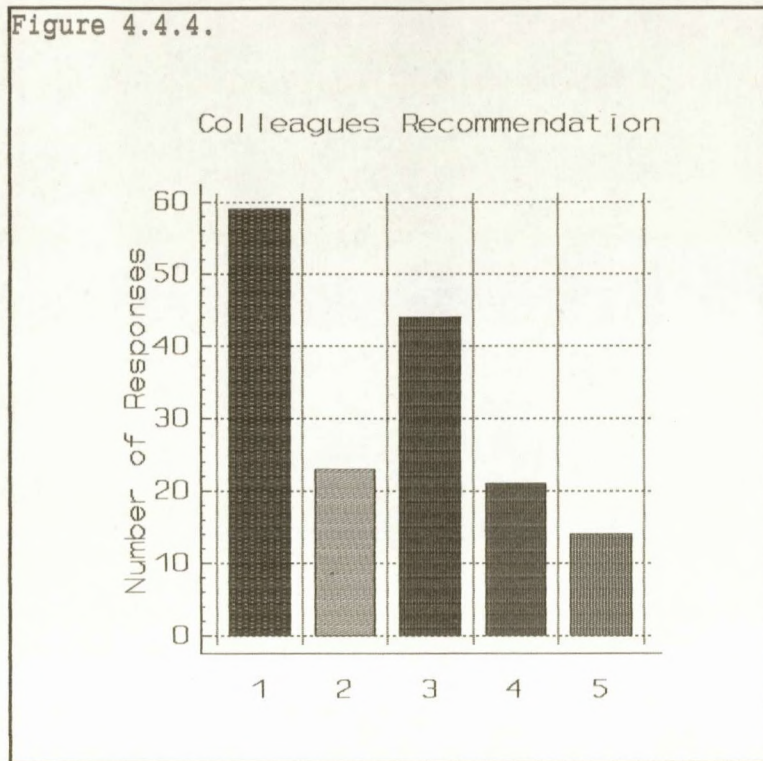
Frequency tabulation of to what extent patient demand would encourage the specialists to use chiropractic more in the future revealed that of the entire sample (n=162) 59 (36,4%) responded '1' on the scale which equates with least extent; 36 (22,2%) responded '2' on the scale which equates with lesser extent, 42 (25,9%) responded '3' on the scale which equates with neither greatest nor least extent, 12 (7,4%) responded '4' on the scale which equates with greater extent and 13 (8,0%) responded '5' on the scale which equates with greatest extent. (see figure 4.4.2)

Figure 4.4.3



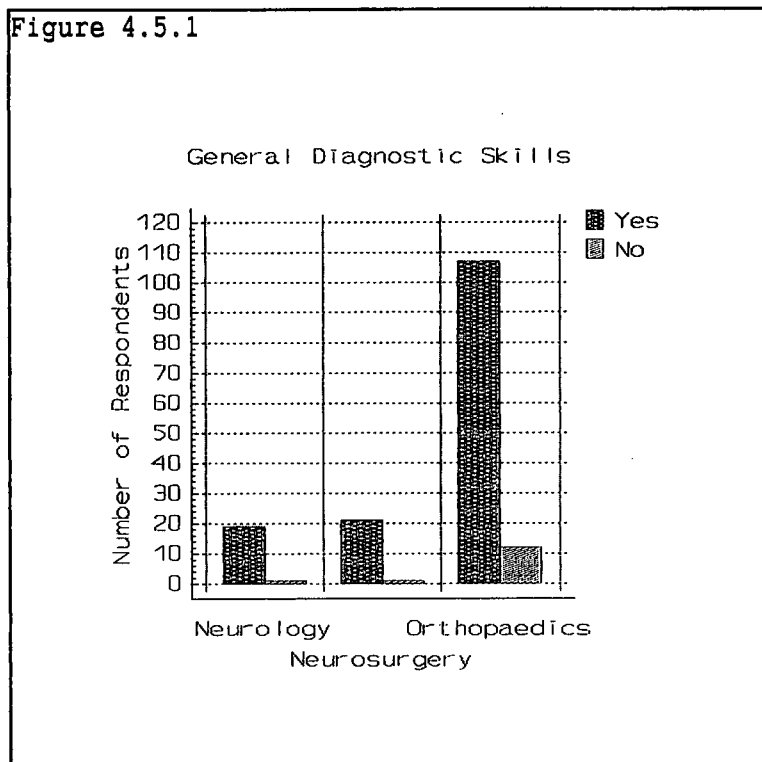
Frequency tabulation of to what extent colleagues' experience would encourage the specialists to use chiropractic more in the future revealed that of the entire sample (n=161) 59 (36,7%) responded '1' on the scale which equates with least extent; 22 (13,7%) responded '2' on the scale which equates with lesser extent, 41 (25,5%) responded '3' on the scale which equates with neither greatest nor least extent, 25 (15,5%) responded '4' on the scale which equates with greater extent and 14 (8,7%) responded '5' on the scale which equates with greatest extent. (see figure 4.4.3)

Figure 4.4.4.



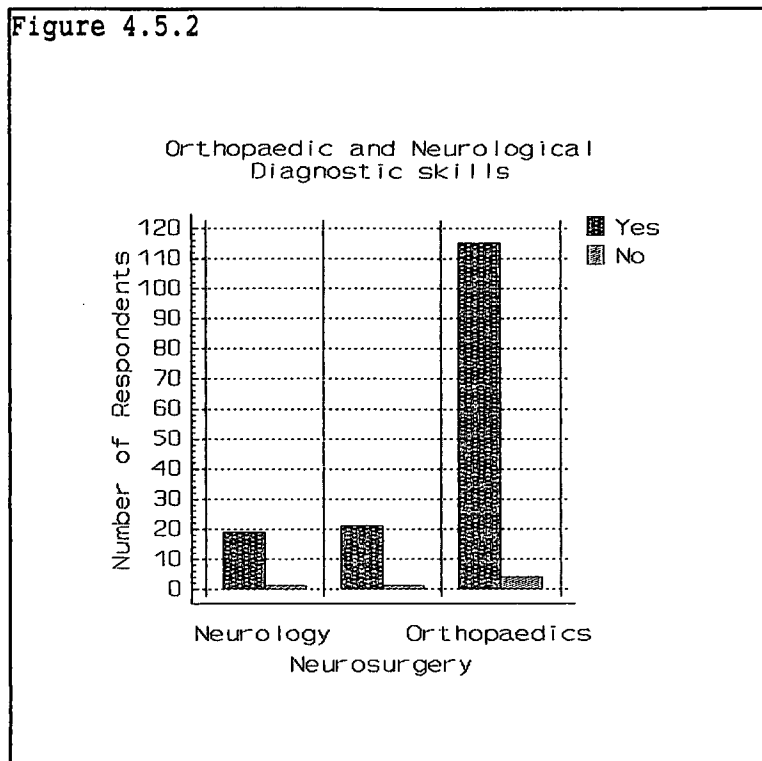
Frequency tabulation of to what extent colleagues' recommendation would encourage the specialists to use chiropractic more in the future revealed that of the entire sample (n=161) 59 (36,7%) responded '1' on the scale which equates with least extent; 23 (14,3%) responded '2' on the scale which equates with lesser extent, 44 (27,3%) responded '3' on the scale which equates with neither greatest nor least extent, 21 (13,0%) responded '4' on the scale which equates with greater extent and 14 (8,7%) responded '5' on the scale which equates with greatest extent. (see figure 4.4.4)

4.15 Do neurologists, neurosurgeons and orthopaedic surgeons believe that people practising manipulation (spinal or other) should have general diagnostic skills, orthopaedic and neurological diagnostic skills and knowledge of relevant radiology?



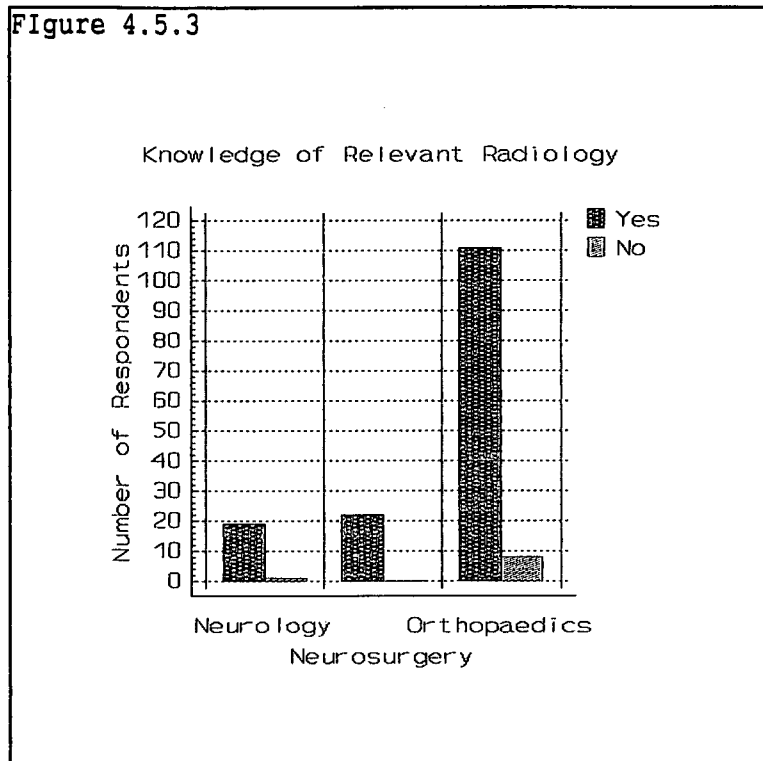
19 (95,0%) neurologists, 21 (95,5%) neurosurgeons and 107 (89,9%) orthopaedic surgeons with a total response of 147 (91,3%) stated that people practising manipulation (spinal or other) should have general diagnostic skills. The differences between groups were not statistically significant. (see figure 4.5.1)

Figure 4.5.2



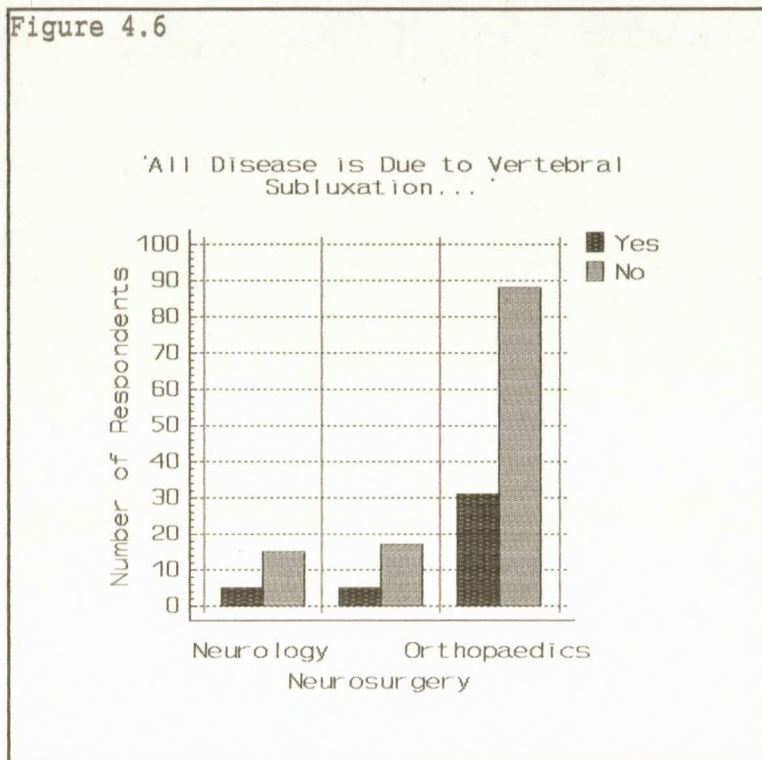
19 (95,0%) neurologists, 21 (95,5%) neurosurgeons and 115 (96,6%) orthopaedic surgeons with a total response of 155 (96,3%) stated that people practising manipulation (spinal or other) should have orthopaedic and neurological diagnostic skills. The differences between groups were not statistically significant. (see figure 4.5.2)

Figure 4.5.3



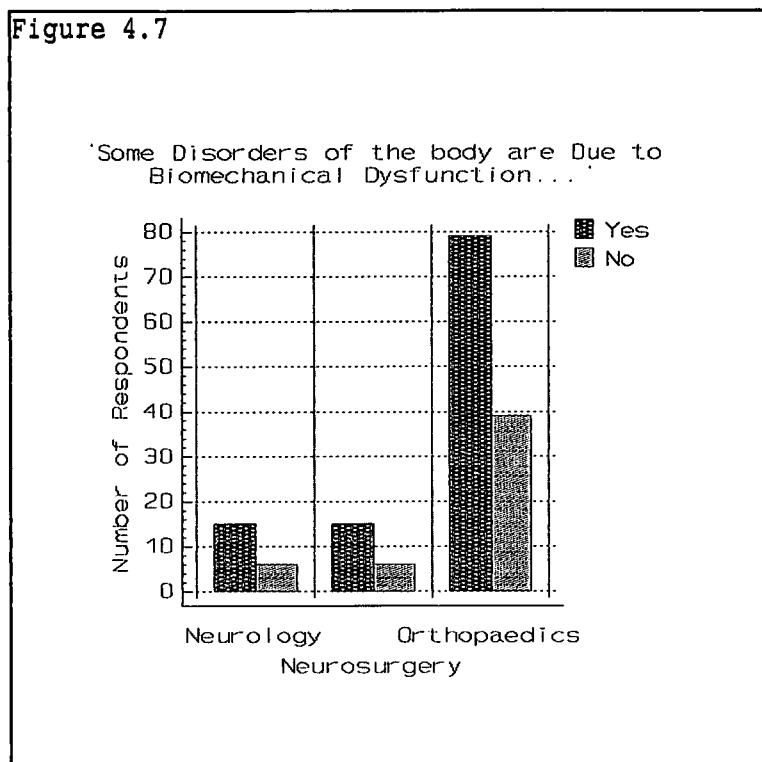
19 (95,0)% neurologists, 22 (100%) neurosurgeons and 111 (93,3%) orthopaedic surgeons with a total response of 152 (94,4%) stated that people practising manipulation (spinal or other) should have knowledge of relevant radiology. The differences between groups were not statistically significant. (see figure 4.5.3)

4.16 Do neurologists, neurosurgeons and orthopaedic surgeons understand chiropractic to claim that all disease is due to vertebral subluxation and amenable to spinal manipulation?



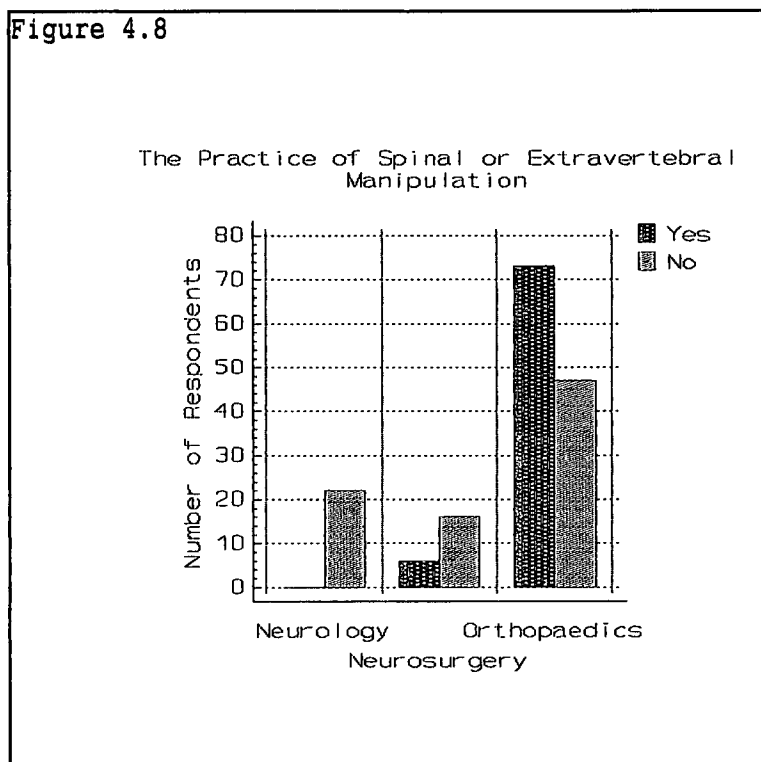
5 (25,0%) of neurologists, 5 (22,7%) of neurosurgeons and 31 (26,1%) of orthopedic surgeons representing a total of 41 (25,5%), stated that they understood chiropractic to claim that all disease is due to vertebral subluxation and amenable to spinal manipulation. The differences between groups were not statistically significant. (see figure 4.6)

4.17 Do neurologists, neurosurgeons and orthopaedic surgeons understand chiropractic to claim that some disorders of the body are due to biomechanical dysfunction and are amenable to spinal manipulation?



15 (71,4%) neurologists, 15 (71,4%) neurosurgeons and 79 (66,9%) orthopedic surgeons representing a total of 109 (68,1%) stated that they understood chiropractic to claim that some disorders of the body are due to biomechanical dysfunction and are amenable to spinal manipulation. The differences between groups were not statistically significant. (see figure 4.7)

4.18. Do neurologists, neurosurgeons and orthopaedic surgeons practice any form of spinal or extravertebral manipulation?



Cross tabulation of the type of specialist and whether or not they practised any form of spinal or extravertebral manipulation revealed that no neurologists, 6 (27,3%) neurosurgeons and 73 (60,8%) orthopaedic surgeons practice some form of spinal or extravertebral manipulation. This represents a total of 79 (48,2%). These differences between groups were not statistically significant. (see figure 4.8)

Those neurosurgeons who use some form of manipulation identified the types of conditions for which they use manipulation and the forms that this manipulation takes in response to question 18, an open ended question (see appendix B). The responses are in the respondents own words, and one neurosurgeon did not complete the question.

1. Cervical spine manipulation under general anaesthesia
2. Joint problems of the cervical and lumbar regions without general anaesthesia
3. Cervical and lumbar manipulation under general anaesthesia
4. Self traction, cervical and lumbar
5. Lumbar and cervical spondylosis

Those orthopaedic surgeons who use some form of manipulation identified the types of conditions for which they use manipulation and the forms that this manipulation takes in response to question 18, an open ended question (see appendix B). The responses are in the respondents own words, and three orthopaedic surgeons did not complete the question.

1. Manipulation of stiff joints like knees and shoulders.
2. Degenerated conditions.
3. Facetal arthropathy: rotational, distraction (eg 'lift' manipulation, cervical and thoracic) and hyperextension (thoracic).
4. Neck or lumbar pain, sometimes shoulders and seldom knees.
5. Cervical and low back problems.
6. Chronic neckache, 'frozen shoulder', correction of deformities eg club foot.

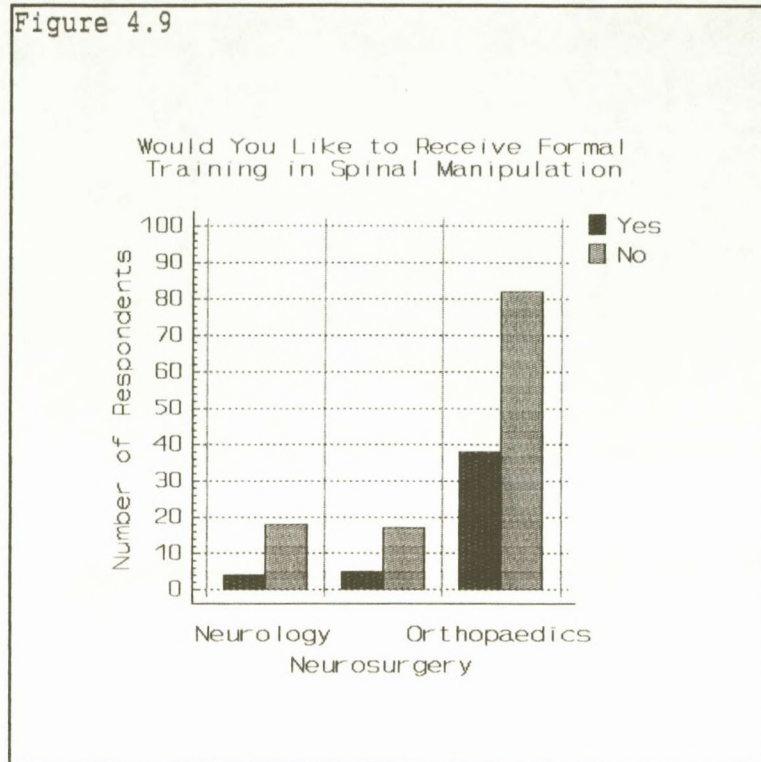
7. Mechanical low back pain, neck pain under general anaesthesia without neurological involvement.
8. Post operative conditions.
9. Neck and spinal manipulation under general anaesthesia.
10. Facet syndromes.
11. Tension headache with neck spasm.
12. Manipulation under general anaesthesia cervical spine, lumbar spine, frozen shoulders, stiff knees.
13. Selected cases.
14. Low back pain without neurological signs and no abnormal x-ray findings.
15. Stress conditions of the cervical spine and post traumatic mobilizations.
16. Very occasionally in stiff joints, post arthroplasty etc. occasionally serial splintage for incremental gain, physiotherapy active and passive range of motion (regularly-especially upper limb).
17. Mechanical neck pain with muscle spasm and mechanical low back pain without neurological signs.
18. Manipulation of joints under general anaesthesia, if physiotherapy makes no progress after surgery.
19. Facet joints of cervical and lumbar spines.
20. Cervical and lumbar spondylosis-facet syndrome normally with local/epidural anaesthetic.
21. Backache, neck pain.
22. Those for which it is safe after full investigation and diagnosis to exclude any dangerous complications.
23. Disc degeneration mainly and hard disc prolapse of a mild degree-cervical and lumbar- or even thoracic vertebral manipulation.

24. Frozen shoulder - manipulation under general anaesthesia, stiff peripheral joints, cervical spondylosis all under general anaesthesia.
25. Spondylosis, facet joints, frozen shoulders, post trauma joint stiffness.
26. Painful backs without neurological involvement no tumours infections or fractures.
27. Spine, mainly cervical, in consulting room not under general anaesthesia.
28. Osteoarthritis, facets.
29. Cervical spine facet joint type pain.
30. Spinal manipulation.
31. Acute lumbago and acute torticollis.
32. Manipulation under general anaesthesia for dislocated joints eg cervical facets and also stiff joints, hips, shoulders, knees, elbows.
33. Shoulder manipulation.
34. Back and neck pain, shoulder pain and stiffness, occasionally knee stiffness.
35. Spinal manipulation for acute locked back.
36. Usually under general anaesthesia, neck for chronic neck pain/"tension" without epidural for low back pain with or without sciatica.
37. Neck manipulation for osteoarthritis.
38. Spondylosis, facet arthrosis, chronic disc.
39. Very limited to cervical, thoracic and lumbar area.
40. Adhesion of joints eg frozen shoulder and knee, reduction of intra-articular fractures, stiff neck proven by x-ray and not due to disease of the cervical spine.
41. Neck and back pain, stiff joints following trauma or disease with Maitland type mobilization.

42. Frozen shoulder very occasionally under anaesthetic.
43. Locked back, swift manipulation without general anaesthesia.
44. Manipulation (sometimes under general anaesthesia) for acute torticollis, low back pain etc, adhesions following prolonged immobilization etc.
45. Neck and back pain, joint pain.
46. Low back pain manipulation under general anaesthesia.
47. Muscle spasm without herniation or any other severe underlying pathology.
48. Spinal manipulation for stable spondylosis in the absence of neurological deficit or root pain.
49. Spondyloarthropathies.
50. Careful manipulation under general anaesthesia , chronic spondylotic conditions.
51. Early cervical and lumbar spondylosis.
52. Manipulation, intermittent traction.
53. Backache without demonstrable evidence of nerve root pressure, neck, shoulder.
54. Cyriax manipulation.
55. Acute locked back, post operative ankylosis, post traumatic ankylosis.
56. Mechanical back and neck pain with Maitland mobilization.
57. Very seldom a neck or back is manipulated under general anaesthesia as a last resort.
58. Spondylosis of neck or lower back without complications- if it does not clear up with normal methods of conservative treatment, then manipulation under general anaesthesia.
59. Early spondylosis.
60. Intra-articular degeneration.

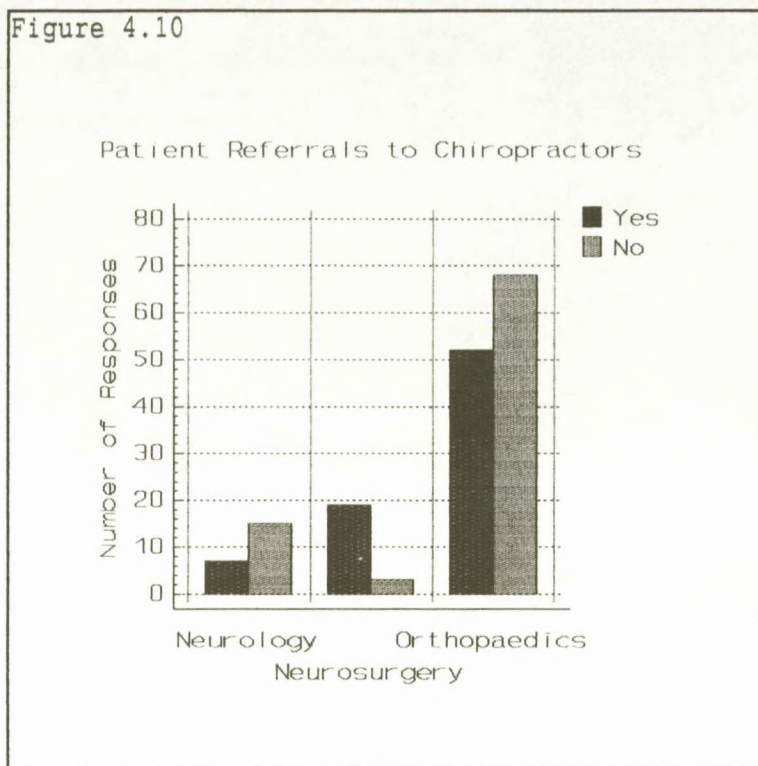
61. Mechanical backache, mechanical instability with or without dynamic nerve root entrapment.
62. Mechanical backache.
63. Non-discogenic back and neck pain (no osteoarthritis) under general anaesthesia.
64. Mechanical back and neck pain with no compression on a nerve under general anaesthesia.
65. Paravertebral joint dysfunction, post operative joint stiffness under general anaesthesia.
66. Degenerative arthrosis.
67. Low back and neck under general anaesthesia.
68. Manipulation cervical spine under general anaesthesia.
69. Neck/back manipulation in advanced stages of spondylosis where conservative means don't help or when surgery is not considered.
70. Spondylogenic low back pain.

4.19 Would neurologists, neurosurgeons and orthopaedic surgeons like to receive formal training in spinal manipulation?



4 (18,2%) neurologists, 5 (22,7%) neurosurgeons and 38 (31,7%) orthopaedic surgeons, representing a total of 47 (28,7%) would like to receive formal training in spinal manipulation. (see figure 4.9)

4.20 Referrals by neurologists, neurosurgeons and orthopaedic surgeons to chiropractors.



7 (31,8%) neurologists, 19 (86,4%) neurosurgeons and 52 (43,3%) orthopaedic surgeons, totalling 78 (47,6%), have referred patients to chiropractors. (see figure 4.10). Of those specialists who have referred patients to chiropractors, 5 (22,7%) neurologists, 8 (36,4%) neurosurgeons and 24 (20,0%) orthopaedic surgeons, totalling 37 (22,6%), responded that the referrals were in the manner of a suggestion to the patient that he/she might try chiropractic if he or she wished. 3 (13,6%) neurologists, 14 (63,6%) neurosurgeons and 36 (30,0%) orthopaedic surgeons, totalling 53 (32,3%) who have referred patients to chiropractors responded that the referrals were in the manner of direct referral to a chiropractor by name. An overlap occurs in the manner of referral where some specialists both suggested chiropractic and referred directly to a chiropractor by name.

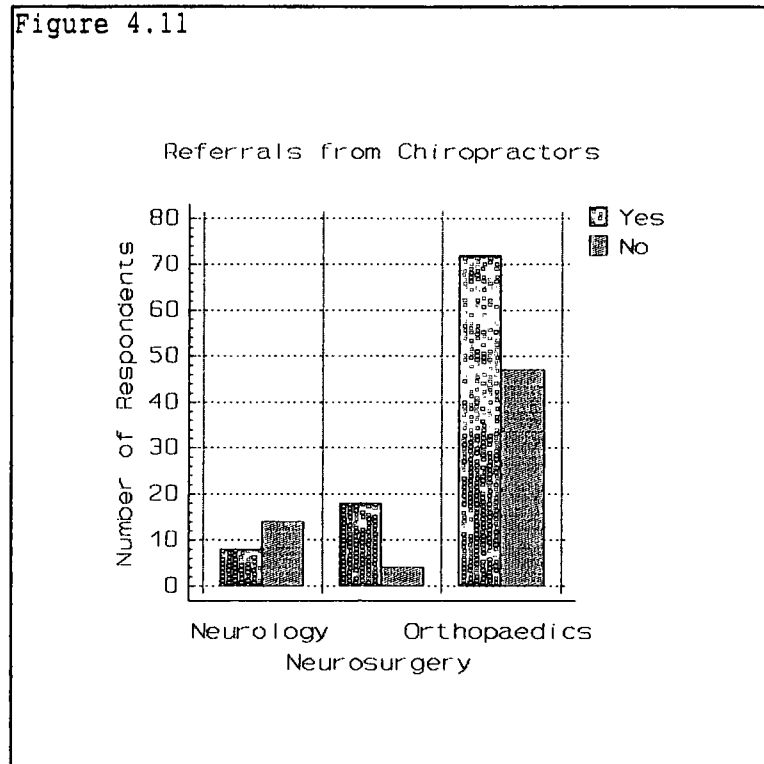
Table 4.12 FREQUENCY OF REFERRALS TO CHIROPRACTORS

	Single Occasion	Weekly	Monthly	Quarterly	Yearly	Row Total
Neurology	3 42.9	0 .0	0 .0	3 42.9	1 14.3	7 9.1
Neuro-surgery	2 11.1	1 5.6	7 38.9	4 22.2	4 22.2	18+ 23.4
Ortho-paedics	14 26.9	2 3.8	7 13.5	14 26.9	15 28.8	52 67.5
Column Total	19 24.7	3 3.9	14 18.2	21 27.3	20 26.0	77 100.0

+ 1 missing value

Of those specialists who referred to chiropractors, 3 (42,9%) neurologists referred on a single occasion, 3 (42,9%) referred patients quarterly and 1 (14,3%) referred yearly. 2 (11,9%) neurosurgeons referred on a single occasion, 1 (5,6%) weekly, 7 (38,9%) monthly, 4 (22,2%) quarterly and 4 (22,2%) referred yearly. 14 (26,9%) orthopaedic surgeons referred on a single occasion, 2 (3,8%) weekly, 7 (13,5%) monthly, 14 (26,9%) quarterly and 15 (28,8%) referred yearly. (See table 4.12)

4.21 Referrals by chiropractors to neurologists, neurosurgeons and orthopaedic surgeons.



8 (36,4%) neurologists, 18 (81,8%) neurosurgeons and 72 (60,5%) orthopaedic surgeons, totalling 98 (60,1%), have received referrals from chiropractors. (see figure 4.11)

Table 4.13 FREQUENCY OF REFERRALS TO NEUROLOGISTS, NEUROSURGEONS AND
ORTHOPAEDIC SURGEONS

	Single Occasion	Weekly	Monthly	Quarterly	Yearly	Row Total
Neurology	4 50.0	0 .0	0 .0	2 25.0	2 25.0	8 8.2
Neuro- surgery	1 5.6	3 16.7	5 27.8	5 27.8	4 22.2	18 18.4
Ortho- paedics	21 29.2	3 4.2	10 13.9	18 25.0	20 27.8	72 73.5
Column Total	26 26.5	6 6.1	15 15.3	25 25.5	26 26.5	98 100.0

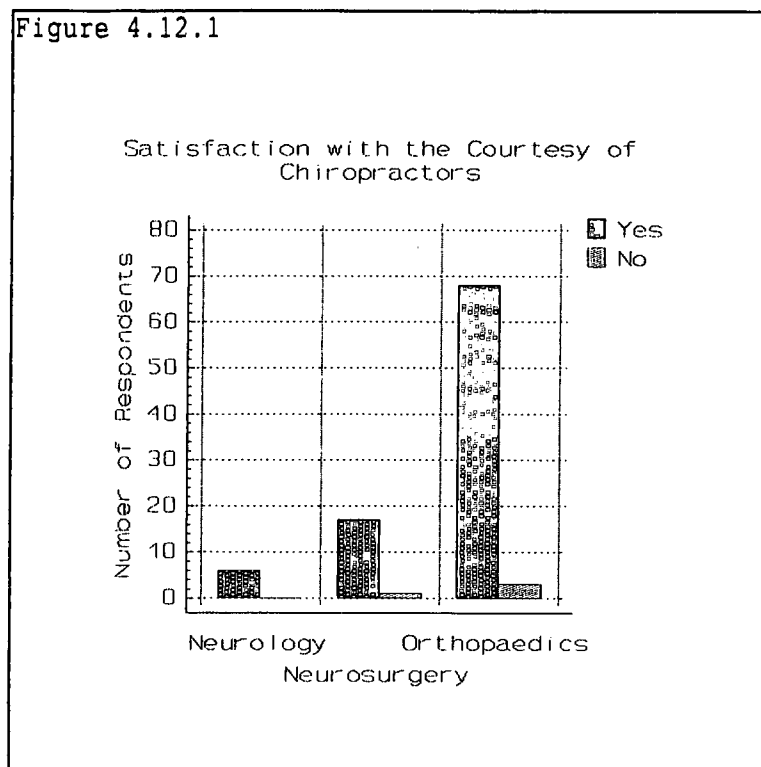
Of those specialists who received referrals from chiropractors, 4 (50,0%) neurologists received referrals on a single occasion, 2 (25,0%) received patients quarterly and 2 (25,0%) received patients yearly. 1 (5,6%) neurosurgeons received referrals on a single occasion, 3 (16,7%) weekly, 5 (27,8%) monthly, 5 (27,8%) quarterly and 4 (22,2%) yearly. 21 (29,2%) orthopaedic surgeons received referrals on a single occasion, 3 (4,2%) weekly, 10 (13,9%) monthly, 18 (25,0%) quarterly and 20 (27,8%) yearly. (See table 4.13)

Table 4.14 SATISFACTION WITH THE NATURE OF REFERRALS FROM
CHIROPRACTORS

	Greatly Satisfied	Moderately Satisfied	Slightly Satisfied	Not at all Satisfied	Row Total
Neurology	2 28.6	3 42.9	1 14.3	1 14.3	7+1 7.2
Neuro-surgery	13 72.2	5 27.8	0 .0	0 .0	18 18.6
Ortho-paedics	30 41.7	31 43.1	7 9.7	4 5.6	72 74.2
Column Total	45 46.4	39 40.2	8 8.2	5 5.2	97 100.0

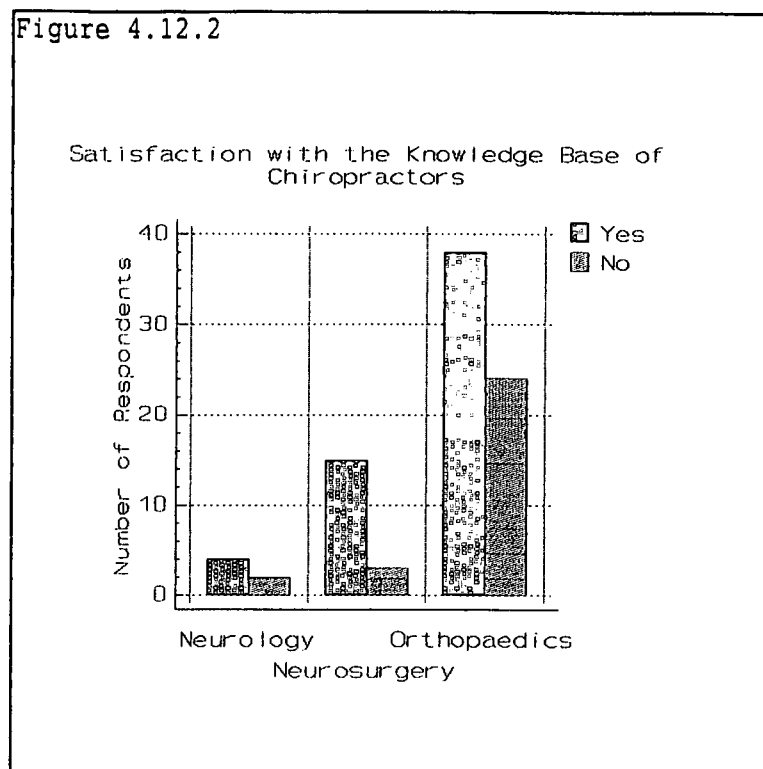
Of the referrals received, 2 (28,6%) neurologists were greatly satisfied with the nature of the referrals, 3 (42,9%) were moderately satisfied, 1 (14,3%) was slightly satisfied and 1 (14,3%) was not at all satisfied. 13 (72,2%) neurosurgeons were greatly satisfied with the nature of the referrals, 5 (27,8%) were moderately satisfied and none were slightly or not at all satisfied. 30 (41,7%) orthopaedic surgeons were greatly satisfied with the nature of the referrals, 31 (43,1%) were moderately satisfied, 7 (9,7%) were slightly satisfied and 4 (5,6%) were not at all satisfied. (See table 4.14)

Figure 4.12.1



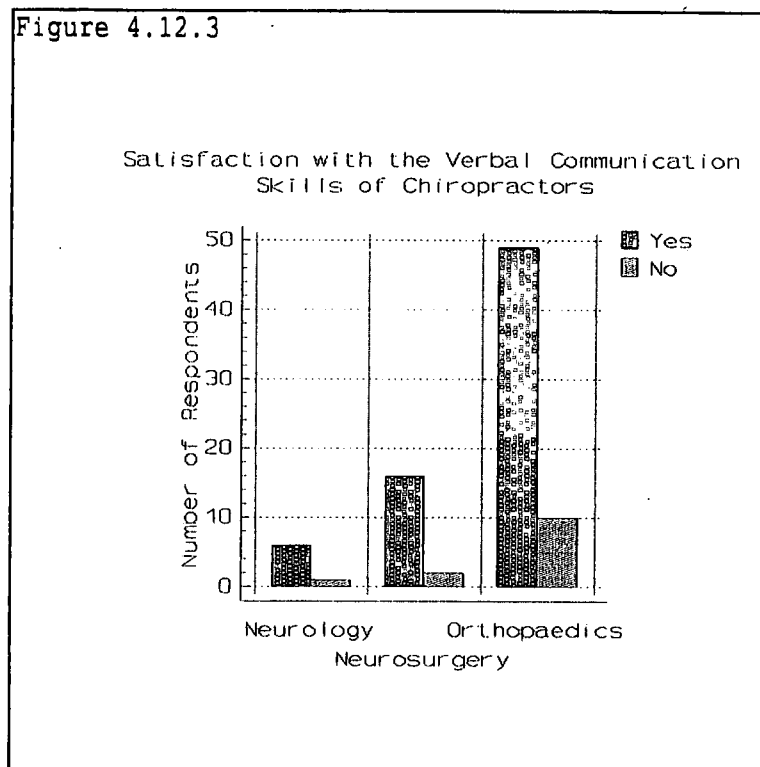
In any communication that neurologists, neurosurgeons and orthopaedic surgeons have had with chiropractors, 6 (100%) neurologists (n=6), 17 (94,4%) neurosurgeons (n=18) and 68 (95,8%) orthopaedic surgeons (n=71) were satisfied with the chiropractor's professionalism in terms of courtesy. (see figure 4.12.1)

Figure 4.12.2



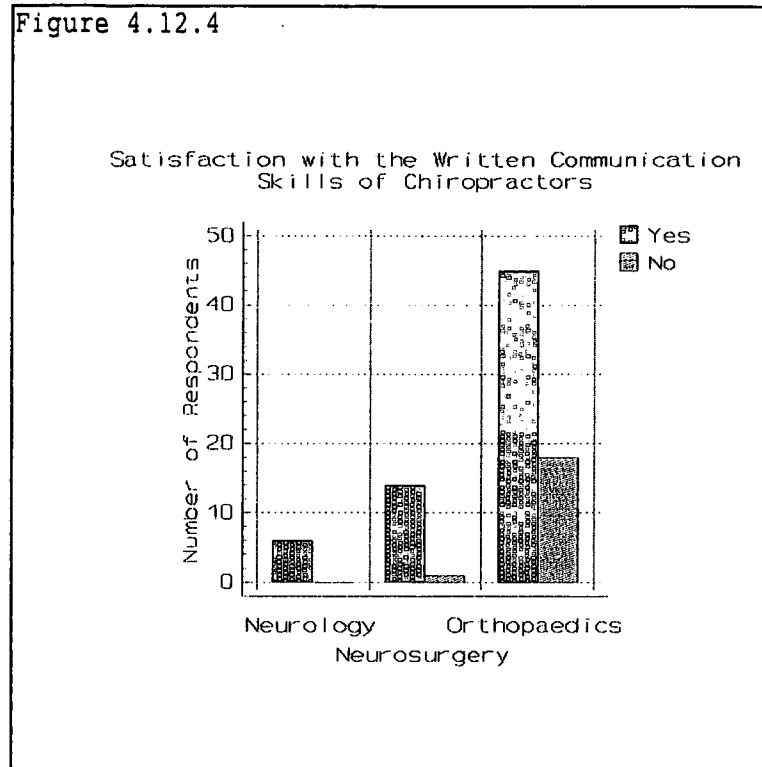
In any communication that neurologists, neurosurgeons and orthopaedic surgeons have had with chiropractors, 4 (66,7%) neurologists (n=6), 15 (83,3%) neurosurgeons (n=18) and 38 (61,3%) orthopaedic surgeons (n=62) were satisfied with the chiropractor's professionalism in terms of knowledge base. (see figure 4.12.2)

Figure 4.12.3



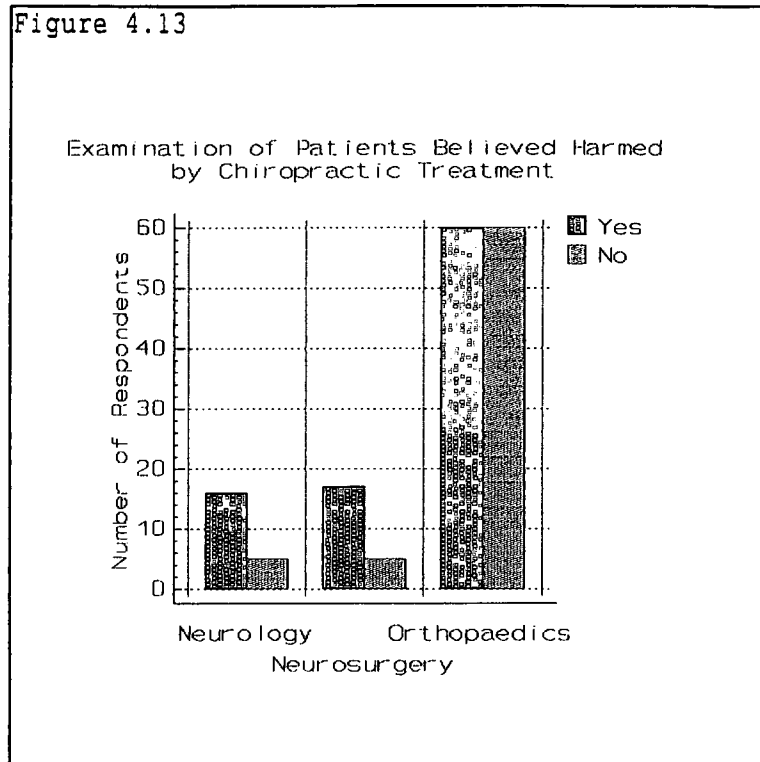
In any communication that neurologists, neurosurgeons and orthopaedic surgeons have had with chiropractors, 6 (85,7%) neurologists (n=7), 16 (88,9%) neurosurgeons (n=18) and 49 (83,1%) orthopaedic surgeons (n=59) were satisfied with the chiropractors professionalism in terms of the chiropractor's verbal communication skills. (see figure 4.12.3)

Figure 4.12.4



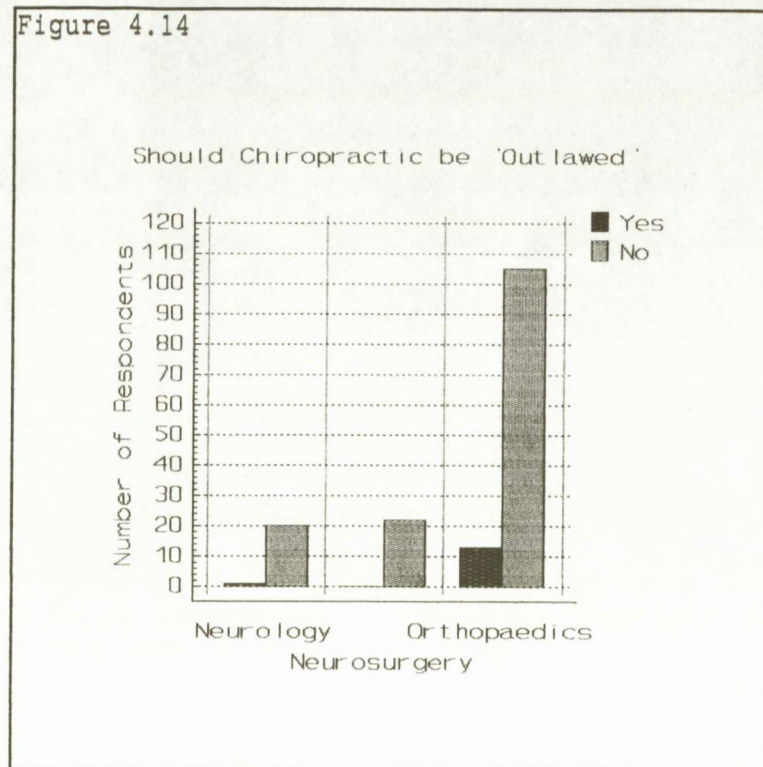
In any communication that neurologists, neurosurgeons and orthopaedic surgeons have had with chiropractors, 6 (100%) neurologists (n=6), 14 (93,3%) neurosurgeons (n=15) and 45 (71,4%) orthopaedic surgeons (n=63) were satisfied with the chiropractor's professionalism in terms of the chiropractor's written communication skills. (see figure 4.12.4)

4.22 Have neurologists, neurosurgeons and orthopaedic surgeons examined any patients that they believed were any way harmed by chiropractic treatment?



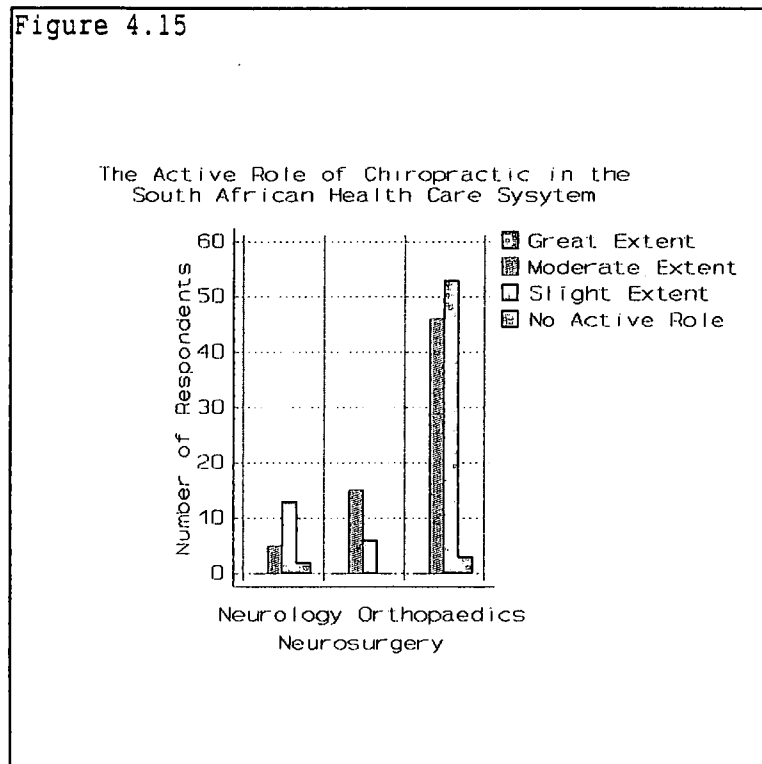
16 (76,2%) neurologists, 17 (77,3%) neurosurgeons and 60 (50%) orthopaedic surgeons, totalling 93 (57,1%) responses, have examined patients that they believed were harmed by chiropractic treatment. (see figure 4.13)

Figure 4.14



1 (5,0%) neurologist, no neurosurgeons and 13 (11,0%) orthopaedic surgeons, totalling 14 (8,7%) responses, believe that the nature and frequency of any such harm is sufficient to "outlaw" chiropractic. (see figure 4.14)

4.23 To what extent do neurologists, neurosurgeons and orthopaedic surgeons believe chiropractic should play an active role in the South African health care system?



No neurologists responded that chiropractic should play an active role to a great extent in the South African health care system. 5 (25,0%) responded moderate extent, 13 (65,0%) slight extent and 2 (10%) no active role.

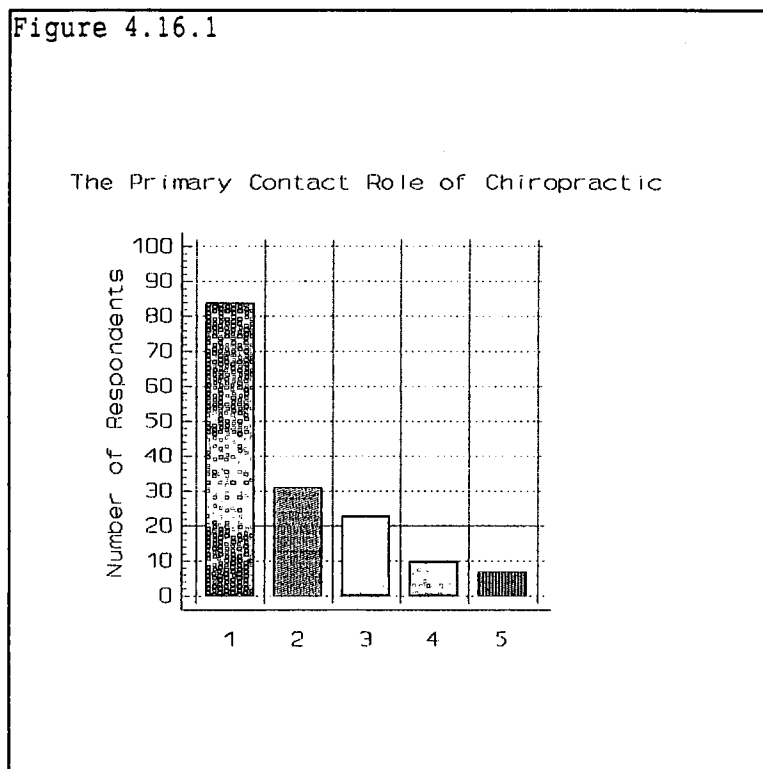
No neurosurgeons responded that chiropractic should play an active role to a great extent in the South African health care system. 15 (71,4%) responded moderate extent, 6 (28,6%) slight extent and 0 no active role.

6 (5,1%) orthopaedic surgeons responded that chiropractic should play an active role to a great extent in the South African health care system. 46 (39,0%) responded moderate extent, 53 (45,0%) slight extent and 13 (11,0%) no active role.(n=118).

Chi-square analysis demonstrated these differences to be statistically significant ($p=0,0367599$). It can therefore be concluded, at a 5% level of significance, that neurosurgeons believe chiropractic should play an active role in the South African health care system to a greater extent than do neurologists or orthopaedic surgeons. (see figure 4.15)

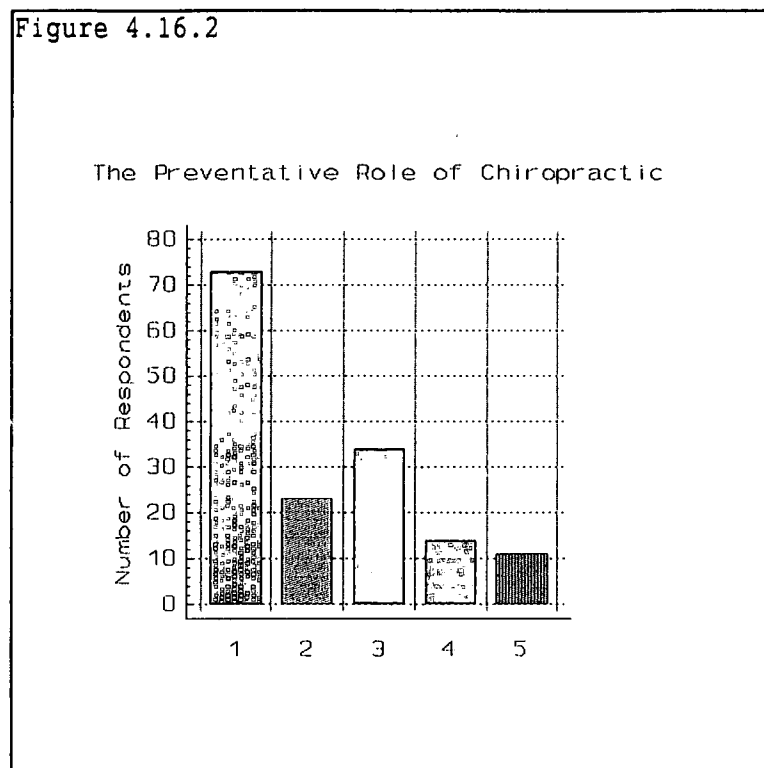
4.24 The roles that chiropractic should occupy in health care.

Figures 4.16.1 to 4.16.4 indicate to what extent neurologists, neurosurgeons and orthopaedic surgeons believe that chiropractic should occupy the roles of primary contact, prevention, support and rehabilitation in the South African health care system.



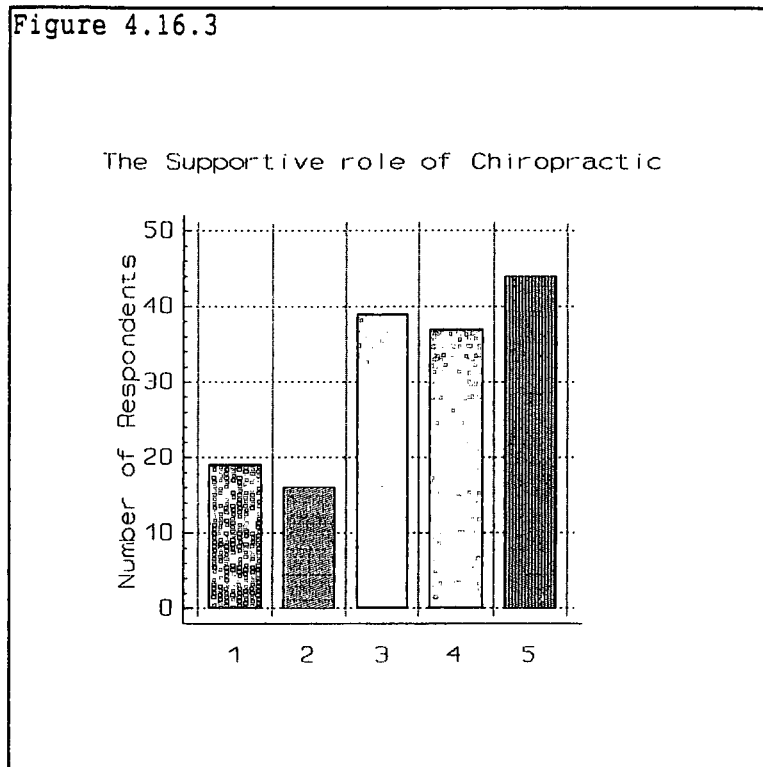
Frequency tabulation of to what extent neurologists, neurosurgeons and orthopaedic surgeons believe that chiropractic should occupy a primary contact role in health care revealed that of the entire sample (n=155) 84 (54,2%) responded '1' on the scale which equates with least extent; 31 (20,0%) responded '2' on the scale which equates with lesser extent, 23 (14,8%) responded '3' on the scale which equates with neither greatest nor least extent, 10 (6,5%) responded '4' on the scale which equates with greater extent and 7 (4,5%) responded '5' on the scale which equates with greatest extent. (see figure 4.16.1)

Figure 4.16.2



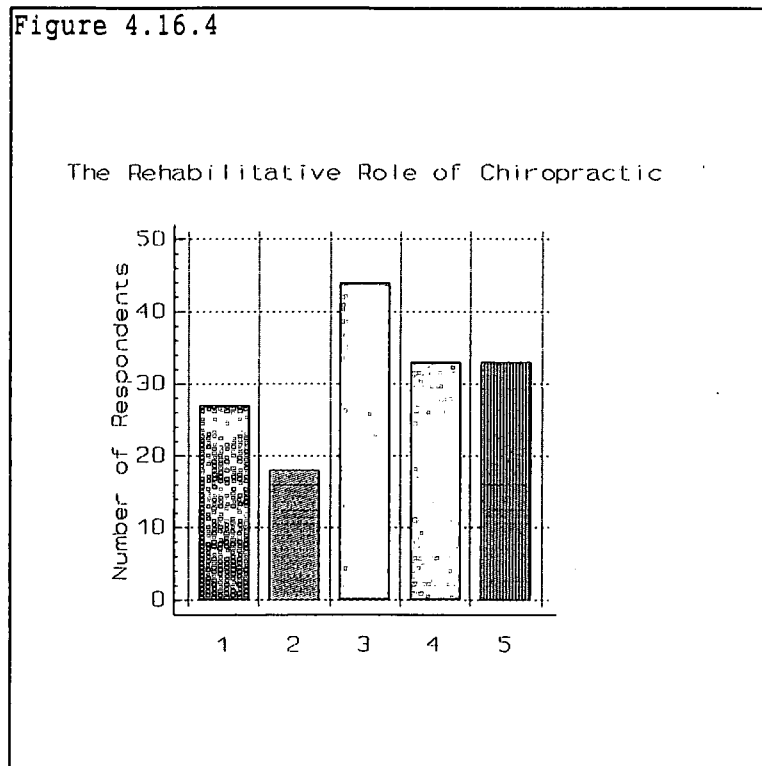
Frequency tabulation of to what extent neurologists, neurosurgeons and orthopaedic surgeons believe that chiropractic should occupy a preventative role in health care revealed that of the entire sample (n=155) 73 (47,1%) responded '1' on the scale which equates with least extent; 23 (14,8%) responded '2' on the scale which equates with lesser extent, 34 (21,9%) responded '3' on the scale which equates with neither greatest nor least extent, 14 (9,0%) responded '4' on the scale which equates with greater extent and 11 (7,1%) responded '5' on the scale which equates with greatest extent. (see figure 4.16.2)

Figure 4.16.3



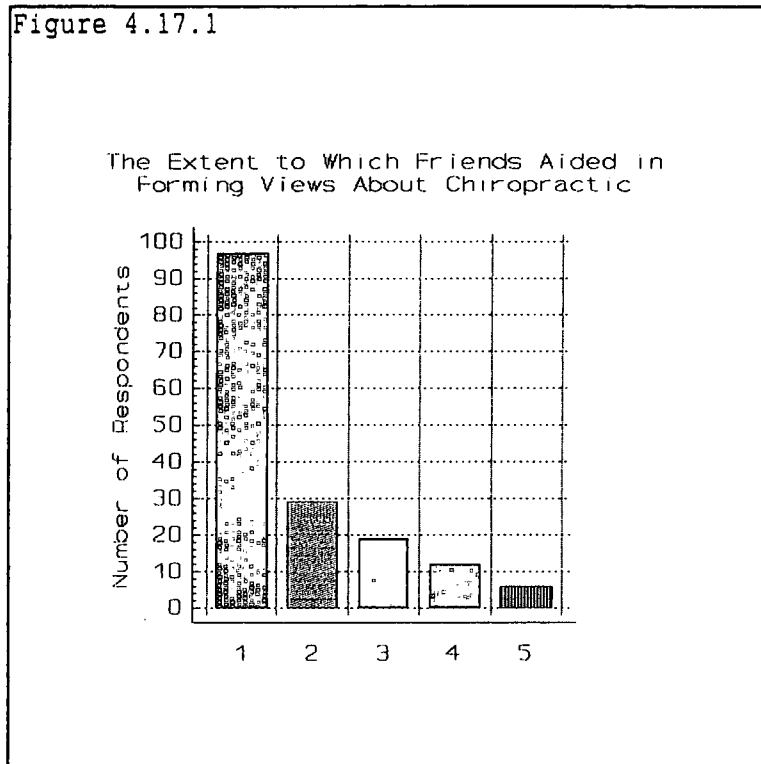
Frequency tabulation of to what extent neurologists, neurosurgeons and orthopaedic surgeons believe that chiropractic should occupy a supportive role in health care revealed that of the entire sample 19 (12,3%) responded '1' on the scale which equates with least extent; 16 (10,3%) responded '2' on the scale which equates with lesser extent, 39 (25,2%) responded '3' on the scale which equates with neither greatest nor least extent, 37 (23,9%) responded '4' on the scale which equates with greater extent and 44 (28,4%) responded '5' on the scale which equates with greatest extent. (see figure 4.16.3)

Figure 4.16.4



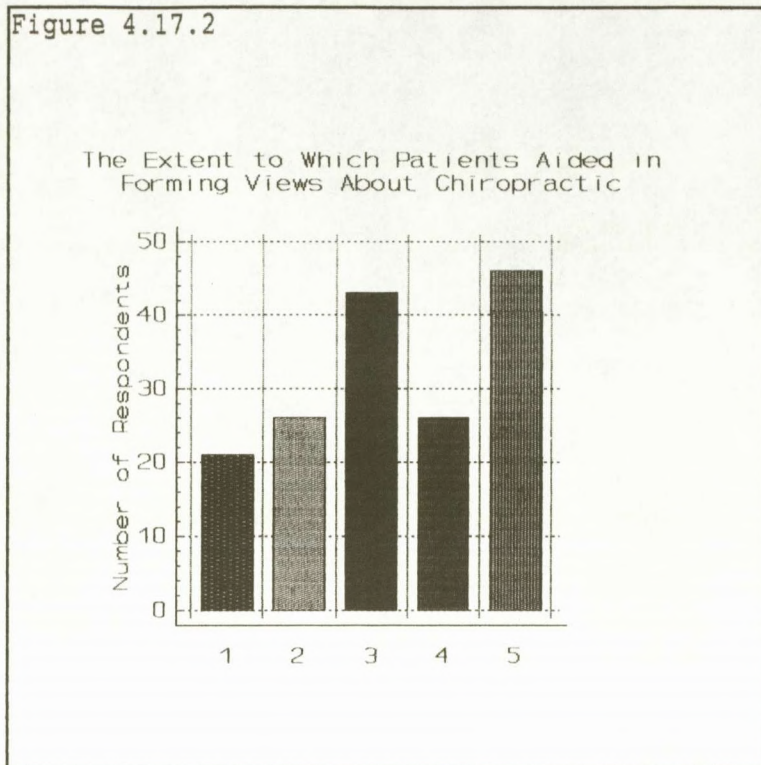
Frequency tabulation of to what extent neurologists, neurosurgeons and orthopaedic surgeons believe that chiropractic should occupy a rehabilitative role in health care revealed that of the entire sample 27 (17,4%) responded '1' on the scale which equates with least extent; 18 (11,6%) responded '2' on the scale which equates with lesser extent, 44 (28,4%) responded '3' on the scale which equates with neither greatest nor least extent, 33 (21,3%) responded '4' on the scale which equates with greater extent and 33 (21,3%) responded '5' on the scale which equates with greatest extent. (see figure 4.16.4)

4.25 To what extent have friends, patients, chiropractors, colleagues, the popular media and medical journals aided in forming neurologists, neurosurgeons and orthopaedic surgeons views about chiropractic.



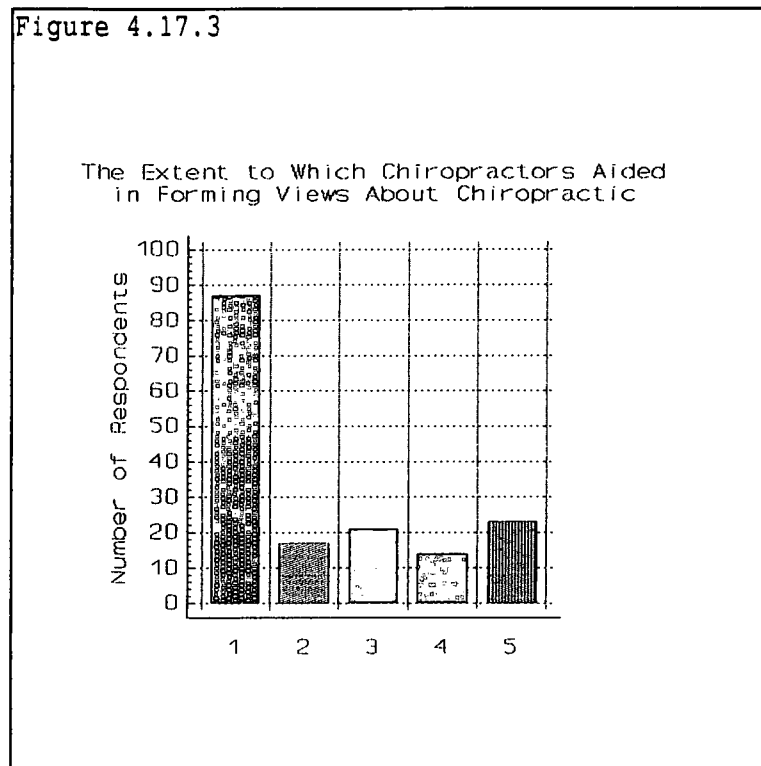
Frequency tabulation of to what extent friends have aided in forming neurologists, neurosurgeons and orthopaedic surgeons views of chiropractic revealed that of the entire sample 97 (59,5%) responded '1' on the scale which equates with least extent; 29 (17,8%) responded '2' on the scale which equates with lesser extent, 19 (11,7%) responded '3' on the scale which equates with neither greatest nor least extent, 12 (7,4%) responded '4' on the scale which equates with greater extent and 6 (3,7%) responded '5' on the scale which equates with greatest extent. (see figure 4.17.1)

Figure 4.17.2



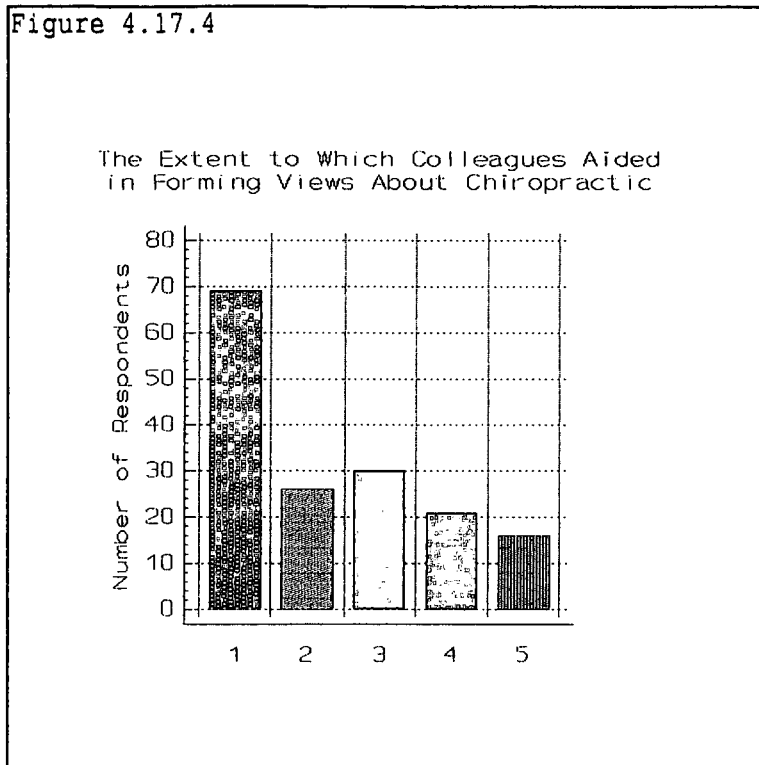
Frequency tabulation of to what extent patients have aided in forming neurologists, neurosurgeons and orthopaedic surgeons views of chiropractic revealed that of the entire sample 21 (13,0%) responded '1' on the scale which equates with least extent; 26 (16,0%) responded '2' on the scale which equates with lesser extent, 43 (26,5%) responded '3' on the scale which equates with neither greatest nor least extent, 26 (16,0%) responded '4' on the scale which equates with greater extent and 46 (28,4%) responded '5' on the scale which equates with greatest extent. (see figure 4.17.2)

Figure 4.17.3



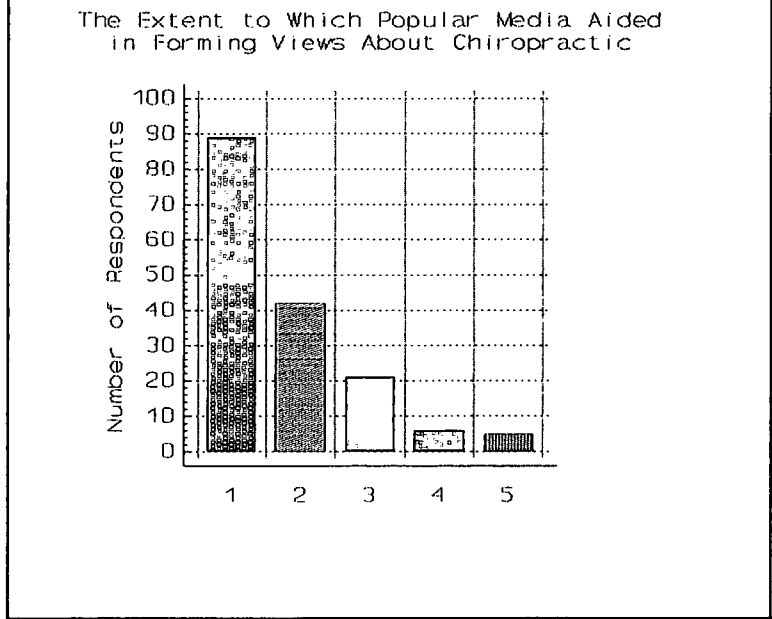
Frequency tabulation of to what extent chiropractors have aided in forming neurologists, neurosurgeons and orthopaedic surgeons views of chiropractic revealed that of the entire sample 87 (53,7%) responded '1' on the scale which equates with least extent; 17 (10,5%) responded '2' on the scale which equates with lesser extent, 21 (13,0%) responded '3' on the scale which equates with neither greatest nor least extent, 14 (8,6%) responded '4' on the scale which equates with greater extent and 23 (14,2%) responded '5' on the scale which equates with greatest extent. (see figure 4.17.3)

Figure 4.17.4



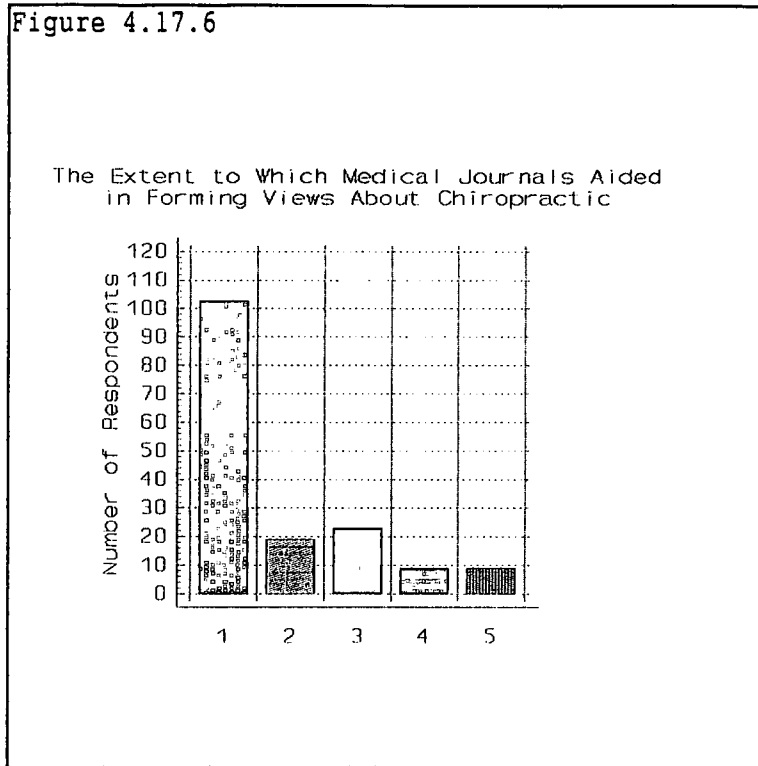
Frequency tabulation of to what extent colleagues have aided in forming neurologists, neurosurgeons and orthopaedic surgeons views of chiropractic revealed that of the entire sample 69 (42,6%) responded '1' on the scale which equates with least extent; 26 (16,0%) responded '2' on the scale which equates with lesser extent, 30 (18,5%) responded '3' on the scale which equates with neither greatest nor least extent, 21 (13,0%) responded '4' on the scale which equates with greater extent and 16 (9,9%) responded '5' on the scale which equates with greatest extent. (see figure 4.17.4)

Figure 4.17.5



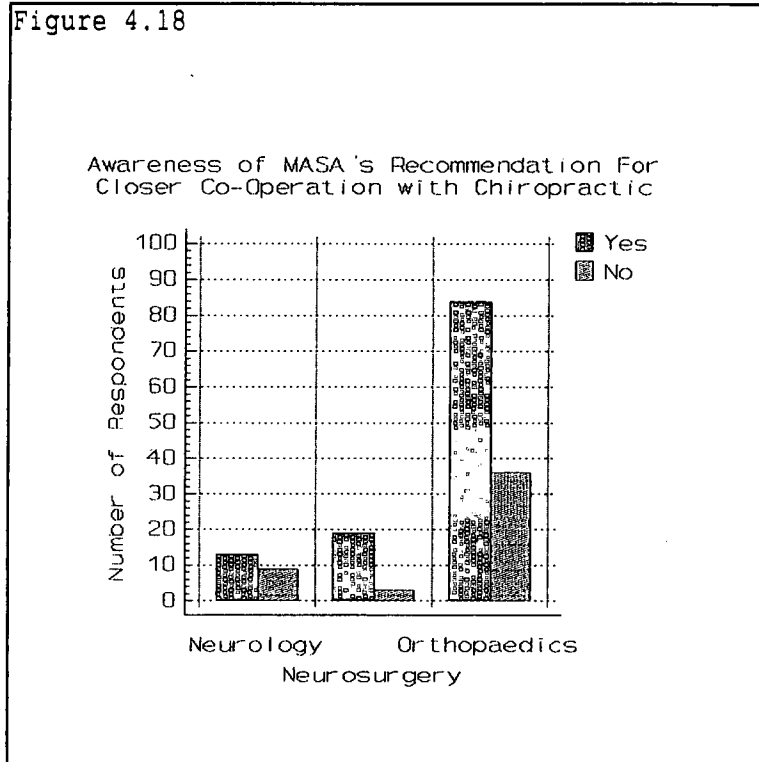
Frequency tabulation of to what extent the popular media has aided in forming neurologists, neurosurgeons and orthopaedic surgeons views of chiropractic revealed that of the entire sample 89 (54,6%) responded '1' on the scale which equates with least extent; 42 (25,8%) responded '2' on the scale which equates with lesser extent, 21 (12,9%) responded '3' on the scale which equates with neither greatest nor least extent, 6 (3,7%) responded '4' on the scale which equates with greater extent and 5 (3,1%) responded '5' on the scale which equates with greatest extent. (see figure 4.17.5)

Figure 4.17.6



Frequency tabulation of to what extent medical journals have aided in forming neurologists, neurosurgeons and orthopaedic surgeons views of chiropractic revealed that of the entire sample 103 (63,2%) responded '1' on the scale which equates with least extent; 19 (11,7%) responded '2' on the scale which equates with lesser extent, 23 (14,1%) responded '3' on the scale which equates with neither greatest nor least extent, 9 (5,5%) responded '4' on the scale which equates with greater extent and 9 (5,5%) responded '5' on the scale which equates with greatest extent. (see figure 4.17.6)

4.26 Are neurologists, neurosurgeons and orthopaedic surgeons aware that the Scientific and Education Committee of MASA made a positive recommendation to the SAMDC to make it possible for closer co-operation between medical practitioners and chiropractors.



13 (59,1%) neurologists, 19 (86,4%) neurosurgeons and 84 (70,0%) orthopaedic surgeons, totalling 116 (70,7%) respondents, were aware that the Scientific and Education Committee of MASA made a positive recommendation to the SAMDC to make it possible for closer co-operation between medical practitioners and chiropractors. (see figure 4.18)

Chapter 5. The Discussion

5.1 To what extent do neurologists, neurosurgeons and orthopaedic surgeons feel informed as to what chiropractors do?

Only 37,8% of South African neurologists, neurosurgeons and orthopaedic surgeons were moderately informed as to what chiropractors do as opposed to 50% of American family physicians. 16,5% of neurologists, neurosurgeons and orthopaedic surgeons were not at all informed as opposed to 6% of family physicians (Cherkin et al. 1989). The comparison between these values only serves as a guide to illustrate various professions knowledge of chiropractic. American family physicians are perhaps informed to a greater extent because chiropractic is a much larger profession in the United States with a greater number of chiropractors per head of population. The prominence of the Wilk antitrust lawsuit over many years has perhaps also influenced the public and other professional groups to become better informed about chiropractic.

When categorising the responses into those who felt greatly or moderately informed as opposed to those who felt slightly or not at all informed, neurosurgeons (59,1%) were the most well informed and neurologists (63,6%) were the least informed as to what chiropractors do. A possible explanation for this is that neurosurgeons deal more with chiropractors in terms of referrals as evidenced by the fact that 86,4% of neurosurgeons who responded to this survey have referred to chiropractors before as opposed to 31,8% of neurologists.

81,8% of neurosurgeons who responded claimed to have received referrals from chiropractors. This interaction may enable neurosurgeons to be more knowledgeable about chiropractic.

5.2 Statements best reflecting neurologists, neurosurgeons and orthopaedic surgeons views of chiropractic.

50,0% of the total sample of neurologists, neurosurgeons and orthopaedic surgeons were uncomfortable with chiropractic but believed it to be effective for some patients as opposed to 66% of family physicians in a study by Cherkin et al. (1989). 29,3% believed that chiropractic provides excellent treatment for some musculoskeletal conditions as opposed to 26% of family physicians. 4,9% responded that chiropractic is quackery and does more harm than good as opposed to 3% of family physicians. Although many South African neurologists, neurosurgeons and orthopaedic surgeons believe chiropractic to be effective for some patients, and indeed nearly 30% stated that chiropractic provides excellent treatment for some musculoskeletal conditions, a high percentage are still uncomfortable with chiropractic. Possible reasons for this include the fact that the majority of neurologists, neurosurgeons and orthopaedic surgeons who responded to this survey believe chiropractors to be slightly or not at all competent in neuro-musculo-skeletal examination and diagnosis (50,3%), which could make them very uncomfortable with chiropractic.

This is in keeping with the views of Curtis and Bove (1992) who state that allopathic medicine regards the extent, depth and validity of manipulative training with suspicion, especially in terms of misdiagnosis and the possibility of overlooking serious disease.

They do however state that chiropractors are highly trained in musculoskeletal diagnosis and treatment. These views of neurologists, neurosurgeons and orthopaedic surgeons are perhaps due to the fact that the respondents believe chiropractors to be in need of greater education and are unaware of the level of training of chiropractors (see 4.13).

The majority of neurosurgeons (52,4%) believed chiropractors to be greatly or moderately competent in neuro-musculo-skeletal examination and diagnosis while the majority of orthopaedic surgeons (55,0%) stated that chiropractors were slightly or not at all competent. These differences in opinion may be due to the fact that neurosurgeons interact more with chiropractors, and hence have a greater knowledge of their ability.

The majority of neurologists (59,1%) and orthopaedic surgeons (51,7%) were uncomfortable with chiropractic but believed it to be effective for some patients while the majority of neurosurgeons 54,5% believed that chiropractic provides excellent treatment for some musculoskeletal conditions. These differences between groups were statistically significant ($p=0,0105728$), indicating that neurosurgeons believe chiropractic treatment to be more effective than do neurologists or orthopaedic surgeons. (See table 4.3)

This again could be due to the fact that neurosurgeons interact more with chiropractors and are therefore better informed. The high rates of patient referrals would indicate that neurosurgeons believe chiropractic to provide excellent treatment.

5.3 What severity of conditions do neurologists, neurosurgeons and orthopaedic surgeons think chiropractors can treat.

40,5% of respondents believed that chiropractors can effectively treat mild conditions only and 38,0% stated moderate conditions while none stated serious conditions. (See table 4.5). Question 5 (see appendix B) of the survey is too simplistic and generalised and only a broad answer is possible. Further research needs to be conducted in the area of which severity of musculoskeletal conditions chiropractors can effectively treat, both from a subjective and objective point of view. Waddell and Main (1984) state that no satisfactory or accepted method for assessing the severity of low back disorders exists. Shekelle et al. (1995) states that comparisons between medical and chiropractic care have been made without respect to severity of illness, and that no quality data exists with respect to severity of illness for back pain. It is also debated whether chiropractors treat patients with fewer or less severe conditions, thereby increasing treatment cost effectiveness (Stano 1993).

5.4 Do neurologists, neurosurgeons and orthopaedic surgeons believe that there is sufficient difference between chiropractic and physiotherapy to justify the existence of two separate professions?

Although the majority of neurologists, neurosurgeons and orthopaedic surgeons (59,3%) believe there is sufficient difference between chiropractic and physiotherapy to justify the existence of two separate professions, 16,7% responded that there was no difference. 24,0% claimed they did not know. These figures suggest that chiropractic is still viewed as a separate and distinct profession by neurologists, neurosurgeons and orthopaedic surgeons in South Africa. It is the opinion of this author that many members of the chiropractic profession in South Africa are concerned that chiropractic may lose its identity and merge with physiotherapy, either voluntarily or involuntarily, as indeed manipulation is not exclusively practised by chiropractors. Competition between chiropractors and physiotherapists is on the increase according to Michaeli (1991) and if chiropractic is to remain separate and distinct, it must demonstrate to the public and other professions its importance in the health care system. Wardwell (1980: 25-41) believes that chiropractors are autonomous practitioners and have functioned at a much higher level than physiotherapists in the diagnosis and treatment of illness. It is therefore important for the chiropractic profession in South Africa to inform those neurologists, neurosurgeons and orthopaedic surgeons who are unaware of the differences between chiropractic and physiotherapy.

5.5 Disciplines that neurologists, neurosurgeons and orthopaedic surgeons might refer patients to for neuro-musculo-skeletal problems.

The overwhelming majority of neurologists, neurosurgeons and orthopaedic surgeons (78,5% responded "greatest extent") would refer patients to physiotherapists for neuro-musculo-skeletal problems while reflexology and osteopathy would receive the least referrals. Acupuncture, chiropractic and massage therapy would receive slightly more referrals, although still to a very small extent when compared with physiotherapy. This is in keeping with Cherkin et al. (1995) who stated for low back pain more than 75% of specialist physicians believed physical therapy to be substantially more effective than any other form of treatment. This is most likely due to medical model training, where physiotherapists are the accepted referrals. This could also account for that fact that other effective therapies not included in the medical model are rejected.

5.6 Conditions that neurologists, neurosurgeons and orthopaedic surgeons think chiropractors can treat.

If the mode (the value that occurs most often) is analyzed for each condition, neurologists, neurosurgeons and orthopaedic surgeons believe that chiropractors can never treat allergies, asthma, bacterial infections, depression, diabetes mellitus, high blood pressure, insomnia, low blood pressure, malnutrition, migraine, nerve root pain, obesity, peptic ulcer and viral infections.

Neurologists, neurosurgeons and orthopaedic surgeons believe that chiropractors can sometimes treat disc herniations, general back pain, hip pain, knee pain, low back pain, myalgia, neck pain, nervous tension, osteoarthritis, rheumatism, sciatica, shoulder pain, tension type headache and whiplash. The conditions that these specialists believe chiropractors can sometimes treat may be classified as neuro-musculo-skeletal problems and if chiropractors restricted themselves to treating these conditions they may achieve greater recognition from the medical profession. This is a view held by many, including Stranack (1995) and Sidley (1994). However, chiropractic education incorporates instruction in both the social sciences (notably psychology and sociology) and biochemistry (nutrition) which should enable the treatment of a broader scope of conditions or at the very least chiropractors must be able to recognize conditions beyond their competence to treat and be able to refer to the appropriate health care professional.

5.7 Neurologists, neurosurgeons and orthopaedic surgeons views on various professions importance in primary health care.

If the mode (the value that occurs most often) is analyzed for each condition, neurologists, neurosurgeons and orthopaedic surgeons rated chiropractic, herbalism, homoeopathy, naturopathy and traditional healing as being least important in terms of serving in a primary health care capacity (mode = '1'). Dentistry, medicine, nursing, optometry, pharmacy and physiotherapy all scored a mode of '5', indicating most important in serving in a primary health care capacity.

The majority of respondents to this survey believe that chiropractic should occupy supportive and rehabilitative roles to a much greater extent than primary contact or preventative roles in health care. The majority of respondents stated that chiropractic should play an active role to a slight extent in the South African health care system (45,3%). The majority of neurosurgeons (71,4%) responded moderate extent. These differences again indicate neurosurgeons view chiropractic more positively than neurologists and orthopaedic surgeons.

Chiropractic in South Africa is aiming at becoming a primary contact health care profession, as per mission statement of it's educational programme at Technikon Natal, in order to cope with the greater needs of society (Technikon Natal 1994). Sidley (1994) states that chiropractors in South Africa tend to see themselves as primary health care providers, although there is much debate as to whether chiropractic should become a limited medical profession or a primary care provider. Wardwell (1980: 25-41) states that although they are not primary care providers, limited medical practitioners are portals of entry to the health care system, since they are characteristically the first point of contact for patients who have not undergone a medical diagnosis. Hence these practitioners must be able to recognise conditions beyond their competence to treat and be willing to refer them to someone who can, which is the aim of chiropractic education in South Africa. It is the opinion of this author that the South African chiropractor should simultaneously be a primary care provider and a limited medical practitioner, similar to the views of Sanchez (1991).

It is also the opinion of this author that the chiropractic profession in South Africa should take steps to avoid being categorised with other health care disciplines that do not have similar legislated guidelines in terms of education and practice, as this could harm the status of chiropractic.

5.8 Which medical practices do neurologists, neurosurgeons and orthopaedic surgeons believe chiropractors should be able to perform given the appropriate training.

Of the total number of respondents, 3,1% stated that given the appropriate training, chiropractors should be able to perform minor surgery; 15,4% stated intra-articular injection; 22,9% stated prescription of scheduled medicines related to neuro-musculo-skeletal conditions; 25,9% stated the drawing of blood for diagnostic purposes and 13,6% stated the reduction of minor fracture/dislocations. These responses would indicate that a fair proportion of neurologists, neurosurgeons and orthopaedic surgeons could see chiropractors as increasing their scope of practice within the field of a limited medical speciality, which may indicate a changing role for chiropractic in the South African health care system.

5.9 To what extent do neurologists, neurosurgeons and orthopaedic surgeons agree or disagree with the statement that "General practitioners have negative views about managing patients with musculoskeletal problems and often feel frustrated with back pain patients."

68,5% of the total sample agreed or strongly agreed with the statement. It has been stated that the medical model may have little to offer these patients (Waddell 1987). This may indicate that these patients are perhaps better suited to other therapies, including chiropractic, which have shown to be effective for these types of conditions.

5.10 Which direction would neurologists, neurosurgeons and orthopaedic surgeons like to see Chiropractic take in the future.

43,5% of the entire sample responded that chiropractic should exist under medical supervision. 26,7% responded that chiropractic should become a limited medical profession similar to dentistry or optometry. 18% of the entire sample responded that chiropractic should retain its present status as marginal to medicine. It is the opinion of this author that chiropractors would not want to exist under medical supervision, in keeping with the views of Jekel (1991) Wardwell (1980). Wardwell (1980) states that the majority of medical physicians would probably prefer manipulative treatment to be carried out by physiotherapists under medical supervision, hence the preference for chiropractic to exist under medical supervision.

It is also the opinion of this author that if chiropractic retained its present status as marginal to medicine, its position in the health care system would retrogress, as chiropractic must evolve with the changing health care system in South Africa.

5.11 What would Chiropractic have to do to encourage greater interaction with medicine and its' specialities?

The majority of responses to this open ended question focused on informing doctors about chiropractic education and methods of treatment, as well as the need for increased scientific research on chiropractic (see 4.13). These responses indicate that the respondents to the survey are not well informed as to the extent and depth of chiropractic education or the increase in scientific research on chiropractic that has become available. It is the opinion of this author that the medical profession in general must be satisfied with the educational standards of chiropractors in order for chiropractic to become integrated into the health care system.

5.12 Factors that would encourage neurologists, neurosurgeons and orthopaedic surgeons to use chiropractic more in the future.

Personal experience was the factor that would most encourage neurologists, neurosurgeons and orthopaedic surgeons to use chiropractic more in the future (60,2% responded great or greatest extent). This was followed in descending order of importance by colleagues experience (24,2%), colleagues recommendation (21,7%) and lastly patient demand (15,4%).

It is interesting to note that patient demand was least important, which could support the argument that medical model of education does not focus enough on patient-doctor interaction.

5.13 Do neurologists, neurosurgeons and orthopaedic surgeons believe that people practising manipulation (spinal or other) should have general diagnostic skills, orthopaedic and neurological diagnostic skills and knowledge of relevant radiology?

The overwhelming majority of respondents stated that people practising manipulation (spinal or other) should have general diagnostic skills (91,3%), orthopaedic and neurological diagnostic skills (96,3%) and knowledge of relevant radiology (94,4%). This is important to note because a wide range of individuals practising manipulation (spinal or other) do not possess these skills. Any harm that these practitioners may cause could negatively affect chiropractic due to the fact that manipulation and chiropractic are closely related. Chiropractors are the only health practitioners equipped by the nature of their training to perform spinal manual therapy (Inglis 1979).

5.14 Do neurologists, neurosurgeons and orthopaedic surgeons understand chiropractic to claim that all disease is due to vertebral subluxation and amenable to spinal manipulation?

25,5% stated that they understood chiropractic to claim that all disease is due to vertebral subluxation and amenable to spinal manipulation.

It is the opinion of this author that this point of view will offend the public and the medical profession and it is important that this perception be dispelled. In order for chiropractic to gain further acceptance, it must compromise its original principles. This is also a view held by Coulter (1992) and Wardwell (1994). 68,1% of respondents stated that they understood chiropractic to claim that some disorders of the body are due to biomechanical dysfunction and are amenable to spinal manipulation.

5.15 Do neurologists, neurosurgeons and orthopaedic surgeons practice any form of spinal or extravertebral manipulation and would these specialists like to receive formal training in spinal manipulation?

48,2% of the respondents practice some form of spinal or extravertebral manipulation, with 60,8% of orthopaedic surgeons performing these techniques, although many of these are under general anaesthetic (see 4.18). 28,7% of the respondents would like to receive formal training in spinal manipulation, the majority being orthopaedic surgeons (31,7%). These results contrast with the views of Wardwell (1980) who states that it is unlikely that many medical doctors or specialists will themselves want to become skilled in chiropractic adjusting. Jekel (1991) is concerned that medicine may begin to use the best techniques of chiropractic, and manipulative therapeutics may become another medical speciality. This may be a cause of concern for South African chiropractors, and this concern may be valid as evidenced by the high number of responses that chiropractic education should integrate with a medical degree. (see 4.13)

5.16 Referrals by neurologists, neurosurgeons and orthopaedic surgeons to chiropractors.

31,8% neurologists, 86,4% neurosurgeons and 43,3% orthopaedic surgeons, totalling 47,6%, have referred patients to chiropractors. This is a fairly substantial amount, indicating the beginning of a well founded referral system. This occurs in spite of the fact that most respondents to this survey were uncomfortable with chiropractic. Wardwell (1980) stated that in a 25% random sample of chiropractors in 1973, 65% of chiropractors received referrals from physicians, also a large number.

22,6% responded that the referrals were in the manner of a suggestion to the patient that he/she might try chiropractic if he or she wished and 32,3% referred directly to a chiropractor by name. This also indicates the beginning of a referral system. Of these referrals patients were most frequently referred quarterly (27,3%), although neurosurgeons most frequently referred monthly (38,9%).

5.17 Referrals by chiropractors to neurologists, neurosurgeons and orthopaedic surgeons.

36,4% neurologists, 81,8% neurosurgeons and 60,5% orthopaedic surgeons, totalling 60,1%, have received referrals from chiropractors, and the majority were greatly or moderately satisfied with the nature of the referrals (86,6%). 95,8% were satisfied with the chiropractor's professionalism in terms of courtesy.

66,3% were satisfied with the chiropractor's professionalism in terms of knowledge base. 84,5% were satisfied with the chiropractors professionalism in terms of the chiropractor's verbal communication skills. 77,4% were satisfied with the chiropractor's professionalism in terms of the chiropractor's written communication skills. These results again demonstrate that the framework for an organised referral system is in place, although the relative dissatisfaction with the knowledge base of chiropractors again reinforces the perception that chiropractors have an inadequate standard of education.

5.18 Have neurologists, neurosurgeons and orthopaedic surgeons examined any patients that they believed were any way harmed by chiropractic treatment?

57,1% have examined patients that they believed were harmed by chiropractic treatment. These statistics would seemingly indicate that manipulation is dangerous, although this is dispelled by the fact although only 8,7% of the total sample believe that the nature and frequency of any such harm is sufficient to "outlaw" chiropractic. Spinal manipulation is a relatively safe procedure when performed with care by those practitioners skilled in manipulation. This is in agreement with Micheali (1991). Inglis (1979) states that spinal manual therapy in the hands of a registered chiropractor is safe.

5.19 To what extent have friends, patients, chiropractors, colleagues, the popular media and medical journals aided in forming neurologists, neurosurgeons and orthopaedic surgeons views about chiropractic.

Patients have played the greatest part in forming neurologists, neurosurgeons and orthopaedic surgeons views about chiropractic. Friends chiropractors, colleagues, the popular media and medical journals have all played the least part in forming these views. This is somewhat disconcerting as neurologists, neurosurgeons and orthopaedic surgeons have indicated that patient demand would least encourage them to use chiropractic more in the future, indicating that patient opinion is perhaps not a high priority for these specialists. It would be much more acceptable if chiropractors themselves as well as medical journals were the most important factors in influencing neurologists, neurosurgeons and orthopaedic surgeons views about chiropractic, constituting a more objective point of view.

5.20 Are neurologists, neurosurgeons and orthopaedic surgeons aware that the Scientific and Education Committee of MASA made a positive recommendation to the SAMDC to make it possible for closer co-operation between medical practitioners and chiropractors.

59,1% of neurologists, 86,4% of neurosurgeons and 70,0% of orthopaedic surgeons, totalling 70,7% respondents, were aware that the Scientific and Education Committee of MASA made a positive recommendation to the SAMDC to make it possible for closer co-operation between medical practitioners and chiropractors.

This could be viewed as a positive step, with a greater number of doctors being aware that these communication channels are now open, as these results indicate, improved communication could lead to a greater understanding of the effects and benefits of chiropractic by the medical profession.

Chapter 6. Conclusions and Recommendations

The following conclusions can be drawn from this survey:

1. The majority of South African neurologists, neurosurgeons and orthopaedic surgeons who responded to this survey are not well informed about chiropractic.
2. Although many South African neurologists, neurosurgeons and orthopaedic surgeons believe chiropractic to be effective for some patients, a high percentage are still uncomfortable with chiropractic.
3. Neurosurgeons are informed to a greater extent about chiropractic than are neurologists and orthopaedic surgeons and believe chiropractic to be more effective than do neurologists and orthopaedic surgeons. Chi-square analysis revealed this to be statistically significant ($p=0,0105728$). Neurosurgeons also refer more patients to and receive more referrals from chiropractors than do neurologists or orthopaedic surgeons.
4. The majority of neurologists, neurosurgeons and orthopaedic surgeons who responded to this survey believe chiropractors to be slightly or not at all competent in neuro-musculo-skeletal examination and diagnosis, in spite of the increased recognition of chiropractic educational standards.

5. The majority of neurologists, neurosurgeons and orthopaedic surgeons who responded to this survey believe that chiropractic is limited to treating neuro-musculo-skeletal problems.
6. The majority of neurologists, neurosurgeons and orthopaedic surgeons who responded to this survey believe that chiropractic is not important in serving in a primary health care capacity and should adopt a supportive and rehabilitative role in the South African health care system.
7. The majority of neurologists, neurosurgeons and orthopaedic surgeons who responded to this survey believe that there is a sufficient difference between chiropractic and physiotherapy to justify the existence of two separate professions, and physiotherapists are the first choice of referral for neuro-musculo-skeletal problems.
8. Chiropractic is not significantly more important than acupuncture, massage therapy, reflexology and osteopathy in terms of the extent to which these disciplines may receive referrals for neuro-musculo-skeletal conditions.
9. A meaningful number of referrals occur between chiropractors and neurologists, neurosurgeons and orthopaedic surgeons. Neurologists, neurosurgeons and orthopaedic surgeons are greatly satisfied with the majority of these referrals.

10. The majority of neurologists, neurosurgeons and orthopaedic surgeons who responded to this survey believe that chiropractic should exist under medical supervision or become a limited medical profession.

11. The majority of neurologists, neurosurgeons and orthopaedic surgeons who responded to this survey believe that medical doctors and specialists need to be informed about chiropractic education and chiropractic methods of treatment, and that the chiropractic profession should concentrate on scientific research. Personal experience of chiropractic would encourage these specialists to use chiropractic more in the future.

12. A large number of neurologists, neurosurgeons and orthopaedic surgeons have examined patients they were believed harmed by chiropractic treatment, although they state that chiropractic should not be outlawed because of this.

The following recommendations can be made:

1. The medical profession in South Africa must be informed about the educational standards of chiropractors and the methods of chiropractic treatment. This will enhance co-operation between chiropractic and the medical profession and strengthen referral systems which are already in place.
2. Chiropractors in South Africa should restrict themselves to treating neuro-musculo-skeletal conditions. This approach will engage the support of neurologists, neurosurgeons and orthopaedic surgeons who believe that chiropractors can effectively treat neuro-musculo-skeletal conditions (see 4.8 pg 52). This is in keeping with the views of Wardwell (1994) who states that chiropractic should compromise its' original principles and become a limited medical profession.
3. The sample size (n=164) of this survey negatively affects the statistical significance of the study. Any similar studies conducted in the future should attempt to increase the sample size so as to avoid under representation of results.

4. If the survey is to be used again in the future, the following changes may help to improve the questionnaire:

4.1 Question 5 which reads "What severity of conditions do you think chiropractors can effectively treat..." should be removed as it is non-specific. Question 8 which reads "to what extent do you think the following conditions can be effectively treated by chiropractors..." serves to answer this question in part.

4.2 Question 11 which reads "To what extent do you agree or disagree with the following statement? 'General practitioners have negative views about managing patients with musculoskeletal problems and often feel frustrated with back pain patients'..." is a double-barrelled question and should be divided into two separate questions.

4.3 Question 14 which reads "Please indicate to what extent the following factors would encourage you to use chiropractic more in the future" implies that the respondent already uses chiropractic and the question should be changed to read "Please indicate to what extent the following factors would encourage you to use chiropractic in the future."

4.4 Question 19 should include the sub-section "Have you received formal training in spinal manipulation." This is due to the fact that certain respondents had received training in spinal manipulation.

4.5 Question 22 (b) which reads "Do you believe that the nature and frequency of any such harm is sufficient to 'outlaw' chiropractic..." should exist as a separate question.

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Dear Doctor,

I am currently a final year student pursuing a Masters Diploma in Technology: Chiropractic. The health care delivery system in South Africa is undergoing change, and important issues include shortage of resources, the high costs of health care as well as a lack of interprofessional cooperation.

The medical profession in the past has generally been opposed to the theories and practice of chiropractic, for a variety of reasons, including lack of scientific validity as well as unsubstantiated claims made by some chiropractors, who sometimes treat patients prior to the establishment of medical diagnosis. Chiropractors treat the common pool of patients, and the profession is attempting to improve co-operation with the medical profession via the scientific validation of its theories and practice through research. Rule 7.(2) has recently been removed from the statutes of the SAMDC and this opens the way for greater co-operation between the medical profession and chiropractic. At present, very little quantifiable information on medicines opinion of chiropractic exists and no studies of this nature have been carried out in South Africa. In view of the need for this information, a questionnaire has been included for your completion. 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 will be concerned with your views of chiropractic utilization as well as its therapeutic efficacy and interprofessional relations.

As with all surveys, the information which you furnish will be treated confidentially. With the exception of a few open ended questions where a short written answer is necessary, all the questions can be answered by marking the appropriate box or boxes with a tick or cross, or circling a number. Please return the questionnaire in the stamped envelope included for your convenience.

Your time and your assistance are greatly appreciated.

Brent-Nolan Rubens
Masters Student

Dr A. G. Till
Head of Department: Chiropractic

INSTRUCTIONS

1. Please ensure that all the questions are answered.
2. All the questions can be answered by marking the appropriate box or boxes with a tick or cross, or by circling a number.
3. Please answer the questionnaire as truthfully as possible.
4. Your answers will be regarded with the strictest confidence.

Department of Chiropractic
Technikon Natal

A study of medical specialities perceptions
of chiropractic in South Africa.

(Study conducted by B-N Rubens)

(Quest. MD6, ver. A.4; updated 22/10/95)

1. Please indicate your field of speciality. (Please tick the appropriate box.)

- 1. Neurology
- 2. Neurosurgery
- 3. Orthopaedics

2. To what extent do you feel informed as to what chiropractors do? (Please tick one box only.)

- 1. Greatly informed
- 2. Moderately informed
- 3. Slightly informed
- 4. Not at all informed

3. Which one of the following statements best reflects your view of chiropractic? (Please tick one box only.)

- 1. I am uncomfortable with it but it is effective for some patients.
- 2. Chiropractic provides excellent treatment for some musculoskeletal conditions.
- 3. Chiropractic is quackery and does more harm than good.
- 4. Not informed enough to comment.

4. To what extent do you believe chiropractors to be competent in neuro-musculo-skeletal examination and diagnosis?
(Please tick one box only.)

- 1. Greatly competent
- 2. Moderately competent
- 3. Slightly competent
- 4. Not at all competent
- 5. Not informed enough to comment.

5. What severity of conditions do you think Chiropractors can effectively treat? (Please tick one box only.)

- 1. Mild conditions only.
- 2. Moderate conditions.
- 3. Serious conditions.
- 4. None of the above.
- 5. I don't know which conditions.

6. Is there sufficient difference between Chiropractic and Physiotherapy to justify the existence of two separate professions?

- 1. Yes
- 2. No
- 3. Don't know

7. Please indicate to what extent you might refer patients to the following disciplines for neuro-musculo-skeletal problems. (Please circle one number for each discipline, with (1) indicating no referrals and (5) indicating most referrals.)

- | | | | | | |
|---------------------------|---|---|---|---|---|
| 1. Acupuncture | 1 | 2 | 3 | 4 | 5 |
| 2. Chiropractic | 1 | 2 | 3 | 4 | 5 |
| 3. Massage therapy | 1 | 2 | 3 | 4 | 5 |
| 4. Reflexology | 1 | 2 | 3 | 4 | 5 |
| 5. Osteopathy | 1 | 2 | 3 | 4 | 5 |
| 6. Physiotherapy | 1 | 2 | 3 | 4 | 5 |
| 7. Other (please specify) | | | | | |
-

8. To what extent do you think the following conditions can be effectively treated by chiropractors? (Please tick only one box per condition.)

	Always ¹	Usually ²	Sometimes ³	Never ⁴
Allergies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Asthma	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bacterial infections	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Depression	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Diabetes mellitus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Disc herniation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
General back pain	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
High blood pressure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insomnia	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hip pain	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Knee pain	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low back pain	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low blood pressure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Malnutrition	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Migraine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Myalgia	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Neck pain	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nerve root pain	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nervous tension	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Obesity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Osteoarthritis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Peptic ulcer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rheumatism	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sciatica	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shoulder pain	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tension type headache	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Viral infections	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Whiplash	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9. Please rate each of the following professions in terms of their importance in serving in a primary health care capacity? (Please circle a number for each profession, with (1) indicating least important and (5) indicating most important.)

1. Chiropractic	1	2	3	4	5
2. Dentistry	1	2	3	4	5
3. Herbalism	1	2	3	4	5
4. Homoeopathy	1	2	3	4	5
5. Medicine	1	2	3	4	5
6. Naturopathy	1	2	3	4	5
7. Nursing	1	2	3	4	5
8. Optometry	1	2	3	4	5
9. Pharmacy	1	2	3	4	5
10. Physiotherapy	1	2	3	4	5
11. Traditional healing	1	2	3	4	5
12. Other (please state)					

10. Which of the following practices, given the appropriate training, do you think chiropractors should be able to perform? (Please tick appropriate boxes.)

- | | |
|--|--------------------------|
| 1. Minor surgery. | <input type="checkbox"/> |
| 2. Intra-articular injection. | <input type="checkbox"/> |
| 3. Prescribe scheduled medicines related to neuro-musculo-skeletal conditions. | <input type="checkbox"/> |
| 4. Draw blood for diagnostic purposes | <input type="checkbox"/> |
| 5. Reduce minor fracture/dislocations | <input type="checkbox"/> |
| 6. None of the above | <input type="checkbox"/> |

11. To what extent do you agree or disagree with the following statement? (Please tick one box only.)

"General practitioners have negative views about managing patients with musculoskeletal problems and often feel frustrated with back pain patients."

- | | |
|----------------------|--------------------------|
| 1. Strongly agree | <input type="checkbox"/> |
| 2. Agree | <input type="checkbox"/> |
| 3. Undecided | <input type="checkbox"/> |
| 4. Disagree | <input type="checkbox"/> |
| 5. Strongly disagree | <input type="checkbox"/> |

12. Which direction would you like to see Chiropractic take in the future? (Please tick one box only.)

- 1. Chiropractic should fuse with medicine.
- 2. Chiropractic should exist under medical supervision.
- 3. Chiropractic should retain it's present status as marginal to medicine.
- 4. Chiropractic should become a limited medical profession similar to Dentistry or Optometry.
- 5. Chiropractic should disappear.

13. In your opinion, what would Chiropractic have to do to encourage greater interaction with medicine and its' specialities?

14. Please indicate to what extent the following factors would encourage you to use chiropractic more in the future? (Please circle one number for each choice, with (1) indicating the least extent and (5) the greatest extent.)

- | | | | | | |
|-------------------------------|---|---|---|---|---|
| 1. Personal experience | 1 | 2 | 3 | 4 | 5 |
| 2. Patient demand | 1 | 2 | 3 | 4 | 5 |
| 3. Colleagues' experience | 1 | 2 | 3 | 4 | 5 |
| 4. Colleagues' recommendation | 1 | 2 | 3 | 4 | 5 |

15. Do you believe that people practising manipulation (spinal or other) should have: (Please tick appropriate box)

- | | Yes | No |
|--|--------------------------|--------------------------|
| 1. General diagnostic skills. | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Orthopaedic and neurological diagnostic skills. | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Knowledge of relevant radiology. | <input type="checkbox"/> | <input type="checkbox"/> |

16. Do you understand chiropractic to claim that all disease is due to vertebral subluxation and amenable to spinal manipulation? (Please mark appropriate box)

- 1. Yes
- 2. No

17. Do you understand chiropractic to claim that some disorders of the body are due to biomechanical dysfunction and are amenable to spinal manipulation?

- 1. Yes
- 2. No

18. Do you practice any form of spinal or extravertebral manipulation?

- 1. Yes
- 2. No

If Yes, for which types of conditions do you use manipulation and what form does this take? (Please state)

19. Would you like to receive formal training in spinal manipulation?

- 1. Yes
- 2. No

20. Have you ever referred a patient to a chiropractor?

- 1. Yes
- 2. No

(a) If Yes, was it in the manner of:

- 1. A suggestion to the patient that he/she might try Chiropractic if he or she wished.
- 2. Direct referral to a Chiropractor by name.

AND

(b) If Yes, with what frequency have you referred to chiropractors?

- 1. On a single occasion
- 2. Weekly
- 3. Monthly
- 4. Quarterly
- 5. Yearly

21. Have you ever received referrals from chiropractors?

- 1. Yes
- 2. No

(a) If Yes, with what frequency have you received referrals from chiropractors?

- 1. On a single occasion
- 2. Weekly
- 3. Monthly
- 4. Quarterly
- 5. Yearly

AND

(b) To what extent were you satisfied with the nature of the referral?

- 1. Greatly satisfied
- 2. Moderately satisfied
- 3. Slightly satisfied
- 4. Not at all satisfied

AND

(c) In any communication that you have had with chiropractors, were you satisfied with the person/s professionalism in terms of: (Please tick box)

	Yes	No
Courtesy	<input type="checkbox"/>	<input type="checkbox"/>
Knowledge base	<input type="checkbox"/>	<input type="checkbox"/>
Verbal communication skills	<input type="checkbox"/>	<input type="checkbox"/>
Written communication skills	<input type="checkbox"/>	<input type="checkbox"/>

22. Have you examined any patients that you believed were in any way harmed by chiropractic treatment?

- 1. Yes
- 2. No

(a) If Yes, please state the nature of the injury/s.

(b) Do you believe that the nature and frequency of any such harm is sufficient to "outlaw" chiropractic?

- 1. Yes
- 2. No

23. To what extent do you believe chiropractic should play an active role in the South African health care system? (Please tick one box only.)

- 1. Great extent
- 2. Moderate extent
- 3. Slight extent
- 4. No active role

24. To what extent should chiropractic occupy the following roles in health care? (Please circle one number for each role, with (1) indicating no role at all and (5) the greatest role.)

- | | | | | | |
|--------------------|---|---|---|---|---|
| 1. Primary contact | 1 | 2 | 3 | 4 | 5 |
| 2. Preventative | 1 | 2 | 3 | 4 | 5 |
| 3. Supportive | 1 | 2 | 3 | 4 | 5 |
| 4. Rehabilitative | 1 | 2 | 3 | 4 | 5 |

25. Please indicate to what extent the following sources have aided in forming your views about chiropractic. (Please circle one number for each source, with (1) being least informative and (5) being most informative.)

1. Friends	1	2	3	4	5
2. Patients	1	2	3	4	5
3. Chiropractors	1	2	3	4	5
4. Colleagues	1	2	3	4	5
5. Popular media	1	2	3	4	5
6. Medical journals	1	2	3	4	5

26. Are you aware that the Scientific and Education Committee of MASA made a positive recommendation to the SAMDC to make it possible for closer co-operation between medical practitioners and chiropractors?

- 1. Yes
- 2. No

27. How many years have you practised as your current registered professional status indicates?

- 1. 10 years or less
- 2. 20 years or less, but more than 10 years
- 3. 30 years or less, but more than 20 years
- 4. More than 30 years

APPENDIX C

PRETEST EVALUATION

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

(Please mark the appropriate box).

- 1. Extremely interesting []
- 2. Interesting []
- 3. Average []
- 4. Uninteresting []
- 5. Very uninteresting []

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

- 1. Yes []
- 2. No []

3. Would you describe the covering letter as...

(Please mark the appropriate box).

- 1. Very clear []
- 2. Clear []
- 3. Adequate []
- 4. Unclear []
- 5. Very unclear []

4. How would you describe the instructions accompanying the questions?

(Please mark the appropriate box).

- 1. Very clear []
- 2. Clear []
- 3. Adequate []
- 4. Unclear []
- 5. Very unclear []

5. Was the questionnaire too long?

1. Yes []

2. No []

6. What is your opinion of the wording of the questions?

(Please mark the appropriate box).

1. The meaning of every question is very clear. []

2. The meaning of most questions is clear. []

3. The meaning of only half the number of questions is clear. []

4. The meaning of most questions is unclear. []

5. The meaning of every question is very unclear. []

If applicable, please write down the number/s of the question/s you had difficulty in answering and your suggestions on how these questions could be improved.
