# The knowledge and perceptions of Paediatricians in South Africa with respect to Chiropractic

**BY:**

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Chiropractic

I, Sarah Heslop, do declare that this dissertation is representative of my own work.

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# DEDICATION

This Dissertation is dedicated to my parents, Glen and Jane Heslop, for their unconditional love, support and encouragement.

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# ABSTRACT

*Objectives:* To investigate the knowledge and perceptions of Paediatricians in South Africa with respect to Chiropractic, and to determine if any correlation exists between the two.

*Methods:* A posted quantitative questionnaire was used to collect data from Paediatricians in South Africa. Follow up telephonic calls were made to encourage response from participants. After a 12-week period, returned questionnaires were collected and data analysed.

*Results:* The results obtained (25% response rate), indicated that there are relatively low levels of knowledge and poor perceptions amongst Paediatricians, which was supported by the low referral rate from Paediatricians for Chiropractic treatment. With regard to perception, Paediatricians seem to have a better perception of Chiropractic for the general compared to the paediatric population. Paediatricians felt that they do not have enough knowledge to discuss Chiropractic with their patients and would like to be further informed. This was reflected in the statistically significant correlation between knowledge and perception, and it would seem that better knowledge allowed for more positive perceptions. The study also found that Paediatricians agreed that they would like to receive treatment feedback after referring a patient for Chiropractic treatment and they were more likely to refer to a Chiropractor if they had a post-registration paediatric specialisation.

*Conclusions:* A correlation exists between knowledge and perceptions of Paediatricians in South Africa with respect to Chiropractic, with both being relatively, although better perceptions of Chiropractic for the general than for the paediatric population exist.

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# DEFINITION OF TERMS

**Chiropractic/ The Chiropractic Profession:**

For the purposes of this study, Chiropractic is defined by the World Federation of Chiropractic (2001) as: "…a health profession specialising 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." This is congruent with the definition from the Chiropractic Association of South Africa (CASA website, 2006). In this context Chiropractic is often seen and recognised as a Complementary Alternative Medicine (CAM) (WHO, 2005). Therefore studies incorporating Chiropractic as part of CAM will be discussed in this study and this therefore implies that the discussion is applicable to Chiropractic as a CAM discipline.

**Complementary and Alternative Medicine (CAM):**

According to the World Health Organisation (WHO website, 2008), the umbrella term CAM is widely accepted as including both traditional medicine and more recent forms of non-standard medicine. The recently updated and widely accepted Cochrane definition of CAM is, "all such practices and ideas self defined by their users as preventing or treating illness or promoting health and well-being".

**Paediatrician:**

A medical doctor who specialises in the treatment of babies and children (Biology Online, 2005).

**Paediatric patient:**

According to the Kwa-Zulu Natal Health Department the South African definition of a paediatric patient is a child less than or equal to 14 years of age (Health KwaZulu-Natal, 2008). Only paediatric patients who have the appropriate capacity for decisions and legal empowerment may give consent for medical care. In all other situations, parents or guardians provide permission for diagnosis and treatment of children where appropriate, therefore assuming that where communications with the patient are not comprehended, communications will be made through their parent or guardian (Committee on Bioethics, 1995).

**Perception:**

Refer to the way in which things are seen, understood to be like, and interpreted as (Oxford English Dictionary, 2002).

**Physician:**

For the context of this study, mainstream medical practitioners, General Practitioners (GP's) or Medical Doctors (MD's) have been referred to as physicians. Although this study is about Paediatricians, studies about physicians have been discussed as they provide comparisons to Paediatricians in many instances.

**Practitioner:**

For the context of this study, all those who practice CAM therapies, including Chiropractors, have been referred to as (CAM) practitioners.

**Traditional Medicine:**

Refers to the health practices, approaches, knowledge and beliefs which incorporate plant, animal and mineral based medicines, spiritual therapies, manual techniques and exercises, applied singularly or in combination to treat, diagnose and prevent illnesses and maintain well-being. In industrialised countries, adaptations of traditional medicine are termed "Complementary' or 'Alternative' (WHO, 2008)

# Chapter 1: INTRODUCTION

## 1.1 Background to the study

According to the World Health Organisation (WHO, 2005), Chiropractic, along with other therapies such as Naturopathy, Homeopathy and Acupuncture, falls under the domain of Complementary and Alternative Medicine (CAM) (National Centre for Complementary and Alternative medicine, 2008), and is defined by the World Federation of Chiropractic (2001) as: "…a health care profession specialising 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." The Chiropractic Association of South Africa (CASA, 2008) similarly highlights these characteristics on its website.

Research has found high and increasing use of CAM, specifically Chiropractic, in the treatment of paediatric patients around the world (Lowe *et al*., 2008; Wilson *et al*., 2007; Crawford *et al*., 2006; Hughes and Wingard, 2006; Lim *et al*., 2006; Smith and Eckert, 2006; Soo *et al.*, 2005; Yussman *et al.,* 2004; Madsen *et al*., 2003; Lee *et al.,* 2000; Spigelblatt *et al.,* 1994). In the Boston Metropolitan area in 1998, there were estimated to be 420 000 paediatric Chiropractic visits indicating that children and adolescents constitute a noteworthy number of patients of Chiropractors (Lee *et al*., 2000). According to Spigelblatt *et al*., (1994), Chiropractic, Homeopathy, Naturopathy and Acupuncture together accounted for 84% of CAM usage among children in Canada and according to Yussman *et al*., (2004) Chiropractors were the most common CAM provider to children in the United States. This utilisation was similarly reflected in Australia which found Chiropractic rated as the most commonly used CAM therapy amongst paediatric patients (Lim *et al*., 2006). Integration of CAM with mainstream medicine is slowly progressing with increased education and more frequent inter-professional communication between CAM and mainstream medical physicians (Crawford *et al*., 2006). Therefore the high utilisation of CAM among children and adolescents is something that Paediatricians should be aware of as this could impact on their ability to effectively treat / manage the patient in order to achieve the best outcomes for the paediatric patients in their

care (American Academy of Paediatrics: Committee on Children with Disabilities, 2001 and Durant *et al*., 2001).

According to Davies, (2000) Chiropractors have treated paediatric patients since the inception of the profession but only in the last decade has paediatrics emerged as a specialty discipline in the Chiropractic profession. Davies highlighted that Chiropractic offers treatment that is different, but overlapping with mainstream medicine for paediatric patients. Health promotion through wellness and maintenance care is an important contribution the Chiropractic profession can make in the care, well-being and health of the paediatric patient. Durant *et al*., (2001) found that Chiropractors believe they should play a role secondary to Paediatricians in the management and treatment of non-musculoskeletal health problems in children. Of the CAM therapy users in Detroit, 66% of parents/caretakers had utilised CAM concurrently with conventional medicine and 37% felt that this integration provided the best results (Sawni *et al.,* 2007).

While general medical practitioners provide health care to all age groups, specialists such as Paediatricians and Geriatricians focus on the extremes of age. Neonatologists, Paediatricians and Paediatric Surgeons have increasingly cared for newborns, children and adolescents (Jamison and Davies, 2005). Zotti *et al.,* (2002) stated that parents are influenced by what their physician recommends, therefore the personal perceptions of the Paediatrician will influence the perceptions of the patient and their parents. Hence Paediatricians are a valuable link that Chiropractors have to inform the public about Chiropractic. Therefore if the Paediatricians have limited knowledge about Chiropractic, it will influence the way in which paediatric patients and their parents view Chiropractic.

Good communication between health care professionals has been indicated as an important aspect in ensuring high standards of patient care (Brussee *et al*., 2001). Bower-Hulme *et al*., (1988) proposed that when professionals attempt to communicate and work together they should be knowledgeable about one another's principles, attitudes, formation, qualifications and basic skills and they need to be aware of the differences between individuals and groups of professionals.

Studies by Flannery *et al*., 2006; Greene *et al*., 2006; van Haselen, 2004 and Corbin-Winslow and Shapiro, 2002 found that mainstream medical providers, in particular Paediatricians (Sikand and Laken, 1998; Fountain-Polley *et al*., 2007; Kemper and O'Connor, 2004), rated their knowledge of Chiropractic as limited or inadequate and were motivated to learn more about it in order to effectively communicate with their patients. Physicians who described themselves as being confident in their knowledge were inclined to inquire explicitly about their patients' use of CAM therapies (Flannery *et al.*, 2006). Langworthy and Smink (2000) found a high correlation between increased knowledge and acceptance and respect between professionals.

A review of the literature revealed a number of studies exploring the relationship between chiropractic, the South African public, and other health care professions such as General Practitioner's (GP's) and physiotherapists (Kew, 2005; Louw and Myburgh, 2007; Van As, 2005; Hunter, 2004 and Rubens, 1996). However no studies have assessed Paediatricians' knowledge and perception of Chiropractic in South Africa.

Therefore, in light of the above, the problem statement for this research study was: to analyse the knowledge and perceptions held by South African Paediatricians of the Chiropractic profession.

## 1.2 Objectives

- To establish the level and extent of knowledge about chiropractic amongst Paediatricians in South Africa.
- To determine the perceptions about Chiropractic amongst Paediatricians in South Africa.
- To determine if any relationship exists between the Paediatricians' level of knowledge and their perception of the Chiropractic profession.

## 1.3 Rationale

- The perception of Chiropractic amongst Paediatricians in South Africa has not been researched. Gathering the perceptions of the Paediatricians could lead to more holistic care for paediatric patients and improved inter-professional communication.

- There has been research which has found Chiropractic to be beneficial in the management of many paediatric conditions, including: colic (Wiberg *et al*., 1999), nocturnal enuresis (Krietz and Baker, 1994) and Attention Deficit Hyperactive Disorder (Lovett and Blum, 2006), but it is uncertain if this correlates into referrals from Paediatricians to Chiropractors.

- Zotti *et al.,* (2002) stated that parents are influenced by what their physician recommends and therefore the Paediatricians' perception of Chiropractic influences the parent's perception of Chiropractic. A greater awareness of Chiropractic amongst Paediatricians could open up the spectrum of public awareness.

## 1.4 Benefits

The benefits of the study would be to gain insight into the knowledge and perceptions of Paediatricians in South Africa with respect to Chiropractic. It would also identify problems with communication between the two professions. Furthermore this study would highlight ways to improve communications between Chiropractors and Paediatricians.

## 1.5 Assumptions/Limitations

- It was assumed that all respondents were able to understand and respond in English, this assumption is possible as Paediatricians would most likely receive English medium tertiary training in South Africa.
- All Paediatricians were required to report honestly and openly their reality of their situation.

## 1.6 Conclusion

The aim of this study was to determine the knowledge and perceptions of Paediatricians in South Africa with respect to Chiropractic.

Chapter Two consists of a review of related literature, Chapter 3: the research methodology, and lastly the results, interpretation and conclusion thereof in Chapters Four and Five respectively.

# Chapter 2: LITERATURE REVIEW

## 2.1 Introduction

Literature has shown that the international utilisation of CAM, specifically Chiropractic, among paediatric patients is high and increasing (Lowe *et al*., 2008; Wilson *et al*., 2007; Crawford *et al*., 2006; Hughes and Wingard, 2006; Lim *et al*., 2006; Smith and Eckert, 2006; Soo *et al.*, 2005; Yussman *et al.,* 2004; Madsen *et al*., 2003; Lee *et al.,* 2000; Spigelblatt *et al.,* 1994).

The high and increasing use of CAM found by Crawford *et al*., (2006) among children and adolescents, especially those with chronic illness, is something that all health professionals should be aware of. Lee *et al*., (2000) found that in the Boston Metropolitan area in 1998, there were an estimated 420 000 paediatric Chiropractic visits which indicated that children and adolescents constituted a noteworthy number of patients of Chiropractors. According to Spigelblatt *et al*., (1994), Chiropractic, Homeopathy, Naturopathy and Acupuncture together accounted for 84% of CAM usage among children in Canada and according to Yussman *et al*., (2004) Chiropractors were the most common CAM provider to children in the United States. This utilisation was similarly reflected in Australia which found Chiropractic rated as the most commonly used CAM therapy amongst paediatric patients (Lim *et al*., 2006).

A study conducted by Madsen *et al*., (2003) in Denmark found that 53% of paediatric patients surveyed had been treated by a CAM practitioner at least once, 23% within the preceding month. It was found that of those that had received CAM treatment, over 50% had experienced positive results. A similar study in Australia found that 51% of the children surveyed had visited a CAM provider in the year leading up to the study (Lim *et al*., 2006). A study by Hughes and Wingard (2006) in San Diego found that the visits to CAM providers had increased in the last decade and stated that Paediatricians and other paediatric health care providers should be aware of CAM usage among paediatric patients in order to provide integrated health care. A study in New Zealand found a 70% prevalence (Wilson *et al*., 2007) and a study in Ireland by Lowe *et al*., (2008) found a 57% prevalence of CAM usage among paediatric patients. Crawford *et al.,* (2006) has shown that integration of CAM with mainstream medicine is slowly

progressing with increased education and more frequent inter-professional communication between CAM and mainstream medical physicians.

A point highlighted in the literature was that due to the growing trend toward CAM among paediatric patients (Lowe *et al*., 2008; Wilson *et al*., 2007; Crawford *et al*., 2006; Hughes and Wingard, 2006; Lim *et al*., 2006; Smith and Eckert, 2006; Soo *et al.*, 2005; Madsen *et al*., 2003), Paediatricians should be mindful and aware of CAM therapies their patients may be receiving (Hughes and Wingard, 2006; Madsen *et al*., 2003; Sawni-Sikand *et al*., 2002 and Spigelblatt *et al*., 1994). A study by Fearon (2003) found that only 40% of Paediatricians and nurses questioned their patients about CAM usage and it was revealed by the study that this was most often due to lack of confidence in their own knowledge of the therapies.

A further trend highlighted in the literature indicated that a large percentage of parents don't report their use of CAM to their Paediatrician (Crawford *et al*., 2006; Lim *et al*., 2006; Vlieger *et al*., 2006; Sawni-Sikand *et al*., 2002) and that CAM utilisation, including Chiropractic, seemed to be taboo in doctor-patient communications (Moenkhoff *et al*., 1999). However in the same study, parents felt it was important that their Paediatrician be able to provide information on CAM (Vlieger *et al*., 2006). Sawni *et al*., (2007) found that among the families who had used CAM, that they perceived results to be the most successful when CAM and mainstream medicine were integrated (Sawni *et al*., 2007).

Durant *et al*., (2001) found that Chiropractors believed they should play a role secondary to Paediatricians in the management and treatment of non-musculoskeletal health problems in children. Of the CAM therapy users in Detroit, 66% of parents/caretakers had utilised CAM concurrently with conventional medicine and 37% felt that this integration provided the best results (Sawni *et al*., 2007).

In the UK the National Service Framework (2006) which aims to address health care delivery issues, addressed themes for children, among those were:

- Holistic approach to caring for the child, placing them at the centre of services, and
- Recognition that the children will benefit from co-ordinated services in their health care.

A holistic approach, which can be provided by a Chiropractor, may result in the promotion of further, safe and effective integration of CAM into children's healthcare.

## 2.2 Chiropractic and mainstream medicine

According to Eisenberg *et al*., (1993) earlier definitions of CAM included those therapies which:

- Were not taught at medical schools.
- Were generally not provided at hospitals.
- Were lacking evidence of effectiveness.
- Were generally not reimbursable by medical aid (third party payers).

However there have been shifts in practices which have deemed the above statements to be questioned (Kemper *et al*., 1999):

- In the US, most medical schools now offer courses on CAM therapies (Ernst *et al*., 1995) and in South Africa there is some informal education on Chiropractic at medical schools although it is very limited (Vawda, 2008).
- Many CAM therapies such as acupuncture are now widely available at US hospitals (Ernst *et al*., 1995), and in South Africa, Chiropractic has been offered at Kimberly General Hospital since 1997, with a full-time post for a Chiropractor established in January of 1998 (Till and Till, 2000).
- There are an increasing number of mainstream medical journals which have published studies evaluating the effectiveness of CAM therapies (Ernst *et al*., 1995) In South Africa there has been literature produced by both the Durban University of Technology and University of Johannesburg since 1993 providing evidence of efficacy of Chiropractic (CASA, 2008).
- In South Africa, nearly all medical aids provide for Chiropractic care (About South Africa>Health, 2006).

Although there have been these shifts, Paediatricians in South Africa may still have a poor perception of the Chiropractic profession.

## 2.3 Perception

Perception is an active psychological process whereby individuals organise and interpret stimuli received from the environment through their five senses, which are then organised in a way which is relevant to them. What an individual perceives can be distinctly different from the reality of the situation, however an individuals perception of a situation dictates their behaviour in that situation (Hayes 1994, Maund 1999 and Atkinson *et al*., 2000). Only when conflict arises between an individual's perceptions and interpretations of a situation are realities challenged which then forces them to re-examine their interpretation and perception (Chaffe, 1997).

### 2.3.1 The individuals perceptual set

**Table 2.1: An individuals perceptual set**

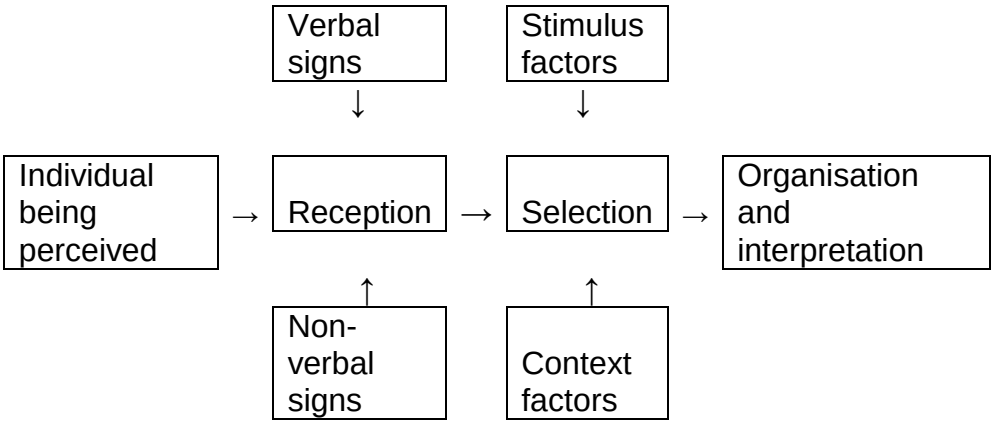
| |
|---|
| Stimulus from the Environment |
| ↓ |
| Process of Perception |
| ↓ |
| Individuals Perceptual Set |
| ↓ |
| 1. Motivators |
| 2. Prior Experience and Familiarity |
| 3. Knowledge and Learning |
| 4. Demographics |
| 5. Attitudes |

Individual experience ensures that perception is an active and not a passive process (Maund, 1999), this is because an individual will focus on what is important to them in a situation as it is impossible to take in all the information in any situation (Hayes, 1994). Individual experiences, which includes both internal and external stimuli, have 'set' an individual to perceive the world around them in a particular way, this is known as a 'perceptual set' (Maund, 1999).

Allport (1995) believed a perceptual set was the tendency of an individual to perceive only certain aspects of what they see and ignore all others. Through their perceptual set an individual tends to perceive select, order and interpret the world according to their individual background, experiences and assumptions. Much of what is seen by the perceiver is determined by what their experience, culture and education has 'set' them to see (Coren and Ward, 1989).

### 2.3.2 The process of perceiving others

**Table 2.2: The process of perceiving others**




With regard to this study, the individual/object being perceived is the Chiropractic profession. The phase of reception is influenced by both verbal and non-verbal signals, verbal would be with regard to the interactions and referrals between the Chiropractor and the Paediatrician, while non-verbal would be with regard to information that the Paediatrician gains from articles and literature regarding paediatric Chiropractic.

According to Maund (1999) verbal and non-verbal information can be further divided into static and dynamic information. Static information remains constant in any encounter while dynamic information may change during the encounter. Static information includes things such as: Gender, Age and Culture/Ethnicity

All of the above data, much of which is unconsciously absorbed, provides patterns of information which the perceiver then selects, orders and interprets. The perceiver forms a set of assumptions by this dynamic process which immediately influences how they react to the individual being perceived and how they interpret their words and actions (Maund, 1999).

## 2.4 Factors affecting Perception

According to Eysenck and Keane (1996) mistakes can often be made in the process of perceiving and remembering information, information can be mis-interpreted leading to incorrect conclusions about an object and/or event. This suggests that perception is subjective which according to Bergh and Theron, 1999; Maund, 1999; Eysenck and Keane, 1996 and Hayes, 1994 is attributable to factors in the target and the situation.

To better understand the factors that may influence perception, the Neiss classification as presented by Bergh and Theron (1999) and Robbins (1996) indicated the following broad categories of possible factors, as presented in Table 2.1.

**Table 2.3: Neiss Classification**

<table>
<tr><td>1. Factors in the Perceiver, which in the context of this research is the Paediatricians.<br><br>Motivators.<br>Prior experience and familiarity.<br>Knowledge and Learning.<br>Demographics.<br>Attitudes.</td><td>2. Factors in the Target, which in the context of this research is the Chiropractic Profession.<br><br>Motion.<br>Novelty.<br>Public Relations.<br>Background.</td></tr>
<tr><td colspan="2">3. Factors in the Environment, which in the context of this research are factors that could influence or modify the target (i.e. Chiropractic profession) or the perceiver (i.e. Paediatricians' knowledge and perception)<br><br>'South African setting'.<br>• Culture.<br>• Accessibility.</td></tr>
</table>

With regard to this study, the factors are discussed in the context of the Questionnaire which was sent to the Perceivers (i.e. the Paediatricians) to ascertain their knowledge and perceptions of the Target (i.e. the Chiropractic Profession) in the environment in which the situation was found (i.e. the South African setting).

The factors are discussed under the broad headings of the Questionnaire:

1. Demographics of the Perceiver/Paediatricians.
2. The knowledge the Paediatricians have of the Target/Chiropractic profession.
3. The perceived role of Chiropractic in the Paediatric population.
4. Inter-professional communication between Chiropractors and Paediatricians.
5. The Paediatricians personal experience with Chiropractic.

### 2.4.1 Demographics of Paediatricians

#### 2.4.1.1 Age and Gender

Studies have shown age and gender to influence Paediatricians' perception of the usefulness of CAM therapy providers (Sawni and Thomas, 2007; Sikand and Laken, 1998; Goldszmidt *et al*., 1995). Sikand and Laken (1998) found that younger Paediatricians were more likely to show a positive attitude toward CAM although the 49$^{th}$ Periodic Survey of Fellows of the American Academy of Paediatrics (2003) found that younger Paediatricians were less likely to have knowledge of CAM therapies. Sawni and Thomas (2007) found that Paediatricians more likely to refer for CAM therapies were 45 years of age or younger and female.

Sikand and Laken (1998) and Goldszmidt *et al*., (1995) also found that female Paediatricians were more likely to discuss their patients' use of CAM, refer for CAM therapies and to want further education on these CAM therapies. Goldszmidt *et al*., (1995) found female physicians more likely to view CAM therapies as useful. However studies by Flannery *et al*., (2006) and Greene *et al*., (2006) found that age and gender were not significant predictors for perception of and referral to Chiropractors, although the study demonstrated male physicians were more likely to have accepted referrals from Chiropractors which may indicate that those Paediatricians had a positive perception of the Chiropractic profession.

In South Africa, the Chiropractic profession only received licensure in 1982 (Till, 1997), this may mean that Paediatricians who qualified before this date could be under the perception that Chiropractic is an unlawful practice, resulting in them not referring patients for Chiropractic treatment. However, having been in practice for more years may have lead to increased exposure to Chiropractic when compared to newly qualified Paediatricians.

#### 2.4.1.2 Type of Practice

A study by Greene *et al*., (2006) found that physicians in private practice were more likely to show a positive attitude and therefore regular referrals to Chiropractors and postulated that this may be due to lack of peer review or pressure in larger institutional settings. Easthope *et al*., (2000) found that GP's in smaller practices tended to view CAM therapies more favourably

than those in larger practices. There may also be the factor of financial incentive with regards to inter-referrals among Paediatricians' and Chiropractors, especially among smaller practices. In the South African setting this may be enhanced due to the fact that Paediatricians are predominately found in the Private sector (About South Africa>Health, 2006). Sawni and Thomas (2007) found that Paediatricians in Private practice were more likely to believe their patients to be using CAM therapies.

Most Chiropractors in South Africa work in the Private sector (CASA, 2008) which caters for the middle and upper income brackets. It has also been found in the South African setting that specialists are more likely to practice in the private sector (About South Africa>Health, 2006) which caters to the same economic bracket. This may positively influence the perception of Paediatricians in the Private sector.

However, also with regard to the South African setting, Chiropractic care has been found to be unaffordable to most of the population (Hubert *et al*., 2005; About South Africa>Health, 2006). Studies by Gaumer *et al*., 2002 and Lindhard, 1987 have shown that this could negatively affect the perception of Paediatricians who work in the public health care sector, as they perceive that Chiropractic is only available to the more affluent.

### 2.4.2 Level of knowledge of Chiropractic

Flannery *et al*., (2006) stated that Physicians who described themselves as being confident in their knowledge of CAM therapies were more likely inquire about their patient's use of CAM therapies. Langworthy and Smink (2000) found that greater knowledge is associated with acceptance and respect between professions.

Studies by Kemper and O'Connor (2004), Sawni and Thomas (2007) and Fountain-Polley *et al*., (2007), surveying Paediatricians knowledge, use of and exposure to CAM found mixed results. The study conducted by Sawni and Thomas (2007) found that Paediatricians had a positive attitude towards CAM and believed that many of their patients were using CAM and that asking about CAM should be part of routine medical history. While a study conducted by

Kemper and O'Connor, (2004) found a more negative attitude among Paediatricians. Although they were aware that their patients may be using CAM they did not feel comfortable discussing it, were concerned about side effects and felt that use of CAM may lead to a delay in mainstream medical care. Therefore these Paediatricians were more likely to recommend medications than CAM therapy (Kemper and O'Connor, 2004).

Various studies by Flannery *et al*., (2006); Greene *et al*., (2006); van Haselen, (2004); Corbin-Winslow and Shapiro, (2002) found that mainstream medical providers, in particular Paediatricians (Fountain-Polley *et al*., 2007; Kemper and O'Connor, 2004; Sikand and Laken, 1998), rated their knowledge of Chiropractic as limited or inadequate and were motivated to learn more about CAM in order to effectively communicate with their patients.

#### 2.4.2.1 Motivators

The causes of motivation range from physiological reactions in the body and brain, to culture and social or professional interactions with other people (Atkinson *et al*., 2000). The American Academy of Paediatrics (Committee on Children with Chronic Disabilities, 2001) provided the following statement as a guide to Paediatricians when counseling families about CAM: "To best serve the interests of children, it is important to maintain a scientific perspective, to provide balanced advice about therapeutic options, to guard against bias, and to establish and maintain a trusting relationship with families." If Paediatricians were knowledgeable about Chiropractic it would enable them to discuss it with their patients.

It has been found in studies by Flannery *et al*., (2006); Kemper and O'Connor, (2004); van Haselen *et al*., (2004); Corbin Winslow and Shapiro, (2002) and Sikand and Laken, (1998), that Paediatricians do not feel confident in discussing CAM therapies due to their own lack of knowledge. Positive referrals were linked with better knowledge and therefore comfort in discussing CAM therapies (Flannery *et al*., 2006; McLellan, 2005) which may be motivating factors for them to learn more about CAM therapies. Flannery *et al*., (2006) and Kemper *et al*., (1999) found that physicians were motivated to learn more about CAM therapies by seeking further education and training so to answer their patients questions regarding CAM therapies.

However if Paediatricians had no knowledge or motivation to learn about the Chiropractic profession they may have a negative perception of the profession.

#### 2.4.2.2 Learning and Knowledge

Maund (1999) proposed the factors which enable learning and development to take place to be:

- Education and Training, which in this context would relate to further education and training in Chiropractic.
- Personal Experience (discussed under Paediatricians' personal use of Chiropractic).

Goldszmidt (1995) found low levels of knowledge of Chiropractic among physicians, with only 11% having reported good knowledge about Chiropractic; the study also found that only 2% of physicians had some prior training in Chiropractic. Studies by Flannery *et al*., (2006); van Haselen *et al*., (2004); Corbin Winslow and Shapiro, (2002) and Pirotta *et al*., (2000) found significant interest in further education of Chiropractic amongst mainstream medical providers. Amongst these physicians, positive attitudes toward the use of CAM therapies by their patients were associated with clinician comfort in advising patients. Pirotta *et al*., (2000) found that 93% of the physicians surveyed agreed there should be education on CAM therapies in medical undergraduate programs and between a quarter and a third expressed an interest in training in Chiropractic. Sikand and Laken (1998) found most American Paediatricians they surveyed were interested in continuing medical education courses on Chiropractic, among other CAM therapies.

Studies conducted in various countries such as the United States of America (Sawni and Thomas, 2007, and Kemper and O'Connor, 2004), the United Kingdom (Fountain-Polley *et al.,* 2007) and Ireland (Lowe *et al*., 2008) found that Paediatricians wanted to be better informed about Chiropractic, and preferred to receive such information through presentations by Chiropractors, scientific literature and correspondence with Chiropractors about patients (Daams, 1999).

Given the evidence that CAM use among children is increasing (Lowe *et al*., 2008; Wilson *et al*., 2007; Crawford *et al*., 2006; Hughes and Wingard, 2006; Lim *et al*., 2006; Soo *et al*., 2005; Madsen *et al*., 2003) the issue of further education should surely be addressed by educators in the mainstream medical fraternity (Fearon, 2003) as co-ordination and continuity of care of paediatric patients may be negatively affected (Greene *et al*., 2006).

### 2.4.3 The perceived role of Chiropractic in the paediatric patient

Chiropractic is non-invasive and practitioners readily refer patients to physicians should medication or surgery be required (CASA, 2008). Paediatricians and Chiropractors share the common belief in practicing paediatrics, that children are not little adults and can not be treated in such a manner (Davies, 2000). Chiropractors have treated paediatric patients since the inception of the profession but only in the last decade did paediatrics emerge as a specialty discipline in the Chiropractic profession (Davies, 2000).

With regards to novelty, one of the primary forms of chiropractic treatment is the adjustment of the subluxation complex (Gatterman, 1995), for which there are a number of causes in the paediatric patient. According to Davies (2000) common causes include: the birth process, changes in biomechanics the paediatric patient experiences including changes from supine to crawling to walking and physical trauma due to handling errors and sports and games in older children. Chiropractic offers treatment that is different, but overlapping with mainstream medicine for paediatric patients. Health promotion through wellness and maintenance care is an important contribution the Chiropractic profession can make in the care, well-being and health of the paediatric patient (Davies, 2000).

#### 2.4.3.1 Perception of Chiropractic for the general population versus the paediatric population

With regard to Paediatricians personal use, Chiropractic was among the most commonly used CAM therapies by Paediatricians (Sawni and Thomas, 2007), and also among the most

commonly referred for CAM therapies. This suggested that they perceived Chiropractic to be as effective for the general population as for the paediatric population. However Kemper and O'Connor (2004) found Chiropractic was commonly utilised for personal reasons among Paediatricians but was also thought by Paediatricians as one of the more dangerous therapies for paediatric patients. This suggested that they perceived Chiropractic to be more effective and safe in the general population than in the paediatric population. Kemper and O'Connor (2004) found that Paediatricians felt CAM therapies may lead to delayed mainstream medical care which can be dangerous in the paediatric patient.

Compared to Sikand and Laken's (1998) survey on Paediatricians, the respondents to the more recent survey by Sawni and Thomas (2007) showed increased use of and referral for manipulative therapies including Chiropractic. Chiropractic was also considered safer and more effective in the recent study and this may be as result of more current and favorable Chiropractic research being published (Sawni and Thomas, 2007).

#### 2.4.3.2 Ages of patients and conditions treated by Chiropractors

Verhoef and Papadopoulos (1999) found that Chiropractors were more likely to see older paediatric patients. The study (Verhoef and Papadopoulos, 1999) of Canadian Chiropractors found that 490 Chiropractors saw over 10000 paediatric patients in a one month period and during this period the Chiropractors saw on average 2 patients under the age of 2, 3 patients between the ages of 2 and 4, 5 patients between the ages of 5 and 10 and 10 patients between the ages of 11 and 17.

In an Australian case study by Jamison and Davies (2005), Chiropractors were asked to record age, main complaint and diagnosis of all patients under the age of 18 years they treated in a one month period. Of the 627 paediatric patients, 53 were less than a year in age, 174 were between the ages of 1 and 5, 209 were between the ages of 6 and 12 and the remaining 191 fell into the 13 to 18 age group. The youngest patient reported in the study was a week old while the rest of the infants were a few months old and presented were mostly for a check-up following a "traumatic birth."

Verhoef and Papadopoulos (1999) found of the paediatric patients seen by Canadian Chiropractors, 35% presented for musculoskeletal conditions, 24.3% for preventative reasons, 7% for headaches, 5.2% for otitis media, 4.8% for muscular sprains and strains and 23.3% for other conditions such as enuresis, hyperactivity and colic. Madsen *et al*., (2003) found Chiropractic was most commonly utilised for joint and gastrointestinal conditions such as colic in paediatric patients. Sawni and Thomas (2007) found Paediatricians would consider referring patients to CAM practitioners for chronic conditions such as asthma, low back pain, headaches and pain management, diseases with no known cure or failure of conventional treatment, behavioral problems such as ADHD and psychiatric disorders.

#### 2.4.3.3 Reasons parents may seek CAM therapies for their children

The biomedical model is centered on research/evidence based medicine whereas biopsychosocial medicine is the biomedical model that recognises the importance of psychosocial factors (Engel, 1980). The biopsychosocial model and CAM therapies share the recognition that the practitioner-patient relationship plays an integral role in the success of treatment (Harrington, 1997).

The American Academy of Paediatrics (Committee on Children with Disabilities, 2001) stated that the following reasons may cause parents to seek CAM:

- Emphasis placed on pathological and technical outcomes has re-enforced the perception of families that medical doctors undervalue the importance of relationship with their patients.
- The failure of the biomedical model to recognise individual differences among patients and to respond accordingly.
- As a natural part of the adjustment process, parents question their child's diagnosis, treatment and prognosis, and thus may seek CAM in the desire to ensure the best possible outcome for their child.
- The internet has allowed parents to be actively involved in seeking therapies for their children. Media, condition-specific publications and parent to parent contact also allow parents to learn more about CAM and then seek it as an alternative treatment.

- Parents are often attracted to claims that CAM is a more 'natural' choice of therapy with fewer side effects, leading parents to believe that an intervention which claims to do no harm is worth a trial.

Therefore the American Academy of Paediatrics (Committee on Children with Disabilities, 2001) believes that in order to achieve optimal care and health for paediatric patients, an interdisciplinary approach must be utilised with co-ordination by a physician, preferably a Paediatrician. The Paediatrician is able to oversee the entire spectrum of paediatric care, from diagnosis through to all stages of treatment.

### 2.4.4 Inter-professional Communication

Good communication between health care professionals has been demonstrated to be an important aspect in ensuring high standards of patient care (Brussee *et al*., 2001). When professionals attempt to communicate and work together they should be knowledgeable about one another's principles, attitudes, formation, qualifications and basic skills and they need to be aware of the differences between individuals and groups of professionals (Bower-Hulme *et al*., 1988). Mainous *et al*., (2000) found that limited communication between physicians and Chiropractors over shared patients lead to breakdown in the continuation of care and decreased quality of care received by the patient. This study concluded that there must be efforts made to improve inter-professional communication and co-ordination of care.

Maund (1999) stated that there are 3 primary forms inter-professional communication recognised to influence perception:

- Written
- Oral
- Non-verbal

#### 2.4.4.1 Written Communication

**Referral notes**

A survey in England by Carrington (1995) described the importance of sending a feedback report after the last treatment and found that this was the most neglected form of communication between professionals. Such a report can describe aspects of the treatment and outcomes which would provide insight for both parties concerned, and could positively influence the communication and co-operation between the two professionals. It therefore may enable the Chiropractor to be responsible and show interest in the overall treatment of the patient. A study by Ben-Ayre *et al*., (2007) found that about 70% of physicians and practitioners preferred to communicate via medical letters, expecting to consult and be consulted with regard to mutual patients and formulation of treatment plans. Their results on the communication between CAM practitioners and physicians (Ben-Arye *et al*., 2007) concluded that there should be focus on practical methods for writing referral and treatment feedback reports in medical education. Medical staff visited the Chiropractic Clinic at Kimberly General Hospital in response to the professional referral notes they had received (Till and Till, 2000).

Results of a study by Greene *et al.,* (2006), found that the majority of physicians preferred their patients to contact Chiropractors on their own rather than them providing a formal referral. The study discussed that the lack of formal referrals between physicians and Chiropractors may affect the quality, efficiency and patient safety in the health care system by breaking the continuity of care. While CAM, specifically Chiropractic, has increased in popularity with paediatric patients (Lowe *et al*., 2008; Wilson *et al*., 2007; Crawford *et al*., 2006; Hughes and Wingard, 2006; Lim *et al*., 2006; Smith and Eckert, 2006; Soo *et al.*, 2005; Yussman *et al.,* 2004; Madsen *et al*., 2003; Lee *et al.,* 2000; Spigelblatt *et al.,* 1994), physicians generally have a negative perception of Chiropractic causing them to be reluctant to make or receive referrals with Chiropractors (Greene *et al.,* 2006). Greene *et al*., (2006) postulated that Chiropractors may be perceived as a threat to physician's practices. Mainous *et al*., (2000) however

found that although neither physicians nor Chiropractors were positive about sharing patients they did not believe they were in direct competition with each other for patients.

**Literature**

Langworthy and Smink (2000) proposed that Chiropractic-related research should be published in multi-disciplinary/mainstream publications as this may lead to greater familiarity among Paediatricians who read publications and may positively influence their perception.

Research was conducted by Gotlib and Rupert (2005) to review the biomedical literature up to and including 2003 to determine how much evidence is available related to the therapeutic application of Chiropractic manipulation for paediatric health conditions. The data sources searched included Medical and Chiropractic literature and identified 1731 articles and only 166 of these met the inclusion criteria of the study. The literature included one systematic review, nine randomized controlled studies, one observational study, 141 descriptive case studies and fourteen conference abstracts. The research concluded that health claims made by Chiropractors with regard to Chiropractic care for paediatric patients, are for the most part, supported by low levels of scientific evidence and there is a need for more rigorous scientific inquiry to examine the value Chiropractic for paediatric conditions (Gotlib and Rupert, 2005). The Chiropractic profession must focus on the production of validated literature for mainstream medical journals (Langworthy and Smink, 2000) on Chiropractic care for paediatrics to improve the knowledge and perceptions of Paediatricians.

### 2.4.4.2 Verbal Communication (Telephonic communication)

Langworthy and Smink (2000) found it more likely for Chiropractors to be rated as skilled practitioners when the therapists surveyed had had contact with a Chiropractor. In a study on communication between physicians and Chiropractors in the Netherlands, it was found that although many of the physicians were positive about communications with Chiropractors there

were barriers and downfalls in the communication. Some factors found to influence the communication process were: bad experiences, stereotyping and a lack of knowledge (Brussee *et al*., 2001).

McPhee *et al*., (1984) found that referring physicians who contacted those who they were referring to personally were more likely to learn the results of the consultation. With regard to professional communication between Chiropractors and Paediatricians, direct telephonic communication may lead to more positive perceptions by Paediatricians.

#### 2.4.4.3 Non verbal Communication

These are elements of human communication which are not expressed orally or in writing (Maund, 1999). With regard to this study these non-verbal communications would be personal experience the Paediatrician has had with the Chiropractor.

### 2.4.5 Personal use of Chiropractic by Paediatricians

Fountain-Polley *et al*., (2007) found that around one third of the Paediatricians they surveyed had sought CAM therapy for themselves and a larger percentage had sought CAM therapy for their family members, both of which are higher than the 10% national utilisation in a general population in Great Britain found in by Thomas and Coleman (2004). However in this study there was little correlation between increased personal or family use by Pediatricians and the likelihood of them referring their patients for CAM therapies. This suggested that the Paediatricians personal health beliefs may not necessarily reflected in their practice (Fountain-Polley *et al*., 2007).

However Sawni and Thomas (2007), found that about half the Paediatricians surveyed had sought CAM therapies for themselves with Chiropractic rating amongst the most commonly utilised and referred for therapies. Kemper and O'Connor (2004) found 34% of Paediatricians had used CAM for personal or family member needs also with Chiropractic rating amongst the most common therapies. This study found that Paediatricians who used CAM therapies for

themselves were more comfortable in discussing CAM, more confident in co-ordination of care with CAM providers, more optimistic about the effectiveness of CAM therapies and less concerned about side-effects of CAM therapies.

Fearon (2003) concluded that a high rate of CAM usage and positive experiences with CAM therapies were associated with positive attitudes about CAM therapies with physicians. Having personal experience with the Chiropractic profession, whether it be the Paediatricians personal Chiropractic treatment or taking their children for Chiropractic treatment would lead to familiarity.

#### 2.4.5.1 Familiarity

Familiarity relates to the relationship the perceiver has with the object they perceive (Maund, 1999); in this study the relationship the Paediatrician has with the Chiropractic profession. When an individual is familiar with the target, they have multiple impressions on which to base their impression. When accurate information is gathered by the perceiver about the target, it is likely that their perception is also accurate (Maund, 1999). If a Paediatrician had a single encounter with a Chiropractor which was negative, this would negatively influence their perception with the converse being likely. Furthermore, if the Paediatrician was familiar with the Chiropractic profession and had multiple encounters they would be more likely to have a perception which was based on experience.

According to Maund (1999) one of the barriers to social perception is stereotyping, a term first developed by Walter Lippmann in the early 1920's. Lippmann found that, in the quest to understand people and situations, individuals tend to create stereotypes as a manner of classification in an attempt to better understand people (Maund, 1999). Moorhead and Griffin (1995) define stereotyping as 'the process of categorizing or labeling people on the basis of a single attribute or characteristic.' Chiropractors tend to be classified as 'back specialists' (Louw and Myburgh, 2007; Middleton and Pollard, 2005; Hunter, 2004; Rubens, 1996) which limits our scope of practice, and should Paediatricians stereotype Chiropractors in such a manner, it would negatively influence their perception.

According to Adler (1991) stereotyping may be helpful when it is accurate, consciously held and modified based on further observations and experience with the perceived object. Such positive stereotyping may be achieved when the perceiver is familiar with the target. Familiarity with the Chiropractic profession and its treatment of paediatric patients may lead to increased awareness and more positive perceptions of Chiropractic by Paediatricians.

#### 2.4.5.2 Referrals

A study by Sawni and Thomas (2007) found that 75% of Paediatricians in the USA had referred patients for Chiropractic treatment. Flannery *et al*., (2006) found that physicians who used CAM for themselves were more likely to refer their patients for CAM therapies. In addition, studies (Flannery *et al*., 2006; McLellan, 2005) found that better knowledge of the Chiropractic profession results in more positive referrals. In a study regarding paediatric care providers' practices of referring patients for therapeutic massage and acupuncture, it was found that factors associated with positive referral patterns was familiarity with and personal use of the therapies as well as a professed comfort level in discussing these therapies. Significant differences were not found with regard to professional status, gender, or years in practice in 42% of the respondents who reported making the referrals (McLellan, 2005).

Although in a study by Greene *et al.,* (2006), a vast majority of physicians preferred their patients to contact Chiropractors on their own rather than them providing a formal referral. This study found that only 29.4% reported having formally referred patients for Chiropractic treatment while 64.4% had recommended their patient see a Chiropractor. The study (Greene *et al*., 2006) discussed that the lack of formal referrals between physicians and Chiropractors may affect the quality, efficiency and patient safety in the health care system by breaking the continuity of care. While CAM, specifically Chiropractic has increased in popularity with paediatric patients (Lowe *et al*., 2008; Wilson *et al*., 2007; Crawford *et al*., 2006; Hughes and Wingard, 2006; Lim *et al*., 2006; Smith and Eckert, 2006; Soo *et al*., 2005; Madsen *et al*., 2003), physicians generally have a negative perception of Chiropractic causing them to be reluctant to make or receive referrals with Chiropractors (Greene *et al*., 2006).

### 2.4.5.3 Communication about CAM between patients and Paediatricians

van Haselen (2004) proposed that patient interest was a driving force for physicians to refer for or recommend Chiropractic. A study conducted amongst the active members of the American Academy of Paediatrics (2001) found that 87% of those surveyed had been asked about CAM by a patient in the three months preceding the study, while a study conducted among paediatric doctors in Birmingham found that 74% had been asked by their patients about CAM. Flannery *et al*., 2006; McLellan, (2005) stated that when Paediatricians are motivated to learn more about CAM therapies in order to be able to discuss them with their patients, this would lead to increased awareness and knowledge among Paediatricians which may positively influence their perception.

However various studies (Sawni *et al*., 2007; Crawford *et al*., 2006; Lim *et al*., 2006; Smith and Eckert, 2006 and Sibinga *et al*., 2004) have found that over 50% of parents do not inform their GP or Paediatrician about their use of CAM for their children. This suggests that as Paediatricians do not know of parents combining treatment it may reduce their motivation to learn more about Chiropractic. This is illustrated in the following studies: Crawford *et al*., (2006) found 66% of parents did not disclose the use of CAM and that the main reasons for this was the parent's lack of confidence in their own knowledge and the limited amount of data available on the safety and efficacy of CAM therapies. The adolescents and parents also perceived that physicians may not be interested or not want to hear about their use of CAM therapies. Lim *et al*., (2006) found that 63% of parents didn't disclose the use of CAM to the treating physician although this study found that the majority of CAM users thought it was important for their physicians to be aware of the use. Sawni *et al*., 2007 found that more than half of parents/caretakers had not informed their physician that they had sought a CAM therapy for their child and when questioned about reasons for not informing their physician, 82% cited that their physician did not ask. Sibinga *et al*., (2004) found that 53% expressed desire to ask their Paediatrician about CAM, increasing to 75% among those who utilised CAM for themselves however only 36% had discussed it with their Paediatrician.

The American Academy of Paediatrics (Committee on Children with Chronic Disabilities, 2001) proposed that the reluctance to disclose is due to many factors, and one of these factors may be the expected negative perception of the Paediatrician toward Chiropractic. They recommended that in order to maintain good communication, there should be a non-judgmental attitude on the part of the Paediatrician so parents feel confident to discuss the therapies utilised. It has also been recommended to Paediatricians specifically discuss the use of CAM in an open and non-judgmental way so to help identify possible interactions of CAM with conventional medicine (Ernst, 1995).

The lack of disclosure of Chiropractic use to Paediatricians (Sawni *et al*., 2007; Crawford *et al*., 2006; Lim *et al*., 2006; Smith and Eckert, 2006 and Sibinga *et al*., 2004), may lead to Paediatricians vastly underestimating their patients use of Chiropractic and having decreased motivation to learn and understand more about it. Sikand and Laken (1998) found that 83.5% of Paediatricians believed their patients sought CAM therapies, but those who did think their patients were using CAM therapies estimated that this constituted less than 10% of their patient population. Whereas in the more recent study by Sawni and Thomas (2007) it was found that 96% of Paediatricians believed that their patient's utilised CAM therapies and those who thought their patients were using CAM therapies thought that this constituted less than 30% of their patients. While there has been an increase in the estimation of the number of paediatric patients utilising CAM therapies by Paediatricians, the estimations of 10-30% were markedly less than the 50-70% utilisation of CAM therapies among paediatric patients worldwide (Lowe *et al*., 2008; Wilson *et al*., 2007; Crawford *et al*., 2006; Hughes and Wingard, 2006; Lim *et al*., 2006; Smith and Eckert, 2006; Soo *et al*., 2005; Madsen *et al*., 2003).

## 2.6 South African setting

The situation, as proposed by the Neiss classification, is a key factor as it influences the way in which the perceiver views the target (Maund, 1999 and Hayes, 1994) and the extent and power of social and situational factors are often under-estimated as a factor in perception (Atkinson *et al*., 2000). South Africa is largely a third world country with pockets of first world

scattered throughout. The Chiropractic profession has different needs and opportunities to that of more developed countries (Till and Till, 2000).

The health care system in South Africa consists of the Public and Private sectors. The larger Public sector is government funded, and over-utilised while being under-resourced whereas the smaller Private sector which is run for private profit, is seen as being over-resourced and under-utilised (About South Africa>Health, 2006). The Private sector tends to attract many of the country's health care professionals, especially specialist physician (About South Africa>Health, 2006). Fifteen to 20% of the South African population has ready access to health care while 75-80% have limited or no access (About South Africa>Health, 2006).

The Private health care sector provides health services to those who can afford it and caters to the middle to upper income earners who tend to be covered by medical aid (About South Africa>Health, 2006). The South African Demographic and Health Survey in 1998 (Department of Health, 2008) found that only 17% of South Africans are covered by a medical aid scheme and the biggest disparity in access to medical aid is found among population groups whereby 75% of those covered by medical aid are white South Africans and only 8% are Black South Africans. While Chiropractic is covered by most medical aids (CASA, 2008), the situation in South Africa found by Rattan (2007) and Hupkes (1990) was that Chiropractic was unaffordable to the majority of the population, which may influence Paediatricians especially those in the Public health care sector.

Till and Till (2000) advocate that the creation of a full-time post for a Chiropractor at the Kimberly General Hospital has been an advantageous venture for all involved and with particular regard to the profession as it has provided positive public relations in the hospital setting. They suggest that an increased presence in the public sector may lead to increased social awareness of Chiropractic and may positively influence the perceptions of Paediatricians and other health care specialists, especially those in the Public health care sector.

Rattan (2007) found that ethnicity/culture significantly influenced knowledge of Chiropractic; she found that the White population surveyed had the best knowledge, while Black South

Africans had the least knowledge. Factors that may be associated with this include: socio-economic factors, lack of exposure to medicine outside the cultural context and exposure and accessibility of Chiropractic in rural areas.

### 2.6.1 Culture

Ethnicity (race) is also cited in the literature (Butt, 2007; Rattan, 2007) as affecting perception and knowledge of Chiropractic. Medicine is a cultural construct, meaning that different cultures produce different types of healthcare (Mackenzie *et al*., 2003) and it is based on a set of shared values and beliefs. As with cultural beliefs there are dominant and non-dominant groups involved (Kemper, 2000). A characteristic of CAM which is often overlooked is that many CAM therapies have originated in the healing traditions of specific cultural or ethnic groups, typically from non-Western societies (Mackenzie *et al*., 2003). The World Health Organisation (WHO, 2008) states that countries in Africa, including South Africa, use Traditional Medicine to meet some of the primary health care needs in the country and that adaptations of Traditional Medicine are termed 'Complementary' and 'Alternative' in industrialized countries (WHO, 2008).

Therefore in the South African context it may be presumed that the dominant health care providers would be the mainstream medical fraternity. However according to the World Health Organisation (WHO, 2008) it is estimated that 80% of the South African Black population, which constitutes 80% of the total South African population (Statistics South Africa, 2005), use Traditional Medicine for primary health care and there are an estimated 200 000 traditional healers in South Africa. Therefore this would constitute as their 'mainstream medicine'. As with Indian Ayurvedic healing, typically a CAM therapy, but may be cited as a main therapy among the Indian community (Mackenzie *et al*., 2003). Therefore when traditional or cultural norms are discussed in the South African context they differ from other parts of the world.

Factors which have been cited for the disparities that exist with respect to health care access between different population groups include: Culture, traditional socioeconomic factors, income and medical aid cover differences (Van As, 2005; Hupkes, 1990). These factors, as well as claims that those previously disadvantaged were not, and may still not be, adequately exposed

to Chiropractic (Rattan, 2007; Gaumer *et al*., 2002; Lindhard, 1987), which will therefore affect their choice of medical care. However it has been found at Kimberly General Hospital, where Chiropractic has been offered since 1998 that there is a need for Chiropractic care, particularly among those communities that are historically underprivileged, which has been confirmed by the high number of previously disadvantaged patients seen at the Chiropractic Clinic (Till and Till, 2000).

Communications with the N. McKerrow (Chief Specialist and Head of Paediatrics and Child Health, 2008) in Kwa-Zulu Natal, revealed that in areas outside Durban there are limited numbers of Paediatricians. In the Pietermaritzburg catchment area with a population of approximately 3.5 million there are 13 Paediatricians in the Public sector and 2 in the private sector while in the Empangeni catchment area with a population of approximately 2 million there are only 3 Paediatricians in the Public sector. It can be postulated that there is a vast under-service of the paediatric patient in many areas of South Africa and a great need for improved services.

The Chiropractor who was posted at Kimberly General Hospital in 1998 was in the process of completing a post-graduate specialisation in Paediatric Chiropractic through the Royal Melbourne Institute of Technology and was given access to the paediatric wards with positive results which yielded positive attitudes among the hospital superintendent and staff which lead to expansion of Chiropractic services in 1999 (Till and Till, 2000).

## 2.8 Conclusion

From the above discussion of the literature it can be seen that various factors compound the knowledge and perception one professional may have of another. These factors need to be investigated so that this relationship can be understood. Therefore, this research will explore the factors which influence the knowledge and perceptions Paediatricians in South Africa with respect to Chiropractic.

# Chapter 3: METHODOLOGY

## 3.1 Introduction

The aim of this chapter is to describe the research methodology as well as the collection and analysis of the data.

## 3.2 Research Design

The design of the study was that of an attitudinal survey. The structured post-pilot study Questionnaire (Appendix I) was sent to all the Paediatricians in South Africa in order to collect the data.

## 3.3 Sampling Method

The entire population of Paediatricians in South Africa was utilised for the study. According to telephonic correspondence with the Information Technology (IT) administrator of the Health Professions Council of South Africa (HPCSA), as of the 31st of July, 2007, there were 678 registered Paediatricians in South Africa who would make up the sample group.

## 3.4 Inclusion and exclusion criteria:

### 3.4.1 Inclusion criteria

In order to participate in the study, the Paediatricians' had to comply with the following criteria:

- The subjects must be registered with the Health Professions Council of South Africa (HPCSA).
- All subjects must be Paediatricians currently practicing in South Africa.
- The subjects must give their informed consent.
- The subjects must be English literate. This is because; it has been found that with translation of the questionnaire, problems affecting its validity occur. When a phrase or combination of words is translated, the meaning or context of the words or phrases may be changed and its meaning may be lost affecting the validity (Baynham, 1995; Scollen and Scollen, 1995). This is because changing the context of words or phrases can result in the words or phrases losing their meaning.

With regard to the questionnaires, the following inclusion criteria were utilised:

- The questionnaires must be returned within the specified time period (i.e. within 12 weeks).
- Data from incomplete questionnaires will be utilised for statistical analysis.

### 3.4.2 Exclusion criteria

Participants were excluded from the study if they:

- Did not comply with the above inclusion criteria.
- Left their clinics, took extended leave, were seriously ill, moved overseas or were retired at the time of the study.

## 3.5 Procedure

The postal addresses of the entire population of Paediatricians in South Africa were obtained from the HPCSA in an emailed pdf. format. The questionnaires were posted to the Paediatricians via the Durban University of Technology postage system.

1. Participants will be posted the post-pilot questionnaire (Appendix I), along with a Letter of Information about the study (Appendix J) and an Informed Consent Form (Appendix K).
2. An initial 6 week time lapse will be allowed for the return of the completed questionnaires.
3. If questionnaires have not been received within 6 weeks, the participant will be contacted telephonically and reminded about the return date of the questionnaires.
4. Posted questionnaires will be returned via the postal service in the provided self-addressed envelope, which will be addressed to Miss Sarah Heslop c/o The Research Administrator, Department of Chiropractic, DUT, P.O. Box 1334, Durban 4000. The researcher will then collect the envelopes from the Departmental Research Administrator.
5. The researcher will then tick off the names on the questionnaires against the list of potential participants so that a response rate can be determined.
6. Only the researcher and her supervisor will have access to the returned questionnaires to ensure the confidentiality of the respondents. All questionnaires will be stored in a locked filing cabinet.
7. If questionnaires have not been returned after 12 weeks, the participant in question will be considered as “not participating” in the study.
8. Data analysis will then take place.

## 3.6 Measurement tool

### 3.6.1 Questionnaire Development:

Langworthy (M. Phil., Institute for Musculoskeletal Research & Clinical Implementation, Bournemouth, UK) developed and piloted a questionnaire that was used in studies in Norway and the Netherlands (Langworthy and Birkelid, 2001).
This questionnaire was modified, with permission from Langworthy (Appendix A) and Kew (Appendix B) to suit the target population of Paediatricians in the South African setting. The new questionnaire comprised 32 questions in 5 sections, covering personal data, knowledge about Chiropractic, the role of Chiropractic in the paediatric patient, inter-professional communication between Paediatricians and Chiropractors and the Paediatricians personal experience with the Chiropractic profession. Adaptation of the questionnaire was accomplished through the use of a focus group.

### 3.6.2 Focus group:

The focus group in this study consisted of the following:

- The researcher.
- The research supervisor, who had guided the researcher through the research process.
- A Chiropractor who was in the process of completing her post-registration specialisation in Chiropractic paediatrics.
- A Chiropractor who had recently had a baby and corresponded with Paediatricians.
- The director of the Storks nest clinic at Parklands hospital who has regular correspondence with Paediatricians and parents of paediatric patients.
- A member of the Chiropractic Department.
- A Chiropractic student who is conducting a similar perception-based questionnaire.

The session was video-recorded, which was allowed by the participants, and an observer (researcher) also took notes on the discussion (Silverman, 2001). A DVD of the proceedings

was made and is available as evidence of the individuals involved and the content of the discussion. (The DVD is available to the examiners of this study upon request through the Department of Chiropractic).

Before commencing, each participant was required to read an Information Letter-Focus Group (Appendix C), and sign a Code of Conduct (Appendix D), a Statement of Confidentiality (Appendix E) as well as an Informed Consent Form (Appendix F). In the focus group each participant was given a copy of the Pre-Focus Group Questionnaire (Appendix G). The participants of the focus group were requested to suggest modifications in order for the questionnaire to be used to accurately assess the knowledge and perceptions of Paediatricians in South Africa with regard to Chiropractic.

The questions were discussed in sequential order. If inconsistencies were found or changes proposed, a unanimous decision was made to institute the change.

#### 3.6.2.1 Focus Group changes to the questionnaire

**Question 1: Personal Data**

- In the question regarding type of practice, the option of 'Group practice (3 or more Paediatricians)' was replaced with 'Associate'.
- The answer options in Question 1.8 were put in alphabetical order.
- The Question, 'What percentage of your practice constitutes the following age groups' was added.

**Question 2: Level of knowledge of Chiropractic**

- The question, 'Do you know something about Chiropractic?' was replaced with, 'Are you familiar with the Chiropractic profession?'
- The question, 'Are you aware that Chiropractors study for a duration of 6 years at either the Durban University of Technology or University of Johannesburg in South Africa?' was replaced with, 'Chiropractors study at which of the following institutions in South

Africa?' and the following options were given, 'Damelin, Durban University of Technology, UNISA, University of Cape Town, University of Johannesburg (formerly Wits Technikon) and other'.

- The answer options in 2.4 were put into alphabetical order and the option of Masters of Technology and other, were added.
- In the question regarding Chiropractic subjects, the option of 'Paediatrics' was added and 'Physiotherapy modalities' were replaced with 'Auxillary therapy modalities'.
- The question, 'to your knowledge do you have any Chiropractors practicing in your residential area?' was re-worded to read 'To your knowledge are there any Chiropractic Clinics in your geographical area of practice?'.
- The question 'To your knowledge is Chiropractic covered by your medical aid?' was changed to 'To your knowledge does the Medical Schemes Council recognise the Chiropractic profession?'.
- In question 2.8 the words 'controlling professional' body was replaced with 'legislative' body.
- In the question regarding the specialisation of Chiropractors, blocks were added to answer 'I don't know'.
- Question 2.10 the word 'of' was replaced with 'in the scope of practice of'.

**Question 3: Role of Chiropractic in the paediatric patient**

- Answer options in question 3.1 were put into alphabetical order.
- The word 'neuromusculoskeletal' in question 3.1 was changed to 'neurological'.
- The question, 'To what extent do you believe Chiropractors to be competent in the musculoskeletal examination and diagnosis in the paediatric patient?'.
- The option of 'I don't know' was added to the question, 'Chiropractic referral is an option for paediatric patients with:' and answer options for 'otitis media' and 'pneumonia' were added.
- The question, 'In your professional capacity would you refer a paediatric patient to a Chiropractor?' was added.

**Question 4: Inter-professional communication**

- The words 'In your professional capacity' was added to the question, 'Have you ever communicated with a Chiropractor?'
- The question, 'Would your decision to refer to a Chiropractor be influenced if the Chiropractor had a post-registration specialisation in Chiropractic paediatrics?' was added.

**Question 5: Personal experience**

- The question with regard to being personally treated by a Chiropractor, 'if yes, was it:' was omitted.
- The question, 'Do you ask your patients or their parents whether they have consulted a Chiropractor or if they intend to in the future?' was replaced with, 'Do you and your patient or their parents discuss the use of Chiropractic?'
- The question, 'Is this discussion more often initiated by yourself or your patient/patients parent?' was added.

As a result of the above proceedings, the pre-pilot questionnaire (Appendix H) was developed.

### 3.6.3 Pilot study:

The refined Questionnaire was then reviewed in a pilot study. The purpose of the pilot study was to ascertain the following information (Hicks, 2004; Fink and Kosecoff, 1985):

- Were any of the questions misleading?
- Were the questions respondent-appropriate?
- Would the questionnaire yield the correct and necessary information?
- Would it be possible for the information collected by the survey to be utilised correctly by the researcher?
- Whether a reasonable amount of time was allocated for the study.
- Whether the instructions are clearly understood by the respondents.

The questionnaire, following the changes made by the focus group and departmental meeting, was sent to six respondents. The respondents chosen were representative of the study group to be researched. They were required to answer the pre-pilot Questionnaire (Appendix H), to determine if the questions in the Questionnaire were understood and simple to complete. It was judged in terms of its readability, simplicity and whether the instructions to the Questionnaire are simple and easy to understand. Respondents involved in the pilot study had to further amend the Questionnaire so that the final Questionnaire could be produced and completed by the Paediatricians.

#### 3.6.3.1 Pilot study changes to the questionnaire

The headings for each question were removed in order to decrease the possibility of any bias which a heading may have provided to the respondent.

**Question 1: Personal data**

- The word ‘race’ was replaced with ‘ethnicity’.

**Question 2: Level of knowledge of Chiropractic**

- The question, ‘Are you familiar with the Chiropractic profession?’ was replaced with, ‘How would you rate your knowledge of the Chiropractic profession?’ and answer options for ‘good, moderate, average and poor’ were added.
- The answer option of ‘I don’t know’ was added to the questions regarding knowledge of Chiropractic, specifically where it is studied, which degree is obtained and which subjects are taken.

**Question 3: Role of Chiropractic in the paediatric patient**

- For each of the statements/questions regarding the Chiropractic role in the paediatric patient, a statement for the general population (aged 14 years and older) was added.

As a result of these proceedings, the post-pilot study Questionnaire (Appendix I) was developed.

### 3.6.4 Final Questionnaire discussion:

The post-pilot study Questionnaire (Appendix I) comprised of 5 questions:

- Question 1 : questions (1.1 - 1.8) regarding the respondent's demographic details and personal data
- Question 2 : questions (2.1 - 2.10) regarding the respondent's level of knowledge of Chiropractic
- Question 3 : questions (3.1 - 3.9) specifically revolving around the Paediatricians' view on the role of Chiropractic in the paediatric patient
- Question 4 : questions (4.1 - 4.6) regarding the inter-professional communication between Paediatricians and Chiropractors
- Question 5 : questions (5.1 - 5.8) the respondent's personal experience with Chiropractic and comments

## 3.7 Measurement frequency:

The questionnaire will be administered only once per participant.

## 3.8 Statistical methodology

SPSS version 15.0 (SPSS inc., Chicago, Illinios, USA) was used to analyse the data. A p value $<0.05$ was considered as statistically significant. Descriptive statistics entailed frequency tables and bar charts for categorical variable and summary statistics such as mean, standard deviation and range for quantitative variables. The relationship between knowledge and perception scores was ascertained using Pearson's correlation analysis.

# Chapter 4: RESULTS AND DISCUSSION

## 4.1 Introduction

Chapter 4 will cover both the results of the study and a discussion of the results. A more detailed discussion of the results will follow in Chapter 5.

## 4.2 Data

Data sources utilised for this chapter were compiled from both primary and secondary sources of information.

### 4.2.1 Primary Data

The primary data utilised comprised of information collected directly from the respondents of the study in the form of a completed questionnaire (Appendix I).

### 4.2.1 Secondary Data

Secondary data included data acquired from personal communications with the statistician (Esterhuizen, 2007), as well as the literature, personal interviews, journals, books and Internet which was used to construct arguments with which to compare results of the study.

### 4.2.3 Abbreviations

- “n” = sample size.
- “%” = Percentage
- “Sig” = Significance
- “SD” = Standard Deviation
- “P-Value” = the probability of results being due to chance or random error. The p-value is set usually set at p=0.05 or p=0.01. The smaller the p-value the more significant the value (Hinton, 2001; Bland, 1996)
- “Q” = specific ‘Questions’ as pertaining to the post-pilot questionnaire (Appendix I)

## 4.3 Response rates

Communication with the HPCSA (2007) revealed that as of the 31st of July 2007 there were 678 registered Paediatricians in South Africa who made up the sample group. Questionnaires were sent to the entire population group. Eighty Five questionnaires were returned completed, 11 responded indicating that they had retired and 15 envelopes were returned unopened for various reasons such as: [Incorrect addresses (n=11), death of the intended recipient (n=2) and emigration (n=2). There were a further number of respondents who replied indicating their unwillingness to take part in the study (n=12)].

After a 12 week period this equated to 123 responses which included those responses which were null responses. Further communications were then made with the HPCSA (2008) revealing that Paediatricians who were registered were not necessarily still in practice and that the researcher should use certain resources to ascertain the practice status of all Paediatricians registered with the HPCSA. This was done through MEDpages (www.Medpages.co.za, 2008) which revealed that 97 Paediatricians had closed their practice. An attempt was then made to contact the rest of the non-respondents finding that a further 26 had retired, 1 was deceased, 4 had emigrated and 66 had incorrect contact details and therefore the researcher was unable to contact them.

This left a total sample group of 484 Paediatricians who fitted the inclusion criteria of this study and the response rate achieved was 25%.

## 4.4 Descriptive analyses of respondents

### 4.4.1. Demographics of the respondents

The demographics below represent the following categories, as represented by questions 1.1, 1.2, 1.3, 1.4 and 1.5 in the questionnaire.

#### 4.4.1.1 Gender (Q1.1)

Of the 85 respondents in this study, 56.5% were males and 43.5% females. The gender distribution is shown in Table 4.1.

**Table 4.1: Gender of respondents**

| | Frequency | % |
|---|---|---|
| Male | 48 | 56.5% |
| Female | 37 | 43.5% |
| Total | 85 | 100.0% |

#### 4.4.1.2 Age and Professional Experience (Q1.2, 1.4 and 1.5)

The mean age of respondents was 45.3 years (SD 11.8 years) with a range from 29 to 79 years. The mean number of years practicing was 13.5 years and mean number of years as a GP was 2.5 with a range from 0 to 14.

**Table 4.2: Summary statistics for age, years practicing and years as a GP**

| | | Age | Years practicing[1] | Years as a GP[2] |
|---|---|---|---|---|
| N | Valid counts | 83 | 84 | 85 |
| | Missing counts[3] | 2 | 1 | 0 |
| Mean (Age / Years) | | 45.29 | 13.46 | 2.49 |
| Std. Deviation (in years) | | 11.848 | 10.778 | 3.198 |
| Minimum (Age / Years) | | 29 | 1 | 0 |
| Maximum (Age / Years) | | 78 | 50 | 14 |

[1] Years practicing as a Paediatrician
[2] Years practicing as a General Practitioner before specialising in Paediatrics
[3] Throughout the reporting process, the missing data is acknowledged in the relevant tables / figures, however only in instances where a large proportion of the data has not been reported is the percentage actualised in order to observe the degree of potential effect on the overall outcome.

### 4.4.1.3 Ethnicity (Q1.3)

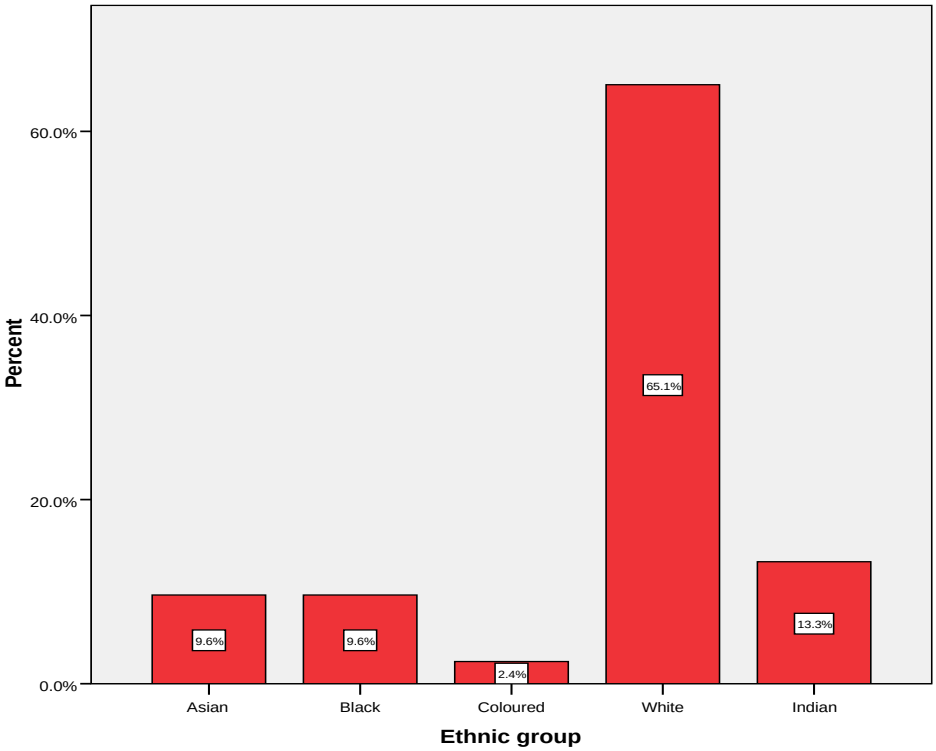



**Figure 4.1: Ethnic group of respondents (n=83)**

The majority of respondents (65.1%) were White, while 13.3% were Indian.9.6% were Black, 9.6% were Asian and 2.4% were Coloured, shown in Figure 4.1. It should be noted that this is not representative of the demographics of the country and reasons for this should be further explored.

### 4.4.2 Practice Details of the respondents

The practice details below represent the following questions in the questionnaire: 1.6 to 1.8 and 2.6.

#### 4.4.2.1 Sector and Type of Practice (Q1.6 and 1.7)

The sector and type of practice is shown in Table 4.3. The Private health care sector consists of hospitals which are not controlled by the state and are run for private profit, while the Public health care sector consists of the state funded hospitals in South Africa. Table 4.3 shows that 55.3% of respondents were in the Private sector and 52.9% were in the Public sector, this percentage does not add up to 100% as seven respondents responded that they practices in both Private and Public sector. It would seem from the literature (www.southafrica.info, 2006) that there are more Paediatricians in the Private sector.

Table 4.3 also shows the Type of practice in which the respondents were found, the majority were in solo practice (44.1% or 26/59), while 33.9% (20/59) were found to be in Group practice and 22% (13/59) were in Partnerships. The respondents who did not respond to this question (26/85) may have changed these statistics had they responded, or may comprise of Paediatricians who work in the Public sector and do not feel they work in any of these types of practice.

**Table 4.3: Sector and type of practice**

| | | | Count | % |
|---|---|---|---|---|
| Private sector | Valid | No | 38 | 44.70% |
| | | *Yes* | 47 | 55.30% |
| | Missing | | | |
| Public sector | Valid | No | 40 | 47.10% |
| | | Yes | 45 | 52.90% |
| | Missing | | | |
| Type of practice | Valid | Solo | 26 | 44.1%(30.6%) |
| | | Partnership | 13 | 22.0%(15.3%) |
| | | Group practice | 20 | 33.9%(23.5%) |
| | Did not respond | | 26 | (30.60%) |
| | Total | | 85 | (100%) |

### 4.4.2.2 Median ages of paediatric patients treated (Q1.8)

Table 4.4 shows the median ages of patients treated by the respondents, indicating that 50% of the respondents' patients were newborns, 25% were 2-5 years old, 15% were 5-8 years old and 10% were 8-14 years. This shows that Paediatricians are more likely to treat younger patients with the incidence decreasing as the paediatric patients increase in age. In contrast literature by Jamison and Davies, (2005) and Verhoef and Papadopoulos, (1999) has shown that Chiropractors are more comfortable providing treatment to older paediatric patients, and that as the age of paediatric patients increase there is more likelihood of Chiropractic care being utilised (Verhoef and Papadopoulos, 1999). This may be a factor with regard to knowledge and referral.

**Table 4.4: Median percentage of patients of each age group (n=82)**

| | Newborn-2 | 2-5 | 5-8 | 8-14 |
|---|---|---|---|---|
| Median | 50% | 25% | 15% | 10% |

### 4.4.2.3 Respondents knowledge of Chiropractors in their area (Q2.6)

Question 2.6 was initially put with the knowledge questions in Question 2 but in hindsight did not have a 'right' answer. It has been put with the practice details question instead and it is of interest to note that 71.1% do know of a Chiropractic practice in their geographical area of practice. This would be expected as Chiropractors are most likely to be found in urban areas (CASA, 2008) and Paediatricians are also more likely to be found in such areas. The 4.8% who answered 'no' may be Paediatricians who practice in rural areas or be unaware of Chiropractors in their area.

**Table 4.5: To your knowledge is there a Chiropractic practice in your geographical area of practice**

| | | | Frequency | % |
|---|---|---|---|---|
| To your knowledge is there a Chiropractic practice in your geographical area of practice | Valid | Yes | 59 | 71.1% |
| | | No | 4 | 4.8% |
| | | Don't know | 20 | 24.1% |
| | | Total | 83 | 100% |
| | Missing | System | 2 | |
| | Total | | 85 | |

### 4.4.3 Summary of Demographics and Practice details

The majority of respondents were White (Figure 4.1) majority were males (Table 4.1), with a mean age of 45 years (Table 4.2), a higher percentage were found to be practicing in the private sector (Table 4.3) in a solo practice (Table 4.3) and the majority were aware of a Chiropractic practice in their geographical area of practice (Table 4.5). Most Paediatricians had been practicing paediatrics for 13.5 years, and had practiced as a General Practitioner for 2.5 years before specialising (Table 4.2). It was found that the majority of paediatric patients treated by the respondents fell into the 'newborn to 2 years old' category, with the percentage decreasing as the age of the paediatric patients increased (Table 4.4).

## 4.5 Descriptive analyses of questionnaire

### 4.5.1 Descriptive statistics for Inter-Professional Communication between respondents and Chiropractors

#### 4.5.1.1 Personal Communication experiences of the respondents

Table 4.6 shows that only 18 (21.2%) respondents had communicated with a chiropractor. This indicates that there is a definite barrier in communication between the Chiropractors and Paediatricians in South Africa at present. Previous studies by Louw and Myburgh (2007) and Hunter (1996) conducted in South Africa about the communication between Chiropractors and GP's and physiotherapists respectively, also found relatively low levels of communication.

**Table 4.6: Respondents personal communications with a Chiropractor (Q4.1)**

| | | Frequency | % |
|---|---|---|---|
| Valid | Yes | 18 | 21.2% |
| | No | 67 | 78.8% |
| | Total | 85 | 100.0% |

Respondents who had answered 'Yes' to Question 4.1, and had communicated with a Chiropractor were then asked as to the frequency of the communication, the respondents could respond that they had communicated with a chiropractor but not often, or that they had communicated with a Chiropractor frequently. Of these, 88.9% (16/18) had not communicated frequently while only 11.1% (2/18) had communicated often. This again indicates that the current levels of inter-professional communication between Chiropractors and Paediatricians are low.

**Table 4.7: Respondents who had communicated with a Chiropractor**

| | | Frequency | % |
|---|---|---|---|
| Valid | I have often communicated with a chiropractor about a patient | 2 | 11.1% |
| | I have communicated with a chiropractor but not often | 16 | 88.9% |
| | Total | 18 | 100.0% |
| Missing | Refers to those respondents that responded as No in table 4.6 | 67 | |
| Total | | 85 | |

Of the respondents who answered 'No' to Question 4.1 and had not communicated with a Chiropractor, 83.3% (45/54) were interested in doing so. However 19.4% (13/85) of respondents did not respond to this question, which if they had responded negatively may have reduced this percentage. This would make the response rate significantly lower than that reported by Langworthy and Birkelid (2001). In this study Langworthy and Birkelid (2001) found that 93% of the participating GP's were either currently communicating or were interested in communicating with chiropractors, however they did not indicate what percentage of respondents did not respond.

**Table 4.8: Respondents who had not communicated with a Chiropractor**

| | | Frequency | % |
|---|---|---|---|
| Valid | I am interested in doing so | 45 | 83.3% (67.2%) |
| | I am not interested in doing so | 9 | 16.7% (13.4%) |
| Total | | 54 | 100.0% |
| | Refers to those respondents that responded as Yes in table 4.6 | 18 | |
| Missing | Unknown | 13 | (19.4%) |
| Total | | 85 | (100%) |

Respondents were asked to rate the communication they had had with a Chiropractor as ‘very negative’, ‘negative’, ‘neutral’, ‘positive’ or ‘very positive’. Of the 21.2% (18/85), who had communicated with chiropractors, overall 14.1% thought it was a negative experience while 63.2 % thought it was a neutral experience. None of the respondents answered that the communication experience had been a positive one. The majority of respondents answered that they had never communicated with a Chiropractor, however it would seem that some of the respondents who had responded that they had not communicated with a Chiropractor then rated their communication process, indicating that either they had communicated or that they misunderstood the question. This is shown in Figure 4.2.

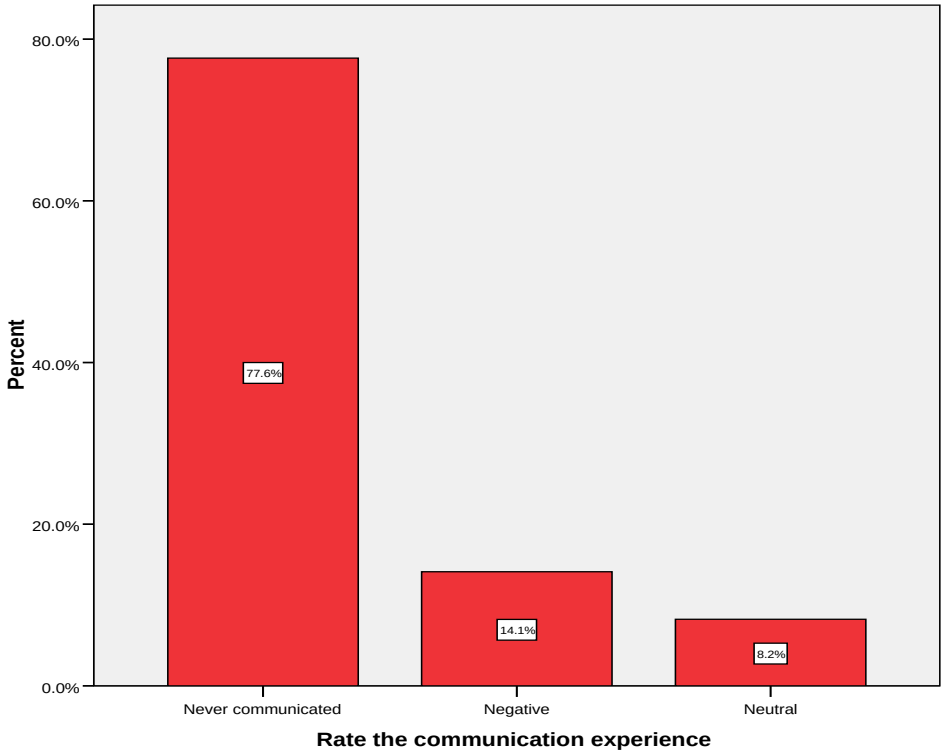



**Figure 4.2: Communication experience of Paediatricians (Q4.2)**

Respondents were then asked if they would like this communication to be improved, to which 77.9% (53/68) positively agreed. The respondents who did not respond to this question (20% or 17/85) may have reduced this percentage had they responded negatively.

**Table 4.9: Would you like this communication to be improved (Q4.3)**

| | | Frequency | % |
|---|---|---|---|
| Valid | Yes | 53 | 77.9% |
| | No | 15 | 22.1% |
| | Total | 68 | 100.0% (80%) |
| Missing | Respondents failing to answer | 17 | (20%) |
| Total | | 85 | (100%) |

This question included a qualitative section where respondents were asked how they thought this communication could be improved and some of the responses were:

- 'Would like to know what their diagnosis and plan of treatment is but I must admit that I don't write referral letters either just recommend that they see one.'
- 'Referral letters and report back with letters.'
- 'Discussion regarding mutual patients.'
- 'Seminars, Newsletters, Continuing Medical Education.'
- 'Ward rounds.'
- 'Interdisciplinary referrals.'
- 'Evidence of benefit of Chiropractic on paediatric conditions.'
- 'Knowledge of scope of Chiropractic.'
- 'Can a non-existent thing be improved?'

It can be seen from the above responses that there is a great need for Chiropractors to produce literature of scientific evidence of benefits of Chiropractic for paediatric conditions which needs to be accessible to Paediatricians. Durban University of Technology has increased ward rounds as part of the diagnostic syllabus, which will increase the exposure of the students to different conditions as well as the mainstream medical physicians in the

hospitals to the practice of Chiropractic. Communication includes feedback reports which are discussed under 4.5.1.4.

### 4.5.1.2 Chiropractic Referral

Table 4.10 shows that only 20.2% of paediatricians surveyed had referred patients to a chiropractor. These results are similar to those found by Sawni and Thomas (2007), who found that 25% of Paediatricians had referred patients for Chiropractic. The results are also similar to those found by Greene *et al*., (2006) who found that 29.4% of physicians had referred patients to a Chiropractor, although in this study it was found that 64.4% had recommended their patient see a Chiropractor. Paediatricians may prefer to patients to contact Chiropractors on their own as found by Greene *et al*., (2006) who found that 87% prefer patients to contact Chiropractors on their own rather than provide a formal referral, which may be demonstrated by a statement made by a Paediatrician in the qualitative section of 4.5.1.2, 'Would like to know what their diagnosis and plan of treatment is but I must admit that I don't write referral letters either just recommend that they see one'.

The results of this study are lower than the results found by Louw and Myburgh (2007) who found that 54.8% of South African GP's reported having referred patients for Chiropractic treatment which may indicate that health professionals in South Africa are less comfortable with Chiropractic for the general than for the paediatric population. Studies (Flannery *et al*., 2006; McLellan, 2005) have found that better knowledge is associated with clinician comfort in referring for Chiropractic, so again it is re-iterated that there needs to be an effort by Chiropractors to educate Paediatricians and other main stream medical providers.

**Table 4.10: Responses to whether respondents referred to Chiropractors (Q4.4)**

| | | Frequency | % |
|---|---|---|---|
| Valid | Yes | 17 | 20.2% |
| | No | 67 | 79.8% |
| | Total | 84 | 100.0% |
| Missing | Respondents failing to answer | 1 | |
| Total | | 85 | |

Of those respondents who had referred patients for Chiropractic treatment, 29.4% (5/17) did so at the patient's request while 71.6% (12/17) did so at their own judgment.

**Table 4.11: Decision for Chiropractic referral (Q4.4)**

| | | Frequency | % |
|---|---|---|---|
| Valid | Only at patient's request | 5 | 29.4% |
| | On my own judgment | 12 | 70.6% |
| | Total | 17 | 100.0% |
| Missing | Respondents who answered 'No' to having referred (Table 4.10) | 68 | |
| Total | | 85 | |

### 4.5.1.3 Treatment Feedback

This study has shown that only 8.2% of respondents had received treatment feedback from Chiropractors, while 29.4% reported that they had not received any treatment feedback. Ben-Ayre *et al*., (2007) found that about 70% of physicians preferred to communicate via a medical letter and that there should be focus on practical methods for writing referrals and treatment feedback reports during medical education. This may be a manner in which Chiropractors could improve the inter-professional communication between themselves and Paediatricians. Figure 4.3 shows that 62.4% of respondents answered that they had not referred while Table 4.10 showed that 79.8% of Paediatricians reported that they had not referred to a Chiropractor. This would either indicate that more Paediatricians had in fact referred or that Paediatricians who had not referred answered that they had not received treatment feedback which would indicate that they did not understand the question. Had these Paediatricians instead answered that they had not referred, it would indicate that a higher percentage had in fact received treatment feedback from a Chiropractor.

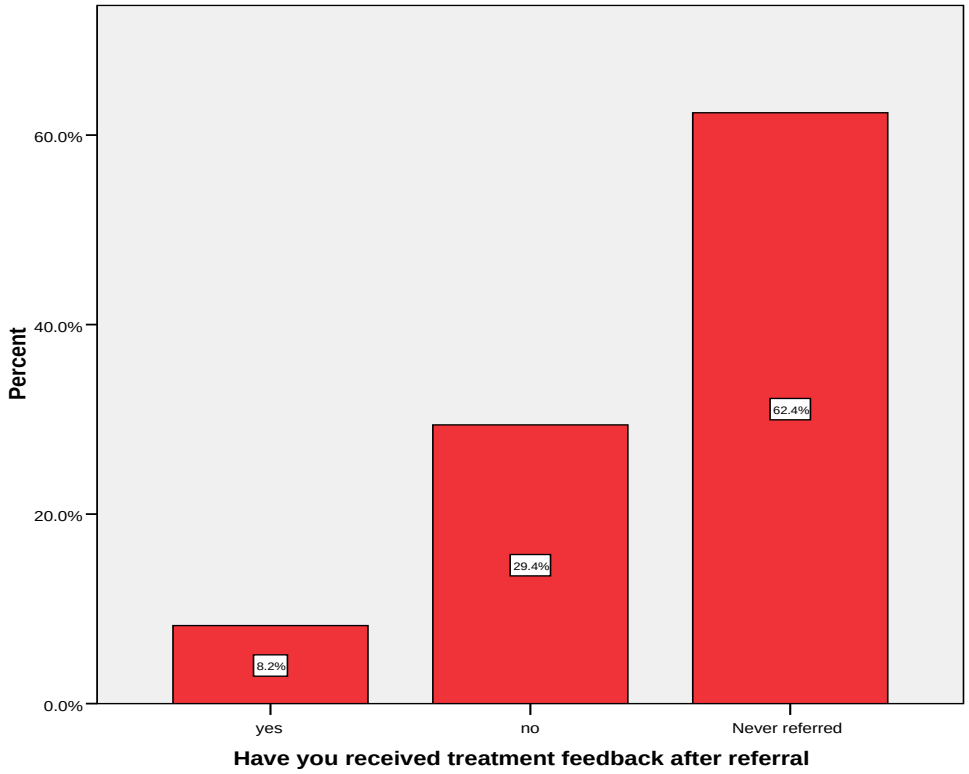



**Figure 4.3: Percentage of respondents who received treatment feedback from Chiropractors (Q4.5)**

When asked whether they would like to receive treatment feedback, 91.1% said they would like to while 8.9% responded that they would not like to. This may indicate that Paediatricians would like to learn more about Chiropractic via such a feedback report. It is also a method of setting up good inter-professional relationships encouraging further communications and referrals. Ben-Ayre *et al.,* (2007) found that medical letters are physicians preferred method of inter-professional communication with Chiropractors.

**Table 4.12: Whether the respondents would like to receive treatment feedback (Q4.6)**

| | | Frequency | % |
|---|---|---|---|
| Valid | Yes | 72 | 91.1% |
| | No | 7 | 8.9% |
| | Total | 79 | 100.0% |
| Missing | System | 6 | |
| Total | | 85 | |

### 4.5.1.4 Summary of Inter-Professional Communication

On average this study revealed low levels of inter-professional communication, with 21.2% of Paediatricians having communicated with a Chiropractor (Table 4.6). Of those who had communicated, 2 (11.1%) said they had communicated often, while 16 (88.9%) said they had communicated with a Chiropractor, but not often (Table 4.7). Paediatricians were asked to rate the communication they had had with a Chiropractor as ‘very negative’, ‘negative’, ‘neutral’, ‘positive’ or ‘very positive’. Rating by the respondents who had communicated with a Chiropractor revealed a relatively equal split between the communications being rated as negative and neutral (Figure 4.2). Of the Paediatricians who had never communicated with a Chiropractor, 45 (83.3%) said they were interested in doing so while 9 (16.7%) said they had no interest in communicating with a Chiropractor (Table 4.8).

An overwhelming 78.8% wanted the inter-professional communication to be improved (Table 4.9). Only 20.2% had referred a patient for Chiropractic treatment (Table 4.10), with 29.4% of these being at the request of the patient and the remaining 69.6% being at their own discretion (Table 4.11). The study revealed that 8.2% of respondents had received treatment feedback

from a Chiropractor (Figure 4.3). Over 91.1% of respondents stated that they would like to receive feedback from Chiropractors with regard to mutual patients and referrals (Table 4.12).

### 4.5.2 Post Registration Specialisation in Chiropractic Paediatrics (Q4.7)

The study found that 80.2% of Paediatricians said their decision to refer patients to a Chiropractor would be positively influenced by the Chiropractor having a specialist qualification in Chiropractic paediatrics. This suggests that Chiropractors who would like to offer treatment to paediatric patients should look at post-registration courses provided by overseas Chiropractic colleges, such as that offered by Bournemouth University at the Anglo-European College of Chiropractic (Bournemouth University, 2008), and gain these accreditations to increase the likelihood of referrals from Paediatricians.

**Table 4.13: Whether this specialisation would influence the respondents in their decision to refer for Chiropractic treatment**

| | | Frequency | % |
|---|---|---|---|
| Valid | Yes -positively | 65 | 80.2% |
| | No | 16 | 19.8% |
| | Total | 81 | 100.0% |
| Missing | System | 4 | |
| Total | | 85 | |

### 4.5.3 Respondents personal experience with Chiropractic

This study showed that only 12.9% of respondents had been treated by a Chiropractor. The results from the surveys by Fountain-Polley *et al*., (2007) and Sawni and Thomas (2007) showed that Chiropractic rated among the most commonly used CAM therapies by Paediatricians. However a study by Kemper and O'Connor, (2004) who found that Paediatricians who use Chiropractic themselves feel more confident to discuss Chiropractic less concerned about side effects and would be more comfortable to then co-ordinate care for their patients with a Chiropractor.

**Table 4.14: Whether the respondent had been to a Chiropractor (Q5.1)**

| | | Frequency | % |
|---|---|---|---|
| Valid | Yes | 11 | 12.9% |
| | No | 74 | 87.1% |
| | Total | 85 | 100.0% |

Respondents were then asked to rate this experience revealing that 88.9% (8/9) of those who had been treated by a chiropractor said it was a positive experience while only 11.1% (1/9) thought it to be a negative experience. A positive experience at the Chiropractor would lead the Paediatrician to be more confident in Chiropractic care and more familiar with the therapy which may increase perception and likelihood of referral.

**Table 4.15: Rating of this experience by respondents who had been treated by a Chiropractor (Q5.2)**

| | | Frequency | % |
|---|---|---|---|
| Valid | Positive | 8 | 88.9% |
| | Negative | 1 | 11.1% |
| | Total | 9 | 100.0% |
| Missing | System | 2 | |
| Total responses | | 11 | |
| Respondents who had not been to a chiropractor | | 74 | |
| Total | | 85 | |

As seen in Table 4.16, 35.3% of respondents had had a family member treated by a chiropractor shown in Table 4.17 only 4.7% of respondents had taken their child to a chiropractor; this is lower than the 56% family use found by Fountain-Polley *et al*., (2007) who stated that personal or family use of CAM did not translate into increased likelihood of asking about CAM usage. However, in contrast, Kemper and O'Connor (2004) found that increased personal and family use translated into higher levels of clinician comfort in asking about use of CAM therapies.

**Table 4.16: Whether a family member of the respondent had been to a Chiropractor (Q5.3)**

| | | Frequency | % |
|---|---|---|---|
| Valid | Yes | 30 | 35.3% |
| | No | 55 | 64.7% |
| | Total | 85 | 100.0% |

**Table 4.17: Whether the respondent had taken their own child for Chiropractic treatment (Q5.4)**

| | | Frequency | % |
|---|---|---|---|
| Valid | Yes | 4 | 4.7% |
| | No | 70 | 82.4% |
| | Don't have children | 11 | 12.9% |
| | Total | 85 | 100.0% |

### 4.5.4 What percentage of your patients do you think visit Chiropractors (Q5.5)

The mean response to this question was 5.86% with a range from 0 to 40% and a standard deviation of 7%. This highlights that respondents felt that a low percentage of patients visit Chiropractors. This is significantly lower than results yielded by studies conducted worldwide which have found 50-70% utilisation of CAM therapies by paediatric patients (Lowe *et al*., 2008; Wilson *et al*., 2007; Crawford *et al*., 2006; Hughes and Wingard, 2006; Lim *et al*., 2006; Smith and Eckert, 2006; Soo *et al*., 2005; Madsen *et al*., 2003). Although this percentage is closer to estimations by Paediatricians in studies by Sawni and Thomas, 2007 and Sikand and Laken, 1998 who indicated that 10-30% of their patients were using CAM therapies. Parents failing to disclosure their use of Chiropractic may be a factor leading Paediatricians to underestimate their patient's use of Chiropractic. This has been found by Sawni *et al*., (2007); Crawford *et al*., (2006); Lim *et al*., (2006); Smith and Eckert, (2006) and Sibinga *et al*., (2004). Although a study on utilisation has not been conducted amongst the paediatric population in South Africa, worldwide trends would predict utilisation higher than 5.86% with Chiropractic growing in numbers of professionals and status in South Africa.

**Table 4.18: What percentage of your patients do you think visit Chiropractors**

| | | |
|---|---|---|
| N | Valid | 69 |
| | Missing | 16 |
| Mean | | 5.86 |
| Std. Deviation | | 6.891 |
| Minimum | | 0 |
| Maximum | | 40 |

### 4.5.5 Discussion of Chiropractic treatment between the respondent and their patients regarding Chiropractic (Q5.6)

Table 4.19 indicates that 34.5% of Paediatricians discussed the use of Chiropractic with their patients. These results are similar to those found by Kemper and O'Connor (2004) who found that 38% of Paediatricians were comfortable discussing Chiropractic with their patients/parents.

**Table 4.19: Do you discuss the use of Chiropractic with patients**

| | | Frequency | % |
|---|---|---|---|
| Valid | Yes | 29 | 34.5 |
| | No | 55 | 65.5 |
| | Total | 84 | 100.0 |
| Missing | System | 1 | |
| Total | | 85 | |

Of those respondents who had discussed Chiropractic with their patients (29/85), Table 4.20 shows that 25% said the discussions were initiated by themselves and Table 4.21 shows that 89.3% by the patients or their parents (the percentages do not add up to 100% as some paediatricians said both). The results of this study compare to results found by Fountain-Polley *et al*., (2007) and Sawni and Thomas (2007) who found that 70% (Sawni and Thomas, 2007) to 88% (Fountain-Polley *et al*., 2007) of parents initiate discussions about CAM therapies and 80% of patients ask about CAM. However the results of this study contrast to results to results found by Fountain-Polley *et al*., 2007 and Sawni and Thomas, 2007 which found that only 31% (Fountain-Polley *et al*., 2007) to 37% (Sawni and Thomas, 2007) of Paediatricians initiate the discussion asking the patient about CAM usage as part of routine medical history.

**Table 4.20: Discussion is initiated by the respondent (Q5.7)**

| | | | Frequency | % |
|---|---|---|---|---|
| Discussion is initiated by respondent | Valid | No | 21 | 75% |
| | | Yes | 7 | 25% |
| | | Total | 28 | 100% |

**Table 4.21: Discussion is initiated by the patient or their parent (Q5.7)**

| | | | Frequency | % |
|---|---|---|---|---|
| Discussion initiated by patients or parents | Valid | No | 3 | 10.7% |
| | | Yes | 25 | 89.3% |
| | | Total | 28 | 100% |

### 4.5.6 Respondents level of confidence in their own knowledge of Chiropractic

Only 6% of respondents felt they had enough knowledge of Chiropractic to discuss it with their patients. Yet Table 4.20 shows that 25% of respondents initiated discussions about Chiropractic which is surprising given the low percentage who fell they have enough knowledge about it. This indicates very low levels of knowledge of Chiropractic among Paediatricians.

**Table 4.22: Do you feel you have enough knowledge to discuss Chiropractic care (Q5.8)**

| | | Frequency | % |
|---|---|---|---|
| Valid | Yes | 5 | 6.0% |
| | No | 78 | 94.0% |
| | Total | 83 | 100.0% |
| Missing | System | 2 | |
| Total | | 85 | |

When asked if they would like to receive more knowledge about Chiropractic, 82.4% of Paediatricians wanted to receive more information on Chiropractic. This indicates that South African Paediatricians want to be educated about what Chiropractors can do in their scope of practice. The results of this study are similar to those found by Kemper and O'Connor (2004) who found that 83% of Paediatricians wanted additional information on CAM therapies, while 57% specifically wanted more information about Chiropractic. Studies conducted by Lowe *et al*., (2008); Fountain-Polley *et al.,* (2007); Sawni and Thomas, (2007) and Kemper and O'Connor, (2004) found that Paediatricians want to be better informed about Chiropractic, and prefered to receive such information through presentations by Chiropractors, scientific literature and correspondence with Chiropractors about patients (Daams, 1999).

**Table 4.23: If no, would you like to receive more information (Q5.8)**

| | | Frequency | % |
|---|---|---|---|
| Valid | Yes | 61 | 82.4 |
| | No | 13 | 17.6 |
| | Total | 74 | 100.0 |
| Missing | System | 4 | |
| Total | | 78 | |

## 4.6 Analyses in support of the objectives of the study

### 1.2 Objectives

- To establish the level and extent of knowledge about Chiropractic amongst Paediatricians in South Africa.
- To determine the perceptions about Chiropractic amongst Paediatricians in South Africa.
- To determine any relationship between the level of knowledge and the perception of the Chiropractic profession.

### 4.6.1 Objective 1: To establish the level and extent of knowledge about Chiropractic amongst paediatricians in South Africa.

#### 4.6.1.1 Respondents' self reported knowledge of Chiropractic (Q2.1)

Question 2.1 requested self reported knowledge of Chiropractic and respondents were asked to rate their knowledge as 'good', 'moderate', 'average' or 'poor'. Figure 4.4 showed that most respondents rated their knowledge of Chiropractic as poor (74.1%). Twenty percent reported average knowledge while only 6% reported moderate knowledge and none of the respondents reported that they had good knowledge of Chiropractic. These results are similar to those found by Kemper and O'Connor (2004) who found that in general fewer than 5% of Paediatricians felt very knowledgeable about any CAM therapy, although 69% felt slightly or somewhat familiar with Chiropractic. This study also concurs with various studies (Flannery *et al*., 2006; Greene *et al*., 2006; van Haselen, 2004; Corbin-Winslow and Shapiro, 2002) which have found that mainstream medical providers, in particular Paediatricians (Fountain-Polley *et al*., 2007; Kemper and O'Connor, 2004; Sikand and Laken, 1998), rate their knowledge of Chiropractic as limited or inadequate. But it has been found that physicians who describe their knowledge of CAM therapies as 'good' are more likely to respect and accept CAM therapists (Flannery *et al*., 2006; Langworthy and Smink, 2000).

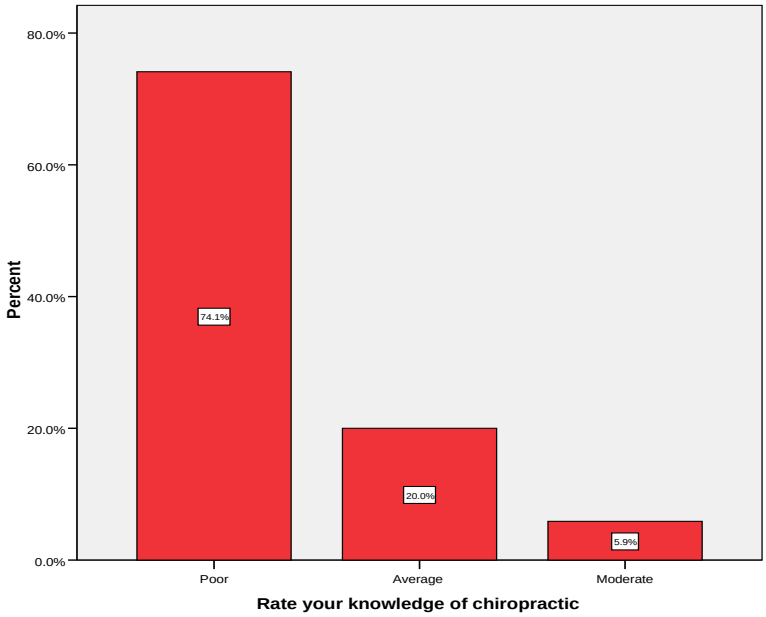



**Figure 4.4: Self reported knowledge of Chiropractic**

### 4.6.1.2 How respondents attained their knowledge of Chiropractic (Q2.2)

Most of the respondents who reported to have any knowledge of Chiropractic obtained their knowledge from patients who received Chiropractic treatment (29.8%), followed by having read about it in a magazine (21.4%) which may not be a reliable source of information (Figure 4.5). A study by van Haselen *et al*., 2004 found that patient interest motivated physicians to learn more about Chiropractic. However it has been found by Sawni *et al*., (2007); Crawford *et al*., (2006); Lim *et al*., (2006); Smith and Eckert, (2006) and Sibinga *et al*., (2004) that a large percentage of parents of paediatric patients and paediatric patients do not disclose their use of Chiropractic to their Paediatricians for fear of a negative reaction which may be a factor in the low levels of knowledge about Chiropractic found in these studies.

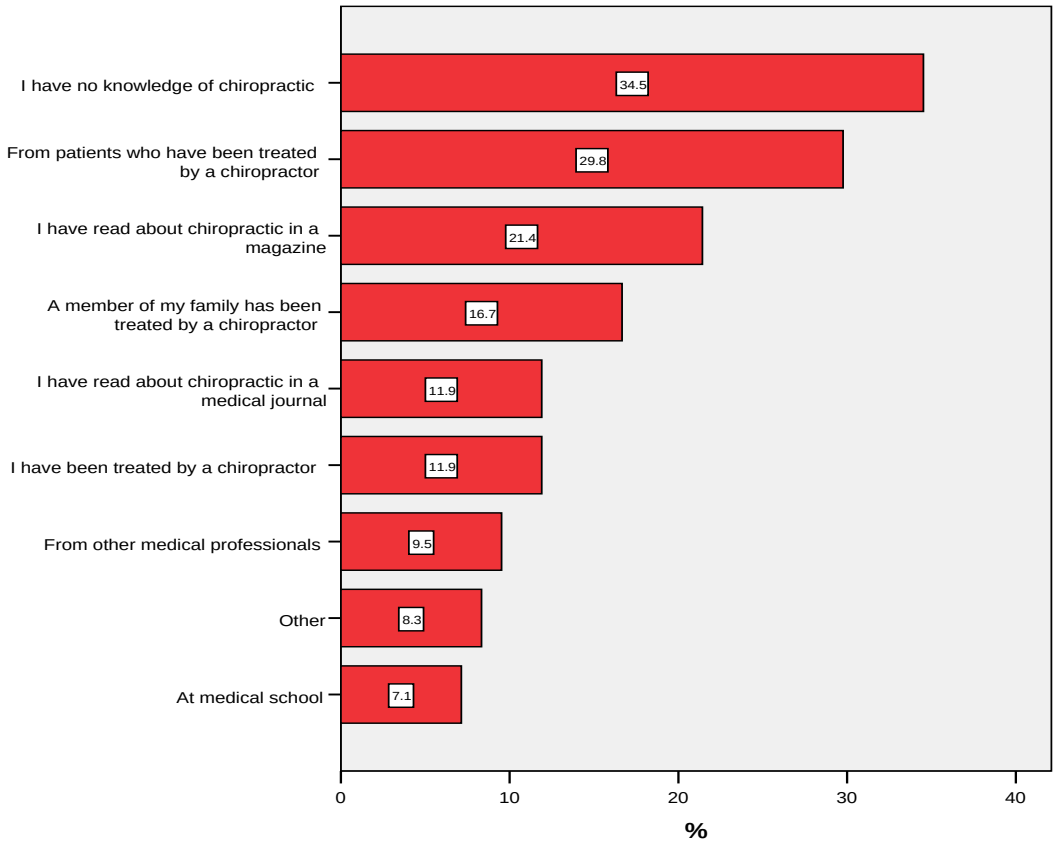



**Figure 4.5: Where respondents obtained their knowledge of Chiropractic**

### 4.6.1.3 Knowledge of Chiropractic

The next few questions (Questions 2.3, 2.4, 2.5, 2.7, 2.8, 2.9 and 2.10) objectively assessed their knowledge of Chiropractic. Reponses to these questions are shown in Tables 4.24 through 4.29).

### 4.6.1.4 Knowledge of which institutions offer Chiropractic (Q2.3)

Table 4.24 shows that only 57% of respondents knew that Chiropractic studies were offered at the Durban University of Technology (DUT) and only 23% knew that it could be studied at University of Johannesburg (UJ). As the researcher was from DUT, meaning the documents and self-addressed return envelopes received by the respondents had DUT letterheads, this may explain why there was better knowledge that the course was studied at DUT as opposed to UJ. Chiropractic education in South Africa is still relatively new having only been offered at DUT since 1989 (Till, 1997) and Paediatricians may still be under the perception that Chiropractic can only be studied overseas (Brantingham and Snyder, 1999).

**Table 4.24: Responses to knowledge question on which institutions offer Chiropractic**

| | | | Count | % |
|---|---|---|---|---|
| Chiropractors study at which institutions in South Africa? | I don't know | No | 50 | 59.50% |
| | | Yes | 34 | 40.50% |
| | Damelin | No | 78 | 92.90% |
| | | Yes | 6 | 7.10% |
| | DUT | No | 36 | 42.90% |
| | | Yes | 48 | 57.10% |
| | UNISA | No | 81 | 96.40% |
| | | Yes | 3 | 3.60% |
| | UCT | No | 81 | 96.40% |
| | | Yes | 3 | 3.60% |
| | UJ | No | 65 | 77.40% |
| | | Yes | 19 | 22.60% |
| | Other | No | 84 | 100.00% |
| | | Yes | 0 | 0.00% |

### 4.6.1.5 Academic Qualification of a Chiropractor (Q2.4)

Only 14.3% knew that chiropractors qualify with a Masters degree (Table 4.25). This shows that Paediatricians believe Chiropractors to be less qualified than they actually are. This again shows low levels of knowledge and may be a contributing factor to the perception held by Paediatricians.

**Table 4.25: Responses to knowledge question on which degree a Chiropractor qualifies with**

| | | Count | % |
|---|---|---|---|
| A chiropractor qualifies with which degree? | I don't know | 43 | 51.20% |
| | Bachelors | 6 | 7.10% |
| | Bachelor of Technology | 16 | 19.00% |
| | Certificate | 4 | 4.80% |
| | Double bachelors | 0 | 0.00% |
| | Masters | 12 | 14.30% |
| | National Diploma | 2 | 2.40% |
| | Other | 0 | 0.00% |

### 4.6.1.6 Subjects included in Chiropractic training (Q 2.5)

All of the subjects in table 4.26, except for surgery, are correct (Chiropractic Department Handbook, 2007; Chiropractic and Somatology Department Handbook, 2008). But only 70.2% of respondents knew Anatomy was part of the training and 53.6% knew Physiology to be part of Chiropractic training. In all the other subjects respondent responses indicated less than 50% knowledge of Chiropractic subjects. These responses indicate a poor knowledge of Chiropractic education amongst South African Paediatricians.

**Table 4.26: Responses to knowledge questions on subjects included in Chiropractic training**

| | Subjects | | Count | % |
|---|---|---|---|---|
| The Chiropractic course includes which subjects? | Anatomy | No | 25 | 29.80% |
| | | Yes | 59 | 70.20% |
| | Chemistry | No | 76 | 90.50% |
| | | Yes | 8 | 9.50% |
| | Diagnostics | No | 52 | 61.90% |
| | | Yes | 32 | 38.10% |
| | Microbiology | No | 74 | 88.10% |
| | | Yes | 10 | 11.90% |
| | Pathology | No | 51 | 60.70% |
| | | Yes | 33 | 39.30% |
| | Pharmacology | No | 68 | 81.00% |
| | | Yes | 16 | 19.00% |
| | First Aid | No | 58 | 69.00% |
| | | Yes | 26 | 31.00% |
| | Physics | No | 68 | 81.00% |
| | | Yes | 16 | 19.00% |
| | Physiology | No | 39 | 46.40% |
| | | Yes | 45 | 53.60% |
| | Physiotherapy modalities | No | 55 | 65.50% |
| | | Yes | 29 | 34.50% |
| | Psychology | No | 69 | 82.10% |
| | | Yes | 15 | 17.90% |
| | Radiology | No | 61 | 72.60% |
| | | Yes | 23 | 27.40% |
| | Surgery | No | 81 | 96.40% |
| | | Yes | 3 | 3.60% |
| | Don't know | No | 59 | 70.20% |
| | | Yes | 25 | 29.80% |

#### 4.6.1.7 Paediatricians knowledge regarding recognition by medical schemes council and the professions' legislative body.

##### Medical schemes council (Q2.7)

Most medical aids in South Africa do provide for Chiropractic care (About South Africa>Health, 2006) so the correct answer to this question is yes. The recorded 63.1% may be a little low especially considering these respondents are medical professionals who do deal with medical aids. Although this study found that 52.9% of the Paediatricians practiced in the public sector, who may have limited dealings with medical aid. It could be assumed that most Paediatricians would have medical aid cover so the 34.5% who answered 'I don't know' may also fall into the percentage of Paediatricians who have not used Chiropractic in a personal capacity.

##### Legislative body (Q2.8)

The answer to the question on whether the Chiropractic profession has a legislative body was also 'yes' (CASA, 2008). The majority (66.7%) of Paediatricians knew this while the remainder (32.1%) answered 'I don't know". The perception that the profession may not have a legislative body would lead to the perception of a disorganised and unethical profession. It is very important, especially among other health professionals, to dispel this perception to lead to better recognition of the profession. A respondent included an explanation for this on their questionnaire stating "When I qualified it was considered unethical to refer patients to Chiropractic practice. Things seem to have changed and alternative medicine seems to be more accepted. I am still unaware of any statement from the HPCSA that referral to a Chiropractic practice is acceptable". As Chiropractic only received licensure in 1982 (Till, 1997) many Paediatricians, especially those who qualified before 1982, may still have the perception that Chiropractic is an illegal practice.

**Table 4.27: Responses to knowledge questions on whether the medical schemes council recognises Chiropractic and if the profession has a legislative body in South Africa.**

| | | Count | % |
|---|---|---|---|
| Does the medical schemes council recognise Chiropractic | Yes | 53 | 63.10% |
| | No | 2 | 2.40% |
| | don't know | 29 | 34.50% |
| Does the Chiropractic profession in SA have a legislative body | Yes | 56 | 66.70% |
| | No | 1 | 1.20% |
| | don't know | 27 | 32.10% |

### 4.6.1.8 Respondents knowledge as to 'Can Chiropractors specialise in Orthopedics, Paediatrics, Radiology, Rehabilitation or Sports injuries?' (Q2.9)

The answer to all options of specialisation is 'yes'. However results shown in Table 4.28 showed that only 28% of paediatricians knew that chiropractors could specialise in paediatrics. This low number could be a reflection against Paediatricians knowledge about Post-Registration Specialisation because results from Table 4.13 that highlights that 80.2% of Paediatricians will be influenced to refer their patients to Chiropractors that had this qualification Therefore it could be suggested that Chiropractors who wish to treat paediatric patients and receive referrals from Paediatricians should consider this post-registration specialisation. It is of interest that Paediatricians see Chiropractors as more specialised in areas of Orthopedics, Rehabilitation and Sports Injuries.

**Table 4.28: Response to knowledge question regarding Chiropractic Specialisation**

| | | | Count | % |
|---|---|---|---|---|
| Can chiropractors specialise in the following areas? | Orthopedics | Yes | 35 | 43.20% |
| | | No | 2 | 2.50% |
| | | don't know | 44 | 54.30% |
| | Paediatrics | Yes | 23 | 27.70% |
| | | No | 5 | 6.00% |
| | | don't know | 55 | 66.30% |
| | Radiology | Yes | 9 | 11.40% |
| | | No | 8 | 10.10% |
| | | don't know | 62 | 78.50% |
| | Rehabilitation | Yes | 39 | 47.60% |
| | | No | 1 | 1.20% |
| | | don't know | 42 | 51.20% |
| | Sports injuries | Yes | 42 | 51.20% |
| | | No | 0 | 0.00% |
| | | don't know | 40 | 48.80% |

### 4.6.1.9 Paediatricians knowledge of Chiropractic treatment modalities (Q2.10)

Table 4.29 shows that 98.8% of respondents see adjustments/manipulation of the joints as a chiropractor's modality of treatment and 76.2% indicated massage as a treatment modality. Manipulation has been perceived to be dangerous in the very young (Jamison and Davies, 2005) and although the possibility of a paediatric patient being injured by an adjustment is reported to be as low as 1 in 250 million (Pistolese, 2001) misreporting of information regarding paediatric care has been reported in scientific journals (Jamison and Davies, 2005). As seen in Table 4.4, the respondents stated that the majority of their patients fell into the 'newborn to 2 year' category, who are likely to be seen as the most vulnerable of all paediatric patients which may have contributed to the low referral rate as seen in Table 4.10.

**Table 4.29: Responses to knowledge questions on Chiropractic treatment modalities**

| | | | Count | % |
|---|---|---|---|---|
| Some treatment modalities of Chiropractic include | Adjustment/manipulation of the joints | No | 1 | 1.20% |
| | | Yes | 83 | 98.80% |
| | Electro-modalities | No | 64 | 76.20% |
| | | Yes | 20 | 23.80% |
| | Dry needling | No | 49 | 58.30% |
| | | Yes | 35 | 41.70% |
| | Heat | No | 37 | 44.00% |
| | | Yes | 47 | 56.00% |
| | Ice | No | 42 | 50.00% |
| | | Yes | 42 | 50.00% |
| | Injection of corticosteroids | No | 80 | 95.20% |
| | | Yes | 4 | 4.80% |
| | Injection of non-steroidal anti-inflammatory drugs | No | 81 | 97.60% |
| | | Yes | 2 | 2.40% |
| | Ischemic compression | No | 46 | 54.80% |
| | | Yes | 38 | 45.20% |
| | Massage | No | 20 | 23.80% |
| | | Yes | 64 | 76.20% |
| | Surgery | No | 83 | 98.80% |
| | | Yes | 1 | 1.20% |

**Table 4.30: Summary statistics for knowledge score**

| | | |
|---|---|---|
| N | Valid | 85 |
| | Missing | 0 |
| Mean | | 45.69 |
| Standard deviation | | 17.95 |
| Minimum | | 0.00 |
| Maximum | | 86.49 |

Knowledge was scored and expressed as a percentage of the total number of questions. The mean composite knowledge score of the sampled Paediatricians' was 45.7% (SD 17.95%) and the range was 0 to 86.5%. This meant that out of a total score of 100, the average Paediatrician scored 45.7 out of 100 for his/her knowledge about Chiropractic. This suggests that the knowledge of Paediatricians about Chiropractic was relatively poor.

### 4.6.1.10 Summary of Respondents knowledge of Chiropractic

Knowledge on the whole was found to be low. This is similar to studies among South African Health Professionals by Louw and Myburgh (2007) and Hunter (1996) who found the knowledge of Chiropractic among GP's and Physiotherapists respectively to be relatively low.

The results from Figure 4.4 showed that 74.1% of respondents rated their knowledge of Chiropractic as poor. Figure 4.5 showed that respondents who had knowledge of Chiropractic had gained it from patients who had been treated by a Chiropractor (29.8%), followed by having read about it in a magazine (21.4%). Table 4.24 showed that 57% of respondents knew that Chiropractic was studied at DUT and only 23% knew that it could be studied at UJ, while only 14.3% knew that a Chiropractor qualified with a Masters degree (Table 4.25). With regards to subjects in the Chiropractic course, more than 50% of respondents knew that Anatomy and Physiology were part of the training, for all the other subjects scores were less than 50% (Table 4.26). Table 4.27 showed that 63.10% of respondents knew that Chiropractic was recognised by the Medical Schemes Council and 66.70% of the respondents knew that the Chiropractic profession does have a legislative body. Only 28% of paediatricians knew that Chiropractors could specialise in paediatrics (Table 4.28). Respondents rated Adjustments or

Manipulations (98.8%) as the main modality offered by Chiropractic followed by massage (76.2%), (Table 4.29).

### 4.6.2 Objective 2: To determine the perceptions about Chiropractic amongst Paediatricians in South Africa.

#### 4.6.2.1 Respondents view of Chiropractic for the general versus paediatric populations (Q3.1 and 3.2)

Table 4.31 reveals the respondents views on the Chiropractic for the general population versus that for the paediatric population. Similarly, for both populations, about a third of the Paediatricians did not feel informed enough to comment (32.9% in the general population versus 36.9% in the paediatric population). This may be indicative of the Paediatricians relatively poor knowledge of Chiropractic indicated by Table 4.30. The next 2 options would imply a negative perception of Chiropractic (options of: 'Chiropractic does more harm than good' and 'I am uncomfortable with it') and a discrepancy is seen here between the perception the Paediatricians have of Chiropractic for the general versus the paediatric population [10.6% (2.4% 'Chiropractic does more harm than good' + 8.2% 'I am uncomfortable with it')] in the general population versus 25% (4.8% 'Chiropractic does more harm than good' + 20.2% 'I am uncomfortable with it') in the paediatric population). This may indicate that Paediatricians have a more negative perception of Chiropractic treatment for the paediatric population than for the general population.

The last 3 (for the general population) or 4 (for the paediatric patient) options would imply a positive perception of Chiropractic (options for both general and paediatric populations: 'It may be effective for some patients', 'Chiropractic is effective for some neuro-musculoskeletal conditions' and 'Chiropractic is effective for some neuro-musculoskeletal conditions and some organic conditions' and specific to the paediatric population: 'All paediatric patients should go for a spinal check up'). Here it is shown that 56.9% (17.6% 'It may be effective for some patients' + 25.9% 'Chiropractic is effective for some neuro-musculoskeletal conditions' + 12.9% 'Chiropractic is effective for some neuro-musculoskeletal conditions and some organic conditions') of paediatricians have a positive perception of Chiropractic for the general

population versus 38.9% (14.3% 'It may be effective for some patients' + 10.7% 'Chiropractic is effective for some neuro-musculoskeletal conditions' +11.9% Chiropractic is effective for some neuro-musculoskeletal conditions and some organic conditions'+ 1.2% 'All paediatric patients should go for a spinal check-up') for the paediatric population. Sawni and Thomas (2007) found Paediatricians perceived CAM therapies to be as effective for the general population as for the paediatric population, however the results from this study seems to be more in line with Kemper and O'Connor's (2004) findings which showed Paediatricians perceived Chiropractic to be more effective and safe in the general than the paediatric population.

**Table 4.31: Respondent' general perceptions on competency of Chiropractic for the general population versus the paediatric population**

| | | Count | Column % |
|---|---|---|---|
| Your view of Chiropractic treatment for the general population | Not informed enough to comment | 28 | 32.90% |
| | Chiropractic does more harm than good | 2 | 2.40% |
| | I am uncomfortable with it | 7 | 8.20% |
| | It may be effective for some patients | 15 | 17.60% |
| | Chiropractic is effective for some neuro-musculoskeletal conditions | 22 | 25.90% |
| | Chiropractic is effective for some neuro-musculoskeletal conditions and some organic conditions | 11 | 12.90% |
| | | | |
| Your view of Chiropractic treatment for the paediatric population | Not informed enough to comment | 31 | 36.90% |
| | Chiropractic does more harm than good | 4 | 4.80% |
| | I am uncomfortable with it | 17 | 20.20% |
| | It may be effective for some patients | 12 | 14.30% |
| | Chiropractic is effective for some neuro-musculoskeletal conditions | 9 | 10.70% |
| | Chiropractic is effective for some neuro-musculoskeletal conditions and some organic conditions | 10 | 11.90% |
| | All paediatric patients should go for a spinal check up | 1 | 1.20% |

### 4.6.2.2 Respondents perception of Chiropractic with respect to specific systems in the general and paediatric populations

The following tables (Tables 4.32, 4.33 and 4.34) represent questions 3.3 to 3.8 and show the respondents views on the competency of Chiropractors in the musculoskeletal (Table 4.32), neurological (Table 4.33) and general medical management (Table 4.34) of the general population versus the paediatric population. For this study, the first 2 options ('Very incompetent' and 'Incompetent') would be deemed as a negative perception while the last 3 options ('Competent', 'Moderately Competent" and 'Very Competent') would be deemed as a positive perception.

**Table 4.32: Respondents perceptions of the competency of Chiropractors in the musculoskeletal examination and diagnosis in the general population versus the paediatric population (Q3.3 and 3.4)**

| | | | |
|---|---|---|---|
| To what extent are Chiropractors competent in the musculoskeletal examination and diagnosis in general population | Very incompetent | 2 | 2.60% |
| | Incompetent | 14 | 17.90% |
| | Competent | 48 | 61.50% |
| | Moderately competent | 5 | 6.40% |
| | Very competent | 9 | 11.50% |
| | | | |
| To what extent are Chiropractors competent in the musculoskeletal examination and diagnosis in paediatric population | Very incompetent | 9 | 12.20% |
| | Incompetent | 22 | 29.70% |
| | Competent | 34 | 45.90% |
| | Moderately competent | 4 | 5.40% |
| | Very competent | 5 | 6.80% |

Table (Table 4.32) shows that with regard to the competency of Chiropractors in the musculoskeletal examination and diagnosis, 20.5% (2.6% 'very incompetent' + 19.9% 'incompetent') of Paediatricians' have a negative perception with regard to the general population versus 41.9% (12.2% 'very incompetent' + 29.7% 'incompetent') negative perception for the paediatric population. Positive perception for the general population was found to be 79.4% (61.5% 'competent' + 6.4% 'moderately competent' + 11.5% 'very competent') versus 58.1% (45.9% 'competent' + 5.4% 'moderately competent'+ 6.8% 'very competent') for the paediatric population.

**Table 4.33: Respondents perceptions of the competency of Chiropractors in the neurological examination and diagnosis in the general population versus the paediatric population (Q3.7 and 3.8)**

| | | | |
|---|---|---|---|
| To what extent are Chiropractors competent in the neurological examination and diagnosis in general population | Very incompetent | 6 | 8.00% |
| | Incompetent | 36 | 48.00% |
| | Competent | 27 | 36.00% |
| | Moderately competent | 5 | 6.70% |
| | Very competent | 1 | 1.30% |
| | | | |
| To what extent are Chiropractors competent in the neurological examination and diagnosis in paediatric population | Very incompetent | 10 | 14.10% |
| | Incompetent | 40 | 56.30% |
| | Competent | 18 | 25.40% |
| | Moderately competent | 2 | 2.80% |
| | Very competent | 1 | 1.40% |

Table 4.33 shows perceived competency of Chiropractors in the neurological examination and diagnosis, and demonstrates a negative perception of 56% (8% 'very incompetent'+ 48% 'incompetent') for the general population versus 70.4% (14.1% 'very incompetent' + 56.3% 'incompetent') for the paediatric population. This suggests that Paediatricians feel Chiropractors are not skilled in treating neurological conditions

**Table 4.34: Respondents perceptions of the competency of Chiropractors in the general medical management in the general population versus the paediatric population (Q3.5 and 3.6)**

| | | | |
|---|---|---|---|
| To what extent are Chiropractors competent in the general medical management in general population | Very incompetent | 5 | 6.60% |
| | Incompetent | 27 | 35.50% |
| | Competent | 33 | 43.40% |
| | Moderately competent | 6 | 7.90% |
| | Very competent | 5 | 6.60% |
| | | | |
| To what extent are Chiropractors competent in the general medical management in paediatric population | Very incompetent | 9 | 12.50% |
| | Incompetent | 33 | 45.80% |
| | Competent | 22 | 30.60% |
| | Moderately competent | 6 | 8.30% |
| | Very competent | 2 | 2.80% |

Table 4.34 shows the respondents' perception on the competency of Chiropractors in the general medical management in the general versus the paediatric populations and shows a negative perception in 42.1% (6.6% 'very incompetent' + 35.5% 'incompetent') for the general versus 58.3% (12.5% 'very incompetent' + 45.8% 'incompetent') for the paediatric population amongst the respondents to this study. This study found that 57.9% (43.3% 'competent' + 7.9% 'moderately competent' + 6.6% 'very competent') of Paediatricians for the general population versus 41.7% (30.6% 'competent' + 8.4% 'moderately competent'+ 2.8% 'very competent') for the paediatric population have a positive perception of Chiropractic in general medical management.

**Table 4.35: Summary statistics for perceptions score**

| | | |
|---|---|---|
| N | Valid | 85 |
| | Missing | 0 |
| Mean | | 41.78 |
| Std. Deviation | | 19.53 |
| Minimum | | 0.00 |
| Maximum | | 94.59 |

Perceptions were scored and expressed as a percentage of the maximum score. The mean score for Paediatricians who responded to the study was 41.8% (SD 19.53%) and the range was 0 to 94.6%. Thus on the whole the perceptions of Paediatricians about Chiropractic were relatively poor.

### 4.6.2.3 Summary of perception of respondents

Tables 4.30 through 4.33 indicate that Paediatricians have a better perception of Chiropractic for the general population than for the paediatric population. This concurs with findings by Kemper and O'Connor (2004) who found that Paediatricians were more comfortable with Chiropractic as a treatment option for the general population than for the paediatric population. Table 4.30 showed that Paediatricians have a better perception of Chiropractic for the general than for the paediatric population with regard to the diagnosis, management and treatment of the musculoskeletal system, although when compared to the overall perception score of 41.8% (Table 4.34) both figures (79.4% and 58.1% as seen in Table 4.31) are higher which re-iterates findings of other studies (Butt, 2008; Cloete, 2008) that Chiropractors are perceived to be the most competent in the treatment of musculoskeletal conditions. It also reveals the necessity for Chiropractic literature on management and treatment of paediatric conditions to be published in mainstream medical journals (Gotlib and Rupert, 2005; Langworthy and Smink, 2000) in order to improve the perception of Paediatricians.

### 4.6.2.4 Respondents' referral for specific conditions (Q3.9)

The majority of respondents thought that referral to a Chiropractor was an option for low back pain (76.1%), neck pain (71.6%), tension headaches (67.2%), shoulder pain (67.2%), headaches (67.2%), scoliosis (61.2%) and stress (55.2%). This is shown in Figure 4.6. These findings seem to be in line with aspects of other studies, Sawni and Thomas (2007) found Paediatricians would consider referring patients to CAM practitioners for chronic conditions such as asthma, low back pain, headaches and pain management, diseases with no known cure or failure of conventional treatment, behavioural problems such as ADHD and psychiatric disorders. Verhoef and Papadopoulos (1999) found of the paediatric patients seen by Canadian Chiropractors, 35% presented for musculoskeletal conditions, 24.3% for preventative reasons, 7% for headaches, 5.2% for otitis media, 4.8% for muscular sprains and strains and 23.3% for other conditions such as enuresis, hyperactivity and colic and Madsen *et al*., (2003) found Chiropractic to be most commonly utilised for joint and gastrointestinal conditions such as colic in paediatric patients.

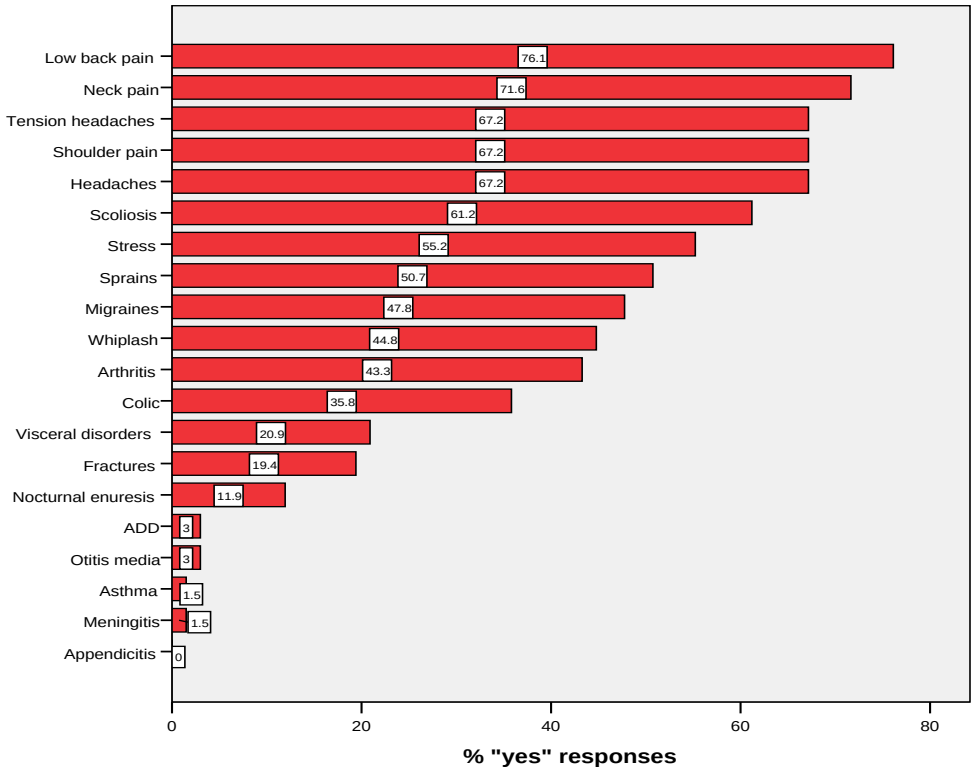



**Figure 4.6: Percentage of respondents who thought that Chiropractic referral is an option for patients with the following conditions**

### 4.6.3 Objective 3: To determine any relationship between the level of knowledge and the perception of the Chiropractic profession.

**Table 4.36: Correlation between knowledge and perception**

| | | Perception |
|---|---|---|
| Knowledge | Pearson Correlation | 0.330(**) |
| | Sig. (2-tailed) | 0.002 |
| | N | 85 |

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

Table 4.36 shows there was a statistically significant (p=0.002) although a weak correlation between knowledge and perception (r=0.330). Figure 4.7 shows that in general as knowledge increased so did the perception score, but there was a wide range of scatter points especially around the middle ranges of knowledge and perception.

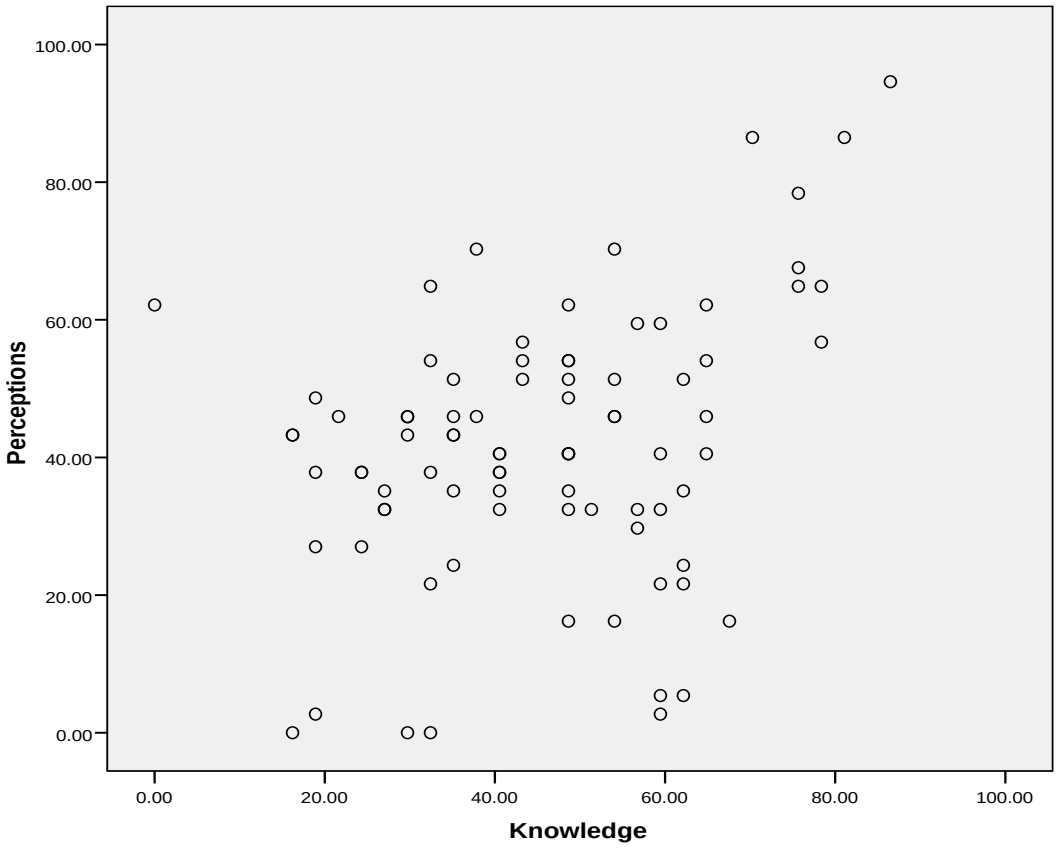



**Figure 4.7: Correlation between knowledge and perceptions**

## 4.7 Summary and review of Objectives

- To establish the level and extent of knowledge about Chiropractic amongst Paediatricians in South Africa.
    - Level of knowledge was found to be relatively low, the mean composite knowledge score of the sampled Paediatricians was 45.7% (SD 17.95%) and the range was 0 to 86.5%.
- To determine the perceptions about Chiropractic amongst Paediatricians in South Africa.
    - The perceptions were found to be relatively poor, with respondents scoring an average of 41.8% mean perception score (SD 19.53%) with a range between 0 and 94.6%.
- To determine any relationship between the level of knowledge and the perception of the Chiropractic profession.
    - The relationship was found to be statistically significant (p=0.002) although the correlation between knowledge and perception was relatively weak.

## 4.8 Summary of Results

The majority of the respondents were White, males, aged 45 years, practicing in the private sector in a solo practice and were aware of a Chiropractic practice in their geographical area of practice. Most Paediatricians had been practicing paediatrics for 13.5 years, and had practiced as a General Practitioner for 2.5 years before specialising. It was found that the majority of paediatric patients treated by the respondents fell into the ‘newborn to 2 years old’ category, with the percentage decreasing as the age of the paediatric patients increased.

On average this study revealed low levels of inter-professional communication, with 21.2% of Paediatricians having communicated with a Chiropractor, of whom only 11.1% communicated with a Chiropractor often. Most Paediatricians rated the communication as negative or neutral. Of the Paediatricians who had never communicated with a Chiropractor, 83.3% said they were interested in doing so and 79.8% wanted the inter-professional communication to be improved.

Only 21.2% had referred a patient to a Chiropractor, 29.4% of these at the request of the patient and 70.6% at their own discretion. Only 8.2% of respondents had ever received treatment feedback, while of the respondents who had referred for Chiropractic treatment just over 20% had received treatment feedback. Yet Over 91.1% of respondents stated that they would like to receive feedback. Most respondents (80.2%) said their decision to refer patients to a chiropractor would be positively influenced by the chiropractor having a specialist qualification in Chiropractic paediatrics.

With regard to personal use, only 12.9% had personally been to a Chiropractor, 35.5% had family members who had been to a Chiropractor and only 4.7% had taken their own child for treatment. Respondents thought only 5.86% of their patients used Chiropractic, with a range from 0 to 40%. 34.5% of Paediatricians discussed the use of Chiropractic with their patients, 25% said the discussions were initiated by themselves and 89.3% by the patients or their parents (the percentages do not add up to 100% as some paediatricians said both). Only 6% of Paediatricians felt they had enough knowledge to discuss Chiropractic with their patients, and 82.4% would like to receive more information in order to do so.

Knowledge on the whole was found to be low; the mean composite knowledge of the respondents was 45.7%, with a range of 0 to 86.5%. Most respondents (74.1%) rated their knowledge as poor, those with knowledge were most likely to have received it from a patient (29.8%) who had been to a Chiropractor. 57% of respondents knew that Chiropractic was studied at DUT and only 23% knew that it could be studied at UJ, while only 14.3% knew that a Chiropractor qualified with a Masters degree. The only subjects in Chiropractic training known by most respondents were Anatomy and Physiology. 63.10% of respondents knew that Chiropractic was recognised by the Medical Schemes Council and 66.70% of the respondents knew that the Chiropractic profession does have a legislative body. Only 28% of paediatricians knew that Chiropractors could specialise in paediatrics (Table 4.27). Respondents rated Adjustments or Manipulations (98.8%) as the main modality offered by Chiropractic followed by massage (76.2%).

Perceptions were scored and expressed as a percentage of the maximum score. The mean score for Paediatricians who responded to the study was 41.8% (SD 19.53%) and the range was 0 to 94.6%. Thus on the whole the perceptions of Paediatricians about Chiropractic were relatively poor. However it was found that Paediatricians had a better perception for Chiropractic for the general population than for the paediatric population and the best perceptions were found to be in the management, diagnosis and treatment of the musculoskeletal system. The majority of respondents thought that referral to a Chiropractor was an option for low back pain (76.1%), neck pain (71.6%), tension headaches (67.2%), shoulder pain (67.2%), headaches (67.2%), scoliosis (61.2%) and stress (55.2%).

A statistically significant (p=0.002) although weak correlation between knowledge and perception (r=0.330). Figure 4.7 shows that in general as knowledge increased so did perception score, but there was a wide range of scatter points especially around the middle ranges of knowledge and perception.

### 4.9 Conclusions

This study has established that the level of knowledge of Chiropractic amongst Paediatricians in South Africa is relatively low, as is their perception. However results show that Paediatricians have a better perception of Chiropractic for the general than for the paediatric population.

There was a statistically significant, although weak correlation between knowledge and perception showing that as general knowledge increased do did perceptions.

Thus by improving the knowledge Paediatricians in South Africa with regard to Chiropractic, so the perception will improve which may lead to better inter-professional communications and inter-referrals between the two professions.

# CHAPTER 5: Conclusions and Recommendations

## 5.1 Introduction

The following chapter serves to conclude the study determining the knowledge and perception of Paediatricians in South Africa with respect to Chiropractic. Conclusions will be drawn from the results and discussion of those results from Chapter 4, and recommendations will be made regarding both possible methodological changes and for the profession of Chiropractic based on the outcomes of the study.

## 5.2 Conclusions

1. This study has revealed that both the level of knowledge and perceptions are relatively poor. With regard to knowledge these results have shown there is a lack of knowledge in the following areas - of Chiropractic as a profession, of scope of practice as well as of the ability of Chiropractors to specialise in paediatrics and then offer treatment and management of paediatric patients. There was also lack of knowledge amongst Paediatricians regarding education requirements, medical scheme council recognition and legislation of the profession.

2. With regard to perception it was found that while Paediatricians seem to view Chiropractors as generally competent in musculoskeletal diagnosis, management and treatment in both general and paediatric populations. Although the perception seemed to be that Chiropractic was more useful and effective in the general rather than the paediatric population.

3. There is a correlation between the knowledge and the perception of Paediatricians, and it seemed that as knowledge increased so did perception. From this it can be concluded that for Paediatricians to have better perception of Chiropractic concerning the paediatric population there must be an effort to increase their knowledge of Chiropractic.

4. The study has found that Paediatricians feel they do not have enough knowledge to discuss Chiropractic with their patients and on the whole would like to have more

knowledge of Chiropractic in order to do so. Discussions about Chiropractic between Paediatricians and their patients are more likely be initiated by the patients.

5. The decision by Paediatricians to refer paediatric patients for Chiropractic would be positively influenced if the Chiropractor had a post-registration specialisation in paediatric Chiropractic.

6. Paediatricians would like to receive feedback treatment from Chiropractors when referring patients to them, this study found that very few Paediatricians have ever received treatment feedback from a Chiropractor.

## 5.3 Recommendations

### 5.3.1 Methodological recommendations

1. The response rate from this study was 25%. It therefore stands to reason that it can not be assumed to be representative of all the Paediatricians in South Africa. A study of non-responders was not performed. We can assume that many of the non-responders had no working relationship with a Chiropractor. It is equally possible that a great number of non-responders were not interested in working with Chiropractors. The possibility of sample bias cannot be ruled out.

2. The questionnaire was of medium length in order to obtain greater insight into Paediatricians perceptions. However, Paediatricians are busy professionals and their time is highly in demand, and a slightly shorter questionnaire might have yielded a better response.

3. The response rate to this mailed survey was relatively low and in order to achieve a higher response rate, it may be useful to slightly change the design. Mailed questionnaires should be as short as possible, obviously focusing on the most pertinent

topics. Sensitive or controversial issues should be avoided if possible. If at all possible, numerous contacts between the researcher and the participants should take place. Ways in which to do this may include, sending an advance letter in which the study can be introduced, sending reminders or another questionnaire 3-4 weeks after the initial sending, and telephonic calls to encourage the non-responders to return the questionnaire. “For every additional contact with the population, the response rate can increase by about 10%” (Russel, *et al.,* 2004).

### 5.3.2 Recommendations for the Profession based on the outcomes of the study

1. The Chiropractic profession must focus on the production of scientifically validated literature on the safety and efficacy of Chiropractic treatment for paediatric conditions which should be aimed at mainstream paediatric journals. Although it can be argued that there are such articles available on the internet, there needs to be motivation on the part of the Paediatrician to find and read these.

2. Chiropractic as a profession needs to establish a clear identity and purpose in the treatment of paediatric conditions which can be highlighted by Paediatricians.

3. Chiropractors should take note of the Paediatricians desire for feedback reports following referrals, which may be a method of setting up good inter-professional relationships and encourage further communications and referrals.

4. Intervention programmes to educate and increase the awareness of Chiropractic amongst Paediatricians should take place. This could include incorporating introductory courses on Chiropractic into the current medical curriculae in South African medical schools which would expose students to the profession increasing their knowledge and likelihood of perceiving Chiropractic as a viable referral option. Alternatively, talks on Chiropractic could be delivered at paediatric conferences, seminars or independant talks.

5. This study has shown that Paediatricians have the perception that Chiropractic is not utilised by many paediatric patients. As such a study has not been conducted this may be an area to research in the future. Utilisation studies conducted around the world have shown a high prevalence of CAM usage among paediatrric patients and such a study in South Africa may show a similar usage motivating Paediatricians to be better informed about Chiropractic.

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# APPENDICES

## APPENDIX A
## Permission from J.Langworthy

| | |
|---|---|
| **Subject:** | RE: Permission to modify Questionnaire |
| **Date:** | Wed, 27 Jun 2007 14:39:32 +0100 |
| **From:** | "JLangworthy" <imrci.JLangworthy@aecc.ac.uk> |
| **To:** | "Sarah Heslop" <sarahjheslop@yahoo.co.uk> |

Hello Sarah,

Many thanks for your email. Please feel free to amend the questionnaire as necessary. I would be interested in seeing a copy as and when it becomes available.

Good luck!
Jenny

---

**From:** Sarah Heslop [mailto:sarahjheslop@yahoo.co.uk]
**Sent:** 26 June 2007 05:48
**To:** JLangworthy
**Subject:** Permission to modify Questionnaire

Goodmorning Ms Langworthy,

My name is Sarah Heslop and I am a Chiropractic Masters student at The Durban University of Technology in South Africa.

Dr. Charmaine Korporaal gave me your address and advised me to contact you requesting permission to use a modified questionnaire based on an original questionnaire devised by you. My reasearch is an attitudes and percerption study titled "An investigation into the attitudes and perceptions of paediatricians in South Africa with respect to Chiropractic."

Your original has subsequently been modified by Jannie Louw, Ron Van As and Michelle Kew, all of whom it appears have had your permission to do so and use the modified version.

You co-operation and assistance in this matter will be greatly appreciated.
Kind regards,
Sarah Heslop

# APPENDIX B
# Permission from Dr M.Kew

| | |
|---|---|
| **Date:** | Tue, 3 Jul 2007 17:35:56 +1000 (EST) |
| **From:** | "Michelle Kew" <michkewtie@yahoo.com.au> |
| **Subject:** | Re: research |
| **To:** | "Sarah Heslop" <sarahjheslop@yahoo.co.uk> |

Hi Sarah,
You have my full permission to use and update the questionnaire that I modified from Dr. Langworthy.
My pleasure and all the best with your research!
Dr. Michelle Kew

***Sarah Heslop <sarahjheslop@yahoo.co.uk>*** wrote:
Hi michelle
Please could you give me permission to modify the Langworthy questionnaire as you were the last student to publish a revised questionnaire!
Thanks very much
Sarah Heslop

# APPENDIX C
# 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:
**The knowledge and perceptions of paediatricians in South Africa with respects to chiropractic.**

**Background to the study:**
The aim of this study is to determine the knowledge and perceptions of paediatricians in South Africa with respect to chiropractic.

Paediatricians are specialist practitioners who care for children and are most often the primary contact practitioner for paediatric patients. Parents of paediatric patients heed the advice of their paediatrician, therefore the personal perceptions of the paediatrician will influence the perceptions of the patient and their parents, which makes them a valuable link we have with the public to inform them about chiropractic. Therefore if the paediatricians do not know much about chiropractic or perceive it in a negative or positive light, it will influence the multidisciplinary health settings within which their paediatric patients and parents find themselves.

At present, very little quantifiable information on paediatricians opinion of chiropractic exists and no studies involving these opinions have been carried out in South Africa.It is therefore the intention of the researcher to determine the current knowledge and perception that paediatricians have of chiropractic.

**Objective of the study:**
The data obtained by means of this questionnaire will allow for further assessment of the knowledge and perceptions of paediatricians of chiropractic in South Africa. The questions are concerned with your knowledge of chiropractic, the role of chiropractic in the paediatric patient, interprofessional communication between paediatricians and chiropractors, as well as your personal experience with chiropractors in South Africa. The questionnaire will only take a few minutes to complete, as most of the questions require you to tick or circle the appropriate answer. There are only a few short written responses that are required.

Your participation in this study is much appreciated and you are assured that your comments and contributions to the discussion will be kept confidential. The results of the discussion will only be used for research purposes.
If you have any further questions please feel free to contact either my supervisor/ co-supervisor or myself.

Sarah Heslop Dr. T. Mac Dougall (M.Tech.:Chiropractic)

## APPENDIX D
## Code of Conduct-Focus Group

**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 |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
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| | | | |

# APPENDIX E

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

## CONFIDENTIALITY STATEMENT – FOCUS GROUP DECLARATION

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

2. The returned questionnaires will be coded and kept anonymous in the research process.

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

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

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

## Please Print in block letters:

Focus Group Member: _____ Signature:_____

Witness Name: _____ Signature:_____

Researcher's Name: _____ Signature:_____

Supervisor's Name: _____ Signature:_____

## APPENDIX F

# INFORMED CONSENT FORM

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

**DATE: :**

**TITLE OF RESEARCH PROJECT:**

The knowledge and perceptions of paediatricians in South Africa with respect to chiropractic.

**NAME OF SUPERVISOR : Dr T. MacDougall (M.Tech.:Chiro.)**

**NAME OF RESEARCH STUDENT : Sarah Heslop**

**Please circle the appropriate answer**

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

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

**Please Print in block letters:**

Focus Group Member: _____ Signature: _____

Witness Name: _____ Signature:_____

Researcher's Name: _____ Signature:_____

Supervisor's Name: _____ Signature:_____

# APPENDIX G
# Pre-Focus Group Questionnaire

## QUESTIONNAIRE

**Question 1** PERSONAL DATA

1.1 Gender: ☐ Male ☐ Female

1.2 State your age in years: _____

1.3 What is your race group?
(for research purposes only)

☐ Asian ☐ White
☐ Black ☐ Indian
☐ Coloured ☐ Other (please specify)

1.4 How long have you been practising as a paediatrician?

☐ 0-10 years
☐ 11-20 years
☐ 21 years or more

1.5 How long did you practise as a General practicioner before you specialised in paediatrics?

☐ 0-5 years
☐ 5-10 years
☐ 10 years or more

1.6 Do you practice in the public or private health care sector?

☐ Private
☐ Public

1.7 In what type of practice do you work?

☐ Solo practice
☐ Partnership
☐ Group pracice (3 or more paediatricians)

1.8 Have you further specialised in any of the following in the paediatric field? in the paediatric field?

☐ Cardiology
☐ Haematology
☐ Developmental paediatrics
☐ Gastroenterology
☐ Other, please specify _____

**Question 2** YOUR LEVEL OF KNOWLEDGE ABOUT CHIROPRACTIC

2.1 Do you know something about chiropractic?

- ☐ Yes
- ☐ No (continue to question 3)

2.2 How did you get this information? (More than 1 answer is possible)

- ☐ I have been treated by a chiropractor
- ☐ A member of my family has been treated by a chiropractor
- ☐ I have read about chiropractic in a medical journal
- ☐ I have read about chiropractic in a magazine or journal
- ☐ From the patients or their parents who have been treated by a chiropractor
- ☐ From other paediatricians, general practicioners, physiotherapists, etc.
- ☐ At medical school
- ☐ Other (please specify) _____

2.3 Are you aware that chiropractors study for a duration of 6 years at either the Durban University of Technology or Wits Technikon in South Africa

- ☐ Yes
- ☐ No

2.4 A chiropractor that qualifies in South Africa does so with which one of the following degrees?

- ☐ Bachelors degree
- ☐ Double Bachelors degree
- ☐ Masters degree
- ☐ Other

2.5 The Chiropractic courses includes which of the following subjects?
(Please tick the subjects you consider to be applicable)

- ☐ Anatomy
- ☐ Chemistry
- ☐ Diagnostics
- ☐ Microbiology
- ☐ Pathology
- ☐ Pharmacology
- ☐ First Aid
- ☐ Physics
- ☐ Physiology
- ☐ Physiotherapy modalities
- ☐ Psychology
- ☐ Radiology
- ☐ Surgery

2.6 To your knowledge do you have any chiropractors practising in your residential area?

- ☐ Yes
- ☐ No
- ☐ I don't know

2.7 To your knowledge is chiropractic care covered by your medical aid?

- ☐ Yes
- ☐ No
- ☐ I don't know

2.8 To your knowledge does the chiropractic profession in South Africa have a controlling professional body?

| | |
|---|---|
| | Yes |
| | No |
| | I don't know |

2.9 Are you aware that chiropractors can specialise in the following areas?

| Yes | No | |
|---|---|---|
| | | Neuromusculoskeletal system |
| | | Extremities (eg: elbow, knee) |
| | | Paediatrics |
| | | Rehabilitation |
| | | Sports injuries |
| | | Radiology |

2.10 Some modalities of chiropractic treatment include? (more than 1 block may be ticked)

| | |
|---|---|
| | Adjustment or manipulation of the joints |
| | Massage |
| | Dry needling |
| | Ischaemic compression |
| | Electro-modalities (eg: Ultrasound, IFC) |
| | Ice |
| | Surgery |
| | Injection of corticosteroids |
| | Injection of anti-inflamatories |
| | Heat |

**Question 3** THE ROLE OF CHIROPRACTIC IN THE PAEDIATRIC PATIENT

3.1 Which of the following statements best reflects your view of chiropractic care for the paediatric patient?

| | |
|---|---|
| | Not informed enough to comment |
| | Chiropractic does more harm than good |
| | I am uncomfortable with it |
| | It may be effective for some patients |
| | Chiropractic is effective for some neuromusculoskeletal conditions |
| | Chiropractic is effective for some neuromusculoskeletal conditions and some organic/visceral conditions |
| | All paediatric patients should go for a spinal check up after their 6 week check up with the paediatrician |

3.2 To what extent do you believe chiropractors to be competent in neuromusculoskeletal examination and diagnosis in the paediatric patient? (Please tick 1 box only)

| | |
|---|---|
| | Very competent |
| | Moderately competent |
| | Competent |
| | Incompetent |

| | |
|---|---|
| | Very incompetent |

3.3 To what extent do you believe chiropractors to be competent in general medical management of paediatric patients? (Definition of general medical management: The ability to diagnose, treat and refer the patient for optimum patient benefit)

| | |
|---|---|
| | Very competent |
| | Moderately competent |
| | Competent |
| | Incompetent |
| | Very incompetent |

3.4 Chiropractic referral is an option for paediatric patients with

| | Agree | Disagree | Undecided |
|---|---|---|---|
| Attention Deficit Disorder | | | |
| Appendicitis | | | |
| Arthritis (inflamatory) | | | |
| Asthma | | | |
| Cervicogenic headaches | | | |
| Colic | | | |
| Chronic visceral disorders (responding poorly to medical intervention) | | | |
| Fractures | | | |
| Lower back pain | | | |
| Meningitis | | | |
| Neck and Shoulder Pain | | | |
| Nocturnal enuresis | | | |
| Non-organic/migraine headaches | | | |
| Postural abnormalities eg; scoliosis or hyperlordosis | | | |
| Sprains/strains (eg:ankle, wrist) | | | |
| Stress related disorders | | | |
| Tension Headaches | | | |
| Whiplash | | | |

**Question 4** INTERPROFESSIONAL COMMUNICATION BETWEEN PAEDIATRICIANS AND CHIROPRACTORS

4.1 Have you ever communicated with a chiropractor by telephone or letter or letter?

| | |
|---|---|
| | Yes |
| | No |

If yes,

| | |
|---|---|
| | I often communicate with a chiropractor about a patient |
| | I have communicated with a chiropractor but not often |

If no,

| | |
|---|---|
| | I have never communicated with a chiropractor but am interested in doing so |
| | I am not interested in communicating with a chiropractor for any reason |

4.2 How would you rate the communication experience between you and a chiropractor?

- ☐ I have never communicated with a chiropractor
- ☐ Very negative
- ☐ Negative
- ☐ Neutral
- ☐ Positive
- ☐ Very positive

4.3 Would you like this communication to be improved?

- ☐ Yes
- ☐ No

If yes, how _____

_____

_____

4.4 Do you refer patients to a chiropractor yourself?

- ☐ Yes
- ☐ No

If yes,

- ☐ Only at the patient or their parents request
- ☐ On my own judgement

4.5 Have you ever received treatment feedback from a chiropractor after referring a patient?

- ☐ Yes
- ☐ No
- ☐ I have never referred a patient to a chiropractor

4.6 Would you like to receive feedback from a chiropractor when referring a patient?

- ☐ Yes
- ☐ No

**Question 5** PERSONAL EXPERIENCE

5.1 Have you ever personally been treated by a chiropractor?

- ☐ Yes
- ☐ No (please skip to question 5.4)

5.2 If yes, was it:

- ☐ In the last 3 months
- ☐ 3 months to 1 year ago
- ☐ over a year ago

5.3 If yes, was it a positive or a negative experience?

- ☐ N/A
- ☐ Positive
- ☐ Negative
- ☐ Both

Any comments regarding your experience?

5.4 Has a member of your family received chiropractic care?

| | |
|---|---|
| | Yes |
| | No |

5.5 Have you taken your own child to a chiropractor?

| | |
|---|---|
| | Yes |
| | No |
| | I don't have any children |

If you answered yes to question 5.5, do you have any comments regarding this experience?

5.6 What percentage of your patients do you think visit chiropractors?

| | |
|---|---|
| | 0-15% |
| | 16-30% |
| | 31-45% |
| | 46-60% |
| | 61% and more |

5.7 Do you ask your patients or their parents whether they have consulted a chiropractor or if they intend to do so in the future?

| | |
|---|---|
| | Yes |
| | No |

5.8 Do you feel you have enough knowledge to discuss chiropractic care with your patient?

| | |
|---|---|
| | Yes |
| | No |

If no would you like to receive more information on order to be able to discuss chiropractic?

| | |
|---|---|
| | Yes |
| | No |

If you would like to receive more information on chiropractic, we can contact you when the study has been completed.

| | |
|---|---|
| | Yes, I would like to receive more informetion |
| | Not interested |

*Thank you*

# APPENDIX H

## Pre-Pilot QUESTIONNAIRE

**Question 1** PERSONAL DATA

1.1 Gender: ☐ Male ☐ Female

1.2 State your age in years: _____ years

1.3 What is your ethnicity?
(for research purposes only)

☐ Asian ☐ White
☐ Black ☐ Indian
☐ Coloured ☐ Other (please specify)

1.4 Please state for how many years you have been practicing as a paediatrician for: _____ years

1.5 Please state for how many years you practiced as a General Practitioner before pecializati in paediatrics:
_____ years

1.6 Do you practice in the public or private health care sector?

☐ Private
☐ Public

1.7 In what type of practice do you work?

☐ Solo practice
☐ Partnership
☐ Group peciali (3 or more paediatricians)

1.8 What percentage of your patients constitute the following age groups?
(Total must be 100%)

☐ newborn to 2 years old
☐ 2 to 5 years
☐ 5 to 8 years
☐ 8 to 14 years

**Question 2** YOUR LEVEL OF KNOWLEDGE ABOUT CHIROPRACTIC

2.1 Do you know something about chiropractic?

☐ Yes
☐ No (continue to question 3)

2.2 How did you get this information? (More than 1 answer is possible)

☐ I have been treated by a chiropractor
☐ A member of my family has been treated by a chiropractor
☐ I have read about chiropractic in a medical journal
☐ I have read about chiropractic in a magazine or journal

- ☐ From the patients or their parents who have been treated by a chiropractor
- ☐ From other paediatricians, general practicioners, physiotherapists, etc.
- ☐ At medical school
- ☐ Other (please specify) _____

2.3 Chiropractors study at which of the following institutions in South Africa? (more than 1 answer is possible)

- ☐ Damelin
- ☐ Durban University of Technology
- ☐ UNISA
- ☐ University of Cape Town
- ☐ University of Johannesburg (formerly Wits Technikon)
- ☐ Other, please specify _____

2.4 A chiropractor that qualifies in South Africa does so with which of the following degrees?

- ☐ Bachelors degree
- ☐ Bachelor of Technonlgy
- ☐ Certificate
- ☐ Double Bachelors degree
- ☐ Masters of Technonlgy
- ☐ National Diploma
- ☐ Other

2.5 The Chiropractic courses includes which of the following subjects?

(Please tick the subjects you consider to be applicable)

- ☐ Anatomy
- ☐ Chemistry
- ☐ Diagnostics
- ☐ Microbiology
- ☐ Pathology
- ☐ Pharmacology
- ☐ First Aid
- ☐ Physics
- ☐ Physiology
- ☐ Physiotherapy modalities
- ☐ Psychology
- ☐ Radiology
- ☐ Surgery

2.6 To your knowledge are there any chiropractic clinics in your geographical area of practice?

- ☐ Yes
- ☐ No
- ☐ I don't know

2.7 To your knowledge does the Medical Schemes Council pecializ the chiropractic profession?

- ☐ Yes
- ☐ No
- ☐ I don't know

2.8 To your knowledge does the chiropractic profession in South Africa have a legislative body?

- ☐ Yes
- ☐ No
- ☐ I don't know

2.9 To your knowledge can chiropractors pecializa in the following areas?

| Yes | No | I don't know | |
|---|---|---|---|
| | | | Orthopedics |
| | | | Paediatrics |
| | | | Radiology |
| | | | Rehabilitation (eg: post surgical) |
| | | | Sports injuries |

2.10 Some treatment modalities of chiropractic include? (more than 1 block may be ticked)

| | |
|---|---|
| | Adjustment or manipulation of the joints |
| | Electro-modalities (eg: Ultrasound, IFC) |
| | Dry needling (insertion of a needle into a tender spot in the muscle) |
| | Heat |
| | Ice |
| | Injection of corticosteroid medication |
| | Injection of non-steroidal-anti-inflammatories |
| | Ischaemic compression (manual compression to a tender spot in a muscle) |
| | Massage |
| | Surgery |

**Question 3** THE ROLE OF CHIROPRACTIC IN THE PAEDIATRIC PATIENT

3.1 Which of the following statements best reflects your view of chiropractic treatment for the general population (over 14years)?

| | |
|---|---|
| | Not informed enough to comment |
| | Chiropractic does more harm than good |
| | I am uncomfortable with it |
| | It may be effective for some patients |
| | Chiropractic is effective for some neuromusculoskeletal conditions |
| | Chiropractic is effective for some neuromusculoskeletal conditions and some organic/visceral conditions |

3.2 Which of the following statements best reflects your view of chiropractic for the paediatric (birth to 14 years) population?

| | |
|---|---|
| | Not informed enough to comment |
| | Chiropractic does more harm than good |
| | I am uncomfortable with it |
| | It may be effective for some patients |
| | Chiropractic is effective for some neuromusculoskeletal conditions |
| | Chiropractic is effective for some neuromusculoskeletal conditions and some organic/visceral conditions |
| | All paediatric patients should go for a spinal check up after their 6 week check up with the paediatrician |

3.3 To what extent do you believe chiropractors to be competent in the musculoskeletal examination and diagnosis in the general population? (please tick only 1 box)

| | |
|---|---|
| | Very competent |

| | |
|---|---|
| | Moderately competent |
| | Competent |
| | Incompetent |
| | Very incompetent |

3.4 To what extent do you believe chiropractors to be competent in the musculoskeletal examination and diagnosis in the paediatric population? (please tick only 1 box)

| | |
|---|---|
| | Very competent |
| | Moderately competent |
| | Competent |
| | Incompetent |
| | Very incompetent |

3.5 To what extent do you believe chiropractors to be competent in the general medical management of the general population? (Definition of general medical management: The ability to diagnose, treat within scope of practice and refer the patient for optimum patient benefit)

| | |
|---|---|
| | Very competent |
| | Moderately competent |
| | Competent |
| | Incompetent |
| | Very incompetent |

3.6 To what extent do you believe chiropractors to be competent in the general medical management of paediatric patients?

| | |
|---|---|
| | Very competent |
| | Moderately competent |
| | Competent |
| | Incompetent |
| | Very incompetent |

3.7 To what extent do you believe chiropractors to be competent in neurological examination and diagnosis in the general population?

| | |
|---|---|
| | Very competent |
| | Moderately competent |
| | Competent |
| | Incompetent |
| | Very incompetent |

3.8 To what extent do you believe chiropractors to be competent in the neurological examination and diagnosis in paediatric patients?

| | |
|---|---|
| | Very competent |
| | Moderately competent |
| | Competent |
| | Incompetent |
| | Very incompetent |

3.9 Chiropractic referral is an option for patients with the following conditions?

| | Agree | Disagree | Undecided |
|---|---|---|---|
| Attention Deficit | | | |

| Disorder | | | |
|---|---|---|---|
| Appendicitis | | | |
| Arthritis (inflammatory) | | | |
| Asthma | | | |
| Cervicogenic headaches | | | |
| Colic | | | |
| Chronic visceral disorders | | | |
| Fractures | | | |
| Lower back pain | | | |
| Meningitis | | | |
| Neck pain | | | |
| Nocturnal enuresis | | | |
| Non-organic/migraine headaches | | | |
| Otitis media | | | |
| Postural abnormalities (eg: scoliosis) | | | |
| Shoulder pain | | | |
| Sprains/strains (eg:ankle, wrist) | | | |
| Stress related disorders | | | |
| Tension Headaches | | | |
| Whiplash | | | |

**Question 4** INTERPROFESSIONAL COMMUNICATION BETWEEN PAEDIATRICIANS AND CHIROPRACTORS

4.1 Have you ever communicated with a chiropractor either by telephone or letter? Or letter?

- ☐ Yes
- ☐ No

If yes,

- ☐ I often communicate with a chiropractor about a patient
- ☐ I have communicated with a chiropractor but not often

If no,

- ☐ I have never communicated with a chiropractor but am interested in doing so
- ☐ I am not interested in communicating with a chiropractor for any reason

4.2 How would you rate the communication experience between you and a chiropractor?

- ☐ I have never communicated with a chiropractor
- ☐ Very negative
- ☐ Negative
- ☐ Neutral
- ☐ Positive
- ☐ Very positive

4.3 Would you like this communication to be improved?

- ☐ Yes
- ☐ No

If yes, how _____

4.4 Do you refer patients to a chiropractor?

| | |
|---|---|
| | Yes |
| | No |

If yes,

| | |
|---|---|
| | Only at the patient or their parents request |
| | On my own judgement |

4.5 Have you ever received treatment feedback from a chiropractor after referring a patient?

| | |
|---|---|
| | Yes |
| | No |
| | I have never referred a patient to a chiropractor |

4.6 Would you like to receive feedback from a chiropractor when referring a patient?

| | |
|---|---|
| | Yes |
| | No |

4.7 Would your decision to refer to a chiropractor be influenced if the chiropractor had a post-registration pecialization in chiropractic paediatrics.

| | |
|---|---|
| | Yes, this would positively influence my decision |
| | No, it would not influence my decision |

**Question 5** PERSONAL EXPERIENCE

5.1 Have you ever personally been treated by a chiropractor?

| | |
|---|---|
| | Yes |
| | No (Please skip to question 5.3) |

5.2 If yes, was it a positive or negative experience?

| | |
|---|---|
| | Positive |
| | Negative |
| | Both (If you have been treated multiple times) |

Any comments regarding your experience?

5.3 Has a member of your family been treated by a chiropractor?

| | |
|---|---|
| | Yes |
| | No |

5.4 Have you ever taken your own child to a chiropractor?

| | |
|---|---|
| | Yes |
| | No |
| | I don't have any children |

If you answered yes to question 5.4, do you have any comments regarding your experience?

5.5 What percentage of your patients do you think visit chiropractors? _____ Percent (%)

5.6 Do you and your patient or their parents ever discuss their use of chiropractic?

- ☐ Yes
- ☐ No (please skip to question 5.8)

5.7 If you answered yes to 5.6, is this discussion more often initiated by yourself or by your patients or their parents?

- ☐ Myself
- ☐ My patients or their parents

5.8 Do you feel you have enough knowledge to discuss chiropractic care with your patients or their parents?

- ☐ Yes
- ☐ No

If no would you like to receive more information on chiropractic in order to do so?

- ☐ Yes
- ☐ No

If you would like to receive more information on chiropractic we can contact you once the study has been completed.

- ☐ Yes, I would like to receive more information. Please insert email address: ☐
- ☐ Not interested

*Thank you*

# APPENDIX I
# Post Pilot Questionnaire

**Question 1**

1.1 Gender: ☐ Male ☐ Female

1.2 State your age in years: _____ years

1.3 What is your ethnicity?
(for research purposes only)

☐ Asian ☐ White
☐ Black ☐ Indian
☐ Coloured ☐ Other (please specify)

1.4 Please state for how many years you have been practicing as a paediatrician for: _____ years

1.5 Please state for how many years you practiced as a General Practitioner before specializing in paediatrics:
_____ years

1.6 Do you practice in the public or private health care sector?

☐ Private
☐ Public

1.7 In what type of practice do you work?

☐ Solo practice
☐ Partnership
☐ Group practice (3 or more paediatricians)

1.8 What percentage of your patients constitute the following age groups?
(Total must be 100%)

☐ newborn to 2 years old
☐ 2 to 5 years
☐ 5 to 8 years
☐ 8 to 14 years

**Question 2**

2.1 How would you rate your knowledge of the chiropractic profession?

☐ Good
☐ Moderate
☐ Average
☐ Poor

2.2 How did you get this information? (More than 1 answer is possible)

- ☐ I have no knowledge of chiropractic
- ☐ I have been treated by a chiropractor
- ☐ A member of my family has been treated by a chiropractor
- ☐ I have read about chiropractic in a medical journal
- ☐ I have read about chiropractic in a magazine or journal
- ☐ From the patients or their parents who have been treated by a chiropractor
- ☐ From other paediatricians, general practitioners, physiotherapists, etc.
- ☐ At medical school
- ☐ Other (please specify) _____

2.3 Chiropractors study at which of the following institutions in South Africa? (more than 1 answer is possible)

- ☐ I don't know
- ☐ Damelin
- ☐ Durban University of Technology
- ☐ UNISA
- ☐ University of Cape Town
- ☐ University of Johannesburg (formerly Wits Technikon)
- ☐ Other, please specify _____

2.4 A chiropractor that qualifies in South Africa does so with which of the following degrees?

- ☐ I don't know
- ☐ Bachelors degree
- ☐ Bachelor of Technonlgy
- ☐ Certificate
- ☐ Double Bachelors degree
- ☐ Masters of Technonlgy
- ☐ National Diploma
- ☐ Other

2.5 The Chiropractic courses includes which of the following subjects?

(Please tick the subjects you consider to be applicable)

- ☐ Anatomy
- ☐ Chemistry
- ☐ Diagnostics
- ☐ Microbiology
- ☐ Pathology
- ☐ Pharmacology
- ☐ First Aid
- ☐ Physics
- ☐ Physiology
- ☐ Physiotherapy modalities
- ☐ Psychology
- ☐ Radiology
- ☐ Surgery
- ☐ I dont know

2.6 To your knowledge is there a chiropractic practice in your geographical area of practice?

- ☐ Yes
- ☐ No
- ☐ I don't know

2.7 To your knowledge does the Medical Schemes Council recognise the chiropractic profession?

| | |
|---|---|
| | Yes |
| | No |
| | I don't know |

2.8 To your knowledge does the chiropractic profession in South Africa have a legislative body?

| | |
|---|---|
| | Yes |
| | No |
| | I don't know |

2.9 To your knowledge can chiropractors specialize in the following areas?

| Yes | No | I don't know | |
|---|---|---|---|
| | | | Orthopedics |
| | | | Paediatrics |
| | | | Radiology |
| | | | Rehabilitation (eg: post surgical) |
| | | | Sports injuries |

2.10 Some treatment modalities of chiropractic include? (more than 1 block may be ticked)

| | |
|---|---|
| | Adjustment or manipulation of the joints |
| | Electro-modalities (eg: Ultrasound, IFC) |
| | Dry needling (insertion of a needle into a tender spot in the muscle) |
| | Heat |
| | Ice |
| | Injection of corticosteroid medication |
| | Injection of non-steroidal-anti-inflammatories |
| | Ischaemic compression (manual compression to a tender spot in a muscle) |
| | Massage |
| | Surgery |

**Question 3**

3.1 Which of the following statements best reflects your view of chiropractic treatment for the general population (older than 14years)?

| | |
|---|---|
| | Not informed enough to comment |
| | Chiropractic does more harm than good |
| | I am uncomfortable with it |
| | It may be effective for some patients |
| | Chiropractic is effective for some neuromusculoskeletal conditions |
| | Chiropractic is effective for some neuromusculoskeletal conditions and some organic/visceral conditions |

3.2 Which of the following statements best reflects your view of chiropractic for the paediatric (birth to 14 years) population?

- ☐ Not informed enough to comment
- ☐ Chiropractic does more harm than good
- ☐ I am uncomfortable with it
- ☐ It may be effective for some patients
- ☐ Chiropractic is effective for some neuromusculoskeletal conditions
- ☐ Chiropractic is effective for some neuromusculoskeletal conditions and some organic/visceral conditions
- ☐ All paediatric patients should go for a spinal check up after their 6 week check up with the paediatrician

3.3 To what extent do you believe chiropractors to be competent in the musculoskeletal examination and diagnosis in the general population? (please tick only 1 box)

- ☐ Very competent
- ☐ Moderately competent
- ☐ Competent
- ☐ Incompetent
- ☐ Very incompetent

3.4 To what extent do you believe chiropractors to be competent in the musculoskeletal examination and diagnosis in the paediatric population? (please tick only 1 box)

- ☐ Very competent
- ☐ Moderately competent
- ☐ Competent
- ☐ Incompetent
- ☐ Very incompetent

3.5 To what extent do you believe chiropractors to be competent in the general medical management of the general population? (Definition of general medical management: The ability to diagnose, treat within scope of practice and refer the patient for optimum patient benefit)

- ☐ Very competent
- ☐ Moderately competent
- ☐ Competent
- ☐ Incompetent
- ☐ Very incompetent

3.6 To what extent do you believe chiropractors to be competent in the general medical management of paediatric patients?

- ☐ Very competent
- ☐ Moderately competent
- ☐ Competent
- ☐ Incompetent
- ☐ Very incompetent

3.7 To what extent do you believe chiropractors to be competent in neurological examination and diagnosis in the general population?

| | |
|---|---|
| | Very competent |
| | Moderately competent |
| | Competent |
| | Incompetent |
| | Very incompetent |

3.8 To what extent do you believe chiropractors to be competent in the neurological examination and diagnosis in paediatric patients?

| | |
|---|---|
| | Very competent |
| | Moderately competent |
| | Competent |
| | Incompetent |
| | Very incompetent |

3.9 Chiropractic referral is an option for patients with the following conditions?

| | Agree | Disagree | Undecided |
|---|---|---|---|
| Attention Deficit Disorder | | | |
| Appendicitis | | | |
| Arthritis (inflammatory) | | | |
| Asthma | | | |
| Cervicogenic headaches | | | |
| Colic | | | |
| Chronic visceral disorders | | | |
| Fractures | | | |
| Lower back pain | | | |
| Meningitis | | | |
| Neck pain | | | |
| Nocturnal enuresis | | | |
| Non-organic/migraine headaches | | | |
| Otitis media | | | |
| Postural abnormalities (eg: scoliosis) | | | |
| Shoulder pain | | | |
| Sprains/strains (eg:ankle, wrist) | | | |
| Stress related disorders | | | |
| Tension Headaches | | | |
| Whiplash | | | |

**Question 4**

4.1 Have you ever communicated with a chiropractor either by telephone or letter?

- ☐ Yes
- ☐ No

If yes,

- ☐ I often communicate with a chiropractor about a patient
- ☐ I have communicated with a chiropractor but not often

If no,

- ☐ I have never communicated with a chiropractor but am interested in doing so
- ☐ I am not interested in communicating with a chiropractor for any reason

4.2 How would you rate the communication experience between you and a chiropractor?

- ☐ I have never communicated with a chiropractor
- ☐ Very negative
- ☐ Negative
- ☐ Neutral
- ☐ Positive
- ☐ Very positive

4.3 Would you like this communication to be improved?

- ☐ Yes
- ☐ No

If yes, how _____

4.4 Do you refer patients to a chiropractor?

- ☐ Yes
- ☐ No

If yes,

- ☐ Only at the patient or their parents request
- ☐ On my own judgment

4.5 Have you ever received treatment feedback from a chiropractor after referring a patient?

- ☐ Yes
- ☐ No
- ☐ I have never referred a patient to a chiropractor

4.6 Would you like to receive feedback from a chiropractor when referring a patient?

- ☐ Yes
- ☐ No

4.7 Would your decision to refer to a chiropractor be influenced if the chiropractor had a post-registration specialization in chiropractic paediatrics.

- ☐ Yes, this would positively influence my decision
- ☐ No, it would not influence my decision

**Question 5**

5.1 Have you ever personally been treated by a chiropractor?

- ☐ Yes
- ☐ No (Please skip to question 5.3)

5.2 If yes, was it a positive or negative experience?

- ☐ Positive
- ☐ Negative
- ☐ Both (If you have been treated multiple times)

Any comments regarding your experience?

_____

_____

_____

5.3 Has a member of your family been treated by a chiropractor?

- ☐ Yes
- ☐ No

5.4 Have you ever taken your own child to a chiropractor?

- ☐ Yes
- ☐ No
- ☐ I don't have any children

If you answered yes to question 5.4, do you have any comments regarding your experience?

_____

_____

_____

5.5 What percentage of your patients do you think visit chiropractors? _____ percent (%)

5.6 Do you and your patient or their parents ever discuss their use of chiropractic?

- ☐ Yes
- ☐ No (please skip to question 5.8)

5.7 If you answered yes to 5.6, is this discussion more often initiated by yourself or by your patients or their parents?

- ☐ Myself
- ☐ My patients or their parents

5.8 Do you feel you have enough knowledge to discuss chiropractic care with your patients or their parents?

☐ Yes
☐ No

If no would you like to receive more information on chiropractic in order to do so?

☐ Yes
☐ No

If you would like to receive more information on chiropractic we can contact you once the study has been completed.

☐ Yes, I would like to receive more information. Please insert email address: ☐
☐ Not interested

*Thank you*

# APPENDIX J
# Letter of information-Paediatricians

Dear Participant
Welcome to my study and thank you for your interest. I am a student pursuing a Masters Degree at the Durban University of Technology.

**Study Title:**
The knowledge and perceptions of paediatricians in South Africa with respect to chiropractic.

Name of Supervisor: Dr T. MacDougall (031-2042094)
M.Tech:Chiropractic
Name of Research Student: Sarah Heslop (031 5648073/ 0832987895)
Name of Institution: Durban University of South Africa

**Purpose of the study:**
The study will involve research on paediatricians in South Africa to determine their knowledge and perceptions of chiropractic.
The data obtained by means of this questionnaire will allow further assessment of the role of chiropractic in South Africa with respect to the paediatric patient. The questions are concerned with your knowledge of chiropractic, the role of chiropractic in South Africa with regard to the paediatric patient, interprofessional communication between paediatricians and chiropractors and your personal experience with chiropractic. The questionnaire will only take a few minutes to complete, as most of the questions recquire you to tick the appropriate answer. There are only a few short written responses required.

**Benefits:**
Once the study has been completed you will have access to the results. You may also choose the option of receiving information on the chiropractic profession which may be useful to both you and your patients.

**Risks/Discomforts and costs:**
There are no risks/discomforts or cost involved from your participation in the study.

**Confidentiality:**
As with all questionnaires, the information which you will furnish will be treated in the utmost confidence. The questionnaires will be delivered to the Durban University of Technology and the researcher will then receive the questionnaires. The questionnaires will be separated from the letters of informed consent by the researcher thereby the identities of the recipients will not be known. You are free to withdraw from the study at any time. Please return the questionnaire in the provided envelope.

If you have any problems or complaints please contact the Dean, Professor N.Gwele, Chair of Faculty of Health Sciences Research and Ethics Committee on 031 3732566.

Your time, opinion and assistance in this project is invaluable and greatly appreciated.

Yours sincerely

| | |
|---|---|
| ……. | …….. |
| Sarah Heslop | Dr T. Mac Dougall |
| Research student | Supervisor |
| (B.Tech.:Chiropractic) | (M.Tech.:Chiropractic) |

**APPENDIX K**
**INFORMED CONSENT FORM-Paediatricians**

**DATE: :**

**TITLE OF RESEARCH PROJECT:**

The knowledge and perceptions of paediatricians in South Africa with respect to chiropractic.

**NAME OF SUPERVISOR : Dr. T. Mac Dougall (M.Tech.:Chiropractic) (031 204 2094)**

**NAME OF RESEARCH STUDENT : Sarah Heslop (031 204 2205/ 083 298 7895)**

**Please circle the appropriate answer**

| | YES/NO | |
|---|---|---|
| 10. Have you read the research information sheet? | Yes | No |
| 11. Have you had an opportunity to ask questions regarding this study? | Yes | No |
| 12. Have you received satisfactory answers to your questions? | Yes | No |
| 13. Have you had an opportunity to discuss this study? | Yes | No |
| 14. Have you received enough information about this study? | Yes | No |
| 15. Do you understand the implications of your involvement in this study? | Yes | No |
| 16. Do you understand that you are free to | | |
| a) withdraw from this study at any time? | Yes | No |
| b) withdraw from the study at any time, without reasons given | Yes | No |
| c) withdraw from the study at any time without affecting your future health care or relationship with the Chiropractic day clinic at the Durban University of Technology. | Yes | No |
| 17. Do you agree to voluntarily participate in this study | Yes | No |
| 18. 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:**

Participants name: _____ Signature: _____

Witness Name: _____ Signature:_____

Researcher's Name: _____ Signature:_____

Supervisor's Name: ___ _____ Signature:_____

# Appendix L
# Ethics Clearance Certificate

DURBAN UNIVERSITY of TECHNOLOGY

*Faculty of Health Sciences*

## ETHICS CLEARANCE CERTIFICATE

| | | | |
|---|---|---|---|
| **Student Name** | **Miss SJ Heslop** | **Student No** | **20200720** |
| **Ethics Reference Number** | **FHSEC 003 / 08** | **Date of FRC Approval** | |
| **Qualification** | **M-Tech: Chiropractic** | | |
| **Research Title:** | **The knowledge and perception of paediatricians in South Africa with respect to chiropractic.** | | |

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

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

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

SIGNATURE OF STUDENT/RESEARCHER — DATE: 19/03/08

SIGNATURE OF SUPERVISOR/S — DATE: 19/3/08

SIGNATURE OF HEAD OF DEPARTMENT — DATE: 19/3/08

SIGNATURE: CHAIRPERSON OF RESEARCH ETHICS COMMITTEE — DATE: 25/8/08

FACULTY OF HEALTH SCIENCES/ETHICS CLEARANCE CERTIFICATET/ 08-2007 Faculty Approved Document