A Study to Determine the International Federations' Perception and Utilization of Chiropractors and Other Sports Medical Personnel.

By

Kirsten Leigh Cloete

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

I, Kirsten Leigh Cloete, do declare that this dissertation is representative of my own work in both conception and execution.

_____ _____

Kirsten Leigh Cloete **Date**

APPROVED FOR FINAL SUBMISSION

_____ _____

Supervisor **Date**
Dr. C.M. Korporaal
M.Tech: Chiropractic (SA), CCFC, CCSP (USA), ICSSD (USA)

DEDICATION

This dissertation is dedicated to my parents, Dave and Trish Cloete, for their unconditional love and support, and for always encouraging me to follow my dreams.

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Finally, to my Lord and Saviour Jesus Christ, for blessing me, never leaving my side, and for offering us all eternal hope in Him.

"…but those who hope in the Lord will renew their strength, they will soar on wings like eagles, they will run and not grow weary, they will walk and not be faint."

- Isaiah 40:31-

GLOSSARY

Athlete: is defined by the Oxford English Dictionary (2002) as “a person who has the necessary abilities to participate in physical exercise, especially in competitive situations such as games, races and matches”. For the purposes of this research however, an athlete will be defined as meaning any person engaged in sports on a competitive level such that they represent either a regional (provincial) or national team in order to participate in tournaments.

Chiropractors: defined by the World Federation of Chiropractic (2001), as “health professionals specializing in the diagnosis, treatment and prevention of disorders of the musculoskeletal system and the effects of these disorders on the function of the nervous system and general health.”

Complementary and Alternative Medicine: a group of medical and health care practices that are not considered part of conventional medicine and includes amongst others chiropractic, osteopathy, homeopathy, acupuncture and herbalism.

FICS: The International Federation of Sports Chiropractic (Federation Internationale de Chiropratique du Sport)

Holistic: the treatment approach whereby the practitioner considers the complete person in the treatment of disease.

International Federations of Sport (IFS): international non-governmental organisations that are recognised by the International Olympic Committee (IOC) as administering sport at world level, and whose responsibilities cover legislation, organization of competitions and development of the sport.

IF executive committee: body within the federation that handles all routine business and makes decisions of a routine nature, and "…has the power, by the majority vote of its members, to adjudicate, ratify and / or amend any of the federations rules and regulations." (www.afaf.com Statutes, 2007).

IF medical commission: body within the federation whose role is to give advice and information on matters of a strictly medical nature. This advice and information is to be given to the secretary general upon request, on all matters within their field of competence. (www.fiba.com General Statutes, 2007).

Medical Care Team: for the purposes of this research the medical care team will be defined as an all encompassing medical service with a representative grouping of medical specialists, general practitioners, nurses as well as support staff and allied health services including Chiropractic.

Perception: defined by the Oxford English Dictionary (2002) as "the way in which things are seen, understood to be like, and interpreted as".

Tournament: a competition in which there are several parts, which happen one after the other. The winner of one part continues to play in the next part until all the parts have been completed and one winner is left. (Cambridge International Dictionary of English, 1999).

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ABSTRACT

Objectives: To investigate the International Sports Federations' (IFS) perception and utilization of chiropractors and other sports medical personnel, and to compare results between the executive committees and medical commissions within federations.

Methods: A specially designed, quantitative questionnaire was used to collect data from the 65 federations belonging to the General Assembly of International Federations of Sport (GAIFS). The questionnaire distribution took place via e-mail, with the secretary of each federation being requested to forward a copy of the questionnaire to a member of the federation's executive committee and medical commission respectively. Follow-up telephone calls were also made to further encourage a response from participants. After an 8-week period, returned questionnaires were collected and data was analyzed.

Results: From the results obtained (30% response rate), it would seem that perceptions vary greatly. This is most evident when one compares the perceptions of the medical commission members to those of the executive committee members. The medical commission on a whole, appears to favour the more traditional medical professions, while the executive committee seems to be more holistic in their approach to treatment options. In terms of current utilization, chiropractors are currently represented on 16% of medical teams, although chiropractors are able, within their scope of practice, to provide 70% of the federations' most requested techniques / modalities for competitions. There appears to be little / no criteria governing the selection of medical personnel, however most of the federations agreed that a chiropractor with a post-graduate diploma in sports injuries, would be seen in a more favourable light for selection.

Conclusions: The perceptions and utilization of chiropractors and other sports medical personnel varies greatly between federations, which may be due to a number of factors related to the formulation of perception itself. In addition, there appears to be a discrepancy between the opinions of the executive committees and medical commission of the participating federations.

CHAPTER 1: INTRODUCTION

1.1 Background to the study

The consistency with which chiropractors are involved in the sporting world is at best inconsistent within and between sports federations (Tripp, 2007; Nook, 2007). According to the World Health Organisation (2005), chiropractic falls under the domain of Complementary and Alternative Medicine (CAM) (www.cam.org), and is defined by The World Federation of Chiropractic as follows: “A heath care profession concerned with the diagnosis, treatment, and prevention of disorders of the musculoskeletal system and the effects of these disorders on the function of the nervous system and general health.”

Research has shown that patient use of and demand for complementary practitioners, including chiropractors, has increased in recent years (Hughes and Wingard, 2006; Wojcicowski et al, 2006; Bodeker and Kronenberg, 2002; McFarland et al, 2002; Bodeker, 2001; Lewith et al,2001; Ernst and White, 2000; Verhoef and Page, 1996).

According to Redwood (2003), chiropractors are also becoming increasingly involved in the treatment of elite athletes competing in various sports at an international level (Redwood, 2003). This increased involvement may be because chiropractic practice is particularly suited to sports, since the mechanical stresses of sporting activities can often be directly linked to the onset of symptoms. (Mootz and McCarthy, 2002; Redwood and Stump, 2000). This has meant that, despite chiropractic’s long and often turbulent history with allopathic medicine (Haldeman, 2002; Paris, 2000; Stranack, 1995; Coulter, 1992), the profession has been more widely accepted and appreciated within the sports community than almost anywhere else. (Mootz and McCarthy, 2002).

As previously stated, the use of chiropractors in sport at an international level has been inconsistent. To begin to understand this inconsistency, it is best to start with the structures that control the athlete population at an international level.

In this respect, the International Federations of Sport (IFS) are international non-governmental organisations that are recognised by the International Olympic Committee (IOC) as administering sport at world level. According to the statement from the Tripartite Commission of the IOC in 1978, the responsibilities of the International Federations cover the legislation, organization and the development of the sport.

Together, the IFS are grouped together to form the General Assembly of International Federations of Sport (GAIFS), which currently consists of 65 federations, including Summer Olympic, Winter Olympic and Other Recognised Sports (http://www.gaifs.com, 2006). Within the Federation structure is the executive committee, that handles the routine business and running of the organisation, and the medical commission, that gives advice on medical matters.

These federations are responsible for ensuring that the athletes have access to treatment at all tournaments at which they participate.
When a tournament is limited to a particular sport, it is the federation's role to provide the medical care necessary for the athletes (at national or international level); however, when a tournament is structured such that many types of sport and therefore many different federations are represented, (e.g. World Games or the Olympics), then it is the responsibility of the tournament's organising committee to deliver the necessary medical care on site. This is done in consultation with the IFS. (Agreement of FICS between FICS and the World Games 2005 to be held in Duisburg, Germany)

In this environment, chiropractors have officially participated at the Olympic Games since 1980 (Redwood, 2003) and the World Games since 2005 (http://www.duisburg.de/worldgames_archiv/en/news/news). However, this

participation has been limited to providing care for various country teams only, and only sporadically as being part of the organising committee's official medical care team. In this regard, the goals of the medical team are the prevention and rehabilitation of sports injuries as well as enhancing the performance of the healthy athlete (Redwood, 2003).

If chiropractors are to become further involved in treating athletes at international competitions, it would be in their best interest to understand how the chiropractic profession is currently perceived by those in control of international sport i.e the IFS.

This research was therefore designed to investigate the IFS perceptions of chiropractors and other sports medical personnel, as well as the IFS current employment of various medical personnel. Federation protocols for selection of medical personnel were also investigated.

1.2 Aims of the Study

1. To determine the IFS executive committees' perception of chiropractors and other sports medical personnel.
2. To determine the IFS medical commissions' perception of chiropractors and other sports medical personnel.
3. To compare and contrast the perceptual differences between the executive committees and medical commissions.

Null Hypothesis one:

There is no difference between the executive committees' and medical commissions' perceptions of chiropractors and other sports medical personnel.

4. To determine the IFS utilization of chiropractors and other sports medical personnel within federations, as recorded between executive committees and medical commissions.

Null Hypothesis two:

This hypothesis stated that there was no difference in the utilization of chiropractors and other sports medical personnel within federations, as recorded between executive committees and medical commissions.

1.3 Rationale:

Although use of chiropractors is increasing worldwide, and chiropractors are becoming further involved in treating elite athletes at an international level, the inclusion of chiropractors in sports medical teams is inconsistent. This inconsistency may be due to the perceptions held by members of the federations' committees, who may be either for or against the inclusion of chiropractors on medical teams. This research therefore attempts to investigate these perceptions, as well as consider the utilization of chiropractors and other sports medical personnel within federations. Selection protocols are another important aspect that will be examined.

1.4 Delimitations

It is assumed that the respondents to this study have answered the questionnaire openly and honestly, therefore allowing the researcher the best approximation of the views and perceptions held by the members of the IFS.
This type of recruitment (e-mail) may not fully represent the population, which may lead to errors in results. It is however inevitable that any sampling process, no matter how carefully carried out, will always result in a sample that is less then perfectly representative of the population (Dyer, 1997).

1.5 Conclusion

A review of the related literature follows in chapter 2, with a discussion of the research methodology employed in chapter 3.
Chapter 4 presents the results of the questionnaire, followed by a discussion of these results in chapter 5. Chapter 6 concludes the research and provides recommendations for future studies.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter reviews and discusses some of the most recent literature available related to the research title i.e. To determine the International Federation of Sports' perception and utilization of chiropractors and other sports medical personnel. Firstly, the chiropractic profession will be discussed in terms of its definition, scope of practice and the trends seen in utilization in recent years. The International Federations and GAIFS will then be reviewed in terms of their definition, structure, roles and functions, and those factors that affect these roles and functions. Finally, perception and its determining factors will be considered and debated.

2.2 Chiropractic

Chiropractic has a very long history dating back to 1895 when the first official manipulation / adjustment was given (CASA, 2005). Since its inception, Chiropractic has risen to become the third most used primary health care profession in the world after medicine and dentistry (CASA, 2005).
Official recognition of chiropractic also differs from country to country. At present, chiropractic is lawful and legally protected in 41 countries worldwide. However, in certain other countries such as China, the government has not granted chiropractic legal status. Instead it takes a "tolerance" approach, and allows the practice to continue so long as it is not seen as dangerous to the people. (Chiropractic Diplomatic Corps: Chiropractic Global Professional Strategy, 2007)

Of all the CAM therapies, chiropractic is the most often used by the general public (Sherman, et al. 2004), and during the past 10 years, numerous studies have

reported the increasing use of complementary and alternative medicine (CAM), including chiropractic, worldwide. (Hughes and Wingard, 2006; Wojcicowski et al, 2006; Bodeker and Kronenberg, 2002; McFarland et al, 2002; Bodeker, 2001; Lewith et al, 2001; Ernst, 2000)

Verhoef and Page (1996) suggest that many patients are drawn towards complementary medicine because of its focus on holistic care, together with patient responsibility for health and well being.

This increased demand for chiropractors is further supported by the growing number of chiropractors in the profession. There has been a notable increase in the number of chiropractors throughout the world in the past 10 years. In 2000, there were 81,000 chiropractors compared with 65,000 in 1989 (www.chiropracticdiplomatic.com, 2007). Since 2000, the number of chiropractors has seemed to plateau, possibly due to market saturation in certain areas.
There has also been an increase in the number of chiropractic schools outside of the United States, from 5 in 1989 to 17 in 2000. (www.chiropracticdiplomatic.com, 2007)

Along with the increased demand for chiropractors by the public and the growing number of chiropractors in the profession, chiropractors are also becoming increasingly involved in the treatment of elite athletes (Redwood, 2003). This increased involvement with athletes stands to reason, given a chiropractor's knowledge of human anatomy, physiology and biomechanics as well as their training in nutrition, exercise and rehabilitation (World Health Organisation, 2005). The chiropractic approach to the management of sports injuries combines local and whole-system methods. Local methods are directed specifically at the injured tissues, whilst the whole system approach is also directed towards tissues which may be relatively distant to the injured site, but whose dysfunction results in added stress to the injured tissue (Redwood, 2003). In addition to this, a major advantage of chiropractic care is that it is a non-drug approach to health care, something that

is of vital importance to athletes competing at a national and international level due to strict anti-doping regulations (http://www.wada-ama.com, 2006).

In this regard, athletes competing in a particular sport at an international level will be members of that sport's national federation, and subsequently, the national federation from each country will form part of that sport's international governing body, the International Federation. The following is an overview of the International Federations and their governing body, GAIFS.

2.3 The International Federations of Sport

Definition

The International Federations of Sport are, by definition "… international non-governmental organisations recognised by the International Olympic Committee (IOC) as administering one or more sports at world level."
(http://www.agfisonline.com, 2006)

History

Many of today's sports stem from very old historical roots, with some of the rules of modern games being laid down as far back as the mid 1800s. When sports competitions began expanding beyond their regional and national level, it became necessary to standardize the rules (e.g. classification of competitors into categories, definition of competitors status) and to create International Federations. This was the case in gymnastics in 1881, and rowing and skating in 1892. Many other sports followed, and the rapid growth of sport as well as the creation of new sporting activities over the years, considerably increased the number and importance of the International Federations. A need arose for the formulation of an international governing body, resulting in the creation of GAIFS (http://www.agfisonline.com, 2006).

Structure

The executive committee of each IFS handles all routine business and makes decisions of a routine nature (www.archery.org, 2007), and "…has the power, by the majority vote of its members, to adjudicate, ratify and / or amend any of the federations rules and regulations." (www.afaf.com Statutes, 2007).

The role of the medical commission is to give advice and information on matters of a strictly medical nature. This advice and information is to be given to the secretary general upon request, on all matters within their field of competence (www.fiba.com General Statutes, 2007).

Roles and functions of the International Federations in Sport

According to the statement from the Tripartite Commission of the IOC in 1978, the responsibilities of the International Federations cover the legislation, organization and the development of the sport.

The legislative responsibilities include the promulgation of the governing regulations of the sport, classification of competitors into categories, definition of the competitor's status and adoption of preventative measures against unlawful dealings. It also includes the laying down of the medical rules.

Organizational responsibilities include organization of large regional, continental and world competitions; control of all international competitions; training and accreditation of international referees and co-ordination of the member's activities.

Development of the Sports Movement takes place through the cooperation and contributions of the national federations affiliated to the International federation.

2.4 GAIFS

The continuation of the initial IFS meetings resulted in the formation of the General Association of International Sports Federations (GAIFS), which deals not only with Olympic matters, but also with all matters concerned with sport.

GAIFS has existed since 1967, although if was as far back as 1921, that a permanent bureau of the International Sports Federations had been created. This bureau however, only included Olympic federations. In the 1960's, again due to the rapid evolution of the sports movement, there was recognition that a more important role for the IFS was needed, and that non-Olympic federations also needed a forum where they could express their points of view. This forum was called the General Assembly of International Sports Federations (GAIFS), with the first meeting being held in Lausanne in 1967 (http://www.agfisonline.com).

Today GAIFS represents the sole forum bringing together all sports organizations. Among the objectives laid down in its Statutes, GAISF is to:

- ensure the authority and the autonomy of its members is maintained;
- promote better communication between its members and all other sports organizations;
- co-ordinate and protect the common interests of the federations;
- collect, verify and distribute information.

(www.agfisonline.com)

Both the International Federations and GAIFS are made up of individuals from all over the world, who are involved in decisions that will ultimately influence the sport as a whole. With respect to the inclusion of chiropractic, it has been articulated by GAIFS that it supports the inclusion of chiropractic within the realm of sports

medicine (FICS AGM minutes. Italy 2005, Nook, 2006), although there does not seem to be an official protocol as to how these selection decisions are made.
In contrast to the executive committee which may actually endorse the use of chiropractors within their respective federations (Nook, 2006), previous research has shown that the medical commissions may be less inclined to support the inclusion of chiropractors in the medical teams, due to low levels of understanding of the chiropractic profession (Kew, 2006; Louw, 2005; Hunter, 2004; Langworthy and Birkelid, 2001; Rubens, 1996).
This extrapolation to the IFS and their various committees may well be incorrect, since the IFS are structures that are highly organised, with personnel that have been involved in sports or in the medical attendance of athletes for many years.

The decisions made by the individual members of the federations are influenced by many factors, including their own personal perception.

2.5 Definition of Perception

The Oxford Learner's Dictionary (1997), defines perception as "…the way in which things are seen, understood to be like, and interpreted as."
Perception can also be described as the process by which people select, organize, and interpret information to form a meaningful picture of the world (Chaffe, 1997). In this respect, it is only when a person finds his / her perception of the same event differs from the perceptions of others, that they are forced to examine the manner in which they select, organize and interpret the events in the world around them (Chaffe, 1997). Kehoe (2002) suggests that we see the world not as it is, but as we are, through the lens of our experiences, expectations and beliefs. Besides experience, expectation and beliefs, there are other factors that may contribute to perception, as outlined below.

2.5.1 Factors Affecting Perception

The subjectivity of perception can be linked to many factors. These factors, according to Robbins (1996) and Bergh *et al. (*1999) may be attributed to the perceiver, the object being perceived or the situation in which the object is being perceived. These are outlined in the table below (Bergh *et al.* 1999; Robbins, 1996; Hayes, 1994).

The above factors have been further split into those that are internal to the perceiver (conditions within the individual), and those that are external to the perceiver (factors from an external source acting upon the individual).

For the purposes of this study, the "perceiver" is the participant in the study, the "perceived objects" are chiropractors and other sports medical personnel, and the "environment" is the work / social environment of the individuals working at the international federations.

Hayes; 1994 Robbins, 1996; Bergh *et al.* 1999

Factors in the perceiver:	Factors in the environment:
• Attitudes. • Motivation. • Interests. • Experience. • Expectations. • Values. • Culture.	• Time. • Work setting. • Social setting.
Factors in the perceived object: • Motion. • Novelty. • Sounds. • Proximity. • Background. • Size.	

Internal Factors (those within the perceiver)

- Attitudes.
- Motivation.
- Interests.
- Experience.
- Expectations.
- Values.
- Culture.

External Factors (those external to the perceiver)

In the environment:

- Time
- Social setting
- Work setting

In the perceived object:

- Motion
- Novelty
- Sounds
- Proximity
- Background
- Size

Internal Factors

Values and attitudes

There have been numerous studies conducted demonstrating that values and attitudes play a major role in influencing perception. Postman et al. (1948) conducted research in 1948, which demonstrated that people take longer to identify sexual or other taboo words than they do neutral ones. Studies by Worthington (1969) and Carpenter et al. (1956) showed the same type of results. This demonstrates how the participants' values and attitudes towards different subject matter influenced their response to them.

In the case of this research, the participants' values and attitudes towards healthcare and towards sports medical personnel in particular, greatly influenced their reactions to the questions proposed in the questionnaire.

Motivation

Motivation can simply be described as the reason for doing something or behaving in a certain way (Oxford Advanced Learner Dictionary). Since this study examines the decisions of the federations regarding health care teams, it would be vitally important to also understand the motivation, or reason, for these decisions.

Exposure

Studies have shown that a person is more likely to know about something if they have personally experienced it for themselves, or received information from someone who has. In other words, exposure to the profession either personally, or through someone else's exposure, may influence perception towards it.

In a study by Brussee et al. (2001), it was seen that a great deal of GPs' information about chiropractic came from patients who had been treated by

chiropractors, and that an important factor influencing general practitioners' opinions and perceptions about chiropractic appeared to be their patients' experiences at chiropractors' practices.

The general public may have reduced exposure to chiropractic treatment since chiropractors operate mainly within the private sector (CASA), which excludes poorer communities.

Exposure to chiropractic may be further limited because of limited interaction between chiropractic and other health care disciplines, which may in turn limit the referral of the general public to chiropractors (Dreyer, 2004; Jamison, 1994).

Expectation

According to Bergh and Theron (1999), our expectations can also influence or distort our perceptions, since we are always more inclined to see what we expect to see due to our belief systems.

Culture

Culture can be defined as the customary beliefs or social forms of racial, religious or social groups (Oxford Advanced Learner Dictionary, 2002). Since culture is something that is instilled in an individual from birth, it would obviously have a major influence on how an individual views the world around them, including health related issues.

For example, the culture in South Africa is that of consultation with traditional healers. The Department of Health estimates that close to 70% of South Africans consult traditional healers as opposed to allopathic doctors. (www.southafrica.info, 2007)

According to Dreyer (2004), social considerations in terms of health care differences that have traditionally been associated with particular cultures may also limit access to health care practices outside of their culture (Dreyer, 2004).
In other words, if a person grows up in a culture that only seeks pure allopathic medicine for the treatment of pain and related ailments, they are far less likely to seek care from CAM practitioners such as chiropractors, homeopaths and herbalists.

External Factors

The Environment

The environment refers not only to the work and social setting that the individual participant finds him / herself in, but also refers to the moment in time. According to Bergh and Theron (1999), human behaviour can seldom be interpreted without considering the context in which it occurs. Similarly, the time at which an object (in this case chiropractors) is considered is also important e.g. if the participant fills out the questionnaire a day before as compared to a day after a consultation with a chiropractor, may likely have an influence on his / her perception of chiropractors.

The Perceived Object

Proximity

The chiropractic profession was founded in the United States in 1895. Following this, chiropractic practice has been regulated in the United States and Canada since the 1920s, in Australia since the late 1940s, in New Zealand and South Africa since the 1960s, and more recently in Asia, Europe and Latin America (Chapman-Smith, 1997). There are now chiropractors in 109 countries all over the

world (Chiropractic Diplomatic Corps, 2007), but most people (76%) only see a ratio of one chiropractor to every hundred thousand to ten million people.(Diplomatic chiropractic global strategy).

It stands to reason that living in a region that does not recognize chiropractic or has a very low doctor to patient ratio, would most certainly influence a person's knowledge and perception of the profession due to the fact that they simply are not exposed to it.

Background

Since chiropractic's inception into the health care system over a century ago, other influential groups, most importantly medicine and sociology have questioned the various teachings and techniques of the profession at length (Wardwell, 1994), and allopathic medicine in particular has viewed the profession with concern (Curtis and Bove, 1992).

However, over the past 30 years or so, the profession has gained widespread social acceptance as an alternative form of health care (Coulter, 1992).

Motion

Motion here refers to the movement in support of CAM, including chiropractic treatment.
As previously mentioned (p. 7), numerous studies over the past decade have indicated a worldwide increasing use of chiropractic treatment (Hughes and Wingard, 2006; Wojcicowski et al, 2006; Bodeker and Kronenberg, 2002; McFarland et al, 2002; Bodeker, 2001; Lewith et al, 2001; Ernst, 2000).

This may be due, in part, to the increased support for the principles of evidence-based medicine by the CAM field itself (van Tulder et. al, 2005), or CAM's holistic approach to wellness, together with a strong focus on patient responsibility (Verhoef and Page, 1996).

Novelty

Although chiropractic as a profession has been around for more than 100 years, much of the public are only now starting to hear about it, and experience treatment for themselves. It seems that there is a perceived novelty or "newness" about chiropractic as more people are only now beginning to understand its benefits as a non-drug approach to the treatment of neuromusculoskeletal disorders.

Sound

Sound, as a factor influencing perception, refers to any form of communication that takes place through hearing. This may be in the form of media (television, radio, movies) or simply through conversation with others. In the case of chiropractic and other medical personnel, sound may refer to the way in which these professions are portrayed on television, or what other people say about them.

Size

This increased demand for chiropractors is further supported by the growing number of chiropractors in the profession. There has been a notable increase in the number of chiropractors throughout the world in the past 10 years. In 2000, there were 81,000 chiropractors compared with 65,000 in 1989 (Chiropractic Diplomatic Corps, 2007), although as previously stated, the number of chiropractors has seemed to plateau since 2000.

2.7 Summary

The IFS members' perceptions, like everyone's perceptions, are influenced and shaped by various factors. Some of theses factors are internal to the individual, such as their past experiences, expectations, culture and interests; and some of which are external, such as their environment, geographical location or events taking place around them.

All of these factors however have an influence on perception, and in this case, have an influence on IFS members' perceptions of chiropractors and sports medical personnel. The perception held by these individuals in turn, has an influence on the chiropractic profession and chiropractors' involvement in international sporting competitions, because the IFS members are the decision-makers in terms of selection of medical teams.

In spite of the increasing demand for chiropractors worldwide, the employment of chiropractors on IFS medical teams has been sporadic. This may in part be due to the perceptions (whether correct or incorrect) of the IFS members. This research therefore aims to investigate these perceptions, compare and contrast the perceptions of the medical commission versus the executive committee as well as consider the use of the chiropractors and other medical personnel by federations.

CHAPTER 3: METHODOLOGY

3.1 Introduction

This chapter covers the methodology employed throughout the research process including: the study type and design, sampling procedure, inclusion and exclusion criteria, the procedure, measurement tool, focus group and pilot study, the questionnaire, measurement frequency and statistical analysis of the results.

3.2 Study Type & Design

This study was quantitative in nature, and involved the use of a structured questionnaire to collect data. According to Dyer (1997), survey research is a good way of collecting information from a large and dispersed group of people. A descriptive type design was used to collect the information. Descriptive surveys are simply used to establish the features of a particular group (e.g. the perception of chiropractic) (Dyer, 1997).

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

3.3 Sampling procedure

a. Sample Size: A questionnaire was sent to each International Federation via e-mail, with the request that the person receiving the questionnaire forward a copy to one member of the executive committee and one member of the medical commission, for completion and return. Since there are currently 65 federations belonging to GAIFS (http://www.gaifs.com, 2006), this meant a sample size of 130.

b. Allocation: 1 group, although comparisons were made between subsets of data (e.g. one for the Executive Committees' response, and one for the Medical Commissions' response, which were to be compared).

c. Method: method of allocation to the group was through self-selection (Mouton, 1996), where the respondents chose to respond by returning the completed questionnaire.

3.4 Inclusion and Exclusion Criteria

a. Inclusion criteria

Federation:

- Had to be a member of the General Assembly of the International Federations of Sport (GAIFS). This is an organisation that represents the sole forum bringing together the whole of sports organizations.

Member of the Federation:

- The respondent who completed the questionnaire sent to the federation's executive committee had to be a member of the federation's executive committee.
- The respondent who completed the questionnaire sent to the federation's medical commission had to be a member of the federation's medical commission.
- The respondents had to give their informed consent.
- The respondents had to be English literate. With translation of the questionnaire, problems affecting its validity occur. Even if words are translated accurately, the meaning of a phrase or combination of words may be unclear, as meaning is not only determined by words or phrases,

but also in their interpretation by others from different cultures, backgrounds and language capabilities. (Scollen and Scollen, 1995). This is because when words are taken out of context they will lose their meaning (Baynham, 1995).

Questionnaires

- The questionnaires had to be returned within the specified time period i.e. Within 8 weeks.

b. Exclusion criteria:

Does not meet the inclusion criteria above.

3.5 Sampling procedure

1. Respondents received the questionnaire (Appendix C), along with a Letter of Information about the study (Appendix A), an Informed Consent Form (Appendix B) and a Letter of Thanks for Participation (Appendix D).
2. If questionnaires had not been received back by the researcher after 4 weeks, the participant was contacted telephonically or again via e-mail and reminded about the return date of the questionnaires.
3. E-mailed questionnaires were returned to the Department Research Officer who is a neutral third party.
4. The Department Research Officer then ticked off the names on the questionnaires against the list of potential participants so that a response rate could be determined.
5. The Department Research Officer then printed out the questionnaires for use by the researcher, but first deleted the names of the participants, in

order to retain anonymity. The hard copy was then stored in a locked filing cabinet.

6. If questionnaires had not been returned after another 4 week period, the participant in question was considered as “not participating” in the study.
7. Data analysis then took place.

3.6 Questionnaire Background and Design

3.6.1 Measurement tool:

This was by means of a questionnaire.
The researcher reviewed similar perception-related questionnaires, which were completed both locally and internationally (Kew, 2006; Louw, 2005; Hunter, 2004; Langworthy and Birkelid, 2001; Rubens, 1996). Questions were then developed which were specifically aimed at obtaining information regarding the federation’s perception and utilization of chiropractors and other sports medical personnel. The questionnaire was then compiled, which was presented to a selected focus group for review and discussion.

3.6.2 Focus Group

The reason for having a focus group was to stimulate the members’ of the groups thinking and encourage them to develop ideas about the topic (Salant and Dillman, 1994). This enabled members of the focus group to critically assess the relevance of questions presented in the questionnaire as well as to add to, delete from or modify for clarity, the questions presented. The focus group was then also able to contextualise the questionnaire (Salant and Dillman, 1994) in order to enhance its validity (Bernard 2000). This was achieved by addressing the following:

a. Face Validity, where face validity is the simplest type of validity, determined by agreement between researchers and those with an interest in the questionnaire (i.e. interpreted in this study as those participants of the focus group), that 'on the face of it' the tool seems valid, unambiguous and easily interpreted (Bernard, 2000).

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

These validity constructs were achieved by ensuring that the individuals in the focus group were representative of the specific areas of expertise related to the research to be conducted.

The focus group in this study consisted of the following:

- the researcher.
- the research supervisor, who had guided the researcher through the research process and who was a member of the International Federation of Chiropractic in Sports (FICS).
- an American chiropractor who was also a member of FICS, and who was able to provide valuable information about the federations and how they operate, as well as giving input from an international perspective.
- a provincial swimming coach, who was able to assist with information regarding medical treatment of athletes.
- a member of a local rugby board, who assisted with information regarding selection of sports medical teams.
- a physiotherapist who is involved in the treatment of professional athletes.
- a local chiropractor.
- 2 chiropractic students who were conducting similar perception-based research.

Before commencing, each focus group participant read the Letter of Information (Appendix G) and signed the Confidentiality Statement (Appendix F), Code of Conduct Statement (appendix E) and Informed Consent form (Appendix H). The original questionnaire (Appendix I) was distributed to participants and questions were discussed in sequential order, following the procedure in Morgan's *Moderating Focus Groups [Vol. 4]* (1998). Following the discussion of each question, some questions were omitted (Questions 8 – 10 and 12 – 16, Appendix I), some questions were added and some minor changes were made to the questionnaire to enhance the understanding of a few of the questions. The questions that were added were all sports specific (Questions 8, 10, 11, Appendix C). The pre-pilot questionnaire was then developed (Appendix C).

3.6.3 The Pilot Study

A pilot study was done to clear any other problems relating to ambiguity of questions or length of time taken to complete the questionnaire. This constituted a two part process. Part one included the submission to the departmental research committee for their analysis of the proposal and their comments and suggestions regarding the questionnaire. They also helped to determine congruency between the study aims and the questionnaire that had been developed from the focus group.

Part two involved having persons outside of the research process reading the questionnaire in terms of its layout, understandability and presentability.
It was suggested that the questionnaire be shortened slightly and that certain questions be omitted, particularly those pertaining to issues that are demographically related to chiropractic education e.g. duration of study and subjects covered, as these may vary from country to country.

3.6.4 Final Questionnaire

As a result of the preceding processes, the final questionnaire was developed and consisted of four sections:

A: questions (1-6) regarding the respondent's demographic details and personal data;
B: questions (7-10) regarding the federation's use and perception of various health care practitioners, including chiropractors;
C: questions (11-14) specifically revolving around the federation's current and future utilization of chiropractors;
D: the respondent's personal experience with chiropractic and comments (questions 15 and 16).

The questionnaire had the headings removed prior to being sent out in order to decrease questionnaire structure and decrease respondents' responses being biased by the inherent structure that headings provide (Bernard, 2000).

3.6.5 Measurement frequency:

The questionnaire was completed only once by each participant.

3.7 Data Analysis

3.7.1 Statistical Analysis:

Statistical analysis was achieved using SPSS version 15.0 (SPSS Inc. Chicago, Illinois, USA). Perceptions were scored using questionnaire responses so that the higher the score, the higher the level of knowledge or perceptions. The score was expressed as a percentage and compared between groups using t-tests or ANOVA (analysis of variance) as appropriate. Pearson's correlation was used to assess intra-group relationships between perceptions and utilization.

3.7.2 Statistical methodology

SPSS version 15.0 (SPSS Inc., Chicago) was used for the analysis of data. A p value of <0.05 was considered as statistically significant. Responses were compared between the two groups using Pearson's chi square tests in the case of categorical variables, and t-tests in the case of quantitative variables.

CHAPTER 4: RESULTS

Chapter 4:

4.1 Introduction:

The following chapter covers the results of the study, as well as a brief discussion of the results. A more detailed discussion of these results follows in chapter 5.

4.2 Data

4.2.1 Primary

Data sources utilized to compile this chapter were from both primary and secondary sources of information. Primary sources included information collected from the participants of the study in the form of a completed questionnaire (Appendix C).

4.2.2 Secondary Data

Secondary data sources included various books on statistical analysis (Bland, 1996; Swinscow, 1996; Wright, 1997; Tropper, 1998; Campbell and Machin, 1999; Hinton, 2001), and personal communications with the statistician (Esterhuizen, 2007).

4.2.3. Abbreviations Pertinent to the Chapter:

- "p" refers to the p-value, which indicates the data statistical significance (Bland, 1996; Swinscow, 1996; Wright, 1997; Campbell and Machin, 1999; Hinton, 2001).
- "n" refers to the sample size. Sample in this case is defined as *"A subset of a population"* (Tropper, 1998).
- "%" = Percentage.
- "$<$" Refers to a figure "less than" the figure reported.
  "=" Implies "equals to."
- "Sig." = significance

4.3 Statistical analysis

4.3.2.1 Null Hypothesis Testing:

When designing a research project, the researcher tests a hypothesis and tries to prove (or disprove) similarities between the research categories. This is a research hypothesis. It is generally assumed that there is no difference between the tested research categories. This is known as the "Null hypothesis". Therefore, the research hypothesis is the opposite of the null hypothesis and is termed the "Alternative hypothesis". Essentially the research hypothesis (alternative hypothesis) assumes a difference in the research categories and null hypotheses assumes they are the same (Bland, 1996; Tropper, 1998; Campbell and Machin, 1999; Hinton, 2001).

4.3.2.2 Significance of the p-value:

If data collected during the research process is not consistent with the null hypothesis, it means that the null hypothesis would be rejected and the alternative hypothesis would probably be true. In addition, the data is represented as being either statistically significant or insignificant compared to the null hypothesis. When a small p-value is calculated, the data is said to be statistically significant. Conversely, if the p-value were large, the data collected did not provide sufficient information to reject the null hypothesis, which means that there is not enough evidence to support the alternative hypothesis, therefore indicating further research is required.

The p-value (significance level) is usually selected before the collection of data, and is usually set at $p = 0.05$ or $p = 0.01$. This renders the probability (p-value) at a significant level. The smaller the p-value ($p < 0.001$) the more significant the difference (Bland, 1996; Swinscow, 1996; Wright, 1997; Campbell and Machin, 1999; Hinton, 2001). For this study, significance was set at $p = 0.05$, although cognicance was given to $p=0.01$ if the results were close or multiple significances were found.

4.4 Response rates

At the date of proposal approval, there were 65 federations belonging to GAIFS (http://www.gaifs.com, 2006). A questionnaire was e-mailed to the secretary of the federation, who then forwarded a copy to a member of both the executive committee and medical commission, equalling a total of 130 questionnaires. Since there were 39 responses to the study, this equals a response rate of 30%. Twenty-two of the responses came from the medical commission and 8 from the executive committee. Nine of the responses were negative, meaning that an individual responded to the study, but did not fill out the questionnaire. The statistics were therefore based on the 30 valid responses.

It must be noted that not all the respondents answered every question in the questionnaire; some felt that certain questions were not applicable to them.

4.5 Results

4.5.1 Demographics

The demographics below represent the following categories, as represented by questions 2-6 on the questionnaire:

- Current position within the federation
- Number of years as a federation member
- Country of residence of respondent
- Representation of country as an individual athlete and when
- Highest level of education

.

Table 4.1: Current position within the federation

Position	Number
Medical Commission Chair / Head / President / Director	11
Medical Commission Vice Chair / Vice Head / Vice President /	5
Medical Commission Ordinary Member	6
Executive Committee President or Vice-President	3
Executive Committee Ordinary Member	5

Table 4.2: Number of years as a federation member

Years	Number
Less than 10	7
10-19	10
20-29	8
30 or more	4

Table 4.3: Country of residence of member

Continent	Number
Europe	9
North America	10
Middle East	2
Africa	1

Table 4.4: Represented country as an individual athlete

Answer	Number
Yes	12
No	16

Table 4.5: If yes, when

When[1]	Number
Sixties	2
Seventies	6
Eighties	5
Nineties	3
After 2000	1

1 people who competed for more than 1 decade were counted for each decade in which they competed.

Table 4.6: Highest level of education

Level	Number
1[2]	1
2[3]	4
3[4]	10
4[5]	4
5[6]	9

1.2 Aims of the Study

1. To determine the IFS executive committees' perception of chiropractors and other sports medical personnel.
2. To determine the IFS medical commissions' perception of chiropractors and other sports medical personnel.
3. To compare and contrast the perceptual differences between the executive committees and medical commissions.
4. To determine the IFS utilization of chiropractors and other sports medical personnel within federations, as recorded between executive committees and medical commissions.

[2] Grade 12
[3] Bachelors's degree (non- medical)
[4] Bachelor of medicine (medical)
[5] Master's degree
[6] PhD

4.5.3 Analyses in support of the above objectives

4.5.3.1 Question 7

4.5.3.1.1 Ankle sprains

With reference to question 7:

" Which health care practitioner would your federation nominate for athletes to consult if they suffered from each of the following conditions: " (Appendix C), table 4.7 shows the number and percentage of positive and negative responses for each type of practitioner for ankle sprains nominated by executive or medical grouping.

Table 4.7: Nominated practitioners for ankles sprains by group

	Group							
	Executive				Medical			
	No		Yes		No		Yes	
	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %
Biokineticist	7	100.0%	0	.0%	18	94.7%	1	5.3%
Chiropractor	6	85.7%	1	14.3%	19	100.0%	0	.0%
Doctor	4	57.1%	3	42.9%	3	15.8%	16	84.2%
Homeopath	7	100.0%	0	.0%	19	100.0%	0	.0%
Pharmacist	7	100.0%	0	.0%	19	100.0%	0	.0%
Physiotherapist	3	42.9%	4	57.1%	8	42.1%	11	57.9%

The following tables show the results of the statistical tests used to compare responses between executive and medical members for each type of practitioner for ankle sprains. For doctors there was a significant difference between responses of executive and medical members (p=0.035). Medical members were more likely to nominate medical doctors for treatment of ankle sprains than executive members (84.2% compared with 42.9% - Table 4.7).

Table 4.8

Biokineticist **Chi-Square Tests**

	Value	Df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.383(b)	1	.536		
Fisher's Exact Test				1.000	.731
N of Valid Cases	26				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is .27.

Table 4.9

Chiropractor **Chi-Square Tests**

	Value	Df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.823(b)	1	.093		
Fisher's Exact Test				.269	.269
N of Valid Cases	26				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is .27.

Table 4.10

Doctor **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	4.446(b)	1	.035		
Fisher's Exact Test				.057	.057
N of Valid Cases	26				

a. Computed only for a 2x2 table

b. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 1.88.

Table 4.11

Homeopath **Chi-Square Tests**

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	26

a. No statistics are computed because homeopath is a constant.

Table 4.12

Pharmacist Chi-Square Tests

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	26

a. No statistics are computed because pharmacist is a constant.

Table 4.13

Physiotherapist Chi-Square Tests

	Value	Df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.001(b)	1	.973		
Fisher's Exact Test				1.000	.655
N of Valid Cases	26				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 2.96.

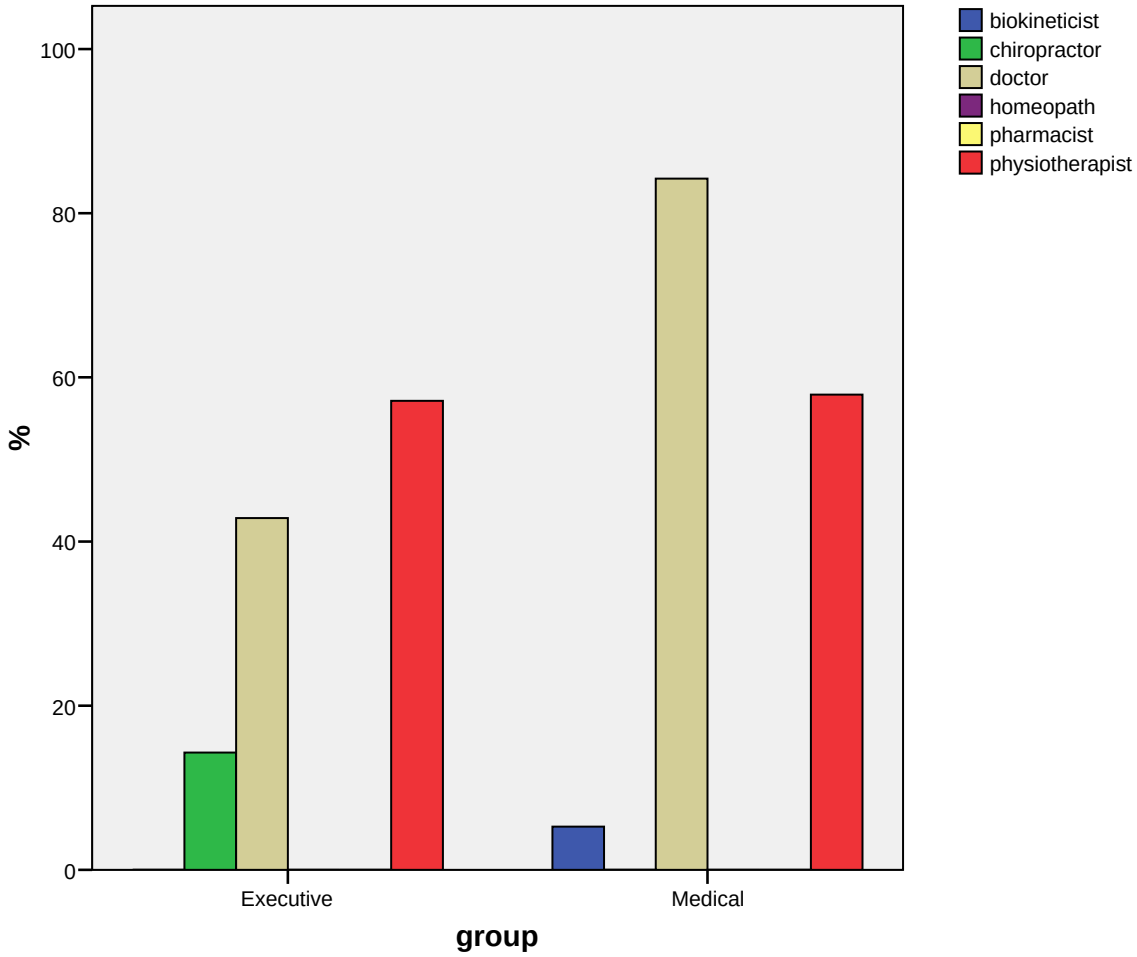

Figure 1: Nominated practitioners for ankle sprain by group

4.5.3.1.2 Tendonitis of the upper limb

Table 4.14 shows the number and percentage of positive and negative responses for each type of practitioner for treatment of tendonitis of the upper limb by executive or medical grouping.

Table 4.14: Nominated practitioners for tendonitis upper limb by group

	Group							
	Executive				Medical			
	No		Yes		No		Yes	
	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %
Biokineticist	7	100.0%	0	.0%	19	100.0%	0	.0%
Chiropractor	4	57.1%	3	42.9%	19	100.0%	0	.0%
Doctor	5	71.4%	2	28.6%	4	21.1%	15	78.9%
Homeopath	7	100.0%	0	.0%	19	100.0%	0	.0%
Pharmacist	7	100.0%	0	.0%	19	100.0%	0	.0%
Physiotherapist	4	57.1%	3	42.9%	7	36.8%	12	63.2%

The following tables show the results of the statistical tests used to compare responses between executive and medical members for each type of practitioner in the treatment of tendonitis of the upper limb. For chiropractors (p=0.013) and doctors (p=0.028) there was a significant difference between responses of executive and medical members. Medical members were more likely to nominate medical doctors for treatment of tendonitis and executive members were more likely than medical members to nominate chiropractors.

The following tables show the results of the statistical tests used to compare responses between executive and medical members for each type of practitioner for tendonitis of the upper limb.

Table 4.15

Biokineticist Chi-Square Tests

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	26

a. No statistics are computed because biokineticist is a constant.

Table 4.16

Chiropractor **Chi-Square Tests**

	Value	Df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	9.205(b)	1	.002		
Fisher's Exact Test				.013	.013
N of Valid Cases	26				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is .81.

Table 4.17

Doctor **Chi-Square Tests**

	Value	Df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	5.736(b)	1	.017		
Fisher's Exact Test				.028	.028
N of Valid Cases	26				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 2.42.

Table 4.18

Homeopath **Chi-Square Tests**

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	26

a. No statistics are computed because homeopath is a constant.

Table 4.19

Pharmacist **Chi-Square Tests**

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	26

a. No statistics are computed because pharmacist is a constant.

Table 4.20

Physiotherapist **Chi-Square Tests**

	Value	Df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.864(b)	1	.353		
Fisher's Exact Test				.407	.313
N of Valid Cases	26				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 2.96.

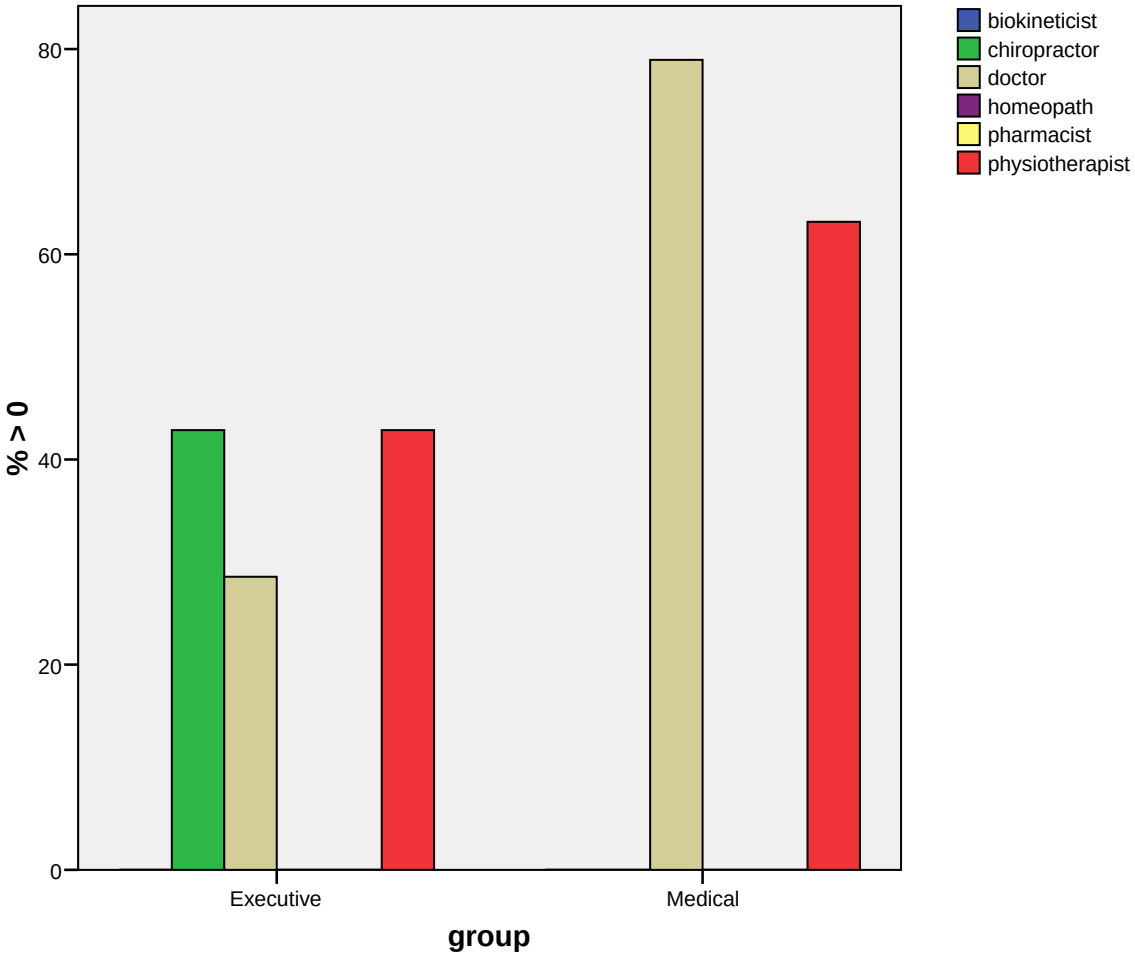

Figure 2: Nominated practitioners for tendonitis upper limb by group

4.5.3.1.3 Joint instability

Table 4.21 shows the number and percentage of positive and negative responses for each type of practitioner for treatment of joint instability by executive and medical grouping.

Table 4.21: Nominated practitioners for joint instability by group

	Group							
	Executive				Medical			
	No		Yes		No		Yes	
	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %
Biokineticist	6	85.7%	1	14.3%	19	100.0%	0	.0%
Chiropractor	6	85.7%	1	14.3%	19	100.0%	0	.0%
Doctor	5	71.4%	2	28.6%	3	15.8%	16	84.2%
Homeopath	7	100.0%	0	.0%	19	100.0%	0	.0%
Pharmacist	7	100.0%	0	.0%	19	100.0%	0	.0%
Physiotherapist	4	57.1%	3	42.9%	9	47.4%	10	52.6%

The following tables show the results of the statistical tests used to compare responses between executive and medical members for each type of practitioner in the treatment of joint instability. For doctors (p=0.014) there was a significant difference between responses of executive and medical members. Medical members were more likely to nominate medical doctors for treatment of joint instability than executive members (84.2% compared with 28.6%).

Table 4.22

Biokineticist **Chi-Square Tests**

	Value	Df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.823(b)	1	.093		
Fisher's Exact Test				.269	.269
N of Valid Cases	26				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is .27.

Table 4.23

Chiropractor **Chi-Square Tests**

	Value	Df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.823(b)	1	.093		
Fisher's Exact Test				.269	.269
N of Valid Cases	26				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is .27.

Table 4.24

Doctor **Chi-Square Tests**

	Value	Df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	7.434(b)	1	.006		
Fisher's Exact Test				.014	.014
N of Valid Cases	26				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 2.15.

Table 4.25

Homeopath **Chi-Square Tests**

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	26

a. No statistics are computed because homeopath is a constant.

Table 4.26

Pharmacist **Chi-Square Tests**

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	26

a. No statistics are computed because pharmacist is a constant.

Table 4.27

Physiotherapist **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.195(b)	1	.658		
Fisher's Exact Test				1.000	.500
N of Valid Cases	26				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 3.50.

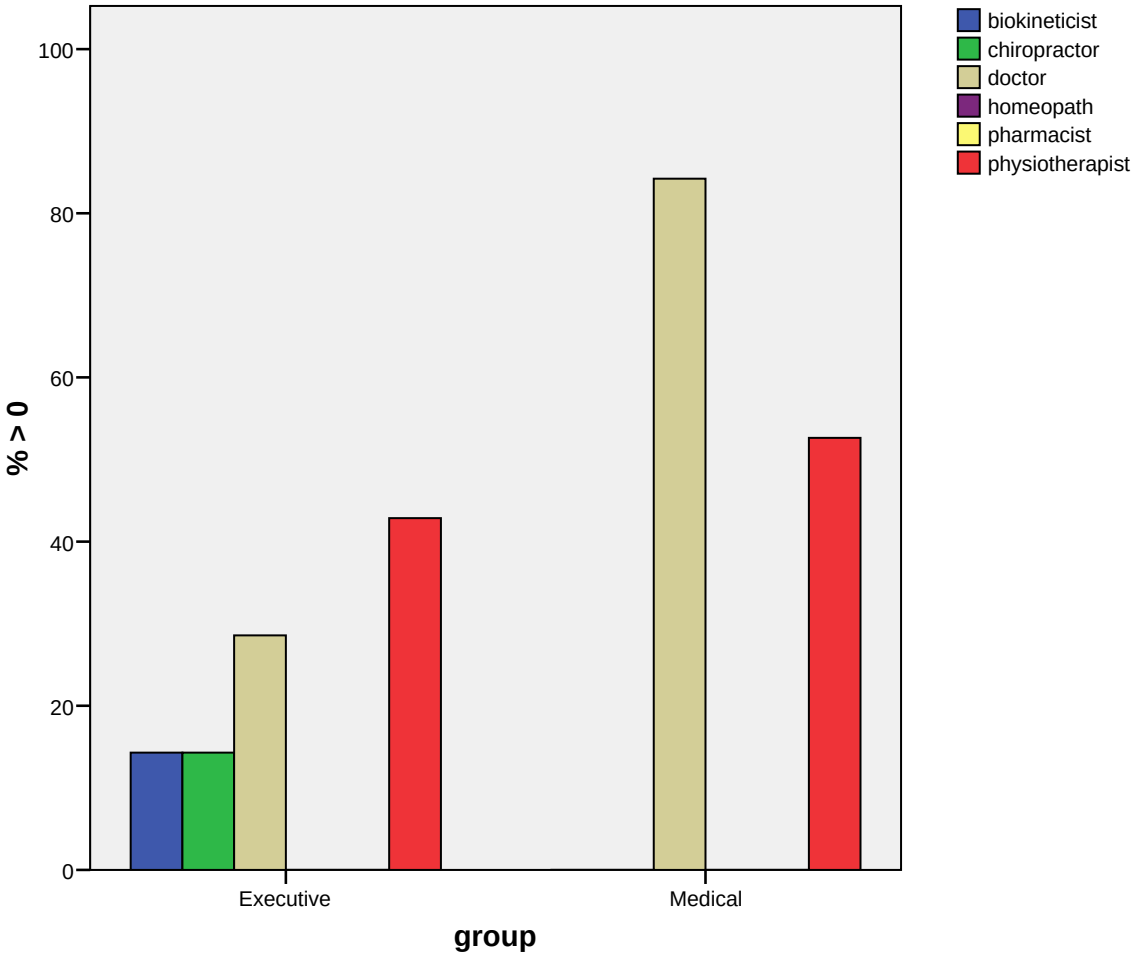

Figure 3: Nominated practitioners for joint instability by group

4.5.3.1.4 Overuse injury

Table 4.28 shows the number and percentage of positive and negative responses for each type of practitioner for treatment of overuse injury by executive or medical grouping.

Table 4.28: Nominated practitioners for overuse injury by group

	Group							
	Executive				Medical			
	No		Yes		No		Yes	
	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %
Biokineticist	7	87.5%	1	12.5%	21	100.0%	0	.0%
Chiropractor	6	75.0%	2	25.0%	19	90.5%	2	9.5%
Doctor	6	75.0%	2	25.0%	4	19.0%	17	81.0%
Homeopath	8	100.0%	0	.0%	21	100.0%	0	.0%
Pharmacist	8	100.0%	0	.0%	21	100.0%	0	.0%
Physiotherapist	6	75.0%	2	25.0%	11	52.4%	10	47.6%

There was a significant difference in responses for nominating a doctor for overuse injury (p=0.005). Medical personnel were more likely to nominate a doctor for this condition than executives.

The following tables show the results of the statistical tests used to compare responses between executive and medical members for each type of practitioner in the treatment of overuse injury.

Table 4.29

Biokineticist **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.719(b)	1	.099		
Fisher's Exact Test				.276	.276
N of Valid Cases	29				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is .28.

Table 4.30

Chiropractor **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.167(b)	1	.280		
Fisher's Exact Test				.300	.300
N of Valid Cases	29				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 1.10.

Table 4.31

Doctor **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	8.028(b)	1	.005		
Fisher's Exact Test				.009	.009
N of Valid Cases	29				

a. Computed only for a 2x2 table

b. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 2.76.

Table 4.32

Homeopath **Chi-Square Tests**

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	29

a. No statistics are computed because homeopath is a constant.

Table 4.33

Pharmacist **Chi-Square Tests**

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	29

a. No statistics are computed because pharmacist is a constant.

Table 4.34

Physiotherapist **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.222(b)	1	.269		
Fisher's Exact Test				.408	.250
N of Valid Cases	29				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 3.31.

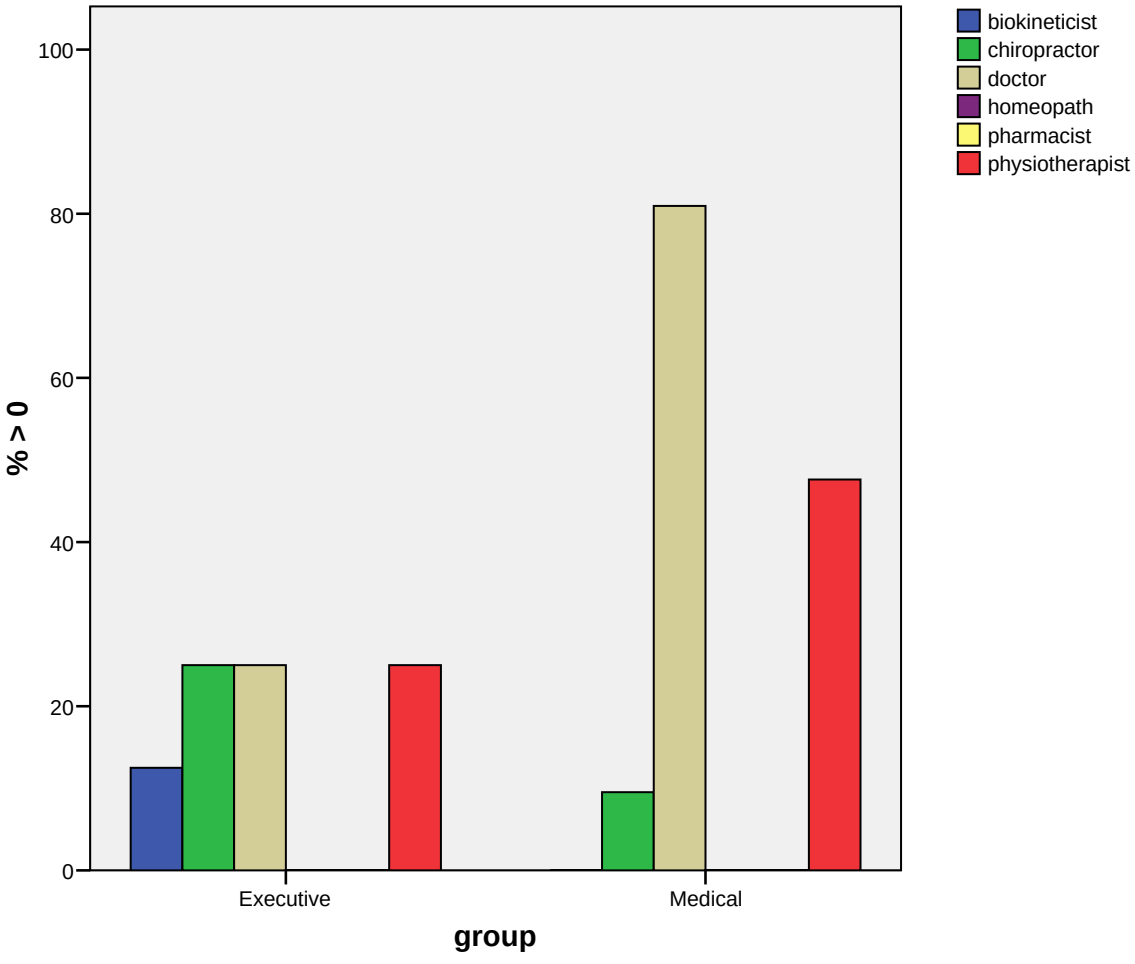

Figure 4: Nominated practitioners for overuse injury by group

4.5.3.1.5 Patellofemoral pain syndrome

Table 4.35 shows the number and percentage of positive and negative responses for each type of practitioner nominated for the treatment of patellofemoral pain syndrome (PFPS) by executive or medical grouping.

Table 4.35: Nominated practitioners for PFPS by group

	Group							
	Executive				Medical			
	No		Yes		No		Yes	
	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %
Biokineticist	6	85.7%	1	14.3%	18	94.7%	1	5.3%
Chiropractor	6	85.7%	1	14.3%	18	94.7%	1	5.3%
Doctor	3	42.9%	4	57.1%	1	5.3%	18	94.7%
Homeopath	7	100.0%	0	.0%	19	100.0%	0	.0%
Pharmacist	7	100.0%	0	.0%	19	100.0%	0	.0%
Physiotherapist	5	71.4%	2	28.6%	10	52.6%	9	47.4%

There was a significant difference in responses to whether a doctor should treat PFPS (p=0.047). Medical personnel were more likely to nominate a doctor for this condition than executives.

The following tables show the results of the statistical tests used to compare responses between executive and medical members for each type of practitioner for PFPS.

Table 4.36

Biokineticist **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.586(b)	1	.444		
Fisher's Exact Test				.474	.474
N of Valid Cases	26				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is .54.

Table 4.37

Chiropractor **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.586(b)	1	.444		
Fisher's Exact Test				.474	.474
N of Valid Cases	26				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is .54.

Table 4.38

Doctor **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	5.554(b)	1	.018		
Fisher's Exact Test				.047	.047
N of Valid Cases	26				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 1.08.

Table 4.39

Homeopath **Chi-Square Tests**

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	26

a. No statistics are computed because homeopath is a constant.

Table 4.40

Pharmacist **Chi-Square Tests**

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	26

a. No statistics are computed because pharmacist is a constant.

Table 4.41

Physiotherapist **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.740(b)	1	.390		
Fisher's Exact Test				.658	.345
N of Valid Cases	26				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 2.96.

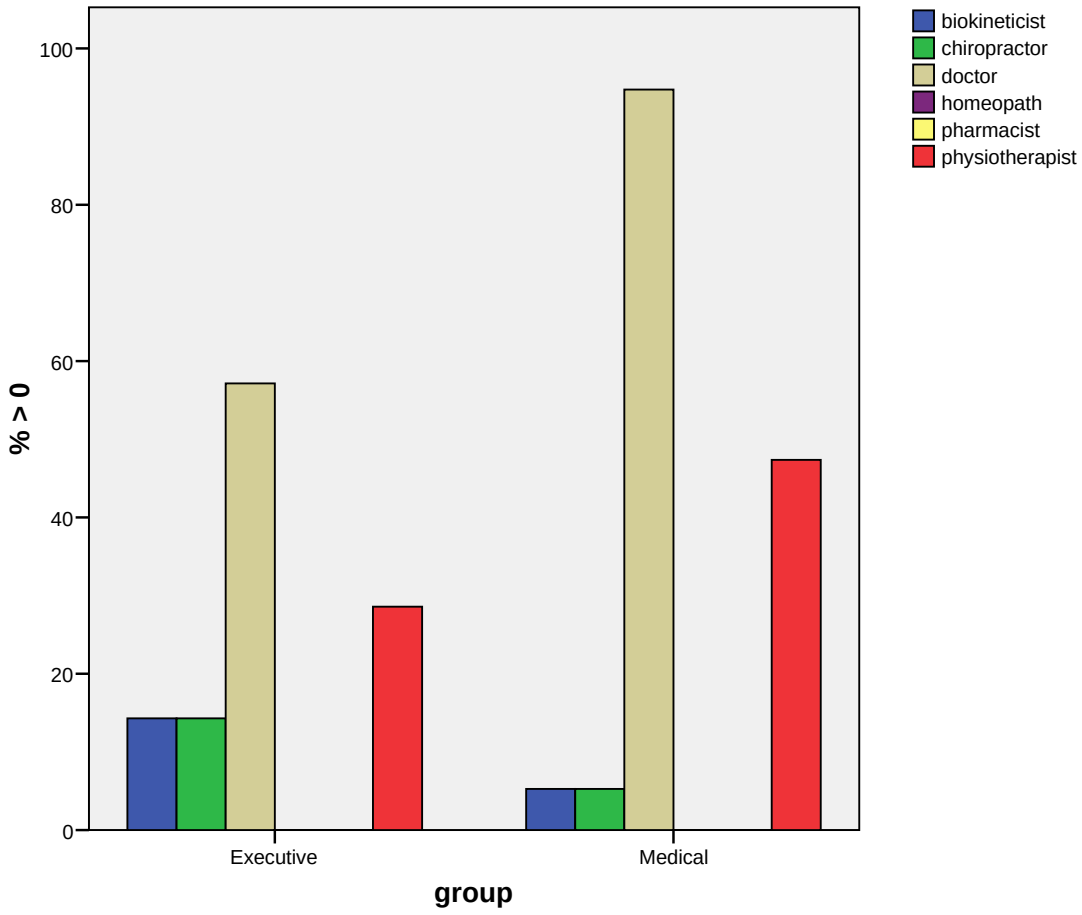

Figure 5: Nominated practitioners for patellofemoral pain syndrome by group

4.5.3.1.6 Muscle strains

Table 4.42 shows the number and percentage of positive and negative responses for each type of practitioner nominated for the treatment of muscle strains by executive or medical grouping.

Table 4.42 Nominated practitioners for muscle strains by group

	Group							
	Executive				Medical			
	No		Yes		No		Yes	
	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %
Biokineticist	7	100.0%	0	.0%	19	100.0%	0	.0%
Chiropractor	5	71.4%	2	28.6%	18	94.7%	1	5.3%
Doctor	7	100.0%	0	.0%	5	26.3%	14	73.7%
Homeopath	7	100.0%	0	.0%	19	100.0%	0	.0%
Pharmacist	7	100.0%	0	.0%	19	100.0%	0	.0%
Physiotherapist	2	28.6%	5	71.4%	6	31.6%	13	68.4%

Medical personnel were more likely to nominate doctors for he treatment of muscle strains than executive personnel (p=0.001).

The following tables show the results of the statistical tests used to compare responses between executive and medical members for each type of practitioner for muscle strains.

Table 4.43

Biokineticist **Chi-Square Tests**

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	26

a. No statistics are computed because biokineticist is a constant.

Table 4.44

Chiropractor **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.723(b)	1	.099		
Fisher's Exact Test				.167	.167
N of Valid Cases	26				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is .81.

Table 4.45

Doctor **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	11.175(b)	1	.001		
Fisher's Exact Test				.001	.001
N of Valid Cases	26				

a Computed only for a 2x2 table

b 2 cells (50.0%) have expected count less than 5. The minimum expected count is 3.23.

Table 4.46

Homeopath **Chi-Square Tests**

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	26

a. No statistics are computed because homeopath is a constant.

Table 4.47

Pharmacist **Chi-Square Tests**

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	26

a. No statistics are computed because pharmacist is a constant.

Table 4.48

Physiotherapist **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.022(b)	1	.883		
Fisher's Exact Test				1.000	.639
N of Valid Cases	26				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 2.15.

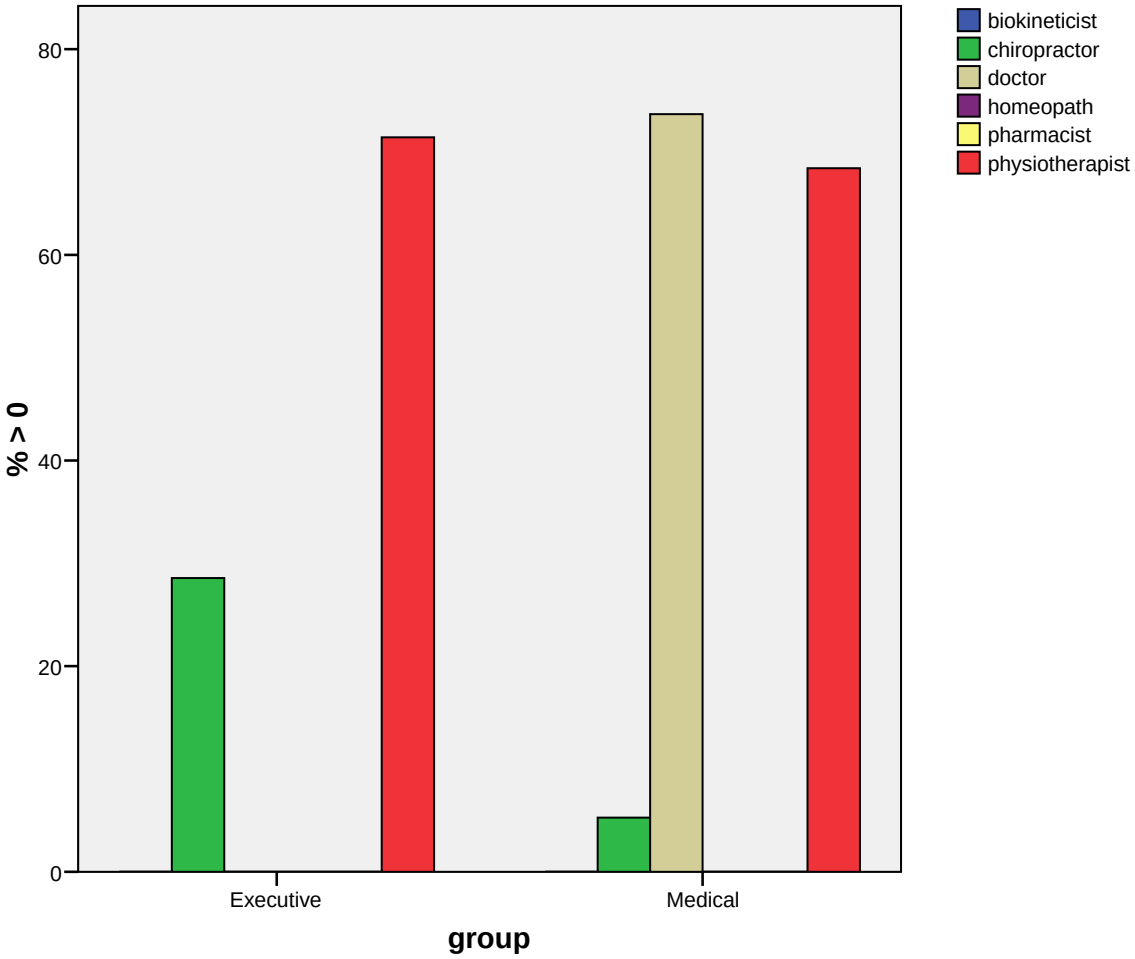

Figure 6: Nominated practitioners for muscle strains by group

4.5.3.1.7 Whiplash

Table 4.49 shows the number and percentage of positive and negative responses for each type of practitioner nominated for the treatment of whiplash by executive or medical grouping.

Table 4.49: Nominated practitioners for whiplash by group

	Group							
	Executive				Medical			
	No		Yes		No		Yes	
	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %
Biokineticist	7	100.0%	0	.0%	19	100.0%	0	.0%
Chiropractor	5	71.4%	2	28.6%	13	68.4%	6	31.6%
Doctor	3	42.9%	4	57.1%	5	26.3%	14	73.7%
Homeopath	7	100.0%	0	.0%	19	100.0%	0	.0%
Pharmacist	7	100.0%	0	.0%	19	100.0%	0	.0%
Physiotherapist	5	71.4%	2	28.6%	10	52.6%	9	47.4%

There were no significant differences in the responses between medical and executive members regarding nominated practitioners to treat whiplash.
The following tables show the results of the statistical tests used to compare responses between executive and medical members for each type of practitioner for whiplash.

Table 4.50

Biokineticist **Chi-Square Tests**

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	26

a. No statistics are computed because biokineticist is a constant.

Table 4.51

Chiropractor **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.022(b)	1	.883		
Fisher's Exact Test				1.000	.639
N of Valid Cases	26				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 2.15.

Table 4.52

Doctor **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.657(b)	1	.418		
Fisher's Exact Test				.635	.361
N of Valid Cases	26				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 2.15.

Table 4.53

Homeopath **Chi-Square Tests**

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	26

a. No statistics are computed because homeopath is a constant.

Table 4.54

Pharmacist **Chi-Square Tests**

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	26

a. No statistics are computed because pharmacist is a constant.

Table 4.55

Physiotherapist **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.740(b)	1	.390		
Fisher's Exact Test				.658	.345
N of Valid Cases	26				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 2.96.

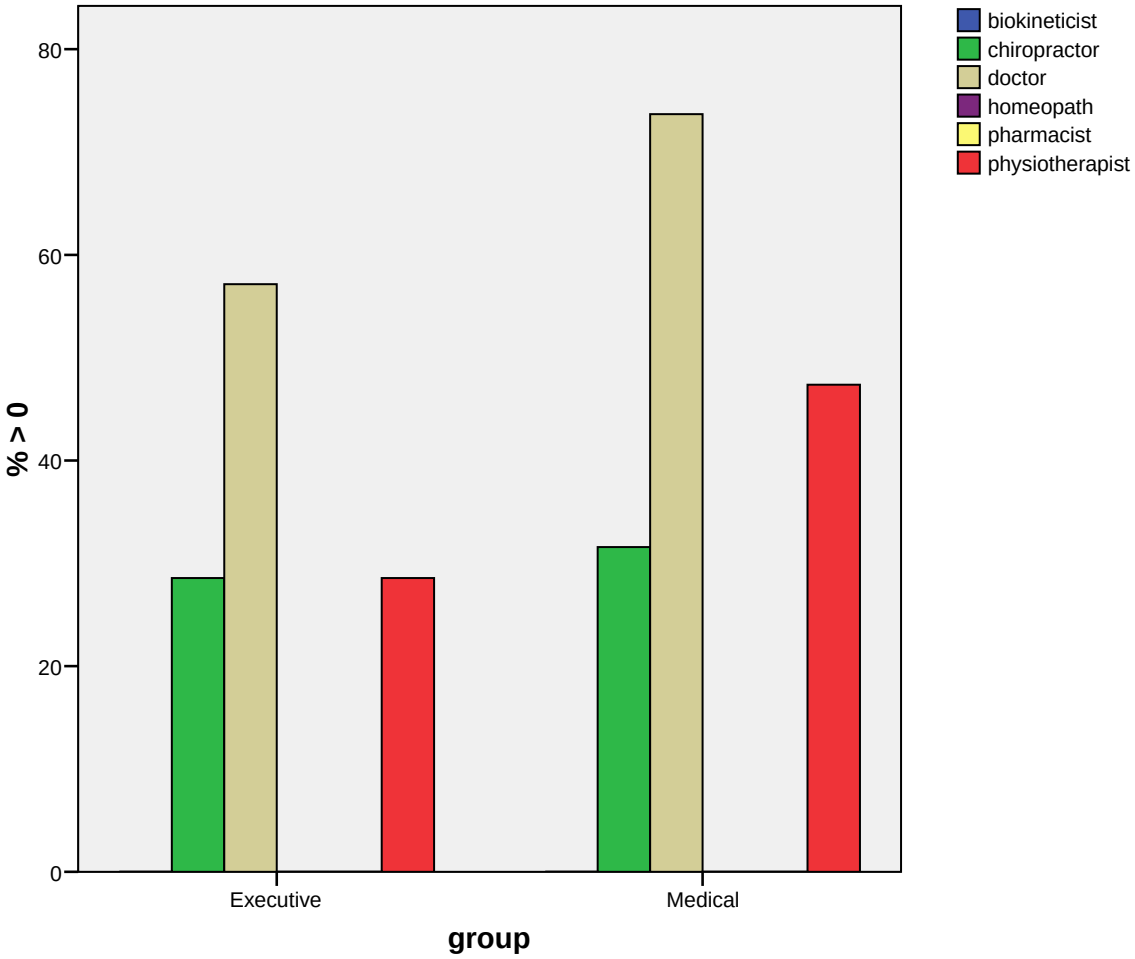

Figure 7: Nominated practitioners for whiplash by group

4.5.3.1.8 Recurrent dislocation

Table 4.56 shows the number and percentage of positive and negative responses for each type of practitioner for recurrent dislocation by executive or medical grouping.

Table 4.56: Nominated practitioners in the treatment of recurrent dislocation by group

	Group							
	Executive				Medical			
	No		Yes		No		Yes	
	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %
Biokineticist	7	100.0%	0	.0%	18	94.7%	1	5.3%
Chiropractor	6	85.7%	1	14.3%	19	100.0%	0	.0%
Doctor	1	14.3%	6	85.7%	1	5.3%	18	94.7%
Homeopath	7	100.0%	0	.0%	19	100.0%	0	.0%
Pharmacist	7	100.0%	0	.0%	19	100.0%	0	.0%
Physiotherapist	7	100.0%	0	.0%	14	73.7%	5	26.3%

There were no significant differences in the responses between medical and executive members regarding nominated practitioners in the treatment of recurrent dislocation.

The following tables show the results of the statistical tests used to compare responses between executive and medical members for each type of practitioner in the treatment of recurrent dislocation.

Table 4.57

Biokineticist **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.383(b)	1	.536		
Fisher's Exact Test				1.000	.731
N of Valid Cases	26				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is .27.

Table 4.58

Chiropractor **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.823(b)	1	.093		
Fisher's Exact Test				.269	.269
N of Valid Cases	26				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is .27.

Table 4.59

Doctor **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.586(b)	1	.444		
Fisher's Exact Test				.474	.474
N of Valid Cases	26				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is .54.

Table 4.60

Homeopath **Chi-Square Tests**

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	26

a. No statistics are computed because homeopath is a constant.

Table 4.61

Pharmacist **Chi-Square Tests**

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	26

a. No statistics are computed because pharmacist is a constant.

Table 4.62

Physiotherapist **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.281(b)	1	.131		
Fisher's Exact Test				.278	.177
N of Valid Cases	26				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 1.35.

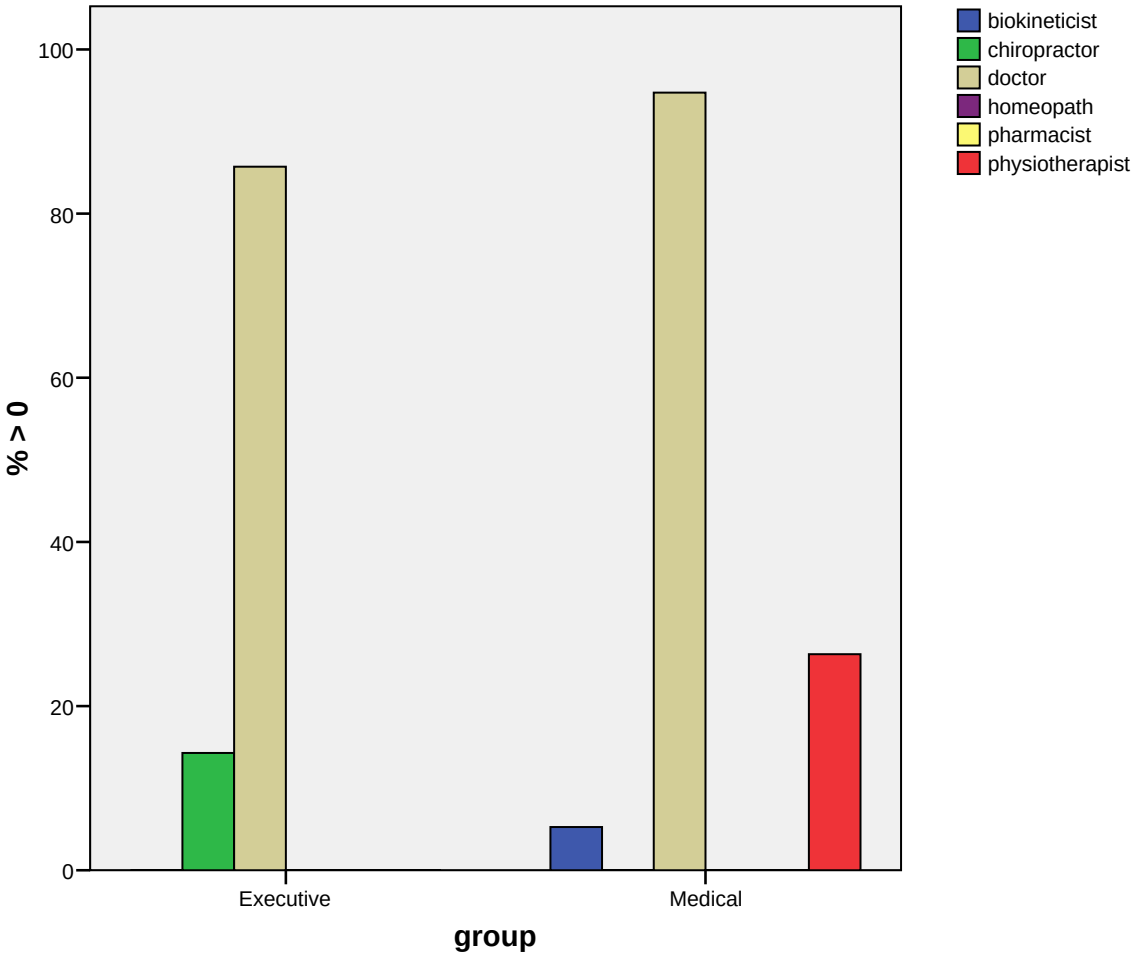

Figure 8: Nominated practitioners for recurrent dislocation by group

4.5.3.1.9 Headaches

Table 4.63 shows the number and percentage of positive and negative responses for each type of practitioner for headaches by executive or medical grouping.

Table 4.63: Nominated practitioners in the treatment of headaches by group

	Group							
	Executive				Medical			
	No		Yes		No		Yes	
	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %
Biokineticist	7	100.0%	0	.0%	18	100.0%	0	.0%
Chiropractor	4	57.1%	3	42.9%	16	88.9%	2	11.1%
Doctor	4	57.1%	3	42.9%	0	.0%	18	100.0%
Homeopath	7	100.0%	0	.0%	18	100.0%	0	.0%
Pharmacist	6	85.7%	1	14.3%	17	94.4%	1	5.6%
Physiotherapist	6	85.7%	1	14.3%	17	94.4%	1	5.6%

Medical personnel were more likely to nominate a doctor for this condition than executive personnel (p=0.003).

The following tables show the results of the statistical tests used to compare responses between executive and medical members for each type of practitioner in the treatment of headaches.

Table 4.64

Biokineticist **Chi-Square Tests**

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	25

a. No statistics are computed because biokineticist is a constant.

Table 4.65

Chiropractor **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	3.175(b)	1	.075		
Fisher's Exact Test				.113	.113
N of Valid Cases	25				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 1.40.

Table 4.66

Doctor **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	12.245(b)	1	.000		
Fisher's Exact Test				.003	.003
N of Valid Cases	25				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 1.12.

Table 4.67

Homeopath **Chi-Square Tests**

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	25

a. No statistics are computed because homeopath is a constant.

Table 4.68

Pharmacist **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.522(b)	1	.470		
Fisher's Exact Test				.490	.490
N of Valid Cases	25				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is .56.

Table 4.69

Physiotherapist **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.522(b)	1	.470		
Fisher's Exact Test				.490	.490
N of Valid Cases	25				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is .56.

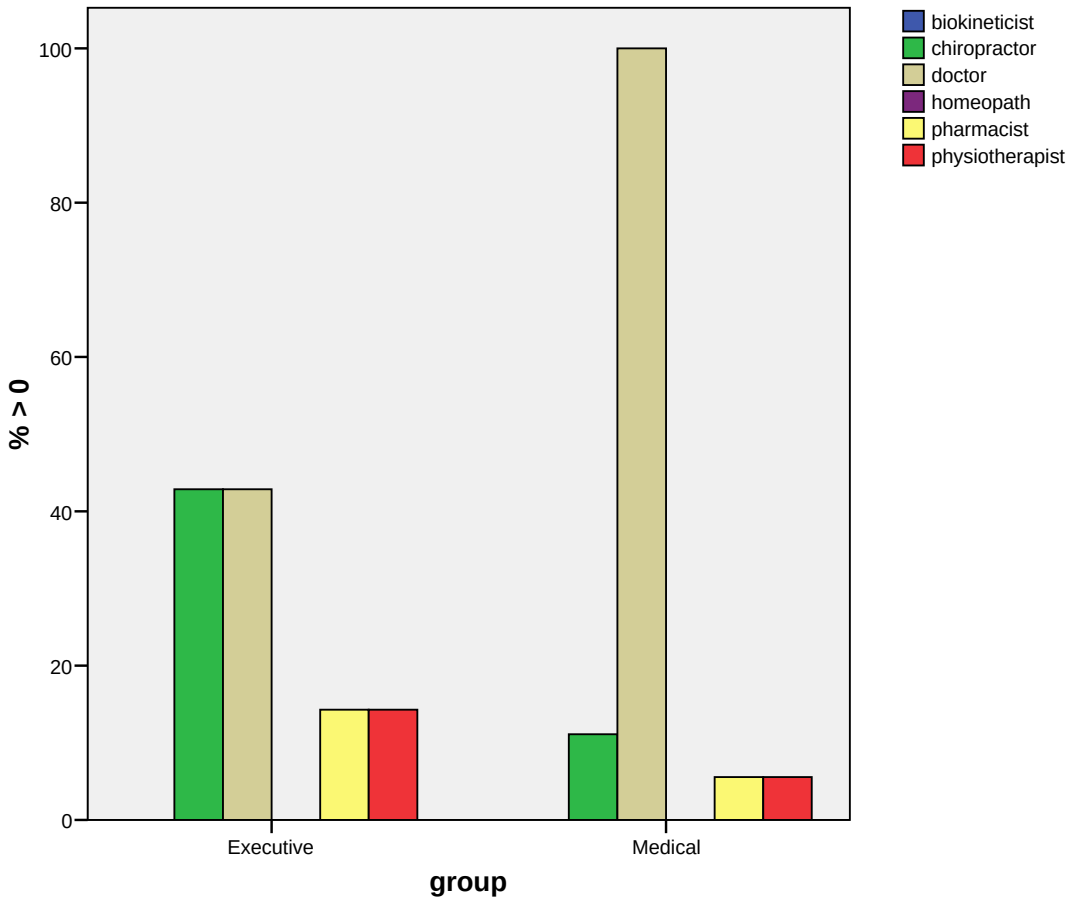

Figure 9: Nominated practitioners for headaches by group

4.5.3.1.10 Fractures

Table 4.70 shows the number and percentage of positive and negative responses for each type of practitioner for the treatment of fractures by executive or medical grouping.

Table 4.70: Nominated practitioners for fractures by group

	Group							
	Executive				Medical			
	No		Yes		No		Yes	
	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %
Biokineticist	7	100.0%	0	.0%	19	100.0%	0	.0%
Chiropractor	7	100.0%	0	.0%	19	100.0%	0	.0%
Doctor	0	.0%	7	100.0%	0	.0%	19	100.0%
Homeopath	7	100.0%	0	.0%	19	100.0%	0	.0%
Pharmacist	7	100.0%	0	.0%	19	100.0%	0	.0%
Physiotherapist	7	100.0%	0	.0%	17	89.5%	2	10.5%

There were no statistical comparisons between the groups for any practitioner except physiotherapist since the responses were the same in both groups for all practitioners.

The following tables show the results of the statistical tests used to compare responses between executive and medical members for each type of practitioner in the treatment of fractures.

Table 4.71

Physiotherapist **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.798(b)	1	.372		
Fisher's Exact Test				1.000	.526
N of Valid Cases	26				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is .54.

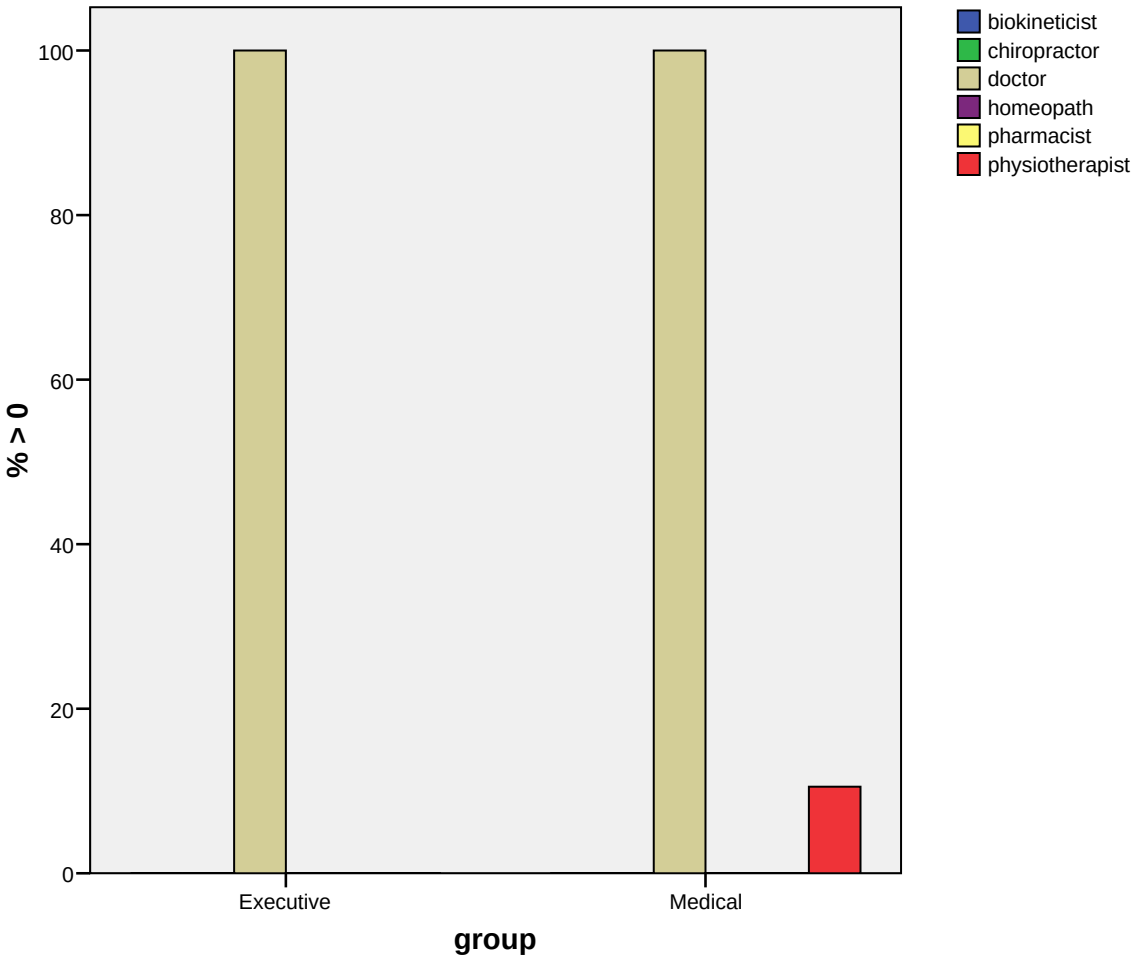

Figure 10: Nominated practitioners for fractures by group

4.5.3.1.11 Disc herniation

Table 4.72 shows the number and percentage of positive and negative responses for each type of practitioner in the treatment of disc herniation by executive or medical grouping.

Table 4.72: Nominated practitioners for disc herniation by group

	Group							
	Executive				Medical			
	No		Yes		No		Yes	
	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %
Biokineticist	7	100.0%	0	.0%	19	100.0%	0	.0%
Chiropractor	4	57.1%	3	42.9%	16	84.2%	3	15.8%
Doctor	3	42.9%	4	57.1%	1	5.3%	18	94.7%
Homeopath	7	100.0%	0	.0%	19	100.0%	0	.0%
Pharmacist	7	100.0%	0	.0%	19	100.0%	0	.0%
Physiotherapist	6	85.7%	1	14.3%	10	52.6%	9	47.4%

The following tables show the results of the statistical tests used to compare responses between executive and medical members for each type of practitioner in the treatment of disc herniation.

Table 4.73

Biokineticist **Chi-Square Tests**

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	26

a. No statistics are computed because biokineticist is a constant.

Table 4.74

Chiropractor **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.111(b)	1	.146		
Fisher's Exact Test				.293	.175
N of Valid Cases	26				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 1.62.

Table 4.75

Doctor **Chi-Square Test**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	5.554(b)	1	.018		
Fisher's Exact Test				.047	.047
N of Valid Cases	26				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 1.08.

Table 4.76

Homeopath **Chi-Square Tests**

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	26

a. No statistics are computed because homeopath is a constant.

Table 4.77

Pharmacist **Chi-Square Tests**

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	26

a. No statistics are computed because pharmacist is a constant.

Table 4.78

Physiotherapist **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.365(b)	1	.124		
Fisher's Exact Test				.190	.139
N of Valid Cases	26				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 2.69.

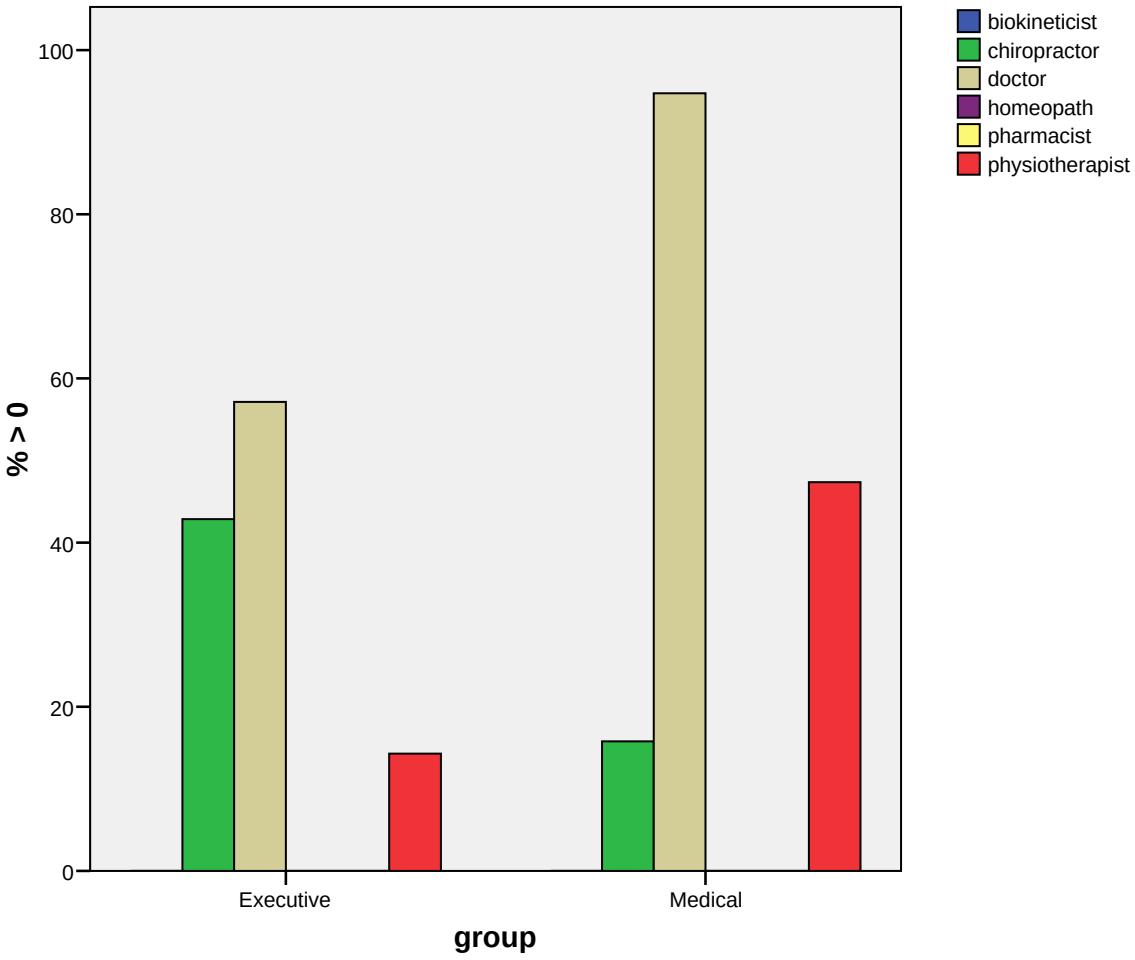

Figure 11: Nominated practitioners for disc herniation by group

4.5.3.1.12 Impingement syndrome

Table 4.79 shows the number and percentage of positive and negative responses for each type of practitioner in the treatment of impingement syndrome by executive or medical grouping.

Table 4.79: Nominated practitioners for impingement syndrome by group

	Group							
	Executive				Medical			
	No		Yes		No		Yes	
	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %
Biokineticist	7	100.0%	0	.0%	19	100.0%	0	.0%
Chiropractor	6	85.7%	1	14.3%	17	89.5%	2	10.5%
Doctor	1	14.3%	6	85.7%	1	5.3%	18	94.7%
Homeopath	7	100.0%	0	.0%	19	100.0%	0	.0%
Pharmacist	7	100.0%	0	.0%	19	100.0%	0	.0%
Physiotherapist	7	100.0%	0	.0%	10	52.6%	9	47.4%

There was a borderline statistically significant difference in responses to physiotherapist between the groups (p=0.058). Medical members were more likely to nominate physiotherapists for this condition than executive members.
The following tables show the results of the statistical tests used to compare responses between executive and medical members for each type of practitioner in the treatment of impingement syndrome.

Table 4.80

Biokineticist **Chi-Square Tests**

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	26

a. No statistics are computed because biokineticist is a constant.

Table 4.81

Chiropractor **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.071(b)	1	.790		
Continuity Correction(a)	.000	1	1.000		
Likelihood Ratio	.068	1	.794		
Fisher's Exact Test				1.000	.627
Linear-by-Linear Association	.068	1	.794		
N of Valid Cases	26				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is .81.

Table 4.82

Doctor **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.586(b)	1	.444		
Continuity Correction(a)	.000	1	1.000		
Likelihood Ratio	.525	1	.469		
Fisher's Exact Test				.474	.474
Linear-by-Linear Association	.564	1	.453		
N of Valid Cases	26				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is .54.

Table 4.83

Homeopath **Chi-Square Tests**

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	26

a. No statistics are computed because homeopath is a constant

Table 4.84

Pharmacist **Chi-Square Tests**

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	26

a. No statistics are computed because pharmacist is a constant.

Table 4.85

Physiotherapist **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	5.071(b)	1	.024		
Continuity Correction(a)	3.194	1	.074		
Likelihood Ratio	7.255	1	.007		
Fisher's Exact Test				.058	.030
Linear-by-Linear Association	4.876	1	.027		
N of Valid Cases	26				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 2.42.

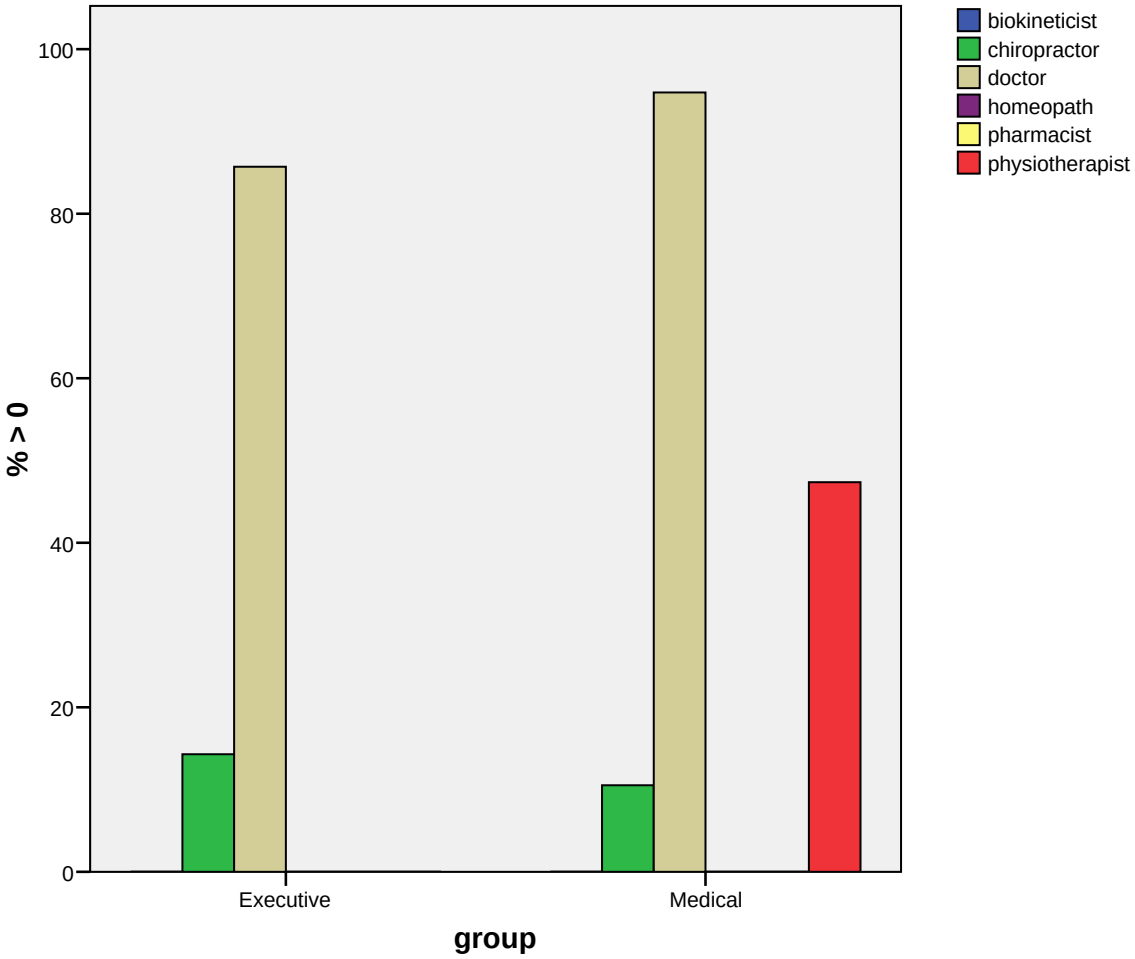

Figure 12: Nominated practitioners for impingement syndrome by group

4.5.3.1.13 Tendonitis of the lower limb

Table 4.86 shows the number and percentage of positive and negative responses for each type of practitioner for the treatment of tendonitis of the lower limb by executive or medical grouping.

Table 4.86: Nominated practitioners for tendonitis lower limb by group

	Group							
	Executive				Medical			
	No		Yes		No		Yes	
	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %
Biokineticist	7	100.0%	0	.0%	19	100.0%	0	.0%
Chiropractor	3	42.9%	4	57.1%	18	94.7%	1	5.3%
Doctor	6	85.7%	1	14.3%	4	21.1%	15	78.9%
Homeopath	7	100.0%	0	.0%	19	100.0%	0	.0%
Pharmacist	7	100.0%	0	.0%	19	100.0%	0	.0%
physiotherapist	5	71.4%	2	28.6%	8	42.1%	11	57.9%

Executive members were more likely to nominate a chiropractor for treatment of this condition than medical members (p=0.01), while medical members were more likely to nominate a medical doctor for treatment of this condition (p=0.005).
The following tables show the results of the statistical tests used to compare responses between executive and medical members for each type of practitioner for the treatment of tendonitis of the lower limb.

Table 4.87

Biokineticist **Chi-Square Tests**

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	26

a. No statistics are computed because biokineticist is a constant.

Table 4.88

Chiropractor **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	8.864(b)	1	.003		
Continuity Correction(a)	5.839	1	.016		
Likelihood Ratio	8.061	1	.005		
Fisher's Exact Test				.010	.010
Linear-by-Linear Association	8.523	1	.004		
N of Valid Cases	26				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 1.35.

Table 4.89

Doctor **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	9.036(b)	1	.003		
Continuity Correction(a)	6.511	1	.011		
Likelihood Ratio	9.348	1	.002		
Fisher's Exact Test				.005	.005
Linear-by-Linear Association	8.689	1	.003		
N of Valid Cases	26				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 2.69.

Table 4.90

Homeopath **Chi-Square Tests**

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	26

a. No statistics are computed because homeopath is a constant.

Table 4.91

Pharmacist **Chi-Square Tests**

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	26

a. No statistics are computed because pharmacist is a constant.

Table 4.92

Physiotherapist **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.759(b)	1	.185		
Continuity Correction(a)	.782	1	.377		
Likelihood Ratio	1.804	1	.179		
Fisher's Exact Test				.378	.189
Linear-by-Linear Association	1.692	1	.193		
N of Valid Cases	26				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 3.50.

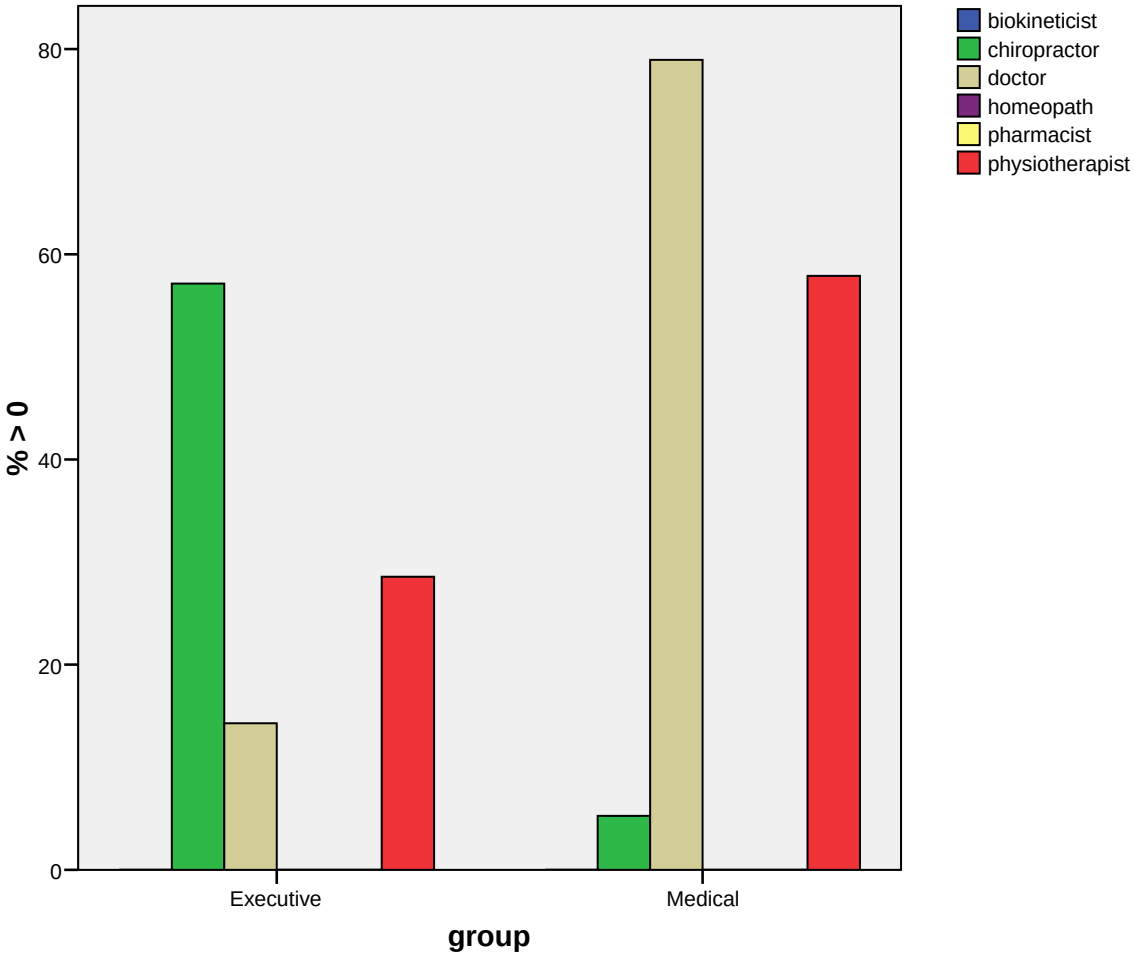

Figure 13: Nominated practitioners for tendonitis of the lower limb by group

4.5.3.1.14 Frozen shoulder

Table 4.93 shows the number and percentage of positive and negative responses for each type of practitioner for treatment of frozen shoulder by executive or medical grouping.

Table 4.93 Nominated practitioners for frozen shoulder by group

	Group							
	Executive				Medical			
	No		Yes		No		Yes	
	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %
Biokineticist	7	100.0%	0	.0%	19	100.0%	0	.0%
Chiropractor	4	57.1%	3	42.9%	15	78.9%	4	21.1%
Doctor	6	85.7%	1	14.3%	4	21.1%	15	78.9%
Homeopath	7	100.0%	0	.0%	19	100.0%	0	.0%
Pharmacist	7	100.0%	0	.0%	19	100.0%	0	.0%
Physiotherapist	4	57.1%	3	42.9%	8	42.1%	11	57.9%

There were significantly more positive responses for doctor from medical members than from executive members (p=0.005).

The following tables show the results of the statistical tests used to compare responses between executive and medical members for each type of practitioner for treatment of frozen shoulder.

Table 4.94

Biokineticist **Chi-Square Tests**

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	26

a. No statistics are computed because biokineticist is a constant.

Table 4.95

Chiropractor **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.236(b)	1	.266		
Continuity Correction(a)	.376	1	.540		
Likelihood Ratio	1.172	1	.279		
Fisher's Exact Test				.340	.263
Linear-by-Linear Association	1.189	1	.276		
N of Valid Cases	26				

a. Computed only for a 2x2 table

b. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 1.88.

Table 4.96

Doctor **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	9.036(b)	1	.003		
Continuity Correction(a)	6.511	1	.011		
Likelihood Ratio	9.348	1	.002		
Fisher's Exact Test				.005	.005
Linear-by-Linear Association	8.689	1	.003		
N of Valid Cases	26				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 2.69.

Table 4.97

Homeopath **Chi-Square Tests**

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	26

a. No statistics are computed because homeopath is a constant.

Table 4.98

Pharmacist **Chi-Square Tests**

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	26

a. No statistics are computed because pharmacist is a constant.

Table 4.99

Physiotherapist **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.465(b)	1	.495		
Continuity Correction(a)	.057	1	.811		
Likelihood Ratio	.465	1	.495		
Fisher's Exact Test				.665	.404
Linear-by-Linear Association	.448	1	.504		
N of Valid Cases	26				

a Computed only for a 2x2 table

b 2 cells (50.0%) have expected count less than 5. The minimum expected count is 3.23.

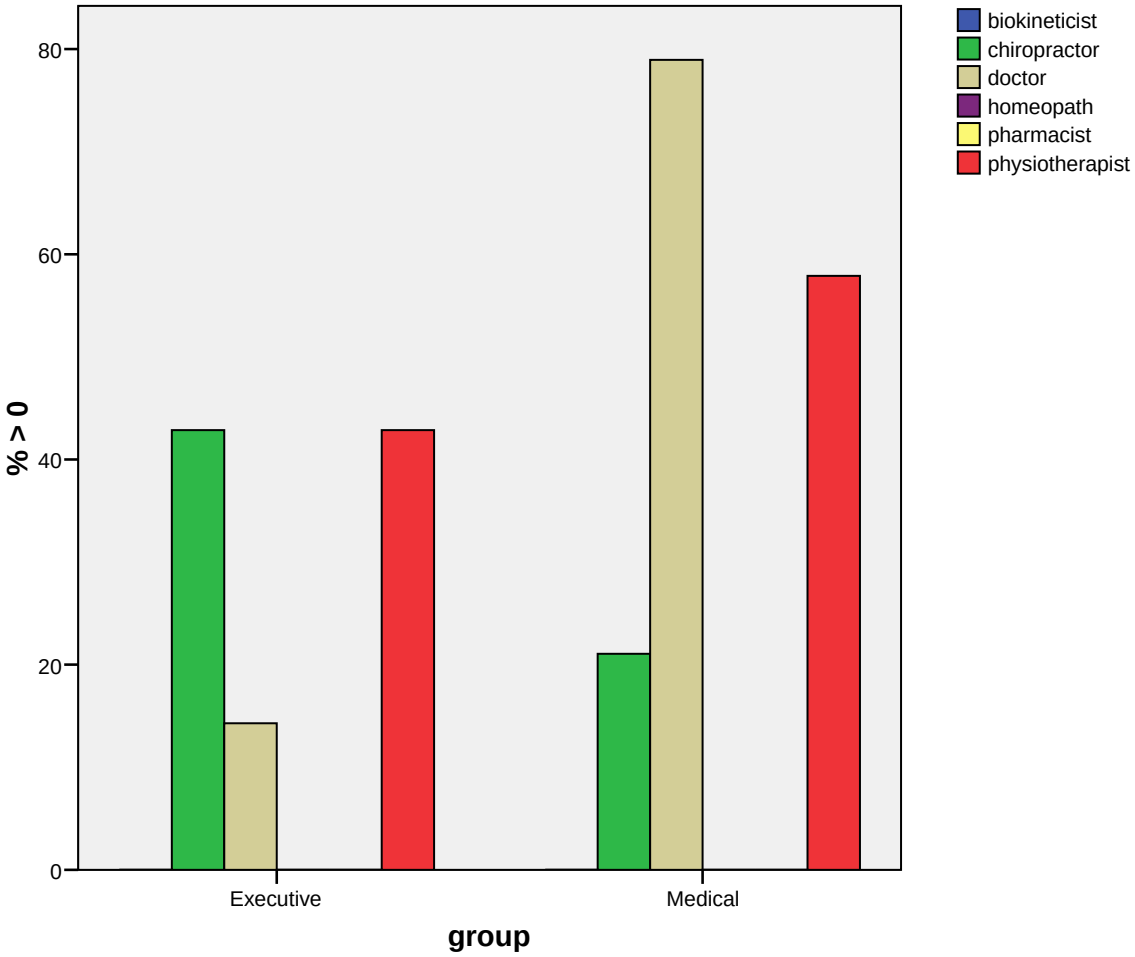

Figure 14: Nominated practitioners for frozen shoulder by group

4.5.3.1.15 Ligament injury

Table 4.100 shows the number and percentage of positive and negative responses for each type of practitioner for treatment of ligament injury by executive or medical grouping.

Table 4.100: Nominated practitioners for ligament injury by group

	Group							
	Executive				Medical			
	No		Yes		No		Yes	
	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %
Biokineticist	7	100.0%	0	.0%	19	100.0%	0	.0%
Chiropractor	6	85.7%	1	14.3%	18	94.7%	1	5.3%
Doctor	1	14.3%	6	85.7%	3	15.8%	16	84.2%
Homeopath	7	100.0%	0	.0%	19	100.0%	0	.0%
Pharmacist	7	100.0%	0	.0%	19	100.0%	0	.0%
Physiotherapist	5	71.4%	2	28.6%	8	42.1%	11	57.9%

There were no significant differences in responses to the listed professionals for this condition.

The following tables show the results of the statistical tests used to compare responses between executive and medical members for each type of practitioner for the treatment of ligament injury.

Table 4.101

Biokineticist **Chi-Square Tests**

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	26

a. No statistics are computed because biokineticist is a constant.

Table 4.102

Chiropractor **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.586(b)	1	.444		
Continuity Correction(a)	.000	1	1.000		
Likelihood Ratio	.525	1	.469		
Fisher's Exact Test				.474	.474
Linear-by-Linear Association	.564	1	.453		
N of Valid Cases	26				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is .54.

Table 4.103

Doctor **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.009(b)	1	.925		
Continuity Correction(a)	.000	1	1.000		
Likelihood Ratio	.009	1	.924		
Fisher's Exact Test				1.000	.713
Linear-by-Linear Association	.009	1	.926		
N of Valid Cases	26				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 1.08.

Table 4.104

Homeopath **Chi-Square Tests**

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	26

a. No statistics are computed because homeopath is a constant.

Table 4.105

Pharmacist **Chi-Square Tests**

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	26

a. No statistics are computed because pharmacist is a constant.

Table 4.106

Physiotherapy **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.759(b)	1	.185		
Continuity Correction(a)	.782	1	.377		
Likelihood Ratio	1.804	1	.179		
Fisher's Exact Test				.378	.189
Linear-by-Linear Association	1.692	1	.193		
N of Valid Cases	26				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 3.50.

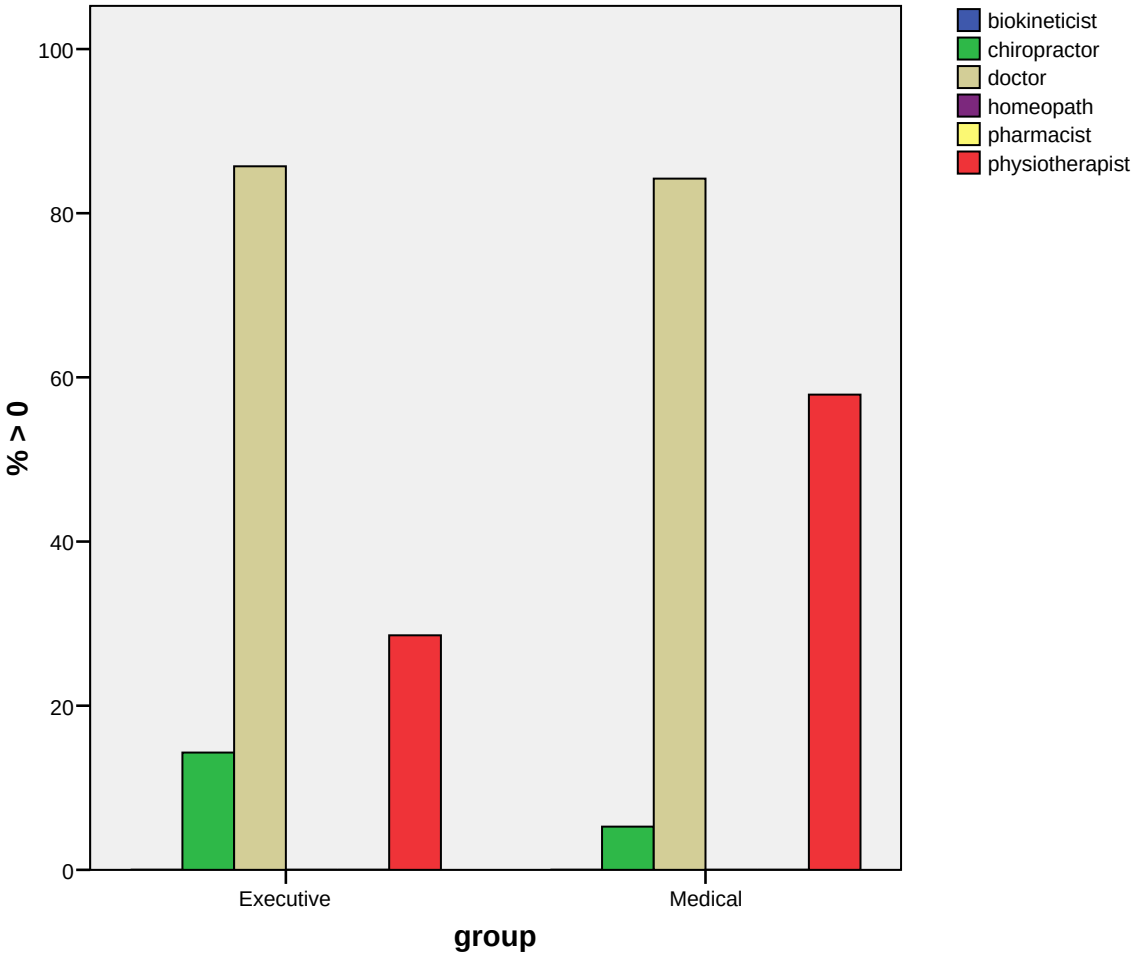

Figure 15: Nominated practitioners for ligament injury by group

4.5.3.1.16 Lower back pain

Table 4.107 shows the number and percentage of positive and negative responses for each type of practitioner for treatment of lower back pain (LBP) by executive or medical grouping.

Table 4.107: Nominated practitioners for lower back pain by group

	Group							
	Executive				Medical			
	No		Yes		No		Yes	
	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %
Biokineticist	7	100.0%	0	.0%	19	100.0%	0	.0%
Chiropractor	3	42.9%	4	57.1%	10	52.6%	9	47.4%
Doctor	4	57.1%	3	42.9%	3	15.8%	16	84.2%
Homeopath	7	100.0%	0	.0%	19	100.0%	0	.0%
Pharmacist	7	100.0%	0	.0%	19	100.0%	0	.0%
Physiotherapist	4	57.1%	3	42.9%	8	42.1%	11	57.9%

Medical members were significantly more likely to choose doctors for treatment of LBP than executive members (p=0.035).

The following tables show the results of the statistical tests used to compare responses between executive and medical members for each type of practitioner for treatment of lower back pain.

Table 4.108

Biokineticist **Chi-Square Tests**

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	26

a. No statistics are computed because biokineticist is a constant.

Table 4.109

Chiropractor **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.195(b)	1	.658		
Continuity Correction(a)	.000	1	1.000		
Likelihood Ratio	.196	1	.658		
Fisher's Exact Test				1.000	.500
Linear-by-Linear Association	.188	1	.665		
N of Valid Cases	26				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 3.50.

Table 4.110

Doctor **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	4.446(b)	1	.035		
Continuity Correction(a)	2.593	1	.107		
Likelihood Ratio	4.155	1	.042		
Fisher's Exact Test				.057	.057
Linear-by-Linear Association	4.275	1	.039		
N of Valid Cases	26				

a. Computed only for a 2x2 table

b. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 1.88.

Table 4.111

Homeopath **Chi-Square Tests**

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	26

a. No statistics are computed because homeopath is a constant.

Table 4.112

Pharmacist **Chi-Square Tests**

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	26

a. No statistics are computed because pharmacist is a constant.

Table 4.113

Physiotherapist **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.465(b)	1	.495		
Continuity Correction(a)	.057	1	.811		
Likelihood Ratio	.465	1	.495		
Fisher's Exact Test				.665	.404
Linear-by-Linear Association	.448	1	.504		
N of Valid Cases	26				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 3.23.

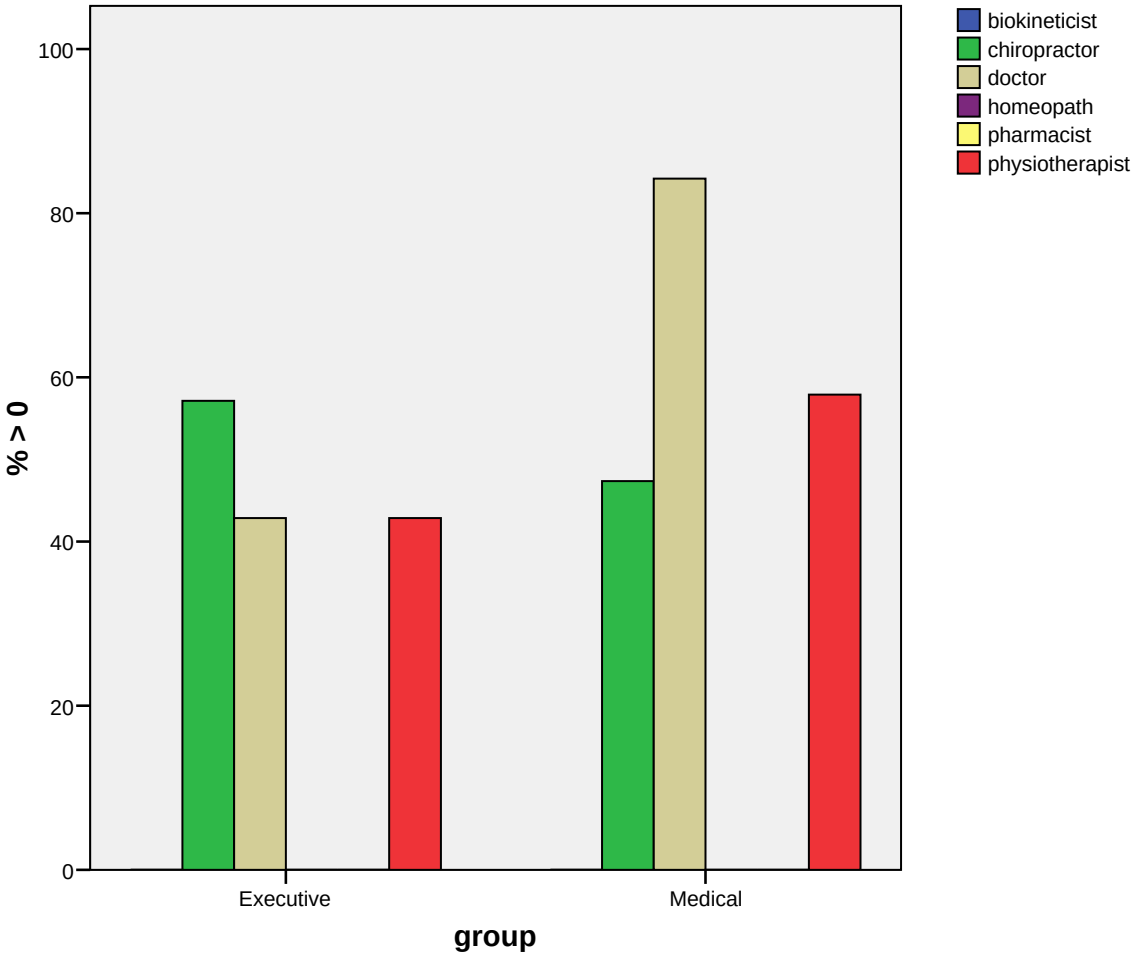

Figure 16: Nominated practitioners for lower back pain by group

4.5.3.1.17 General muscle stiffness

Table 4.114 shows the number and percentage of positive and negative responses for each type of practitioner for the treatment of muscle stiffness by executive or medical grouping.

Table 4.114: Nominated practitioners for muscle stiffness by group

	Group							
	Executive				Medical			
	No		Yes		No		Yes	
	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %
Biokineticist	7	100.0%	0	.0%	18	100.0%	0	.0%
Chiropractor	5	71.4%	2	28.6%	15	83.3%	3	16.7%
Doctor	7	100.0%	0	.0%	5	27.8%	13	72.2%
Homeopath	7	100.0%	0	.0%	18	100.0%	0	.0%
Pharmacist	7	100.0%	0	.0%	18	100.0%	0	.0%
Physiotherapist	2	28.6%	5	71.4%	7	38.9%	11	61.1%

There was a significant difference in responses to using a doctor to treat general muscle stiffness between the groups (p=0.002). Medical members were more likely to use doctors than executive personnel.

The following tables show the results of the statistical tests used to compare responses between executive and medical members for each type of practitioner for the treatment of muscle stiffness.

Table 4.115

Biokineticist **Chi-Square Tests**

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	25

a. No statistics are computed because biokineticist is a constant.

Table 4.116

Chiropractor **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.446(b)	1	.504		
Continuity Correction(a)	.012	1	.911		
Likelihood Ratio	.424	1	.515		
Fisher's Exact Test				.597	.436
Linear-by-Linear Association	.429	1	.513		
N of Valid Cases	25				

a . Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 1.40.

Table 4.117

Doctor **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	10.532(b)	1	.001		
Continuity Correction(a)	7.838	1	.005		
Likelihood Ratio	13.347	1	.000		
Fisher's Exact Test				.002	.002
Linear-by-Linear Association	10.111	1	.001		
N of Valid Cases	25				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 3.36.

Table 4.118

Homeopath **Chi-Square Tests**

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	25

a. No statistics are computed because homeopath is a constant.

Table 4.119

Pharmacist **Chi-Square Tests**

	Value
Pearson Chi-Square	.(a)
N of Valid Cases	25

a. No statistics are computed because pharmacist is a constant.

Table 4.120

Physiotherapist **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.233(b)	1	.629		
Continuity Correction(a)	.000	1	.985		
Likelihood Ratio	.238	1	.626		
Fisher's Exact Test				1.000	.501
Linear-by-Linear Association	.224	1	.636		
N of Valid Cases	25				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 2.52.

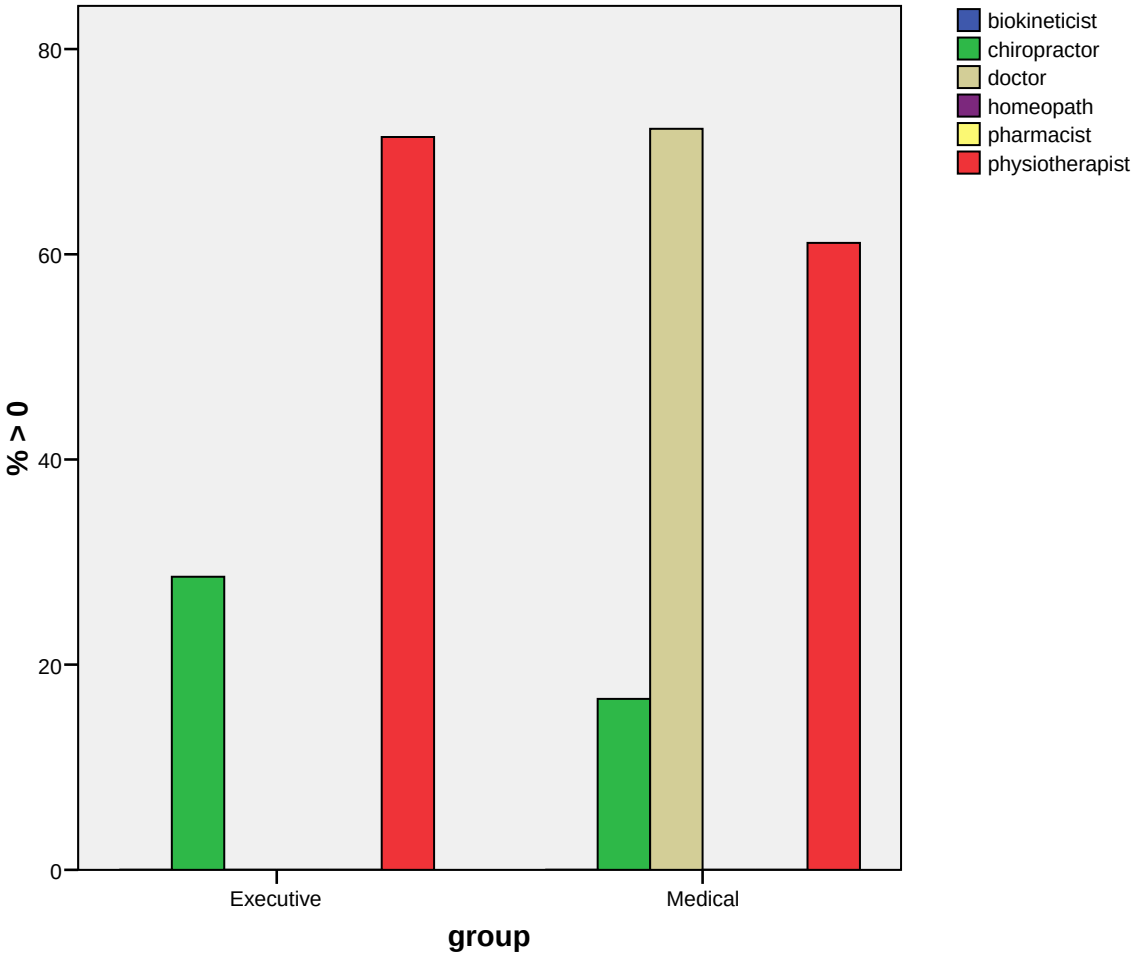

Figure 17: Nominated practitioners for muscle stiffness by group

4.5.3.2 Question 8

With reference to question 8, " Please rank the following health care practitioners from 1 – 12 based on who your federation believes to be most important to any sports medical team, 1 being most important and 12 being least important." (Appendix C), table 4.121 shows that the only differences between the mean rankings of the medical and executive personnel were regarding medical doctors (p=0.049 – medical members ranked them higher), and physiotherapists (executive personnel ranked them higher). With the other practitioners, there was no significant difference in the mean rankings between the two groups.

Table 4.121 : Comparison of mean ranking of each practitioner by group

	group	N	Mean	Std. Deviation	Std. Error Mean	p value
Biokineticist	Executive	6	6.50	3.886	1.586	0.379
	Medical	14	7.86	2.713	.725	
Chiropractor	Executive	7	4.57	2.299	.869	0.279
	Medical	15	5.80	2.455	.634	
Dietician	Executive	7	6.14	2.545	.962	0.933
	Medical	17	6.24	2.359	.572	
Medical Doctor	Executive	7	4.86	4.670	1.765	0.049
	Medical	18	1.83	2.595	.612	
Nurse	Executive	7	6.86	3.388	1.280	0.843
	Medical	15	6.60	2.501	.646	
Neurologist	Executive	7	6.29	3.094	1.169	0.064
	Medical	14	8.36	1.781	.476	
Orthopedic surgeon	Executive	7	6.86	3.237	1.223	0.180
	Medical	15	4.60	3.680	.950	
Personal trainer	Executive	7	7.71	3.302	1.248	0.063
	Medical	15	5.20	2.541	.656	
Pharmacist	Executive	7	7.57	3.309	1.251	0.225
	Medical	13	9.46	3.152	.874	
Physiotherapist	Executive	7	5.86	3.288	1.243	0.037
	Medical	18	3.22	2.415	.569	
Plastic surgeon	Executive	7	7.00	5.416	2.047	0.202

	Medical	14	10.07	3.149	.842	
Psychologist	Executive	7	7.14	2.545	.962	0.183
	Medical	17	5.47	2.764	.670	

Table 4.122– Health care personnel's importance to sports medical teams (overall)

Provider	Mean rank	Importance
Medical doctor	2.61538462	1
Physiotherapist	3.96153846	2
Orthopaedic surgeon	5.2173913	3
Chiropractor	5.26086957	4
Psychologist	5.95833333	5
Personal trainer	6	6
Dietician	6.20833333	7
Nurse	6.60869565	8
Biokineticist	7.45	9
Neurologist	7.66666667	10
Pharmacist	8.8	11
Plastic surgeon	9.04761905	12

With reference to table 4.122, the overall ranking of personnel by the combined groups (executives and medical), it can be seen that chiropractic is ranked 4th overall.

4.5.3.3 Question 9

With reference to question 9, " Which of the following techniques / modalities does your federation believe should be provided at competition sites by appointed health care practitioners? " (Appendix C), table 4.123 shows the number and percentage of each group who responded positively and negatively for each modality listed.

Table 4.123: Frequency and percentage of responses to each of the modalities / techniques[7] listed by group

	Group							
	Executive				Medical			
	No		Yes		no		Yes	
	Count	Row N %	Count	Row N %	Count	Row N %	Count	Row N %
Basic life support	1	12.5%	7	87.5%	0	.0%	21	100.0%
Dietary advice	5	62.5%	3	37.5%	13	61.9%	8	38.1%
Ergonomic advice	6	75.0%	2	25.0%	18	85.7%	3	14.3%
Exercise therapy	6	75.0%	2	25.0%	5	23.8%	16	76.2%
Electro-modalities	5	62.5%	3	37.5%	9	42.9%	12	57.1%
Fracture reduction	5	62.5%	3	37.5%	7	33.3%	14	66.7%
Hot/cold therapy	2	25.0%	6	75.0%	1	4.8%	20	95.2%
Manipulation	2	25.0%	6	75.0%	10	47.6%	11	52.4%
Massage	1	12.5%	7	87.5%	8	38.1%	13	61.9%
Psychology	5	62.5%	3	37.5%	19	90.5%	2	9.5%
Prescription	5	62.5%	3	37.5%	5	23.8%	16	76.2%
Strapping	3	37.5%	5	62.5%	4	19.0%	17	81.0%
Suturing	5	62.5%	3	37.5%	5	23.8%	16	76.2%

[7] Modality / techniques referred to therapeutic interventions that were thought to be necessary by the medical / executive commissions within the confines of the medical team at competition venues.

There was a significant difference between the responses to exercise therapy between the two groups (p=0.028) where medical members were more likely to respond positively than executive members. Also writing of prescriptions and suturing were significantly different (p=0.05). Medical members were more likely to list these modalities than executive members.

The following tables show the results of the statistical tests used to compare responses between executive and medical members for each of the techniques / modalities.

Table 4.124

Basic life support **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.719(b)	1	.099		
Fisher's Exact Test				.276	.276
N of Valid Cases	29				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is .28.

Table 4.125

Dietary advice **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.001(b)	1	.976		
Fisher's Exact Test				1.000	.659
N of Valid Cases	29				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 3.03.

Table 4.126

Ergonomic advice **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.466(b)	1	.495		
Fisher's Exact Test				.597	.425
N of Valid Cases	29				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 1.38.

Table 4.127

Exercise / rehabilitation therapy Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	6.448(b)	1	.011		
Fisher's Exact Test				.028	.018
N of Valid Cases	29				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 3.03.

Table 4.128

Electro modalities Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.895(b)	1	.344		
Fisher's Exact Test				.427	.298
N of Valid Cases	29				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 3.86.

Table 4.129

Fracture reduction Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.032(b)	1	.154		
Fisher's Exact Test				.218	.158
N of Valid Cases	29				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 3.31.

Table 4.130

Hot/cold therapy **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.558(b)	1	.110		
Fisher's Exact Test				.176	.176
N of Valid Cases	29				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is .83.

Table 4.131

Manipulation **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.222(b)	1	.269		
Fisher's Exact Test				.408	.250
N of Valid Cases	29				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 3.31.

Table 4.132

Massage **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.773(b)	1	.183		
Fisher's Exact Test				.371	.192
N of Valid Cases	29				

a. Computed only for a 2x2 table

b. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 2.48.

Table 4.133

Psychology **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	3.178(b)	1	.075		
Fisher's Exact Test				.112	.112
N of Valid Cases	29				

a. Computed only for a 2x2 table

b. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 1.38.

Table 4.134

Prescription **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	3.839(b)	1	.050		
Fisher's Exact Test				.083	.066
N of Valid Cases	29				

a. Computed only for a 2x2 table

b. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 2.76.

Table 4.135

Strapping **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.077(b)	1	.299		
Fisher's Exact Test				.357	.282
N of Valid Cases	29				

a. Computed only for a 2x2 table

b. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 1.93.

Table 4.136

Suturing **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	3.839(b)	1	.050		
Fisher's Exact Test				.083	.066
N of Valid Cases	29				

a. Computed only for a 2x2 table

b. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 2.76.

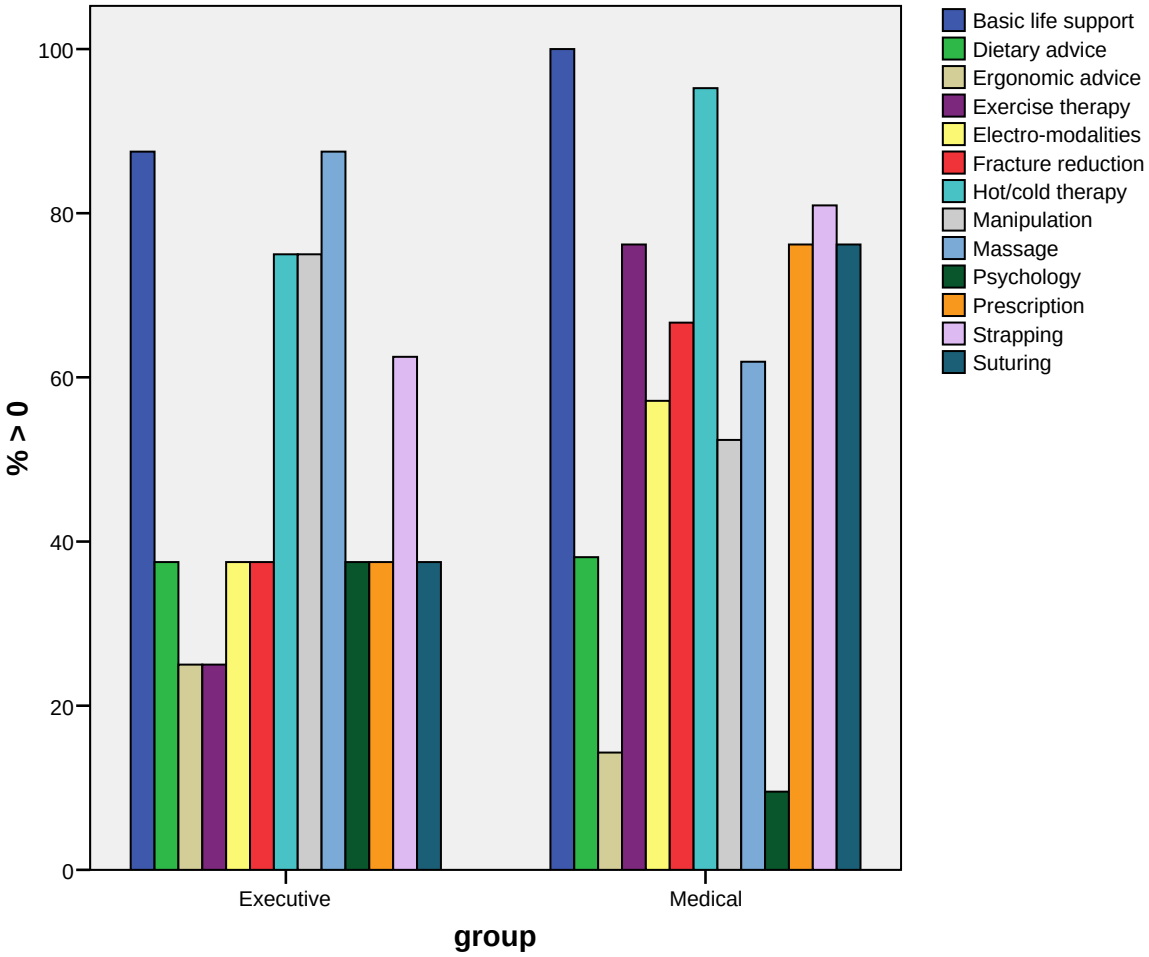

Figure 18: Techniques / Modalities ratings by group

Table 4.137 Overall ranking of techniques / modalities to be provided at competitions

Technique	Percentage yes	rank
Basic life support	97	1
hot/cold therapy	87	2
Strapping	77	3
Massage	67	4
Prescription of drugs	63	5
Suturing	63	5
Rehabilitative therapy	60	7
Fracture reduction	60	7
Manipulation of spine	60	7
Ultrasound therapy	50	10
Dietary advice	37	11
Ergonomic advice	17	12
Psychology	17	12

4.5.3.4 Question 10:

With reference to question 10, " Which of the following health care providers are currently part of your federation's medical team? " (Appendix C), table 4.138 shows that medical doctors and physiotherapists are by far the most common health care providers. The other providers are used infrequently or not at all.

Table 4.138 Overall response to question 10

Provider	Percentage yes	Rank
Medical doctor	100	1
Physiotherapist	64	2
Orthopaedic surgeon	36	3
Psychologist	28	4
Personal trainer	24	5
Nurse	16	6
Dietician	16	6
Chiropractor	16	6
Neurologist	4	9
Biokinetist	4	9
Plastic surgeon	0	11
Pharmacist	0	12

Table 139: Comparison of responses to Question 10 by group

	Executive		Medical		p value
	Count	%	Count	%	
Medical doctor	6	100.0%	18	100.0%	-
Physiotherapist	5	83.3%	11	61.1%	0.621
Orthopaedic surgeon	1	16.7%	7	38.9%	0.621
Psychologist	2	33.3%	5	27.8%	1.000
Personal trainer	3	50.0%	3	16.7%	0.139
Nurse	0	.0%	4	22.2%	0.539
Dietician	1	16.7%	3	16.7%	1.000
Chiropractor	2	33.3%	1	5.6%	0.143
Neurologist	0	.0%	1	5.6%	1.000
Biokineticist	0	.0%	1	5.6%	1.000
Plastic surgeon	0	.0%	0	.0%	-
Pharmacist	0	.0%	0	.0%	-

There were no statistically significant differences in choice of practitioner per group, but the sample sizes were very small. On examination, the data indicated that in terms of some practitioners, opinions differed between the executive and medical personnel, for example medical personnel favoured orthopaedic surgeons compared with executive personnel, executives favoured personal trainers, medical favoured nurses, and executive favoured chiropractors.

Overall, chiropractors are part of the medical teams 16% of the time.

4.5.3.5 Question 11

With reference to question 11, " Which of the following roles would you classify chiropractic care as fulfilling in the health care system?" (Appendix C), table 4.140 shows that 37% of respondents to this question believe chiropractic care fulfils a curative and rehabilitative role, followed by 33% who believe chiropractic fulfils a preventative and rehabilitative role.

Overall

Table 4.140: Role of chiropractic care in health system

Role	Number
Rehabilitative	3
Preventative, rehabilitative and curative	5
Preventative and rehabilitative	9
Curative and rehabilitative	10

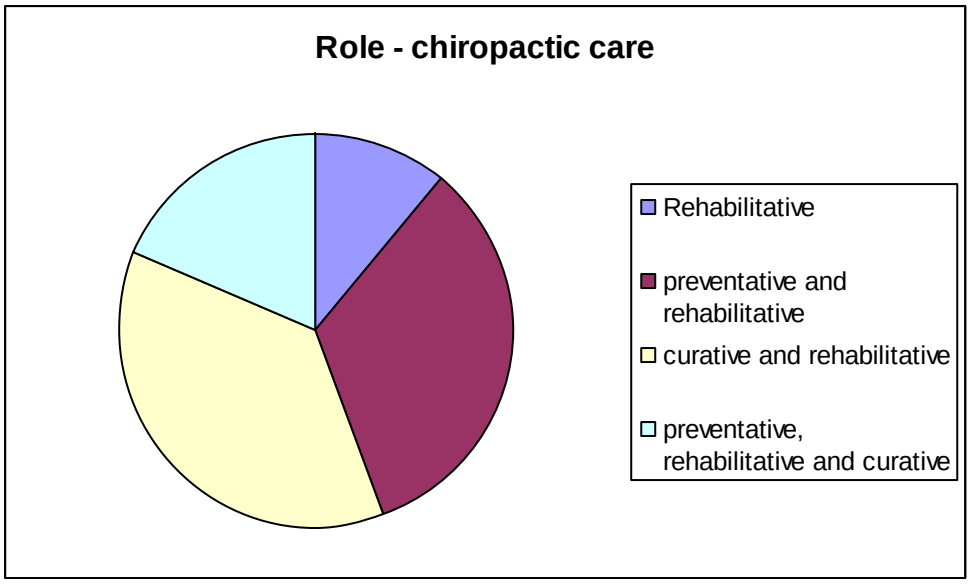

Figure 19: Role of chiropractic in the health care system

Table 141: Comparison of responses to Question 11 by group

			Group		Total
			Executive	Medical	
Q11	Rehabilitative	Count	0	3	3
		%	.0%	16.7%	11.5%
	Preventative and rehabilitative	Count	3	6	9
		%	37.5%	33.3%	34.6%
	Curative and rehabilitative	Count	3	7	10
		%	37.5%	38.9%	38.5%
	Curative, preventative and rehabilitative	Count	2	2	4
		%	25.0%	11.1%	15.4%
Total		Count	8	18	26
		%	100.0%	100.0%	100.0%

Pearson's chi square =2.058, p=0.560

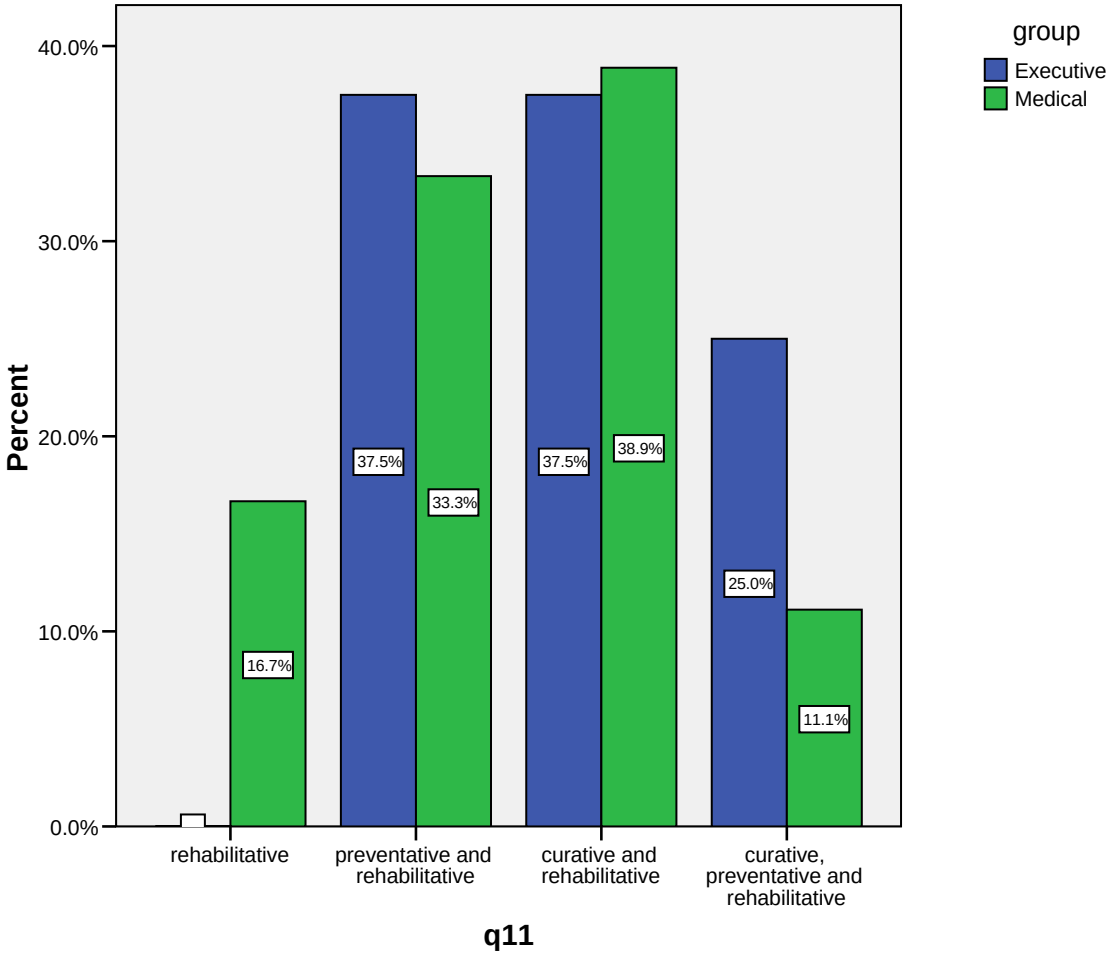

Figure 20: Comparison of responses to Question 11 by group

There was no statistically significant difference in responses to question 11 between the two groups (p=0.560). The table above shows that the percentage respondents who noted "preventative and rehabilitative" and "curative and rehabilitative" were very similar in the two groups, however the percentage who responded "rehabilitative" was slightly higher in the medical group, although numbers were very small. Also a higher percentage of executive members answered "curative, preventative and rehabilitative" than medical members, but the sample sizes again were very small.

4.5.3.6 Question 12

With reference to question 12a, " Do athletes within your national team make use of chiropractic care? " (Appendix C), table 4.142 shows the majority of athletes within federations do make use of chiropractic care.

Table 4.142: National team athletes use chiropractic care

Answer	Number
Yes	18
No	2
Don't know	8

With reference to question 12b, " If so, when? " (Appendix C), table 4.143 shows that most athletes make use of chiropractic care on their own time.

Table 4.143 If yes when

When	Number
Any time	3
During competition	5
On own	10

4.5.3.7 Question 13

With reference to question 13, " Have you had any requests for chiropractors by athletes? " (Appendix C), table 4.144 shows a similar number of positive and negative requests for chiropractors.

Table 4.144 – Requests for chiropractors

Answer	Number
Yes	12
No	13

4.5.3.8 Question 14a With reference to question 14, "Would you be more likely to utilize a chiropractor based on a request from an athlete? (Appendix C),

table 1.145 shows the number of "yes" and "no" responses.

Table 4.145: More likely to utilize chiropractor based on request

Answer	Number
Yes	18
No	7

4.5.3.9 Question 14b

With reference to question 14b, " Would your decision (14a) above be influenced if you knew that the chiropractor had specialized, post-graduate training in sports injuries? " (Appendix C), table 4.146 shows the number of "yes" and "no" answers.

Table 4.146: Decision to utilize chiropractor influenced by post-graduate training in sports injuries

Answer	Number
Yes	20
No	5

4.5.3.10 Question 15

With reference to question 15, " Have you ever been treated by a chiropractor? " (Appendix C), table 4.147 shows that there was a higher percentage of executive members who had received treatment by a chiropractor than medical members. However this difference was not statistically significant (p=0.202). This could be due to the small sample size.

Table 4.147: Responses to Question 15

			Q15a		Total
			Yes	No	
group	Executive	Count	6	2	8
		% within group	75.0%	25.0%	100.0%
	Medical	Count	7	11	18
		% within group	38.9%	61.1%	100.0%
Total		Count	13	13	26
		% within group	50.0%	50.0%	100.0%

Table 4.148 **Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.889(b)	1	.089		
Fisher's Exact Test				.202	.101
N of Valid Cases	26				

a Computed only for a 2x2 table

b 2 cells (50.0%) have expected count less than 5. The minimum expected count is 4.00.

Of the 8 executive members who responded to this question, 6 (75%), had received chiropractic treatment. Of the 18 medical members who responded to this question, 7 (39%) had been treated by a chiropractor. There was no significant difference in their response to the rating of the experience (p=0.157). The mean response was higher for the executive members (4.67 on a scale of 1 to 5) than for the medical members (mean = 4) although both means were relatively high, and the difference between them was small.

Table 4.149: Comparison of mean rating of the experience of being treated by a chiropractor between groups (n=13).

	Group	N	Mean	Std. Deviation	Std. Error Mean	p value
Q15b	Executive	6	4.67	.516	.211	0.157
	Medical	7	4.00	1.000	.378	

4.5.3.11 Question 16: " What is your federation's policy, if any, for selection of medical personnel treating athletes on your medical team?"

The majority of respondents who answered this question stated that either their federation did not have a protocol, or that they did not have a medical team. Many respondents who stated that they did not have a medical team suggested the study be directed at the national federations, who, according to them, do have a medical team and are responsible for medical matters pertaining to them.

Some of the responses to Question 16 included:

“This is an administrative body – we do not have a medical team.”

“Treatment of injured athletes even during the international events is the responsibility of Medical Teams of organizing committees and national medical teams.”

“We recommend that the local organizers provide service providers who can deal with emergency acute care for all events…and have on a consultation basis the services of massage, chiropractic and dental services.”

“It depends on budget of federation and availability of people”

“Medical personnel need to apply, proof of medical credentials and malpractice insurance.”

“Post-graduate qualification, training and experience in sports medicine and the management of acute trauma.”

“By referral from healthcare personnel already involved.”

“Our federation had no policy in this regard.”

“Valid current medical qualification.”

“Usually we select someone with a sports medicine / orthopaedics background.”

“No medical doctor, no competition.”

“The level of care is determined by budget, local law and available personnel.”

“We don’t have health care team. At major events we only have a doctor who is in charge of doping controls. Health care providers are provided directly by participating teams.”

“We do not have a direct policy, it is up to the national federations to have their own medical personnel with them during competition.”

“No specific policy.”

“We do not have a medical team.”

“No policy.”

“Our federation does not have a medical team! Medical support is provided by the event organising committees of the relevant nations.”

4.5.3.12. **Question 17: “Do you have any other comments?”**

“We all need to work together for the good of the athlete.”

“This questionnaire seems to have been developed with the national federation in mind. “

“As an International Federation we are not responsible for providing care to athletes. This is done either by team staff members or by the staff provided by the organising committee – mostly as primary health care provider.”

“As an administrative body we do not have a medical team. You should direct this questionnaire to National Federations.”

“I believe you had better ask the national Federations about these questions…treatment of injured athletes even during the international events is the responsibility of the Medical Team of the organising committee and the national medical team.”

CHAPTER 5: DISCUSSION

5.1 Introduction

What follows in this chapter is a more detailed discussion of the results seen in chapter 4, with the analysis of any trends that have become evident.

5.2 Demographics

Of the 130 questionnaires sent out to the 65 executive committees and 65 medical commissions within the federations belonging to GAIFS, there were 39 respondents. Nine responded negatively, meaning they responded to the survey but did not complete the questionnaire. Of the remaining 30 individuals who completed the questionnaires, 22 were from the medical commission and 8 were from the executive committee.

Ten of the 30 respondents had spent between 10 and 19 years as a member of the federation, 8 had been a member for 20 to 29 years, and 4 had been members for over 30 years. It can be seen that the overwhelming majority of respondents had many years of experience in their field and had spent more than a decade serving their respective federation.

In terms of the respondents' country of residence, 9 were from Europe, 10 from North America, 2 from the Middle East and 1 from Africa. Most had not represented their country as an individual athlete, but those who had, had done so mainly in the 1970's and 1980's.

Most of respondents were highly educated individuals, with over 75% either being medical doctors, or having attained a Master's degree or Doctorate (or PhD equivalent).

5.3 Results

5.3.1 Question 7: Health care practitioners nominated for various conditions

Table 5.1: Significances based on question 7 (Figures 1-17 and tables 4.7 – 4.120)

Significant Difference		Favoured By	
Condition	**Practitioner**	**p-value**	**Medical vs. Executive**
Ankle sprain	Medical doctor	0.057	Medical
Disc herniation	Medical doctor	0.047	Medical
Frozen shoulder	Medical doctor	0.005	Medical
Headaches	Medical doctor	0.003	Medical
Impingement syndromes	Physiotherapist	0.030	Medical
Joint instability	Medical doctor	0.014	Medical
Low back pain	Medical doctor	0.057	Medical
Muscle stiffness	Medical doctor	0.002	Medical
Muscle strains	Medical doctor	0.001	Medical
Overuse injuries	Medical doctor	0,009	Medical
Patellofemoral pain syndrome	Medical doctor	0,047	Medical
Tendonitis – lower limb	Chiropractor Medical doctor	0.010 0.005	Executive Medical
Tendonitis – upper limb	Chiropractor Medical doctor	0.013 0.028	Executive Medical

From table 5.1 it can be seen that the greatest significant differences in opinion between the executive committee and medical commission occurs with respect to the medical doctor. In most cases, it is the medical commission that is favouring the medical doctor over other professions, and the executive that is favouring the other professions. In the two cases of tendonitis, where the significant difference in opinion occurs with respect to chiropractors, it is the executive committee that has given chiropractors their vote.

The physiotherapist, who is also a traditionally mainstream health professional, is also favoured by the medical commission for the treatment of impingement syndrome.

This apparent gravitation of the medical committee towards mainstream medicine may indicate a potential ignorance / misunderstanding of the chiropractic scope of practice, which allows chiropractors to manage the majority of conditions listed (Regulations in Terms of the Associated Health Professions Act, 1982).

The following is an extract from the Associated Health Professions Act as it pertains to chiropractic:

Chiropractic

45. The following acts are acts specially pertaining to the profession of a chiropractor:

(a) The physical examination of any person, with or without the taking, reading and interpreting of X-ray plates, for the purpose of diagnosing any physical defect, illness or deficiency in such person.

(b) The treatment or prevention of any physical defect, illness or efficiency related to spinal, pelvic, spinovisceral and general neuromusculoskeletal conditions in any person by -

(i) manipulation or adjustment;
(ii) electrotherapy;
(iii) exercise therapy;
(iv) hydrotherapy;
(v) traction therapy;
(vi) thermal therapy;
(vii) vibration therapy;
(viii) immobilization therapy;
(ix) neuro-muscular reflex therapy;
(x) massage therapy;
(xi) acupuncture or acupressure therapy; or
(xii) remedies, dietary advice or dietary supplementation.

(Regulations in Terms of the Associated Health Professions Act, 1982)

5.3.2 Question 8: Ranking of practitioners

Table 5.2: Health care personnel's importance to sports medical teams (overall)

Provider	Mean rank	Importance
Medical doctor	2.61538462	1
Physiotherapist	3.96153846	2
Orthopedic surgeon	5.2173913	3
Chiropractor	5.26086957	4
Psychologist	5.95833333	5
Personal trainer	6	6
Dietician	6.20833333	7
Nurse	6.60869565	8
Biokinetist	7.45	9
Neurologist	7.66666667	10
Pharmacist	8.8	11
Plastic surgeon	9.04761905	12

Chiropractic is ranked as 4th most important to the medical team, behind the medical doctor, physiotherapist and orthopaedic surgeon. Orthopaedic surgeons and chiropractors would view their disciplines as neuromusculoskeletal (NMS) specialists. However, this study indicated that the respondents perceive the orthopaedic surgeon as being higher up in the NMS "hierarchy". This may be because health care within the sports setting follows a more curative approach, and the orthopaedic surgeon is seen as being the diagnostic specialist in this setting (Health Professions Act). Chiropractors on the other hand, see themselves as being both curative and preventative (Health Professions Act), which are both important aspects of health care, especially in the sports setting.

Based on the results, it is possible that chiropractors are not putting the correct impression across in terms of their marketing of themselves, and that the sporting fraternity simply does not know that chiropractors can indeed fulfill a combined role of both curative and preventive treatment.

Table 5.3: **Table of significant differences based on question 8 (generated from Table 4.122)**

	Group	N	Mean	Std. Deviation	Std. Error Mean	p value
Physiotherapist	Executive	7	5.86	3.288	1.243	0.037
	Medical	18	3.22	2.415	.569	
Medical Doctor	Executive	7	4.86	4.670	1.765	0.049
	Medical	18	1.83	2.595	.612	

From table 5.2 above, it can be seen that the greatest significant differences in opinion between the executive committee and medical commission occurs with respect to physiotherapy, followed by that of the medical doctor. This supports the findings in 5.3.1 above, where it was shown that medical commissions tend to promote traditionally appointed medical professions (i.e. medical doctor and physiotherapist), as compared to executive committees, which tended to show a more holistic approach to selection of medical teams, tending to favour chiropractic, personal trainers and neurologists.

Therefore, there appears to be a commonality between the perceptions of the executive commission and the general public (Van As, 2002, Brussee, 2001) whereas the medical commission appears to have a greater commonality to the reviews and studies completed regarding medical professions (Kew, 2006; Louw, 2005; Hunter, 2004; Langworthy & Birkelid, 2001; Langworthy and Smink, 2000; Rubens, 1996).

The above discussion further reinforces the assumption made in chapter 2 that federations do not have standard protocols by which to appoint medical teams at

national and therefore also at international level. This was further emphasized by one of the respondents who commented that "…opinion as to which health care practitioner an athlete should be referred to would vary enormously..." This lack of standardization would therefore complicate consistent appointment of appropriate personnel for Olympic or world games, or negate the possibility of athletes' requests for appropriate personnel being upheld.

Table 5.4: Borderline Significant

	Group	N	Mean	Std. Deviation	Std. Error Mean	p value
Neurologist	Executive	7	6.29	3.094	1.169	0.064
	Medical	14	8.36	1.781	.476	
Personal trainer	Executive	7	7.71	3.302	1.248	0.063
	Medical	15	5.20	2.541	.656	

Neurologists and personal trainers are the two professions where the differences in opinions between the executive committee and medical commission is bordering on significant, with the p-values = 0.064 and 0.063 respectively.

The above findings seem to support the outcomes of table 5.2. However, it must be recognized that with an increased number of responses, larger sample size or different data collection method (e.g. website with passwords) these results may have been affected either positively or negatively.

5.3.3 Question 9: Ranking of Modalities

Table 5.5: **Summary of ranking of modalities / techniques**

Technique	Percentage: yes	Rank
Basic life support	97	1
Hot / Cold therapy	87	2
Strapping	77	3
Massage	67	4
Prescription of drugs	63	5
Suturing	63	5
Rehab. / Exercise therapy	60	7
Fracture reduction	60	7
Manipulation of spine	60	7
Ultrasound therapy	50	10
Dietary advice	37	11
Ergonomic advice	17	12
Psychology	17	12

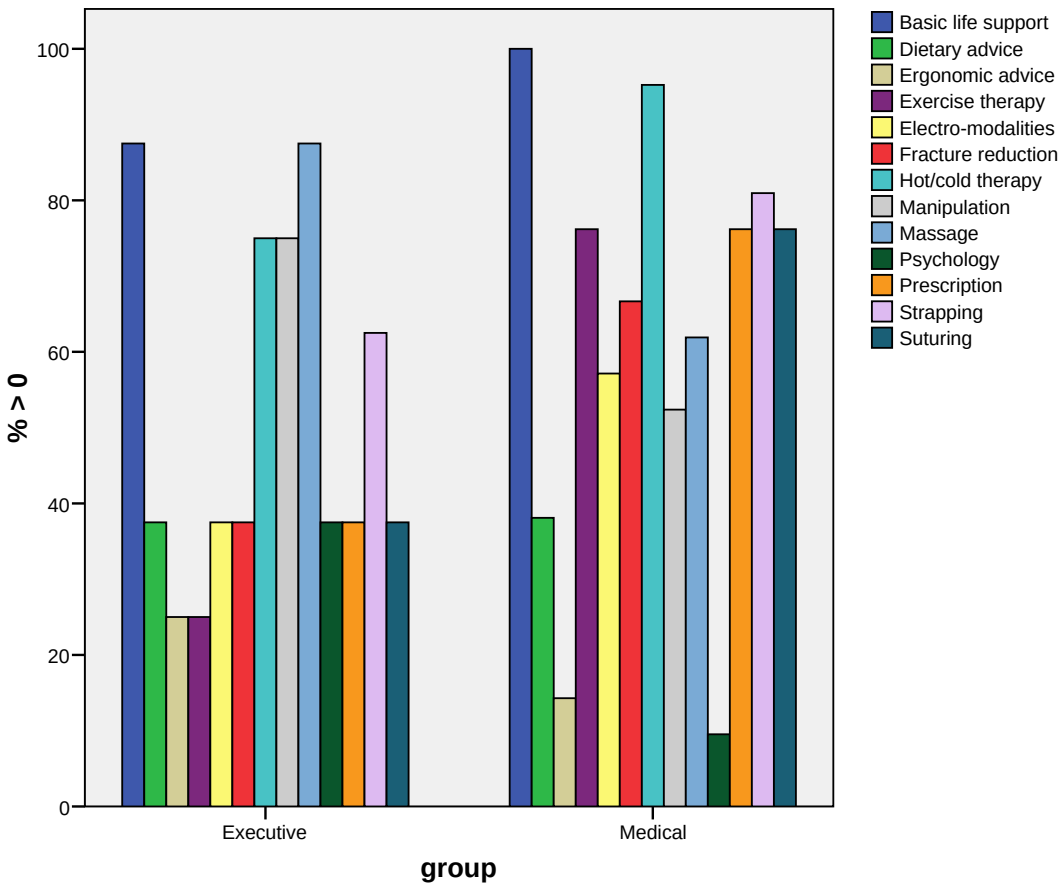

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Figure 21: Techniques / Modalities ratings by group

Based on the modalities identified as being necessary at competition sites, it becomes apparent that out of the 13 techniques / modalities listed, the scope of practice of medical doctors provides them with skills to apply basic life support, hot / cold therapy, prescribe drugs, suture and perform fracture reduction. (5 / 13) (Health Professions act). This compares to physiotherapists who are able, within their scope of practice, to apply hot / cold therapy, strapping, massage, rehabilitative / exercise therapy and ultrasound therapy (5 / 13) (Health Professions Act) and orthopaedic surgeons who could perform fracture reduction and manipulation of the spine, as well as the other techniques within the medical doctor's scope of practice (7 / 13) (Health Professions Act). Notwithstanding these outcomes, these professions are ranked significantly differently between the

medical commissions and the executive committees (Table 5.2 and 5.3), indicating that the medical commission favours those professions traditionally within the medical paradigm. This is even more evident in view of the fact that chiropractors are able within their scope of practice to perform basic life support, hot / cold therapy, strapping, massage, rehabilitative / exercise therapy, manipulation of the spine, ultrasound therapy, dietary advice and ergonomic advice (9 / 13). This study has therefore shown that over 50% of respondents requested 70% of these techniques.

Furthermore, it is interesting to note that the apparent perceptions of the medical commissions are at odds with the World Health Organisation (WHO) publication (*WHO guidelines on basic training and safety in chiropractic*. *Geneva 2005*) on CAM therapies, with particular reference to chiropractic education and training within health care.

From the results seen in this research, it would seem that the medical commission is either unaware of the scope of practice of chiropractic, or have never been exposed to the profession (Gale, 2005). Another possibility is that chiropractic's lack of socialization (Myburgh & Mouton, 2006) has biased the medical commissions' view with respect to the chiropractic profession as compared to the executive committee; as it would seem reasonable that the use of chiropractors within a medical team would allow for greater economic and efficiency values of service delivery, than multiple professions each with their own niche.

5.3.4 Question 10: Currently part of medical team

Table 5.6: Overall response to question 10

Provider	Percentage yes	Rank
Medical doctor	100	1
Physiotherapist	64	2
Orthopedic surgeon	36	3
Psychologist	28	4
Personal trainer	24	5
Nurse	16	6
Dietician	16	6
Chiropractor	16	6
Neurologist	4	9
Biokinetist	4	9
Plastic surgeon	0	11
Pharmacist	0	12

Chiropractors are present in 16% of medical teams, according to the combined results of all respondents.

This is at odds with the response to question 9 (in section 5.3.3 above) where it is seen that 70% of the most requested techniques / modalities, can be provided by chiropractors within their scope of practice (Regulations in Terms of the Associated Health Professions Act, 1982).

Table 5.7: Comparison of responses to Question 10 by group

	Executive		Medical		p value
	Count	%	Count	%	
Medical doctor	6	100.0%	18	100.0%	-
Physiotherapist	5	83.3%	11	61.1%	0.621
Orthopedic surgeon	1	16.7%	7	38.9%	0.621
Psychologist	2	33.3%	5	27.8%	1.000
Personal trainer	3	50.0%	3	16.7%	0.139
Nurse	0	.0%	4	22.2%	0.539
Dietician	1	16.7%	3	16.7%	1.000
Chiropractor	2	33.3%	1	5.6%	0.143
Neurologist	0	.0%	1	5.6%	1.000
Biokineticist	0	.0%	1	5.6%	1.000
Plastic surgeon	0	.0%	0	.0%	-
Pharmacist	0	.0%	0	.0%	-

When comparing responses of the medical commission to those from the executive committee, there were no statistically significant differences in choice of practitioner per group. On examining the data, it is clear that in terms of some practitioners, opinions did differ between the executive and medical personnel. However, this is a very small study and had there been a larger sample, the statistics may have been affected.

These results are congruent with the results obtained in sections 5.3.1, 5.3.2 and 5.3.3, in that the medical commission again seems to favour the traditionally

medical professions (in this case nurses and orthopaedic surgeons) more than executive committee, who are seen to favour chiropractors and personal trainers.

5.3.5 Question 11: Perceived role of chiropractic in health care

There were no statistically significant differences in response to question 11 between the two groups (p=0.560). The table below shows that the percentages who responded “preventative and rehabilitative” and “curative and rehabilitative” were very similar in the two groups, however the percentage who responded “rehabilitative” was slightly higher in the medical group. Also, a higher percentage of members of the executive committee answered “curative, preventative and rehabilitative” than medical members, but again the number of respondents was very small, which may affect the statistical significance. The small number of respondents to this question must also be taken into account.

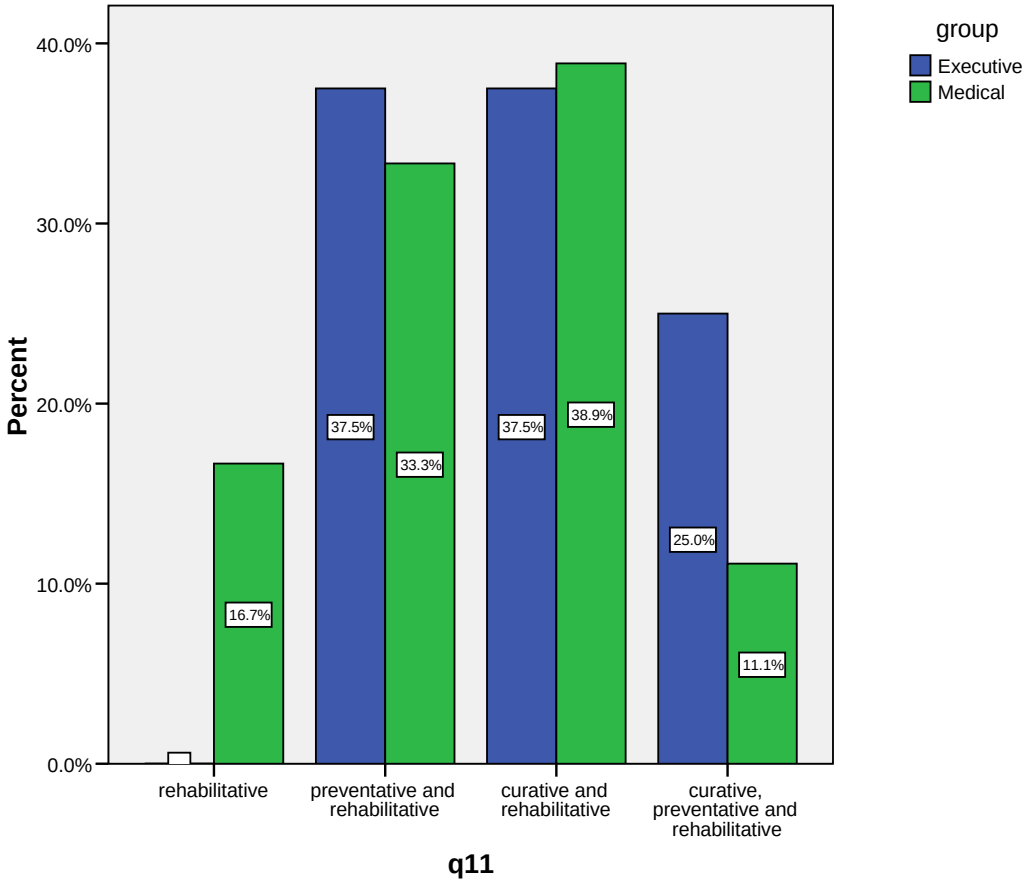

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Figure 22: Comparison of responses to Question 11 by group

5.3.6 Question 12a: Athletes within the national team making use of chiropractic care

Table 5.8: Overall responses for Question 11

Answer	Number
Yes	18
No	2
Don't know	8

Athletes that wish to present requests to the organizing bodies have 2 mechanisms by which to do this:

1. Through the World Olympians Association (http://www.woaolympians.com/index.php?action=kiir&id=constitution.tpl, 2007), which would then forward the request to the executive committee of the involved sporting federation or the IOC as appropriate.
2. Through the individual sporting code i.e. directly to the international federation's executive committee that represents that athlete or group of athletes.

Based on the above it stands to reason that the executive committee is more likely to be exposed to requests outside of the traditional medical ambit as compared to the medical commissions.

This supports the findings thus far in the study whereby the executive committees seem to be more open to various care modalities as compared to the medical commissions within the international federations.

5.3.7 Question 12b: Circumstance of chiropractic use

Table 5.9: If yes when

When	Number
Any time	3
During competition	5
On own	10

The outcome of Question 12a was reinforced when one looks at the responses to question 12b, where the majority of respondents indicated that they would prefer the athlete to utilize chiropractic services in their own time, which is in alignment with the majority of respondents being from the medical commissions.

Further to the above, this outcome reinforces the concept that there is a lack of social integration of chiropractic services (Myburgh and Mouton, 2006) into general medical provisions at all organized sporting events, which is similar to that found within the general medical care (Kopansky-Giles et. al.; 2007Till and Till, 1999).

5.3.8 Question 13: Requests for chiropractors by athlete

Table 5.10: Requests for chiropractors

Answer	Number
Yes	12
No	13

These results concur with those on which the discussion in section 4.5.3.6 above, was based, and are therefore not outside of the expected response. This is especially in lieu of the fact that any requests from athletes are channelled through the executive committees to the medical commissions of the respective IFS. Therefore, a similar rate of response in each “Yes” or “No” category is to be expected.

5.3.9 Question 14a: More likely to utilize a chiropractor based on a request from an athlete

Table 5.11: More likely to utilize chiropractor based on request

Answer	Number
Yes	18
No	7

Eighteen respondents answered “yes” to this question, and seven answered “no”.

These results however need to be interrogated more closely, as they seem to be at odds with previous results (questions 7, 8, 9 and 10), where there is evidence to suggest that the majority of medical commissions would prefer certain identified professions over others.

Therefore, it is unexpected to have received such a positive response from individuals who have, up to now, indicated a negative perception with respect to the inclusion of chiropractic services. This may be due to either:

1. The Hawthorne effect, which can be defined as *“An experimental effect in the direction expected but not for the reason expected; i.e. a significant positive effect that turns out to have no causal basis in the theoretical motivation for the intervention, but is apparently due to the effect on the participants of knowing themselves to be studied in connection with the outcomes measured”* (Draper, 2005).
2. That medical commissions’ decision making process in the absence of a specific request by an athlete would likely be in line with the previous trends seen in the study (question 7 – 10), whereas this decision making process may simply be

modified if a request was submitted. This however implies that no such decision-making process or criteria exist and the inclusion of one professional over another depends purely on circumstance and not set criteria.

5.3.10 Question 14b: Decision to utilize chiropractors Influenced by post-graduate training in sports

Table 5.12: Response to question 14b

Answer	Number
Yes	20
No	5

It would seem that even though there are no rigid criteria applied to the selection of medical personnel at particular games or sports events, it would seem that sports specific qualifications seem to enhance the profile of professionals applying for inclusion into the medical teams.

This suggests that the chiropractic profession needs to address sports specific development in respect of practitioners interested in gaining entry into the sporting arena, as this is one area where there seems to be a large degree of agreement between the medical commissions and executive committees.

Therefore, programmes like the ICSSD (FICS qualifications), CCSS (Fellowship; Canadian) and CCSP (USA) or Chiropractic Sports Diplomate (USA) should be encouraged throughout the world, for those interested in treating sports injuries.

4.5.3.6 Question 15“ Have you ever been treated by a chiropractor? ”

Table 5.13: Response to question 15 by group

			Q15a		Total
			Yes	no	
Group	Executive	Count	6	2	8
		% within group	75.0%	25.0%	100.0%
	Medical	Count	7	11	18
		% within group	38.9%	61.1%	100.0%
Total		Count	13	13	26
		% within group	50.0%	50.0%	100.0%

It is of interest to note that the majority of members from the executive committee (75%) (See Section 4.5.3.6) have been exposed to chiropractic services on a personal level. This may explain their open and inclusive view (Section 5.3.1, 5.2.2, 5.2.3 and 5.2.4) to the chiropractic profession and its inclusion into the medical teams at various events (Campanella and Berlin, 2007). In addition, this outcome indicates that socialization of the profession (Kopansky-Giles et. al., 2007; Myburgh and Mouton, 2006; Till and Till, 1999) is important within contexts that have previously been defined as exclusive, either by virtue of medical commissions’ ignorance (externally imposed barrier), or the lack of education provided by chiropractors (self imposed barrier) for other medical personnel (including the medical commission) (Kew, 2006; Louw, 2005; Hunter, 2004; Langworthy and Birkelid, 2001; Rubens, 1996).

The above argument is supported by the results published in the Journal of Interprofessional Care (2007), where Louw and Myburgh indicate that only 32% of their respondents (medical practitioners / GPs) had been treated by a chiropractor. The results in terms of the perceptions held by these practitioners is not dissimilar to that obtained in this study.

5.4 Summary

A number of conclusions may be drawn from the results discussed in this chapter. Firstly, by analysing the responses of the medical commission separately from the responses of the executive committee, it can be seen that these two groups of individuals have very different views on a number of issues pertaining to medical personnel.

Where the executive committee members appear to be more open-minded with regards to the inclusion of various methods of treatment, the medical commission seem to be a lot more set on the more traditionally appointed medical professions (See sections 5.3.1, 5.3.2 and 5.3.3). The difference may be due to a number of factors, most importantly, exposure (or lack of exposure) to various care modalities, including chiropractic. Since requests for medical personnel would be channelled through the executive commission, these members have a much higher chance than the medical commission members of interacting with or at least hearing about, a number of different professions. The issue of socialization also plays a role, where a much higher percentage of executive members (75%) had also been personally treated by a chiropractor, as apposed to 39% of the medical members. This direct exposure to the profession by the executive members highly suggests a positive effect on their perceptions of the profession.

The apparent differences in perception both between and within federations may in part be due to an unclear identity of the profession itself, which was confirmed by the World Federation of Chiropractic (WFC) Identity Consultation of 2005. This task force found that even within the profession there was uncertainty about its position in the health care system.

The lack of standardization of chiropractic scope of practice may also contribute to the vast difference in perception held by respondents. This is particularly pertinent to the USA, where there is different chiropractic legislation in each state, often with little commonality between these legislations.

From the results obtained in section 4.5.3.2, it can be seen that the chiropractor is ranked as the 4th most important practitioner on the medical team (p.101), behind the medical doctor, physiotherapist and orthopaedic surgeon. Medical doctors, physiotherapist and orthopaedic surgeons all fall under the category of mainstream medicine. It is interesting that chiropractors are the next most frequently utilized, and do not fall under mainstream medicine, but rather CAM therapy. The only other CAM therapy listed as an option is homeopathy, but homeopaths, according to these results, are not used at all.

This may mean the public sees chiropractors as more mainstream than was previously thought. This is in keeping with Haldeman's (2002) sentiments about the chiropractic profession being at the "crossroads" between mainstream and alternative medicine. According to Haldeman (2002), although the biomedical paradigm has not fully accepted chiropractic as a mainstream form of health care, the next decade should determine whether chiropractic remains seen as an alternative health care profession or whether it becomes fully integrated into all health care systems.

According to section 4.136, chiropractors are present in 16% of medical teams. This is at odds with the response to question 9 (in section 5.3.3) where it is seen that 70% of the most requested techniques / modalities, can be provided by chiropractors within their scope of practice. It is therefore clear that the provision of required modalities does not seem to tie up with the current utilization of chiropractors, and again this may be due to the "identity crisis" that the profession seems to be suffering from.

This study indicates that executive and medical personnel agree on the importance of the post-graduate sports qualification.

This is because even though there appears to be no rigid criteria applied to the selection of medical personnel, sports specific qualifications might enhance the practitioner's professional profile.
This suggests that the chiropractic profession needs to address the development of post-graduate sports programmes, whilst taking care to ensure that the programme is globally recognized and standardized on a world-wide level.

What follows in the final chapter is a brief conclusion to the study and recommendations for future studies.

5.5 Discussion of the Hypotheses

At the beginning of this research, two research hypotheses had been formulated for evaluation at the end of the research, once the data had been analysed.

Hypothesis one:

This hypothesis stated that there was no difference between the executive committees and medical commissions perceptions of chiropractors and other sports medical personnel.

Based on the results of this study, this hypothesis was rejected (implying that there was a difference) based on the results obtained in sections 5.3.1, 5.3.2, 5.3.3 and 5.3.4.

Hypothesis two:

This hypothesis stated that there was no difference in the utilization of chiropractors and other sports medical personnel within federations, as recorded between executive committees and medical commissions.

Based on the results of this study, this hypothesis was accepted (implying that there was no difference) based on the results obtained in Section 5.3.4 (particularly Table 5.7).

However, this result is taken with caution as the trends analysed in this section would suggest otherwise, and the limitations of a small sample size may be responsible for the lack of significance.

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction:

The following chapter concludes the study to determine the International Federations' perception and utilization of chiropractors and other sports medical personnel. Conclusions will be drawn from the results discussed in the previous chapters (Chapters 4 and 5), and recommendations made regarding possible methodological changes, as well as recommendations based on the outcomes of the study.

6.2 Conclusion:

The main conclusions that can be drawn from the study are the following:

1. The perception of chiropractic differs greatly between various federations as well as between subcommittees of individual federations. This difference in perception refers to the opposing views of the medical commission, who appear to favour the traditional medical professions, and the executive committee, who seem to be more holistic in their approach to treatment options.

2. The differences in perception about the chiropractic profession between and within federations may in part be due to an unclear identity of the profession itself, causing a somewhat "skewed" image of chiropractic to be projected. The lack of standardization of scope of practice worldwide, particularly in the USA, may also contribute to these vast differences in perception.

3. Chiropractic is the only CAM therapy to be utilized alongside mainstream medical professions. This may indicate that chiropractic is seen as being more mainstream than previously thought, and is in keeping with Haldeman's (2002) sentiments about the profession being at a "crossroad" between mainstream and alternative medicine.

4. Chiropractors are able, within their scope of practice, to provide 70% of the most requested techniques / modalities for competitions. However, only 16% of federations utilize chiropractors.

5. There is little / no criteria by which selection of medical personnel for federations' medical teams is based. In spite of this, both medical commissions and executive committees are united in their view that sports specific qualifications may enhance the professional profile of individuals striving for inclusion into medical teams.

6.3 Recommendations:

6.3.1 Methodological recommendations:

1. The response rate of the study was 30%. It therefore stands to reason that these results cannot be assumed to be representative of all the International Federations. The small sample size was also a limitation of a representation of statistical significance in the hypotheses tested. The trends seen in the results indicate that this study should be repeated in a larger, more representative sample.

2. The data collection method used was e-mail. Phone calls were made only after 4 weeks had elapsed and a response had not yet been received from a

particular federation. The telephonic method proved to be significantly more effective and should be utilized from the onset of future studies in order to yield a higher response rate.

3. If possible, more contact should be made with the potential respondents. An initial phone call should be made to each federation 2-3 weeks prior to the commencement of the study, and a suitable individual singled out as a target. This should be followed up with the sending of the Questionnaire, Information Letter and Consent Form to the aforementioned individual. After a suitable time period (2-3 weeks), the potential respondent should be phoned again and reminded of the questionnaire and have any questions regarding the study answered.

6.3.2 Recommendations based on the outcomes of the study

1. Chiropractic as a profession needs to establish a clear identity and project this to the public and fellow medical professionals.

2. Intervention programmes to educate and increase awareness of chiropractic need to take place within the sporting fraternity. This should occur at a local, provincial, national and international federation level, and include information regarding the profession in general, and specifically how it relates to athletes and sports injuries.

3. The chiropractic profession needs to address the development of post-graduate sports programmes, whilst taking care to ensure that the programmes are globally recognized and standardized on a worldwide level.

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Appendix A

Dear Federation Member

I am a student pursuing my qualification in chiropractic. Your time, opinion and assistance with this project is invaluable and greatly appreciated.

Study Title:

A study to determine the International Sports Federations knowledge, perception and utilization of Chiropractic.

Background to the study:

The patient use of, and demand for, complementary practitioners including chiropractors, has seemed to increase in recent years.
It is however, unknown what the current utilization is of chiropractic, within International Sporting Federations, as well as the Federations' knowledge and perception of chiropractic.

It is therefore the intention of the researcher to determine this information through the use of a questionnaire.

Objective of the study:

The data obtained by means of this questionnaire will allow for further assessment of the role of chiropractic within individual sporting federations The questions are concerned with each federation's knowledge about the chiropractic profession, their perception of chiropractic, as well as their utilization of chiropractors for athletes.
The questionnaire will only take a few minutes to complete, as most of the questions require you to tick or circle the appropriate answer. There are only a few short written responses that are required.

Confidentiality:

As with all surveys, the information that you furnish will be treated in the utmost confidence. A neutral party at the Durban University of Technology will receive the questionnaire, and code them, before returning them to the researcher. This means the researcher will never have access to the identities of the participants. You are free to withdraw from the study at any stage. Please return the to the given e-mail address at your earliest convenience.
Your time, opinion and assistance is with this project is invaluable and greatly appreciated.

Yours sincerely

.....
K. Cloete

Research Student

.....
Dr. C. Korporaal (M.Tech Chiropractic (SA), CCFC (SA), CCSP (USA), ICSSD (FICS)
Supervisor

	INFORMED CONSENT FORM	(APPENDIX B)
	TITLE OF RESEARCH PROJECT	

A study to determine the International Federations perception and utilization of chiropractors and other sports medical personnel.

NAME OF SUPERVISOR	Dr C Korporaal	contact :	charmak@dut.ac.za
NAME OF CO-SUPERVISOR	Dr B Nook	contact :	B.Nook@murdoch.edu.au
NAME OF RESEARCH STUDENT	Kirsten Cloete	contact :	kirst_c@hotmail.com

Please read the following questions and answer as appropriate:

If you are responding electonically highlight in bold the appropriate answer

If you are responding via fax (+ 27 31 2023632) then indicate the appropriate answer by placing a cross over the YES / NO indicating the appropriate answer

1	Have you read the research information sheet (letter attached)?	Yes	No
2	Have you been given contact details of the researcher / supervisors ?	Yes	No
3	Did you need to contact the researcher / supervisors in this study ?	Yes	No
4	If yes to 3. above, have you had an opportunity to ask questions regarding this study?	Yes	No
5	If yes to 4. above have you received satisfactory answers to your questions?	Yes	No
6	Have you received enough information (contained in the letter) about this study?	Yes	No
7	Do you understand the implications of your involvement in this study?	Yes	No
8	Do you understand that you are free to		
	a) withdraw from this study at any time?	Yes	No
	b) withdraw from the study at any time, without reasons given	Yes	No
9	Do you agree to voluntarily participate in this study	Yes	No

If your response to 9. above was YES, thank you for agreeing to participate in this study, your input is greatly appreciated.

Appendix C - Final Questionniare

Do you wish to remain anonymous for the purposes of this questionnaire?

Y	
N	

If No, please state your full name

1 List the International Federation (IF) of which you are a member

2 List your current position within this federation

3 For how many years have you been a member of your respective IF?

4 What country do you reside in?

5a Did you represent your country as an individual athlete at a national or international level?

Y	
N	

b . If YES, list the events and year of competition

6 Please enter your qualification / highest level of education

7 Which health care practitioner would your federation nominate for athletes to consult if they suffered from each of the following conditions?
Please mark with an "X"

	Biokinetisist	Chiropractor	GP	Homeopath	Pharmacist	Physiotherapist
ankle sprain						
tendonitis - upper limb						
joint instability / laxity						
overuse injuries						
patellofemoral pain syndrome						
muscle strains						
whiplash						
recurrent dislocation						
headaches						
fractures						
disc herniation						
impingement syndromes						

tendonitis - lower limb						
frozen shoulder						
ligament injury						
lower back pain						
general muscle stiffness						

8 Please rank the following health care providers from 1 to 12, based on who your your federation believes to be most important to any sports medical team (1 being most important and 12 being least important

Biokinetisist	
Chiropractor	
Dietician	
Medical doctor	
Nurse	
Neurologist	
Orthopaedic surgeon	
Personal trainer	
Pharmacist	
Physiotherapist	
Plastic surgeon	
Psychologist	

9 Which of the following techniques / modalities does your federation believe should be provided at competition sites by appointed health care practitioners ?
Please mark with "X"

Basic Life Support	

Dietary / nutritional advice	
Ergonomic advice	
Exercise / rehabilitative therapy	
Electro-modalities eg. Ultrasound therapy	
Fracture reduction	
Hot / cold therapy	
Manipulation of the spine and extremities	
Massage	
Psychology	
Presciption of drugs and injections	
Strapping	
Suturing	

If other please specify

10 Which of the following health care providers are currently part of your federation's medical team? (minimum requirements for competition)

Please mark with "X"

Biokinetisist	
Chiropractor	
Dietician	
Medical doctor	
Nurse	
Neurologist	
Orthopaedic surgeon	
Personal trainer	
Pharmacist	
Physiotherapist	
Plastic surgeon	
Psychologist	

11 Which of the following roles you would classify Chiropractic care as fulfilling in the health care system?
Please mark with "X"

curative	
preventative	
rehabilatative	
both preventative and rehabilitative	
both curative and rehabilitative	

If other please specify

12a Do athletes within your national team make use of chiropractic care?
Please mark with "X"

Yes	
No	
Don't know	

12b If YES, when?
Please mark with "X"

Any time, Chiropractors are always available	
During competition, when chiropractors are provided	
On their own time, and without the support or knowledge of the medical team	

13 Have you had any requests for Chiropractors by athletes?

Y	
N	

14a Would you be more likely to utilize a Chiropractor based on a request from the athletes ?

Y	
N	

14b **Would your decision (14a) above be influenced if you knew that the chiropractor had specialized, post-graduate training in sports injuries? (ICSSD)**

Y	
N	

15a **Have you ever been treated by a chiropractor ?**

Y	
N	

15b **If YES, what has been your experience?**

Poor		Satisfactory		Excellent
1	2	3	4	5

16 **What is your federation's policy, if any, for selection of medical personnel treating athletes on your medical team**

17 **. Do you have any other comments?**

Thank you for taking time to complete this questionnaire, your participation is very much appreciated.

Appendix D- Letter of Thanks

Dear Respondent

I would like to extend my most sincere thanks for your participation in my research.

Your time and contribution is much appreciated.

Kind regards

…….
K. Cloete
Student researcher

……..
C. Korporaal
Research supervisor

Appendix E

CODE OF CONDUCT

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

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

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

Member represents	Member's Name	Signature	Contact Details

Appendix F

<u>IMPORTANT NOTICE</u>: THIS FORM IS TO BE READ AND FILLED IN BY EVERY MEMBER PARTICIPATING IN THE FOCUS GROUP, BEFORE THE FOCUS GROUP MEETING CONVENES.

<u>CONFIDENTIALITY STATEMENT – FOCUS GROUP DECLARATION</u>

1. All information contained in the research documents and any information discussed during the focus group meeting will be kept private and confidential. This is especially binding to any information that may identify any of the participants in the research process.

2. The returned questionnaires will be coded and the respondent's names will be kept anonymous in the research process.

3. None of the information shall be communicated to any other individual or organisation outside of this specific focus group as to the decisions of this Focus Group.

4. The information from this focus group will be made public in terms of a journal publication, which will in no way identify any participants of this research.

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

<u>Please print in block letters:</u>

Focus Group Member: _____ Signature:_____

Witness Name: _____ Signature:_____

Researcher's Name: _____ Signature:_____

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

Appendix G

LETTER OF INFORMATION – FOCUS GROUP

Dear Participant,

I would like to welcome you into the Focus Group of my study. The title of my research project is:

An investigation to determine the perception of the International Sporting Federations toward chiropractic, as well as to determine the current utilization of chiropractic by the federations and future role which the federations would like chiropractic to play within their particular sport.

Background to the study:

The International Federations (IFs) are international non-governmental organisations recognised by the International Olympic Committee (IOC) as administering one or more sports at world level.
Sports medicine establishments have, in the past, resisted the inclusion of team chiropractors and progress for the profession has been gradual. However, as more and more athletes personally discovered the benefits of chiropractic, they continued to seek out chiropractic care themselves, and eventually demanded the inclusion of chiropractors into sports medicine teams.
However, chiropractic has only just begun to penetrate the international sporting scene and we, as do other medical professions in the sports arena, need to understand our role and function as perceived by the athletes and the federations that represent the athletes. This would not only allow us to become further involved in providing the best possible care, but also enable us to understand the perceptions of those individuals overseeing organization, selection and administration of sports medical teams.

Objective of the study:
The data obtained by means of this questionnaire will allow for further assessment of the role of chiropractic at a National and International level.

The questions are concerned with the IF's's:

- Knowledge and perceptions of chiropractic
- Current role and utilization of chiropractic in national and international sport
- And the potential role that the IFs would like chiropractic to play

The questionnaire will only take a few minutes to complete, as most of the questions require you to tick or circle the appropriate answer. There are only a few short written responses that are required.

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

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

Kind regards,
Kirsten Cloete

Appendix H

INFORMED CONSENT FORM

(TO BE COMPLETED BY THE PARTICIPANTS OF THE FOCUS GROUP)

DATE: :

TITLE OF RESEARCH PROJECT:

An investigation to determine the perception of the International Sporting Federations toward chiropractic, as well as to determine the current utilization of chiropractic by the federations and future role which the federations would like chiropractic to play within their particular sport.

NAME OF SUPERVISOR	**: C. Korporaal**
NAME OF CO-SUPERVISOR	**: B. Nook**
NAME OF RESEARCH STUDENT	**: Kirsten Cloete**

Please circle the appropriate answer

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

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

Please Print in block letters:

Focus Group Member: _____ Signature: _____

Witness Name: _____ Signature:_____

Researcher's Name: _____ Signature:_____

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

Appendix I

INTERNATIONAL FEDERATIONS: POSSIBLE QUESTIONS FOR THE QUESTIONNAIRE

A) Personal Info

1. Age
   - ☐ 35 years or younger
   - ☐ 36 - 44 years
   - ☐ 45 - 54 years
   - ☐ 55 years or older

2. Gender
   - ☐ M
   - ☐ F

3. What IF are you a committee member of _____

4. What country were you born in _____

5. For how long have you been a member of your respective IF?
   - ☐ Less than 1 year
   - ☐ 1-2 years
   - ☐ 2-3 years
   - ☐ 3-4 years
   - ☐ 4-5 years
   - ☐ If over 5 years how many _____

6. Have you competed in a sport/s at a national or international level?
   - ☐ N
   - ☐ Y If yes, which sport/s? _____

7. Please select your level of tertiary education / qualification
   - ☐ Undergraduate / Bachelors degree
   - ☐ Double Bachelors degree
   - ☐ Graduate
   - ☐ Masters Degree
   - ☐ Doctorate
   - ☐ Other, please state _____

B) Knowledge about Chiropractic

8. Are you familiar with the Chiropractic profession
   - ☐ Y If yes answer 1.1 below
   - ☐ N

   1.1 How did you become familiar with it
   - o I have been treated by a Chiropractor
   - o I have a friend / relative who has been treated by a Chiropractor
   - o Read – medical journal
   - o Read – newspaper / magazine
   - o Internet
   - o TV
   - o Other…… please specify_____

9. How many years does it take to qualify as a Chiropractor?
   - ☐ 2
   - ☐ 3
   - ☐ 4
   - ☐ 5
   - ☐ 6
   - ☐ Over 6 years
   - ☐ Don't know

10. How long do you think chiropractors have to work under supervision in addition to time spent training?
   - ☐ Not at all
   - ☐ 1 year
   - ☐ 2 years
   - ☐ 3 years
   - ☐ Don't know

11. The chiropractic course includes grounding in which of the following subjects:

    Please Tick

    - ☐ Accounting
    - ☐ Auxiliary Therapeutics
    - ☐ Anatomy
    - ☐ Business Management
    - ☐ Biochemistry
    - ☐ Chemistry
    - ☐ Diagnostics
    - ☐ Economics
    - ☐ Geratrics
    - ☐ Gynaecology
    - ☐ Mathematics
    - ☐ Microbiology
    - ☐ Paediatrics
    - ☐ Pathology
    - ☐ Pharmacology
    - ☐ Physiology
    - ☐ Physics
    - ☐ Psychiatry
    - ☐ Radiography
    - ☐ Radiology
    - ☐ Sociology
    - ☐ Somatology

12. In which fields can Chiropractors specialize in:

    - ☐ Dermatology
    - ☐ Extremities
    - ☐ Geriatrics
    - ☐ Gynaecology
    - ☐ Neuromusculoskeletal system
    - ☐ Neurology
    - ☐ Paediatrics
    - ☐ Radiography
    - ☐ Rehabilitation
    - ☐ Sports injuries
    - ☐ Surgery
    - ☐ Veterinary Science

13. A chiropractor that qualifies from his/her studies does so with which one of the following?

    - ☐ Diploma
    - ☐ Undergraduate degree
    - ☐ Bachelors degree
    - ☐ Double Bachelors degree
    - ☐ Graduate degree
    - ☐ Masters Degree
    - ☐ Doctorate
    - ☐ DC (Doctor of Chiropractic)
    - ☐ MTech Masters in Technology (Chiropractic)
    - ☐ Other…. Please specify _____

14. Are you aware that Chiropractic is regulated by a Statutory Body?
    - ☐ Y
    - ☐ N

15. Are you aware that Chiropractic has an organized Professional Body?
    - ☐ Y
    - ☐ N

C) Personal Experience and Beliefs

16. Which of the follows best reflects your personal view of Chiropractic
    - □ I am uncomfortable with it.
    - □ Chiropractic is effective for some people with neuromuscular skeletal conditions.
    - □ Chiropractic is quackery and does more harm than good.
    - □ Not informed enough to comment.

17. Have you ever been treated by a chiropractor
    - □ Y
    - □ N

18. Have you, or anyone you know ever had a bad experience with a chiropractor
    - □ Y
    - □ N

    If yes, please specify _____

    _____

    _____

19. Which health care practitioner would you choose to consult if you suffered from each of the following conditions:
    - (choose from biokinetisist, chiropractor, physiotherapist, GP, pharmacist or homeopath)

		Biokinetisist	Chiropractor	Physiotherapist	GP	Pharmacist	Homeopath
i.	Attention deficit disorder						
ii.	Appendicitis						
iii.	Arthritis						
iv.	Asthma						
v.	Cervicogenic headaches						
vi.	Colic						
vii.	Chronic visceral disorders (responding poorly to medical intervention)						
viii.	Disc herniations/protrusions						
ix.	Dysmenorrhoea						
x.	Fractures						
xi.	Low back pain						
xii.	Meningitis						
xiii.	Neck and shoulder pain						
xiv.	Nocturnal enuresis						
xv.	Non-organic/migraine headaches						
xvi.	Osteoporosis						
xvii.	Pregnant females with low back pain						
xviii.	Sprains/strains (eg. Ankle, wrist)						
xix.	Stress related disorders						
xx.	Tension headaches						
xxi.	Whiplash						

20. Please rank the following health care providers from 1 to 10, based on who you believe to be most essential to any sports medical team (1 being most important and 10 being least)

i.	Physiotherapist	
ii.	Medical doctor	
iii.	Chiropractor	
iv.	Nurse	
v.	Occupational therapist	
vi.	Orthopeadic surgeon	
vii.	Neurosurgeon	
viii.	Dietician	
ix.	Biokinetisist	
x.	Other, please specify	

Utilization Within Your International Federation

19. Do athletes within your Federation make use of chiropractic care?
    - □ Yes
    - □ No
    - □ Don't know

    - o If yes, what feedback have you received from them regarding their experience

    _____

    _____

20. What do you believe to be the most important with respect to techniques/modalities required by a health care provider taking care of elite athletes (tick)

    √

    - □ Acupuncture
    - □ Basic Life Support
    - □ Cold therapy/ice therapy
    - □ Dietary advice
    - □ Ergonomic advice
    - □ Exercise therapy
    - □ Hot packs
    - □ Interferential electrotherapy
    - □ Laser
    - □ Low frequency electrotherapy
    - □ Manipulation of the extremities
    - □ Manipulation of the spine
    - □ Massage
    - □ Mobilisation
    - □ Neurological examination
    - □ Physical examination
    - □ TENS
    - □ Traction
    - □ Ultra short wave
    - □ Ultrasound
    - □ Ultraviolet light therapy

21. Which of the following health care providers do your Federation require to be present at major sporting events for use by your athletes (tick from list)

- ☐ Biokinetisist
- ☐ Chiropractor
- ☐ GP
- ☐ Neurologist
- ☐ Orthopaedic surgeon
- ☐ Pediatrician
- ☐ Paramedic
- ☐ Physiotherapist
- ☐ Sports Physician
- ☐ Other, please state, _____

22. Are there any health care providers that you would like to see present, who are not already there
    - ☐ No
    - ☐ Yes, please specify, _____

23. Do you think it could be beneficial for athletes to see chiropractors on a regular basis to maintain peak physical condition and prevent injuries
    - ☐ Yes
    - ☐ No

In the Future

24. Would you like to know more about the benefits of chiropractic treatment

    - ☐ No, proceed to 27
    - ☐ Yes, answer 25

25. In what format would you like this information to be presented (tick from list)

    - ☐ a printed information package
    - ☐ an informative lecture/seminar
    - ☐ email
    - ☐ media/press
    - ☐ personal contact by local chiropractor
    - ☐ research publications

26. Do you believe Chiropractors will continue to gain recognition within the sports medical arena
    - ☐ Yes
    - ☐ No, please answer 27

27. What in your opinion is currently hampering Chiropractic involvement in sport at an International level, and how the current situation be improved ?

_____
_____
_____
_____
_____
_____
_____
_____

28. Please feel free to add any other comments you have about the questionnaire or its content below.

_____

_____

_____

_____

_____

_____

Thank you very much for taking time to complete this questionnaire!