A comparative analysis of six international chiropractic regulatory systems

By

Justin Adams

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Durban University of Technology

I, Justin Adams, do declare that this dissertation is representative of my own work in both conception and execution.

_____________________________ ____________

J. Adams Date

Approved for Final Examination

_____________________________ ____________

Dr C. Korporaal Date

M. Tech. Chiropractic; CCFC, CCSP, ICSSD.

DEDICATION

To my parents Stuart and Chrissie Adams,
your endless support and love made this all possible.
Thank you.

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ABSTRACT

Background: The function and roles of legislation primarily provide a protective function for the public by preserving their fundamental rights. Legislation also maintains the legitimacy of the professions and aids in defining the scope of practice within the profession. Legislation may however affect the international migration of practitioners, in addition to geographical proximity, shared language, customs and educational curricula as well as historical links. There is no published literature that compares chiropractic legislation in regulated countries, thus no understanding of where possible similarities and differences exist and the impact they may have on the migration of chiropractors

Objective: The main objective of the study is to aid in increasing the understanding of the values, structures and operations of various international chiropractic regulatory systems with the goal of identifying the similarities and differences (viz. compare) between these chiropractic regulatory systems.

Method: Six countries with chiropractic Legislation were selected using purposive sampling based on the number of practicing chiropractors. The USA was divided into states with the top three selected according to practicing chiropractors, Canada was divided and the top province selected based on practicing chiropractors. Information and data was obtained via desk based research and additional information was gathered by the researcher from the registrar of the respective regulatory bodies.

Results: A variety of factors were identified that may either aid in or hinder the mobility of chiropractors across jurisdictions. By analysing the legislative documents, it was found that regulatory bodies remain similar in content and structure however significant differences were also found.

Conclusion: In conclusion, regulatory bodies and their governing documents and procedures remain similar in content and structure. However the study revealed differences factors that could possibly affect the mobility of chiropractors across jurisdictions. These areas identified included: Educational standards and processes, competency maintenance, registration requirements (local and foreign), disciplinary procedure and processes and constraints placed by supranational bodies.

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DEFINITION OF TERMS

Accreditation:	Giving the authority or sanction to an individual or something when recognized standards have been met (Oxford Dictionaries, 2013).
Adverse Reaction:	An unintended, harmful effect of a medication, diagnostic test, or therapeutic intervention (Mosby's Medical Dictionary, 2009).
Allopathic:	The treatment of disease by conventional means (Oxford Dictionaries, 2013).
Antitrust:	The prevention and/ or controlling of trusts or other monopolies, with the goal of promoting fair competition in business (Oxford Dictionaries, 2013).
Autonomy:	The right to self-government (Oxford Dictionaries, 2013).
Candidate Status:	This recognizes that an institution complies with the eligibility criteria for candidate status and is working towards accredited status (ECCE, 2013).
Competence:	Being able to do something successfully or efficiently (Oxford Dictionaries, 2013).
Coursework:	Written/ practical work done by a student during a course of study, In order to obtain a grade or mark (Oxford Dictionaries, 2013).
Cupping:	In the context of Chinese medicine, a therapy in which heated glass cups are applied to the skin along the meridians of the body, creating suction and believed to stimulate the flow of energy (Oxford Dictionaries, 2013).
Formal CPD hours:	Also known as "structured CPD" and is often based in a classroom. Formal CPD will have clear learning aims and outcomes given to you by the learning provider. Examples include: Seminars and workshops (Royal Institute of British Architects, 2013)
Impedance:	Meaning resistance (Oxford Dictionaries, 2013).
Informal CPD hours:	Informal CPD includes learning via self-directed means. The learning aims are not dictated or provided (RIBA, 2013)
Itemization:	A list of individual items (Oxford Dictionaries, 2013).
Jurisdiction:	The power and right to make legal decisions and judgements (Oxford Dictionaries, 2013).
Leeching:	The use of leeches in medicine for bloodletting. After biting it secretes an anticoagulant to ensure the flow of blood (Oxford Dictionaries, 2013).

Legislation:	The process of making or enacting laws (Oxford Dictionaries, 2013).
Medicare:	In the context of the USA, A federal system of health insurance for people over 65 years of age (Oxford Dictionaries, 2013).
Paucity:	Small or insufficient quantities or amounts of something (Oxford Dictionaries, 2013).
Pragmatic:	Handling things in a sensible and realistic way that is based on practical rather than theoretical considerations (Oxford Dictionaries, 2013).
Purposive:	Being done with a purpose (Oxford Dictionaries, 2013).
Quantitative:	Relating to, measuring, or measured by the number of something rather than by its quality (Oxford Dictionaries, 2013).
Rationale:	A set of reasons or a logical basis for a course of action or belief (Oxford Dictionaries, 2013).
Regulation:	An authoritative rule or directive made and maintained (Oxford Dictionaries, 2013).
Sanction:	A penalty given for disobeying a law or rule (Oxford Dictionaries, 2013).
Statutory:	Required, permitted, or enacted by statute (Oxford Dictionaries, 2013).
Subluxation:	A slight misalignment of the vertebrae, regarded in chiropractic theory as the cause of many health problems (Oxford Dictionaries, 2013).
Trajectory:	The path followed by an object that is moving under the action of given forces (Oxford Dictionaries, 2013).

LIST OF ABBREVIATIONS

AECC: Anglo European College of Chiropractic
AHPCSA: Allied Health Professions Council of South Africa
AMA: American Medical Association
APC: Annual Practicing Certificate
B. Tech: Bachelors of Technology
CAM: Complementary and Alternative Medicine
CBA: Chiropractic Board of Australia
CCE: Council on Chiropractic Education
CCEA: Council on Chiropractic Education Australasia
CCEB: Canadian Chiropractic Examining Board
CCEI: Council on Chiropractic Education International
CCO: College of Chiropractors of Ontario
CFCREAB: Canadian Federation of Chiropractic Regulatory and Educational Accrediting Boards
CHE: Council on Higher Education
CIN-BAD: The Chiropractic Information Network/Board Action Databank
CMCC: Canadian Memorial Chiropractic College
CPD: Continuing Professional Development
CPiRLS: The Chiropractic Patient Incident Reporting and Learning System
CQU-A: Central Queensland University-Australia
CT: Computed tomography
CV: Curriculum Vitae
DC: Doctor of Chiropractic
Dept.: Department
DoE: Department of Education
DoH: Department of Health
DoHET: Department of Higher Education and Training
Dr: Doctor
DUT: Durban University of Technology
ECCE: European Council on Chiropractic Education
FCLB: Federation of Chiropractic Licensing Boards
FRC: Faculty of Health Sciences Research Committee
FTP: Fitness to Practice
GCC: General Chiropractic Council

IBCE: International Board of Chiropractic Examiners
ID: Identification Document
IELTS: International English Language Testing System
IREC: Institutional Research and Ethics Committee
M. Chiro: Masters of Chiropractic
M. Tech: Masters of Technology
MRI: Magnetic resonance imaging
N/A: Not Applicable
NBCE: National Board of Chiropractic Examiners
NBME: National Board of Medical Examiners
N.Dip: National Diploma
NSAIDs: Non-steroidal anti-inflammatory drugs
NZCB: New Zealand Chiropractic Board
NZCC: New Zealand College of Chiropractic
OSCE: Objective Structured Clinical examination
PhD: Doctor of Philosophy
PRT: Practice Readiness Training
RMIT: Royal Melbourne Institute of Technology
SPEC: Special Purposes Examination in Chiropractic
UCA: United Chiropractic Association
UJ: University of Johannesburg
UK: United Kingdom
US: United States
USA: United States of America
UQTR: Université du Québec à Trois-Rivières
WFC: World Federation of Chiropractic
WHO: World Health Organisation
WIOC: Welsh Institute of Chiropractic
<: Less than
>: Greater than
%: Percentage
y: Years

APPENDICES

Appendix A: FRC/IREC acceptance letter

Appendix B: Final Data Collection tool (Post-Pilot Group)

Appendix C: Letter of Information

Appendix D: Code of Conduct

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Appendix I: Registration flowchart Canada Ontario

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Appendix K: South African Registration Requirements

CHAPTER ONE

INTRODUCTION

This chapter provides an overview of the literature that is available regarding chiropractic legislation internationally. This chapter also justifies the purpose of the study, the aims, objectives and the underlying assumptions.

1.1 Background

The function and roles of legislation primarily provide a protective function (Walston-Dunham, 2009). This pertains primarily to the public, where laws serve to protect the public by preserving their fundamental rights (Walston-Dunham, 2009). Therefore, legislation is in place to maintain structure and discipline within a profession and determine its legitimacy, thereby making it legal to practice it (in this context chiropractic) within ones country within a set of confines of law (as defined by the scope of practice within that profession) (Sandefur and Coulter, 1997).

These legal parameters and boundaries within each country are associated with a scope of practice and are acted upon through a process of development, stakeholder participation, legal review and alignment with national government strategy within each country (Sandefur and Coulter, 1997). Therefore, the outcomes of each of these processes may be different in different jurisdictional / governmental regions, where the contributions from each of the developmental processes, stakeholder participation, legal review and alignment with national government strategy are inherently different and combine differently to form unique sets of rules and regulations within different countries (Parliamentary Monitoring Group, n.d)

Therefore, legislation pertaining to a profession and in particular the health care setting, such as chiropractic can affect the international migration of practitioners (International Chiropractic Regulatory Forum (ICRF), 2013). This is particularly applicable and relevant, when sets of rules and regulations differ significantly between countries (ICRF, 2013). This has resulted in the development of a multitude of different mechanisms for different jurisdictional bodies / statutory councils to evaluate applicants into their country (Kollasch, 2012; Korporaal and Peterson, 2010; Council on Chiropractic Education International, 2013 and Guiry, 2012). These include, but are not limited to:

- The requirement of state or national board examinations when migrating to other chiropractic legislated states or countries (Kollasch, 2012).

- Internships (Korporaal, Peterson, 2010).
- Accreditation requirements (CCEI, 2013).
- Reciprocity agreements (Guiry, 2012).

These evaluation mechanisms however impede practitioners' mobility between jurisdictions and contrast greatly to the reasons for practitioner migration (ICRF, 2013). Practitioner migration, according to Buchan (2006), may include the following: geographical proximity, shared language, customs and educational curricula as well as historical links (de Vries *et al*, 2009).

The above processes are however, at odds with the pragmatic responsibility that is shared by the statutory councils and the laws, rules and regulations that they uphold; - in that these bodies serve primarily the same function of protecting the patient (Walston-Dunham, 2009). Thus, it would stand to reason that they in effect would rely on the same minimum criteria for registration of health professionals within each of their jurisdictions.

However, as no published literature compares chiropractic legislation in countries that are regulated, there is no understanding of where possible similarities (enablers for the migration of practitioners) and differences (disablers for the migration of practitioners) exist and the impact of these similarities and differences on the migration of chiropractors has not as yet been identified. Identifying such enablers and disablers may aid regulated countries in refining aspects of their legislation with the purpose of streamlining practitioner migration, - without compromising their regulatory patient protection function (Walston-Dunham, 2009).

Therefore, this study aimed to increase the understanding of the values, structures and operations of various international chiropractic regulators, with the goal of identifying the similarities and differences between their regulatory systems.

1.2 Aim

The aim of the study was to aid in increasing the understanding of the values, structures and operations of various international chiropractic regulatory systems, with the goal of identifying and comparing the similarities and differences between these chiropractic regulatory systems.

1.3 Objectives

The objectives of this study were determined and approved as follows:

- Objective One: To outline selected international chiropractic regulators in terms of the criteria chosen.
- Objective Two: To describe selected international chiropractic regulators in terms of the criteria chosen.
- Objective Three: To identify and compare similarities and differences between chiropractic regulatory systems.
- Objective Four: To provide a guideline for the development of legislation in unregulated countries.

1.4 Hypothesis

Hypothesis: The regulatory systems were similar.
Null hypothesis: There were no differences between the regulatory systems.

1.5 Rationale

The role of regulatory structures is that of patient protection (Allied Health Professions Council, Act 63 of 1982 (as amended); General Chiropractic Council, 2012), it would stand to reason that each of the jurisdictional structures would have similar legislation and requirements for the purposes of practitioner registration (Walston-Dunham, 2009). This assumption however, does not hold true, as some countries require board examinations (International Board of Chiropractic Examiners, 2012); other countries require only accreditation (Guiry, 2012) or a hybrid of the two systems (Donato, 2012). This is counter-intuitive when one considers that these jurisdictional structures have similar roles and the impact that these differences have on international mobility of practitioner's.

In this context, the Council on Chiropractic Education International (CCEI) and its accrediting agencies have been developing core educational standards that would be applicable for all jurisdictions to utilize as a common reference point and thus alleviate the educational differences that are perceived by the jurisdictional structures (CCEI; CCEA; ECCE; CCCE; 2013)

This is, however, only one aspect of juristic law within countries that regulate chiropractors and thus, there may be more similarities and / or differences that impact on practitioner mobility (AHPCSA, AHPRA). In addition, the lack of a clear chiropractic identity also presents problems in terms of public perception, policy implications and professional growth and development. In this regard, and to the researcher's knowledge, no studies have been conducted comparing chiropractic legislation across the world particularly that which identifies similarities and differences with regards to the requirements for registration. By comparing legislation across the most populated chiropractic countries, similarities and differences can be identified to aid in future improvements in legislation and standardization of chiropractic regulation between countries across the globe. This may then also facilitate or enable migration of practitioners across jurisdictions (ICRF, 2013).

In addition, a document comparing and contrasting chiropractic regulatory systems, will aid countries without legislation, in that it will provide a point of reference for modeling their own legislation that is in line with established legislated countries.

1.6 Assumptions/Limitations

As the data was collected through use of public domain documents or communication with appropriate registrars and did not require responses based on perception. Therefore, data was expected to be directly reflective of laws, rules and regulations within the countries under study.

The scope of the study was limited as a descriptive analysis of the regulatory systems and not the policies derived from those regulatory systems.

1.7 Significance of the study

There is a paucity of literature on chiropractic legislation and no published literature comparing legislation across the globe (Phillips, 2012).

1.8 Organization of the dissertation

The dissertation consists of five chapters:

Chapter One outlines background to the dissertation. Therefore, the chapter includes the rationale, as well as the aims and objectives of the study and identifies possible assumptions/limitations.

Chapter Two provides a detailed review of current literature pertaining to chiropractic legislation and education.

Chapter Three describes the methodology of the study in terms of the formulation, administration and analysis of the data collection tool. The chapter also outlines the sampling process and the inclusion/exclusion criteria.

Chapter Four provides a detailed report and discussion on the results obtained from the analysis of the data gathered. The chapter includes figures, and tables (with appropriate explanations) displaying the results obtained and the statistical inferences.

Chapter Five includes the conclusion/s derived from the study and provides recommendations for future studies. It also identifies the limitations identified during the study.

CHAPTER TWO

REVIEW OF LITERATURE

2.1 Definition of chiropractic

The World Federation of Chiropractic (2001) defines the chiropractic profession as: "a health care profession concerned with the diagnosis, treatment and prevention of disorders of the musculoskeletal system and the effects of these disorders on the function of the nervous system and general health" (WFC, 2001) with emphasis placed on manual therapy including spinal manipulation (Chapman-Smith, 2000). Chiropractic is the largest, most regulated, and best recognized of the health professions that have traditionally functioned outside of mainstream medical institutions ref. Chiropractic is therefore categorised as a complementary and alternative medicine (CAM) (Meeker and Haldeman, 2002)

The word chiropractic is derived from Greek origin (Chapman-Smith, 2000). The words *cheir* and *praxis* translate into practice or treatment by hands (Chapman-Smith, 2000). Chiropractic is mainly a health profession that emphasis the use of manual therapy including spinal manipulation by hand (Chapman-Smith, 2000, Keating, 1992: Plaugher, 1993: Leach, 2004).

2.2 Origins of chiropractic

The profession of chiropractic was founded in 1895 by a magnetic healer Daniel David (DD) Palmer (Keating, 1992). DD Palmer lived in Davenport, Iowa and it was here that the first chiropractic school, *Palmer School of Chiropractic* opened in 1897 (Keating, 1992). Although Palmer had no formal training, he was well respected for his knowledge in human anatomy and physiology that stretched from North America to Europe (Keating, 1992). During this time, health care was recognised more as an art than a science. Hence, educational standards differed and there was a lack of science integrated into medical education and subsequently treatment methods (Duffy, 2011) During this period (1895) up until 1910, other groups of healers emerged including bonesetters (Haldeman, 2005), homeopaths (Chapman-Smith, 2000), osteopaths and naprapaths (Zarbuck, 1986) (Basmajian and, Haldeman, 2005). These forms of healthcare were minimally invasive and focused on the body's inherent ability to heal itself (Chapman-Smith, 2000).

Allopathic doctors during this period did not meet the rigorous educational and licensing standards that exist today and much of the medical profession focused on radical therapies such as cupping and leeching. The general public viewed these methods as worse than the conditions with which they presented and thus demanded alternative forms of treatment, which were less invasive yet perceived to be beneficial (Redwood and Cleveland, 2003) (Duffy, 2011).

Following the Flexner Report (1910) (Duffy, 2011), which condemned most medical education; the changes that followed allowed the medical profession to develop its respected and dominant place within health care. Medical education and research received external financial support through federal government and private donations whilst chiropractic education remained privately funded, with no funding available for evidence based research (Sandefur and Coulter, 1997; Keating, 1992).

To aid the efforts of the allopathic profession in eliminating chiropractic, organized medicine authorities promoted licensing regulations, with the belief that due to the poor standards of education of chiropractic schools this would prevent their graduates from passing state board licensing exams (Sandefur and Coulter, 1997).

In 1925, an additional obstacle for whom was created – the medical profession introduced the Basic Science Boards to the doctor of chiropractic (DC) qualification because the chiropractic curriculum lacked basic science training (Keating, 1992).

In order to maintain educational standards, chiropractic schools expanded the curriculum and employed Ph.D.-level instructors to teach the basic sciences. As a result, chiropractors started to pass the Basic Science Boards (Sandefur and Coulter, 1997; Watkins, 1988).

Over the next 75 years, the allopathic profession challenged the basis of chiropractic and this conflict still remains (Wardwell, 1987). The reasons behind this conflict included:

- Educational standards: The allopathic profession driven by government and private funding improved educational standards (Duffy, 2011) whilst chiropractic education and standards remained stagnant and lacked scientific evidence for its existence. (Keating, 1992)

- Competitiveness: Chiropractors claimed to assist the body's inherent ability to heal itself, and that all dis-ease (Palmer, 1910) was attributed to subluxations with the

spinal column (Leech, 2004). The chiropractic adjustment would correct these subluxations (that interfered with the nervous system and therefore obstructing the body's natural defence mechanisms) (Gatterman, 1990). At the same time chiropractors would encourage patients to abandon drugs, surgery and the medical profession in favour of chiropractic care (Haldeman, 2005).

- Spinal Manipulation: The practice of manipulation which was previously performed by bone setters, attracted hostility from the medical fraternity as it was never a formal part of medical education. However, today the medical profession has recognised that spinal manipulation as a first line treatment for back pain albeit a very recent acknowledgement (Chapman-Smith, 2000; Dagenais and Haldeman, 2012)

- Philosophy: In Western civilization truth around philosophy is generated and proved through a process employing scientific methodology. These "truths" within health sciences, until recently, have only been generated through research conducted by scientists and the allopathic community (Sandefur and Coulter, 1997). This in turn has caused much conflict around the profession and has disadvantaged chiropractic becoming recognized as a health approach (Lipton, 2005).

- Lack of evidence: To this day, scepticism persists due to the lack of scientific evidence indicating the effectiveness of chiropractic care and the lack of evidence behind the proposed philosophy that spinal manipulations can result in health improvements, independent of other variables (Vangelder, 2011).

In more recent times, chiropractors have challenged mainstream medicine by opposing the need for vaccinations due to the adverse reactions that are associated with administration of such. This has caused issues within Australia which has now resulted in chiropractors being told that they may not make anti-vaccination claims to the public (Willingham, 2013).

In a study conducted by Lawrence (2012), titled "*Anti-Vaccination Attitudes within the Chiropractic Profession: Implications for Public Health Ethics*", it concluded that although evidence about the safety and efficacy of administering vaccinations have been generated, many chiropractors do not believe in vaccinations and will encourage the public against being vaccinated by highlighting the risks rather than the benefits. This is considered unethical practice and isolates the chiropractic profession outside the greater healthcare

community and could result in its continued marginalization and small market impact (Lawrence, 2012).

2.3 The Role of law in regulating professions

The function and roles of legislation primarily provide a protective function (Walston-Dunham, 2009). This pertains primarily to the public in which laws will serve to protect them by preserving their fundamental rights. For example: Certain laws may be in place to dictate the conduct of individuals within a particular profession and therefore will protect the public from improper conduct (Walston-Dunham, 2009).

All persons are required to comply with legislation that applies to them (South Australian Legislation, 2012). In the case of the chiropractic profession this applies to those practitioners who are actively practicing (South Australian Legislation, 2012).

The purpose and the roles of legislation differ from country to country with particular reference to the context and profession it applies. For example, in South Africa, the law has evolved primarily from Roman-Dutch law interweaved with English law and statute law as well as limited recognition of customary law (McQuoid-Mason and Dada, 2011). All of which is subject to the constitution of South Africa. By contrast, the USA has derived its law largely from the common law system of English law (Hughes, 1996).

According to a report conducted by the National Advisory Board of Zimbabwe (n.d.) titled "the role of legislation and policy frame-work in education" the following were identified as the main roles of legislation:

- The definition of rights, powers, privileges of citizens and stakeholders in a nation or sector.
- The definition, promotion and protection of national interest and priorities.
- The creation of an enabling and conducive environment for citizens in their conduct of life and business.
- The promotion and protection of national welfare and public safety.
- The proper management and administration of a sector.
- The protection and promotion of the rights of vulnerable groups.
- The legitimation of political philosophy or vision.

2.4 Chiropractic legislation

The process of recognition for the chiropractic profession within USA began in Minnesota in 1905. By 1974, Louisiana became the final state to licence chiropractic (Peterson, 1995). The 69 years between the first and final state obtaining legislation is testament to the resistance created by allopathic medicine (Kaptchuk and Eisenberg, 1998). These years resulted in a number of chiropractic convictions for practicing medicine without licensure. The state of California, for example, during this time, had 450 convictions (Redwood and Cleveland, 2003).

In 1906, BJ Palmer, son of DD Palmer along with several graduates of the Palmer school of chiropractic started the United Chiropractic Association (UCA) (Keating, 1992). The sole purpose of the UCA was to raise funds in order to bail out chiropractors that were imprisoned for practicing chiropractic. In addition, it also functioned in defending chiropractors in court and lobby for state licensure of chiropractors in the USA. By 1927, the UCA had defended some 3 300 court cases (Redwood and Cleveland, 2003).

The UCA along with BJ Palmer met with various state boards and saw a need for a professional association of the regulatory agencies; this led to the formation of the International Congress of Chiropractic Examining Boards (ICCEB) in 1926. The function of the organisation was to focus on improving chiropractic education, to obtain federal recognition and accreditation for chiropractic colleges, and to develop and secure legislation amongst the USA states. In 1934, the ICCEB was renamed “The Council of State Chiropractic Examining Boards” (COSCEB) (Keating, Cleveland and Menke, 2004).

This COSCEB evolved over the years. It later became known as the Federation of Chiropractic Licensing Boards (FCLB), and in 1957 became incorporated under Wyoming law and later, became recognized by the federal government as a non-profit organization (FCLB, 2013).

The mission of the FCLB (as stated on the FCLB website) is:

- Promoting unity within standards of operations of all chiropractic licensing boards
- Assist with problems that arise within individual chiropractic licensing boards
- Encourage co-operation between chiropractic licensing boards
- Provide information that may involve or interest various chiropractic licensing boards

- Encourage standardization of chiropractic education at chiropractic colleges.

The creation of the FCLB resulted in the formation of the National Board of Chiropractic Examiners in 1961, and in 1974 chiropractic colleges gained accreditation and recognition by the US Department of Education (FCLB, 2013).

Today, the licensing and regulation of chiropractic is seen in all of the United States and in many countries worldwide (Christensen, 1993; Sandefur and Coulter, 1997). The purpose of licensure is to define the scope of practice and more importantly to legitimize the chiropractic profession (Sandefur and Coulter, 1997).

Statutes and regulations within each state determine the scope of practice that chiropractors may legally perform in their respective jurisdictions. Spinal manipulation for musculoskeletal conditions is within the scope of practice of the chiropractor in every state; however the legal right to use other procedures including modalities, myofascial work, acupuncture, and the right to give nutritional advice varies across States (Sandefur and Coulter, 1997).

The USA and state constitutions grant states the power to license chiropractors including the right to regulate the scope of practice (Christensen, 1993). According to Sandefur and Coulter (1997),"State regulatory agencies, established by the legislature of each State, manage the licensing process and disseminate information regarding scope of practice. In most States, the extent of the scope of practice will be influenced by laws enacted through legislation, policies, or guidelines issued by the regulatory agency responsible for licensing, and by court decisions".

Apart from the USA, the process of legalising the profession followed in Canada in the 1920's, Australia in the 1940's, South Africa and New Zealand in the 1960's and then followed by Asia, Europe, Latin America and Africa (Chapman-Smith, 1996). Chiropractic is now regulated by law in over 40 national jurisdictions. These countries include, in Americas (Canada, Costa Rica, Mexico, Panama United States), Europe (Belgium, Cyprus, Denmark, Finland, France, Italy, Norway, Portugal, Sweden, Switzerland and the UK), Australasia (Australia and New Zealand), Asia (China, Iran, Saudi Arabia, Thailand and United Arab Emirates) and Africa (Botswana, Namibia, Nigeria, South Africa, and Zimbabwe) (Chapman-Smith, 2008).

Table 2.1 (adapted from WFC, 2013; Chapman-Smith, 2000 and Phillips, 2013) shows the countries where chiropractors are recognized by National Health Authorities.

a Legal pursuant to legislation to accept and regulate chiropractic practice

b Legal pursuant to general law.

c Legal status unclear, but de facto recognition.

d Legal status unclear and risk of prosecution

Table 2.1 Chiropractic Regulatory status of Countries

African Region	**Asian Region**	**Eastern Mediterranean Region**
Botswana a	China c	Cyprus a
Ethiopia b	Hong Kong – SAR China a	Egypt b
Ghana b	Indonesia c	Iran a
Kenya b	Japan b	Israel a
Lesotho a	Malaysia b	Jordan b
Mauritius b	Philippines a	Lebanon b
Namibia a	Singapore b	Libya b
Nigeria a	South Korea d	Morocco c
South Africa a	Taiwan d	Qatar a
Swaziland a	Thailand a	Saudi Arabia a
Zimbabwe a	Vietnam c	Syria c
		Turkey c
		United Arab Emirates a
European Region	**Latin American Region**	**North American Region**
Belgium a	Argentina b	Bahamas a
Croatia b	Bolivia a	Barbados a
Denmark a	Brazil b	Belize b
Estonia b	Chile b	Bermuda b
Finland a	Colombia b	British Virgin Islands b
France a	Costa Rica a	Canada a
Germany b	Ecuador b	Cayman Islands a
Greece c	Guatemala a	Jamaica b
Hungary c	Honduras b	Leeward Islands a
Iceland a	Mexico a	Puerto Rico a
Ireland b	Panama a	Trinidad & Tobago b
Italy a	Peru b	Turks & Caicos a
Liechtenstein a	Venezuela b	United States a
Luxembourg b		US Virgin Islands b
Malta a		
Netherlands b		
Norway a		
Portugal a		
Russian Federation b		
Serbia a		
Slovakia b		
Spain c		
Sweden a		
Switzerland a		
United Kingdom a		
Pacific Region		
Australia a		
Fiji b		
Guam a		
New Caledonia a		
New Zealand a		
Papua New Guinea b		
Tahiti a		

In countries where chiropractic is established, chiropractic practice is recognized and legalized under general law. The right to diagnose, primary care of the patient through direct contact (as a primary health care practitioner) and the right to order diagnostic imaging are all common amongst the various jurisdictions (Chapman-Smith, 2008).

Official recognition of the right to practice can be given in three different ways (Chapman-Smith, 2000):

1) Legislation – Authorization and right to primary practice with the right to diagnose, including the right to provide or order diagnostic imaging.
2) General Law – chiropractic may be recognised under general law without chiropractic legislation. This can be confirmed by ministerial ruling, the decisions of courts or by general legislation under an umbrella legislation that authorizes many types of health care providers.
3) De Facto acceptance - This is a type of recognition where the practice of chiropractic is technically in breach of medical practice law but is acknowledged and unobstructed by national health authorities (Chapman-Smith, 2000).

The above depicts how the scope of practice and rights as a chiropractor which may vary within different regions. More importantly, patient protection and the rights of the patient differ. In a country where legislation exists, the patient has the right to be treated in a safe manner and should he or she be treated unfairly they are protected by law (Walston-Dunham, 2009). On the other hand, chiropractors have rights that allow them to practice safely and in a defined and controlled manner. By not having legislation a chiropractor is open to a range of issues with extremes including possible judgement as practicing medicine without licensure and consequentially face possible conviction (McQuoid-Mason and Dada, 2011).

Licensing laws vary amongst States within the USA and worldwide. This is due to the different philosophies, viewpoints of chiropractors, external influences from political medicine and general law within various regions. An example of which is Washington State which allows for diagnosis and correction of chiropractic subluxations whereas in the State of Oregon minor surgeries and obstetrics are included within the scope of practice. These conflicting statutes and viewpoints can be a source of confusion not only to patients, but to chiropractors themselves. The possibility of changing each states' laws in order and standardize the scope, practice and licensing of chiropractic would be a difficult task. This may also open up the possibility of interference by political medicine (Keating, 1992). With that said, the legal diversity within chiropractic may remain unchanged for the foreseeable future (Keating, Cleveland and Menke, 2004).

2.5 Chiropractic education and its relationship to regulation

Worldwide, 43 chiropractic institutions currently exist in 16 countries. Of these 43 institutions, 8 institutions are not accredited internationally by the various accrediting agencies affiliated with the Council on Chiropractic Education International (CCEI) (CCEI, 2013).

The Council on Chiropractic Education (CCE-US) was created in 1974 with the goal of improving the quality of chiropractic education. The CCE-US was also recognised by the Department of Education in the USA. The primary role of the CCE-US was to implement and improve educational standards for USA chiropractic schools within the curriculum and the admission processes. Schools failing to meet the CCE-US standards were required to close down until a time came that they were able to meet such standards as set out by the CCE-US. By 1995 all chiropractic colleges in the USA achieved accreditation by the CCE-US (Phillips, 1997). This subsequently led to the creation of affiliated accrediting agencies in Canada (CCE-Canada), Europe (ECCE) and Australasia (CCEA) with the same primary role and purpose in mind (Chapman-Smith, 2000).

According to the CCEI website, "The Councils on Chiropractic Education International is an organization of chiropractic accrediting bodies worldwide. CCEI is committed to excellence in chiropractic education through emphasis on quality in its International Chiropractic Accreditation Standards, and by aiding in the development and recognition of new accrediting bodies in geographic regions where such agencies are not currently recognized" (CCEI, 2013). The CCEI website goes on to state that it functions in providing accreditation services through its assigned member organizations (Australasia, Europe and Canada) to chiropractic educational programmes situated in areas not currently served by a CCEI member agency. Recognition and accreditation of chiropractic educational programmes that award equivalent degrees are made and endorsed on the basis of membership in CCEI (CCEI, 2013).

The CCEI achieves its aims through the following functions and objectives (CCEI, 2013):

- Defining chiropractic educational standards that are adopted and maintained by accrediting agencies worldwide.

- Defining the process of accreditation and ensuring that the implementation and administrated of the process by accrediting agencies worldwide is appropriate.

- Verifying that the educational standards and accreditation process utilized by the CCEI is established and maintained by CCEI member accrediting agencies worldwide.

- Assisting in the development of accrediting agencies toward autonomy and membership within CCEI

- Promoting the improvement of international educational standards, and recognizing educational, cultural and legislative diversity of regions included within the CCEI.

- Dissemination and promotion of information to governments, professional organizations and regulators by advocating quality education.

Under the CCE-US, chiropractic education with the USA has seen schools open and close. Currently, in the USA there are 17 chiropractic institutions that offer a Doctor of Chiropractic (DC) qualification with all of them being accredited by the CCE-US (CCEI, 2013). These include:

- D' Youville College
- Life University (Georgia)
- Life Chiropractic College West
- Cleveland Chiropractic College (Kansas)
- Logan College of Chiropractic
- Southern California University of Health Sciences
- National University of Health Sciences
- New York Chiropractic College
- North-Western Health Sciences University
- Palmer College of Chiropractic (Davenport, San Jose, Port Orange)
- Parker University
- Sherman College of Chiropractic
- Texas Chiropractic College
- University of Bridgeport
- University of Western States

Schools located within California include the Southern California University of Health Sciences and Life Chiropractic College West. In Florida, schools include the Palmer College of Chiropractic Florida Campus and National University of Health Sciences and in New York state there are two schools, New York Chiropractic College and D’ Youville College.

The Doctor of Chiropractic (DC) qualification includes pre-requisite training in basic sciences at university level followed by approximately four years of full time coursework in chiropractic school (divided into trimesters) (WHO, 2005).

According to Sandefur and Coulter (1997), The National Board of Chiropractic Examiners (NBCE), which was established in 1963, functions and acts similarly to the National Board of Medical Examiners (NBME).The NBCE Examinations consists of four parts: Part I covers the basic sciences and may be taken after the first year of chiropractic college education. Part II covers clinical sciences and is written during their senior year of Chiropractic school. Part III is a written clinical competency examination that requires Part I to have been completed successfully and be written/sat within 8 months of graduation (if taken while still in school). Optional NBCE Examinations such as the physiotherapy examination may be taken following the completion of 120 hours of physiotherapy coursework and is independent of the other parts of the NBCE examinations. These examinations are compulsory and are required for licensure in the USA (NBCE, 2013). In recent times, the introduction of a part IV examination has been established. Part IV Examination assesses clinical areas in the form of: diagnostic imaging, chiropractic technique and case management skills (Christensen, 1997).

Once completed, the graduate may then be required to complete a state board examination in order to gain licensure within that state. There are only a handful of states that grant licensure to graduates on completion of the NBCE examinations (Sandefur and Coulter, 1997).

The scope of practice of the chiropractor within the USA varies between states from spinal manipulation in most States to minor surgeries in other states (Sandefur and Coulter, 1997). As a chiropractor, the use of modalities, acupuncture and myofascial work varies dependant on the scope of practice within respective jurisdictions (Sandefur and Coulter, 1997). This may result in confusion within the public eye and contrasting opinions as to what chiropractic actually entails.

In Canada, both schools are accredited by the CCE-Canada (CCEI, 2013):

- Université du Québec à Trois-Rivières (UQTR)
- Canadian Memorial Chiropractic College (CMCC)

Although the first school to open in Canada was Toronto Chiropractic College in 1920 (as of today is non-existent), CMCC in the province of Ontario is currently the oldest that still

remains open today after opening in 1945 (Ferguson and Wiese, 1988). UQTR followed by opening in 1969 in Quebec (UQTR, 2013).

Both Schools are accredited by the Canadian Federation of Chiropractic Regulatory and Educational Accrediting Boards (CFCREAB), an affiliated accrediting agency of the CCEI (CCEI, 2013).

Admission into both schools require three years of undergraduate tertiary education followed by five years of theory and clinical education and practical at either CMMC or UQTR.

The Canadian Chiropractic Examining Board (CCEB) requires all candidates to complete a 12 month clinical internship in addition to 3 examinations administered by the CCEB in order to obtain licensure. These examinations must be completed successfully during their 4th year of study. Components A and B (Written Cognitive Skills Examination) must be completed successfully by the student in order to be eligible to sit the Clinical Skills Examination (Component C) after which they can be granted licensure to practice within Canada (CCEB, 2013).

When looking at the domain of the Council on Chiropractic Education Australasia (CCEA), in Australasia, five chiropractic institutions (four of which are accredited) exist:

- Murdoch University
- Macquarie University
- Royal Melbourne Institute of Technology (RMIT)
- Central Queensland University- Australia (CQU-A)
- New Zealand College of Chiropractic (NZCC) (CCEA, 2013)

The duration and type of the qualifications offered in Australia differ. In summary though, five-years of chiropractic education including clinical experience are required before a graduate may register as a practicing chiropractor.

In Australia, the CQU-A and Macquarie programmes graduate chiropractors with an M.Chiro degree (bachelors equivalent) while Murdoch University graduates attain a double bachelor's degree and RMIT offer a bachelor's degree. Thus, the minimum requirement for registration with the regulator is a bachelor's degree or the equivalent. With the exception of CQU-A (due to the course not having graduated any students yet), all the qualifications are

recognised and accredited by the Council on chiropractic education Australasia (CCEA, 2013).

New Zealand has one chiropractic institution, The New Zealand College of Chiropractic (NZCC) which opened in Auckland in 1994. NZCC offers a 4 year bachelor's degree which must be preceded by a year of tertiary education (NZCC, 2013).

Within both Africa and the European region, the European Council on Chiropractic Education (ECCE) accredits the various chiropractic programmes (ECCE, 2013).

In Africa, only South Africa has chiropractic programmes. The two chiropractic institutions being (CASA, 2013):

- Durban University of Technology (DUT)
- University of Johannesburg (UJ)

The Durban University of Technology (formerly Technikon Natal) received its first year of Chiropractic students in 1989 (CASA, 2013). Both universities offer a 5 year Masters Qualification and 1 year Internship programme. It also requires the completion of a dissertation (partial Masters) in order to practice within South Africa (DUT, 2013). The chiropractic qualification in South Africa is internationally accredited by the European council on chiropractic education (ECCE, 2013) as well as the AHPCSA (AHPCSA, 2013).

Within Europe, chiropractic is offered in the following countries:

- Denmark: Southern Denmark University (SDU)
- France: Institut Franco-Européen de Chiropratique (Paris and Toulouse) (IFEC)
- Spain: Barcelona College of Chiropractic (BCC) and Real Centro Universitario Maria Cristina-College of Chiropractic (RCU) and
- Switzerland: University of Zurich (UZ) (WFC, 2013).

In the United Kingdom (UK) there are 3 chiropractic institutions (GCC, 2013):

- Anglo European College of Chiropractic (AECC)
- Welsh institute of Chiropractic (WIOC)
- McTimoney College of Chiropractic.(MCC)

The qualifications within the UK vary according to the relative institutions. The McTimoney College of Chiropractic offers an Undergraduate Masters Degree in Human Chiropractic.

Elective Masters programmes are offered in animal Manipulation and paediatric chiropractic (MCC, 2013) whilst the AECC and WIOC awards a Masters degree in chiropractic (bachelors equivalent) (M. Chiro) (GCC, 2013).

Of the above institutions, AECC, WIOC, IFEC (Paris and Toulouse), RCU and SDU are recognised and are accredited by the ECCE. BCC and MCC have candidate status with the ECCE and are working to meet standards to be fully accredited whilst UZ is not currently accredited nor does it hold candidate status (ECCE, 2013).

Within the UK, all three schools are accredited by the GCC (GCC, 2013; ECCE, 2013).

Elsewhere in the world, chiropractic programmes exist in Malaysia, the Republic of Korea, Brazil, Mexico, Chile and Japan.

Chiropractic qualifications worldwide differ in number of years, slight variations in coursework and the type of qualifications awarded. However, in the countries mentioned above (USA, Australia, New Zealand, Canada, UK and South Africa), one factor remains common- the qualifications offered (except CQU-A) are all accredited by the various affiliated accrediting agencies that fall under the CCEI, meaning that they all meet the standards and minimum criteria that advocate quality chiropractic education.

2.6 Factors influencing the development of the profession outside of education

An event that has had an effect on the profession today was the American Medical Association's (AMA) campaign to discredit and eliminate the chiropractic profession. The campaign began in the 1920's. By 1963, the campaign became known as the "Committee on quackery" and revolved around the AMA's opinion that chiropractic should not be included in the USA's Medicare as it was not based on knowledge that was accepted by the scientific community and that the ability for the practitioner to make an accurate diagnosis and provide appropriate treatment was not possible through the scope of practice of a chiropractor and their level of education (Sandefur and Coulter, 1997).

Short-term goals of the AMA were (Phillips, 2003):

- Exclude chiropractic care from Medicare.

- Prevent recognition of chiropractic accrediting agencies by the U.S. Office of Education.
- Prevent unity between the two national associations.
- Encourage state medical societies to take the initiative in their state legislatures in regard to legislation that might affect the practice of chiropractic.

In 1976, Chester Wilk along with four other chiropractors launched an antitrust suit against the AMA (Keating, 1992) and 10 other medical organisations after it was revealed in internal AMA documents that the AMA heavily influenced the results of Secretary Cohen's report (1968) and that these results had been determined in advance. In 1987, the AMA were found guilty of attempting to eliminate the chiropractic profession illegally through boycott (Redwood and Cleveland, 2003).

In South Africa, in 1971, the registration of chiropractors and chiropractic students was stopped by a bill passed by government. Ultimately the development of the chiropractic profession in South Africa was halted (Brantingham and Snyder, 1999).

Since the inception of the Chiropractors Act (Act 76 of 1971) in South Africa (Hupkes, 1990), the chiropractic profession stagnated, with the total practitioner population declining from approximately 176 in 1971 to 100 in 1982. It was that year when Chiropractors were permitted to register again (Till, 1997). In 1982, Act 63, established by the Allied Health Professions Council of South Africa, was passed (Brantingham and Snyder, 1999; Hupkes, 1990) (AHPCSA, 2005). The AHPCSA is the regulatory authority for chiropractors and the body that wrote chiropractic into law in South Africa (CASA, 2005). This act also allowed for registration for licensure of new chiropractors and assisted in establishing a chiropractic educational programme in South Africa (Brantingham and Snyder, 1999).

In 1979,"The New Zealand commission of inquiry" was published. Once completed, the Commission acknowledged and concluded that it was "faced with a contest on the one hand between organized medicine, assisted by the physiotherapists, and on the other hand the chiropractors" and that "at the end of it all little could be said either for or against chiropractic that had not been placed before us".

In conclusion, the report stated that: "By the end of the Inquiry we found ourselves irresistibly and with complete unanimity, drawn to the conclusion that modern chiropractic is a soundly-based and valuable branch of health care in a specialized area neglected by the medical

profession". This assisted the decision and recommended that there be government funding for chiropractic services (Chapman-Smith, 2008).

According to Keating (2004), the chiropractic profession should be classified into three types - based on beliefs and epistemology (epistemology deals with questions about the validity of assessment methods and theories, and the effectiveness of intervention strategies):

1. Evidenced based Chiropractic (EBC) Synopsis: the chiropractor makes use of the best available scientific literature and accumulated clinical knowledge to effectively manage the patient and also maintains this by keeping up to date with the latest literature. The subluxation-syndrome is currently an unsubstantiated construct (Keating, 2004)

2. Traditional-straight Chiropractic (TSC) Synopsis: The chiropractor does not treat disease and attributes the subluxation as the main cause of disease and the correction of subluxation will ensure health. This type of chiropractor should also be sufficiently trained in diagnosis to recognize when referral or co-management is needed (Keating, 2004)

3. Super-straight Chiropractic (SSC) Synopsis: The chiropractor believes that the subluxation may or may not be a factor in any particular patient's health problem. The chiropractor only diagnoses the subluxation and does not refer to other health care disciplines and that an individual cannot reach their full potential if there is nerve interference caused by the subluxation (Keating, 2004).

In conclusion, Keating (2004) describes how only EBC is accepted as heath care by the general public and mainly in view by the medical and scientific community. He goes on to say that TSC still needs to have research as its focus and SSC is not accepted based on scientific philosophy and therefore is not considered health care.

These conflicting ideologies within the profession when viewed from the outside are what creates barriers to collaboration with other professions and limits development of the profession.

Liewer (2011) found that varying licensure requirements and legislation in different regions creates barriers. Some of the factors mentioned included educational standards, qualification types, university exit and board examinations, various standards of language fluency,

sufficient levels of malpractice/liability insurance, criminal records and varying standards of being considered fit to practice across the board. Without having an understanding of what the minimum standards for the above are, barriers to mobility of practitioners will remain.

The development of chiropractic as a science has been halted by a number of factors according to Watkins (1992). Firstly, most of the laws regarding chiropractic acts were written by legal counsel who specialized in chiropractic legal matters. These laws written have in turn caused more conflict and created further legal barriers to progress within the profession towards a scientific paradigm.

Secondly, the "so called" leaders within the profession have been the culprits that have attempted to halt scientific progress within the profession by means of legal barriers (Watkins, 1992).

Thirdly, legal bodies within chiropractic have based their defence in the past by maintaining that chiropractic is only an art. This use of "prior art rights" has become meaningless to the scientific community; this further halts the professions progress to a unity and towards a scientifically based profession. Although the science and understanding of chiropractic has become a branch of science today, it is due to the lack of scientific organization that this fact is not as easy to prove as in other better organized sciences (Watkins, 1992).

He ascertains that many of the problems that the chiropractic profession face today and in the past have been the direct result of the poor handling of legal matters by their legal counsel and the legal restrictions that are placed upon the profession globally or within various regions are the result of the chiropractic legal counsels inability to effectively represent chiropractic as a science and to construct a case which would have an impact on legislative bodies opposing the practice of chiropractic (Watkins, 1992).

2.7 Conclusion

Legislation pertaining to a profession and in particular the health care setting can possibly affect the international migration of practitioners. According to Buchan (2006), geographical proximity, shared language, customs and educational curricula and historical links (de Vries et al, 2009), were identified as factors that influenced the choice of a destination country for migrating medical doctors. There is also the registration requirement of state or national board examinations to be passed when migrating to other chiropractic legislated states or countries.

With the role of regulatory structures being that of patient protection (Allied Health Professions Council, Act 63 of 1982 (as amended); GCC, 2012), it would stand to reason that each of the jurisdictional structures would have similar legislation and requirements for the purposes of practitioner registration. This assumption does not hold true, as some countries require board examinations (International Board of Chiropractic Examiners, 2012), other countries require only accreditation (Guiry, 2012) and yet other countries, a hybrid of the two requirements (Donato, 2012). This is counter-intuitive when one considers that these jurisdictional structures have similar roles and the impact that these differences have on international mobility of practitioners.

Legislation as previously discussed is in place to maintain the legitimacy of the profession making it legal to practice chiropractic within one's country, but it also aids in defining the scope of practice within the profession (Sandefur and Coulter, 1997). Although legislation has been established in the above mentioned regions, regulatory bodies remain different in each region and all with a different understanding of the fundamentals of chiropractic education and practice.

Chiropractic education throughout the world differs in respect to the structure in which the programme is offered at tertiary institutions as well as coursework. The on-going battle within the profession still revolves around philosophical constructs underpinning the practice of chiropractic profession, and the various chiropractic schools will base their education around a core philosophy which changes the diagnostic and treatment approach towards a patient.

Similarities and differences between legislation in regulated chiropractic countries have not yet been established and may aid in determining areas that need improvement in the process of unifying the profession under one international umbrella term. With this research, determining the legislative enablers and disablers of migration, it forms the basis for future research to determine the impact of these enablers and factors. And reasons for international migration of recently qualified chiropractors or chiropractors in general, has yet to be investigated and may surface on comparison of the rules and regulations of the countries being investigated. In a country such as South Africa where the chiropractic profession is still very young and where healthcare rates as one of the main priorities, the migration of recent graduates or chiropractors in general into and out of the country, should be made to be a seamless task.

Therefore, the researcher proposes to conduct an international comparison of six international chiropractic regulatory systems (South Africa, USA, Canada, UK, Australia and New Zealand), with the aim of identifying similarities and differences which may aid in the understanding of values, structures and operations of the different regulatory systems and to possibly develop a body of regulatory contacts to facilitate global collaboration.

CHAPTER THREE

METHODOLOGY

This chapter outlines the research methodology and provides a description of the study design, data collection tool development and the sampling methodology. The chapter also outlines the data collecting procedure and capturing methods, in keeping with institutional ethics policy and procedure (Appendix A).

3.1 Study design

The study design was a quantitative comparative analysis of international chiropractic legislation consisting of analytical components and in some cases descriptive components. All data was captured and translated into the data collection tool (Appendix B).

3.2 Ethical considerations

As per the research procedure and study design, approval by the DUT in full Faculty of Health Sciences Research Committee (FRC) and the Institutional Research and Ethics Committee (IREC) was obtained (Appendix A), indicating its compliance with the Declarations of Helsinki, Belmont and Nuremberg of 1975 (Johnson, 2005).

For the expert group, Letters of Information, Informed Consent, Code of Conduct and Confidentiality Statements (Appendices C-F) were all signed by the members of the expert group. Information obtained from regulatory bodies was within the public domain and information from the registrars was voluntary based on request from the researcher.

3.3 Advertising and recruitment

No advertising was necessary as the data required for the study was public domain, available from the websites of or on the request from the relevant jurisdictional / government agencies. Thus, in the case of any data not being available online, the registrars of the various regulatory bodies were notified and asked to assist in obtaining the information required.

3.4 Sampling

The sampling used was purposive sampling (Mouton, 1996) in which six countries with chiropractic legislation were chosen based on the highest number of registered practitioners (Chiropractic Diplomatic, 2013).

United States of America (USA)	84 000
Canada	6 500
Australia	4 800
United Kingdom (UK)	2 150
New Zealand	400
South Africa	400

The countries relevant regulatory boards included:

United States of America (USA)	Federation of Chiropractic Licensing Boards (FCLB)
Canada	Canadian Federation of Chiropractic Regulatory and Educational Accrediting Boards (CFCREAB)
Australia	Chiropractic Board of Australia (CBA)
United Kingdom (UK)	General Chiropractic Council (GCC)
New Zealand	New Zealand Chiropractic Board (NZCB)
South Africa	Allied Health Professions Council of South Africa (AHPCSA)

In view of the fact the 50 or 52 states within USA are regulated at a state level, three states were compared (based on number of practicing chiropractors): California, New York and Florida. The same applied to Canada and since the number of practitioners is not as large as the USA, the largest province Ontario (according to number of practitioners) was analysed (FCLB, 2012).

3.5 Inclusion/Exclusion Criteria

3.5.1 Inclusion criteria:

- The country was required to have legislation pertaining to the chiropractic profession.
- The country had to have registered chiropractors that are currently active in practice.
- Legislation and regulatory documents needed to be in English.

3.5.2 Exclusion criteria:

- A country without legislation pertaining to the chiropractic profession.
- A country that did have legislation but no active practicing chiropractors.

3.6 Research procedure

Once the research was approved, an expert group comprising six individuals (randomly selected) (Salant and Dillman, 1994) were assembled, including the researcher and the research supervisor (Morgan, 1998(a)). The expert group participants were required to read and sign the Letter of Information (Appendix C), Code of Conduct (Appendix D), Informed Consent Form (Appendix E) and Confidentiality Statement (Appendix F) documents.

This process was necessary to verify that the participants were reasonably representative of those required in the expert group, were voluntarily part of the research process and were able to understand their role within the context of the research process. The latter being significant, in that it was necessary to aid the participants in analysis of the data collection tool (Appendix G), which required that the expert groups' demographics be varied in order to assist in explaining and clarifying various views (Morgan, 1998).

Once the registration process was completed, the procedure of an expert group was followed as per Morgan (1998(a)) in that all questions / data points in the data tool (Appendix G) were discussed for relevance and importance to the study's objectives. Research shows an in-depth knowledge can be gained by listening to the members of the expert group sharing their experiences and opinions (Morgan, 1998 (b)).

The purpose of the expert group was to promote their critical thinking on the relevance of the questions and which questions were of most importance and therefore should be included in the study (Morgan, 1998(b)). Participants were able to add, delete or modify the questions selected in order to refine the research tool so to enhance its validity (Mouton, 1996). Discussions only resulted in a change in the data collection tool when unanimous agreement existed between the participants.

The above process was video recorded to facilitate complete inclusion of all suggestions and ensure the researcher made all the corrections to the data collection sheet (Silverman, 2001; Streiner and Norman, 1995.

The post-expert group data tool (Appendix H) was then piloted prior to use in this research process (Morgan, 1998(b)).

A *pilot study* was then conducted (Fink and Kosecoff, 1985; Hicks, 2004).

This piloting occurred after the data collection tool was finalized. The Pilot Study was used to analyze the chiropractic legislation of a regulated country (Denmark-not chosen for use in the study); to assist in further refining and enhancing the research tools validity.

The piloting of the post-expert group data collection tool (Appendix H) resulted in the final data collection tool (Appendix B).

Once permission was granted (by the FRC / IREC) (Appendix A), data (*legislation, acts, rules and regulations*) were sourced through desk-based research, during which the researcher / data collector retrieved legislative documents. The researcher particularly looked at information provided by relevant organizations and governmental bodies on the internet, legal documents and any other literature on chiropractic regulation available online. In cases where the required documents were not available online, a request was sent to the regulatory board (registrar) for the required information. This was in the form of a telephonic request (South Africa) or via email (Outside South Africa).

The documents were then analyzed and information from each respective criterion (Appendix B) was then translated and reproduced into a table that had been constructed based on a study compiled by de Vries *et al.*, (2009). Adaptation of the data collection tool occurred through the expert group and pilot study (see discussion of this in Section 3.7.2-3.7.4). This table (Appendix B) served as a data collection tool to aid in comparison of each

country under the various criteria. Similarities and differences were then identified and highlighted.

Once all the required field of criteria had been completed and all data captured, it was statistically analyzed. The information was then evaluated by the researcher and structured into the dissertation appropriately.

3.7 Data collection tool development

The initial data collection tool (Appendix G) was formulated from a study conducted by de Vries *et al*., (2009) titled "*International comparison of ten medical regulatory systems: Egypt, Germany, Greece, India, Italy, Nigeria, Pakistan, Poland, South Africa and Spain".* The data collection tool was then refined and modified based on recommendations outlined in Sections 3.7.1-.3.7.5 to keep in line with the aims and objectives of the study.

3.7.1 Initial data collection tool

The initial tool consisted of six sections (Appendix G). These various sections all contained subsections for data capture and covered various aspects under each section title. The sections included:

- Structure and nature of regulation and regulatory body(ies),
- Chiropractic education,
- Standards and Ethics,
- Fitness to practise (FTP) and related disciplinary procedures and sanctions,
- Registration process and requirements and
- Revalidation / competence assurance / recertification.

3.7.2 Expert group

Possible participants were identified and invited to participate in the expert group meeting on the basis of one or more of the following criteria:

- Qualified practitioners: Chiropractors with experience in chiropractic regulation / legislation.
- Senior students - A senior chiropractic student with exposure to chiropractic regulation / legislation via their experience as a chiropractic student representative within the AHPCSA.
- At least one research supervisor.
- The researcher.

Eight possible participants were asked to attend the meeting. Various time-slots were offered. On receiving feedback, a common time was identified and the meeting was scheduled. Of the eight possible participants, six confirmed that they could attend the

meeting of which all attended on the day. The expert group, therefore, consisted of six participants, made up of four chiropractors with experience in chiropractic regulation and legislation including the supervisor, one senior chiropractic student. The meeting was chaired by the researcher.

The expert group was conducted to allow critical thinking with regard to the relevance of the criteria and what criteria were of the most important to be included in the study (Morgan, 1998(b)). The participants were able to add, delete or modify the criteria selected in order to refine the research tool in order to enhance its validity (Mouton, 1996). The validity (face and content validity (Mouton, 1996; Bernard, 2000)) of the questionnaire is enhanced by members, other than the researcher, taking part in the expert group and contextualizing the questionnaire and its relevance in the research, thus supporting the research process (Salant and Dillman, 1994). This process included the itemization of each category in order to aid in the research data collection.

3.7.3 Outcome of the expert group

Following the expert group discussions, the data collection tool was amended accordingly in terms of sectioning, and the relevance of certain criteria. A clear association between the contents of the questionnaire and the aims / objectives of the study was established so that all questions were relevant to the study's aims and objectives. The initial data collection tool (Appendix G) consisted of a three page hand-out containing a table organised into six sections with subsections within each section, arranged in a logical and coherent sequence.

The following includes the comments and changes that were recommended:

Due to the quantitative structure of the study, the data collection tool was initially changed to that of closed answered questions with limited open answered questions. This is in keeping with the recommended structure of a data collection tool (Dyer, 1997).

3.7.3.1 Changes post-expert group

The following changes listed resulted in the post-expert group data collection tool (Appendix H).

Section One: Structure and nature of regulation and regulatory body (ies):

- During discussion it was suggested that this section was not necessary and not required for answering, in line with the aims and objectives of the study.

Section Two: Chiropractic education:

- Regulation: It was decided that the subsections within the pre-expert group data collection tool were not comprehensive enough and that more pertinent questions pertaining to legislation could be asked. These were:
    - What is the product after the qualification (needed for registration and licensure as a chiropractor) is complete?
    - Is the institution and qualification regulated?
    - Is the qualification registered?

- Funding: The participants all suggested that due to chiropractic schools using different structures for their qualification as well as different subjects and time frames that focused on the cost, questions on funding would be not be important. Instead, it was suggested that asking whether chiropractic institutions were funded either privately, by the state or alumni and if so what percentage was more pertinent.
- Educational trajectory: This section was edited grammatically and re-worded with a few additional questions added:
    - It was suggested that "Extent to which chiropractic students are allowed to train overseas (% that are)" be changed to "Existence of reciprocity/ mobility for students between schools in other countries?"
    - It was suggested that a question be inserted to ascertain how many hours, on average, are required for completion of the qualification and that the structure of the curriculum be found out.
- Examination / Qualification: It was suggested that all the questions within the data collection tool be reworded to make it more appropriate to the aims and objectives of the study with the following questions added:
    - Stages of registration?
    - Types of qualification?
    - Requirement of dissertation for qualification?
    - Is the school registered in country of origin?

Section Three: Standards and Ethics and Section Four: Fitness to practise (FTP) and related disciplinary procedures and sanctions:

- It was suggested that these two sections be merged into one under the heading of "Standards/ethics/fitness to practice and related disciplinary procedures/sanctions" and then broken up into the following subsections:
    - Content,
    - FTP,
    - Disciplinary procedures and characteristics of staff.
- After discussion, new questions under each of the subsections were drafted to keep in line with the aims and objectives of the study. These were:
    - Content:
        - Does a code of ethics exist for the profession?
        - Are there CPD requirements in place?
        - Are there disciplinary procedures in place?
        - Are there structures for self-reporting (e.g. adverse reactions)?
    - FTP:
        - Are there minimum standards for FTP?
        - If minimum standards are not met, are sanctions in place?
    - Disciplinary procedures and characteristics of staff:
        - Constitution of panels?
        - Are lay members present?
        - Is there involvement of lawyers?

Section Five: Registration process and requirements:

- It was suggested that this be divided into local and foreign what with both having different questions, to allow for comparison between countries.
- All the questions were accepted, however, they were rephrased to promote understanding, and to keep the questions closed answered.
- It was suggested that "process of re-registration" be changed to "process of registration".
- The subsection "foreigner registration" was created and it was suggested that the following questions be included:
    - Board examination,
    - Board examination examining body,

    - Content of board examination,
    - Structure of board examination,
    - Countries excluded from registering country,
    - Requirements from bodies for registration of foreigners.
- It was suggested that the first question under subsection “Interaction between regulator and chiropractors” be deleted as it was thought that it would be addressed under the subsection “Foreigner registration”.
- It was suggested that the second question “procedures/materials to verify applicant identity and credentials” be rephrased to “Are there procedures in place to verify applicant’s personal details?” in order to make it a closed answered question.

Section Six: Revalidation / competence assurance / recertification

- It was suggested that this section only have two subsections and the subsection “purpose” be deleted as it wasn’t necessary.
- In the subsection titled “Assessment process”, it was suggested that only two questions be retained. One being “Consequences for doctors not meeting revalidation requirements (e.g. impact on registration)”. However, it was rephrased to make it a closed answered question into “Are there consequences for chiropractors not meeting re-validation requirements” The other being “Tools used to assess performance” which was changed to “are tools used to assess performance” with the next question “What tools are used?”
- The following questions were then suggested and were added:
    - Any procedures in place to re-validate chiropractors that have been de-registered or have inactive practices?
    - Are there consequences for chiropractors not meeting re-validation requirements?
- In the subsection “actors”, it was suggested that only one question be retained: “Extent of involvement of professions own representative bodies”. This was, however, rephrased to “Is there involvement of professions own representative bodies” to keep the question closed answered.

3.7.4 Pilot study

The pilot study involved using a country that complied with the inclusion and exclusion criteria but was, however, not included in the six countries being compared (See inclusion criteria for the study section 3.5.1).

The post-expert group data collection tool (Appendix H) was used and Denmark was the country chosen via hat method sampling (Mouton, 1996) in which legislated countries (excluding sample population) all had the possibility of being selected as the pilot country.

The purpose of the pilot study was to ensure that the data collection tool was comprehensive enough and could be used appropriately for analysis and comparison within the six countries used in the study (Fink and Kosecoff, 1985).

3.7.4.1 Changes post-pilot study

The following changes resulted in the final data collection tool (Appendix B).

Section A - Chiropractic Education:

- A3.4 “Structure”, it was decided to give a definition under each of the structures. Traditional (Didactic), Non-Traditional (Online, case-based, etc.), Mixed mode curriculum.

Section B – Standards / Ethics / Fitness to Practice and Related disciplinary procedures / Sanctions:

- B1.1 “Does a code of ethics exist for the profession?” It was decided that should it exist, then by whom? Regulator or professional association.
- B1.3, “Are there disciplinary procedures in place?” If yes, an algorithm or flow of procedures was required.
- B1.4/B1.5, additional question/criteria was added. “Is there a complaints procedure for patients?”
- B2.1, to further clarify this question, it was changed to “Are there minimum standards or expected requirements for FTP?”

Section C – Registration process & requirements:

- C1.6, "(please provide flowchart or algorithm)" was added to the question to simplify the expected answer.

Section D – Re-validation / Competency assurance / Re-certification:

- D1.1.1, renumbered to D1.2 and "CPD" added as one of the possible answers.
- D1.2, renumbered to D1.3 and "(e.g. Recency requirements)" added to the answer section in order to help increase the participants understanding of the question.
- D2.1, the question was rephrased to "Is there involvement of professions own representative body/ies to assess revalidation / competency".

Section E – Entitlement with Registration:

- This section was added as a recommendation.

3.7.5 Final data collection tool (Appendix B)

The final data collection tool consisted of five sections: Section A, B, C, D and E.

Section A	Chiropractic education
Section B	Standards/ethics/fitness to practice and related disciplinary procedures/sanctions
Section C	Registration process and requirements
Section D	Re-validation/ competency assurance/ re-certification
Section E	Entitlement with registration

3.8 Statistical analysis

Analysis of data captured was made by the researcher focusing on identifying significant similarities and differences within each subsection of the table. Analysis was also done with the latest version of SPSS (SPSS Inc., Chicago, Illinois, USA).

Data was represented and summarised using frequency tables.

3.9 Summary

The study was a quantitative comparative analysis of international chiropractic legislation consisting of analytical components and in some cases, descriptive components. Purposive sampling was used in which six countries with chiropractic legislation and therefore regulated countries were chosen based on the highest number of registered practitioners. These countries which met the inclusion criteria (Section 3.5.1) were USA, Canada, United Kingdom, Australia, New Zealand and South Africa. The data collection tool that was initially developed was formulated from a study conducted by de Vries *et.al* (2009) and then modified at the expert group discussion and pilot study. The data collection tool consisted of four sections, Section A, B, C, D and E.

The data from the completed data collection tools were captured onto a spread sheet and statistically analysed and structured into the dissertation accordingly.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

The standard format for a dissertation generally is such that the results are in Chapter Four and the discussion in Chapter Five (Mouton, 1996). This dissertation is presented in such manner as to present the results along with the discussion within one chapter, Chapter Four. This arrangement for the chapters was chosen to decrease the complexity of presentation and to allow a more logical flow.

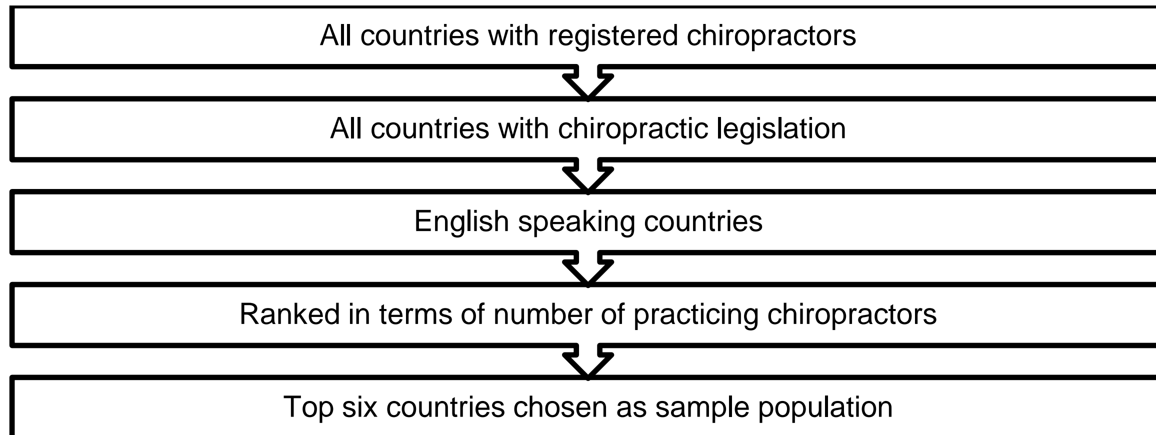
4.2 Data sources

The primary data was sourced through desk-based research and in cases where certain information was unavailable, registrars of the countries regulatory boards were contacted and asked to voluntarily provide the requested information.

4.3 Abbreviations

Abbreviation	Expansion	Abbreviation	Expansion
AECC	Anglo European College of Chiropractic	MRI	Magnetic resonance imaging
		M. Tech	Masters of Technology
		M. Chiro	Masters of Chiropractic
APC	Annual Practicing Certificate	N/A	Not Applicable
B. Tech	Bachelors of Technology	N. Dip	National Diploma
CBA	Chiropractic Board of Australia	NBCE	National Board of Chiropractic Examiners
CCEI	Council on Chiropractic Education International	NSAIDs	Non-steroidal anti-inflammatory drugs
CCO	College of Chiropractors of Ontario	NZCB	New Zealand Chiropractic Board
CHE	Council on Higher Education		
CPD	Continuing professional development	NZCC	New Zealand College of Chiropractic
CPiRLS	The Chiropractic Patient Incident Reporting and Learning System		
CQU-A	Central Queensland University of Australia	OSCE	Objective Structured Clinical Examination
CT	Computed tomography	PhD	Doctor of Philosophy
CV	Curriculum Vitae	PRT	Practice Readiness Training
DC	Doctor of Chiropractic	RMIT	Royal Melbourne Institute of Technology
Dept.	Department	SPEC	Special Purposes Examination in Chiropractic
DoE	Department of Education	UK	United Kingdom
DoH	Department of Health	USA	United States of America
DoHET	Department of Higher Education and Training		
Dr	Doctor	WIOC	Welsh Institute of Chiropractic
FTP	Fitness to Practice	<	Less than
GCC	General Chiropractic Council	>	Greater than
ID	Identification document	%	Percentage
IELTS	International English Language Testing System	y	Years

4.4 Sampling flow diagram



As the USA had state regulation, in addition to Federal regulation, it was decided to choose the top three states (viz. in terms of number of chiropractors). This principle also applied to Canada in which the top province was chosen based on the number of chiropractors.

4.5 Response rate

Six countries participated in the survey, with the United States of America having three responses from three separate states. All countries selected for the sample responded (100%).

4.6 Results as related to tables

The following tables have been presented and numbered in relation to the data collection tool (Appendix B) and the sections within. An example would be Table 4.1: A1.1. The "A1.1." refers to question A1.1 in the data collection tool.

4.6.1 Chiropractic education

4.6.1.1 Regulation

Table 4.1: A1.1. Qualification on completion of school

Country	Bachelors	DC	Double Bachelors	Masters
Australia	0	0	1	1
Canada-Ontario	0	1	0	0
New Zealand	1	0	0	0
South Africa	0	0	0	1
United Kingdom	0	0	0	1
USA-California	0	1	0	0
USA-Florida	0	1	0	0
USA-New York	0	1	0	0

Table 4.2: A1.2. Is the institution regulated?

Country	Yes
Australia	1
Canada-Ontario	1
New Zealand	1
South Africa	1
United Kingdom	1
USA-California	1
USA-Florida	1
USA-New York	1

Table 4.3: A1.3. Is the qualification regulated?

Country	Yes
Australia	1
Canada-Ontario	1
New Zealand	1
South Africa	1
United Kingdom	1
USA-California	1
USA-Florida	1
USA-New York	1

Table 4.4: A1.3. On what level is the qualification regulated?

Country	National/ Country	Regional/ State
Australia	1	0
Canada-Ontario	1	0
New Zealand	1	0
South Africa	1	0
United Kingdom	1	0
USA-California	0	1
USA-Florida	0	1
USA-New York	0	1

Table 4.5: A1.4. Is the qualification registered?

Country		Both (Dept. Education and Health)	Other
Australia	Yes	0	1
Canada-Ontario	Yes	0	1
New Zealand	Yes	1	0
South Africa	Yes	1	0
United Kingdom	Yes	0	1
USA-California	Yes	1	0
USA-Florida	Yes	1	0
USA-New York	Yes	1	0

4.6.1.1.1 Discussion

In the USA, all 18 US DC programmes are accredited by the Council on Chiropractic Education (Liewer, 2013). Institutions also hold accreditation with regional accrediting bodies (Liewer, 2013). Both programme accreditation by professional and regional accrediting bodies are recognized by the US Department of Education (Liewer, 2013).

Graduates of all 18 programmes are accepted as candidates for licensure in every US jurisdiction provided they also comply with other requirements of the state such as the requirement of passing NBCE examinations and the respective states' ethics/jurisprudence examinations. All boards rely to some degree on CCE-US Accreditation for US programmes, as this process serves to certify the programme meets the professional accreditation requirements required for licensure within the USA.

In addition to the professional accreditation by the CCE-US, the New York and Florida qualifications are also regulated by the Commission on Higher Education and the Commission for Independent Education Florida. This additional accreditation has the added benefit of ensuring educational minimum standards are adhered to and constantly monitored and maintained.

In a similar manner to the schools in New York and Florida, the Canadian universities in Ontario and Quebec, are regulated by the Council on Chiropractic Education of Canada (CCCE), as well as the Canadian Federation of Chiropractic Regulatory and Educational Accrediting Boards (CFCREAB).

This is not unlike the universities in the United Kingdom, who are regulated by the Quality Assurance Agency for Higher Education (QAA), the General Chiropractic Council (GCC) and the European Council on Chiropractic Education (ECCE). Universities in Australia are regulated under Australian Law by the Australian Health Practitioner Regulation Agency (AHPRA). New Zealand universities are regulated by the New Zealand Qualifications Authority (NZQA) respectively and in combination by the Council on Chiropractic Education Australia (CCEA).

By comparison, the universities in South Africa are regulated by Department of Higher Education and Training (DoHET) (and its subsidiary the Council on Higher Education (CHE)), the Allied Health Professions Council of South Africa (AHPCSA) and the ECCE.

Thus, it can be seen that in all of the above regions, that the chiropractic education within the sample population is accredited by the various constituent agencies of the Council on Chiropractic Education International (CCEI). This means that from a professional vantage point, the qualifications that are issued within these jurisdictions comply with the professional accreditation minimum standards as proposed by the CCEI and its member agencies.

Beyond this, some of the qualifications are additionally regulated by regional accrediting bodies. These jurisdictions include the universities in New York (USA), Florida (USA), UK, New Zealand and South Africa. This accreditation and approval is a requirement by the respective education authorities within which these universities reside. The purpose of this accreditation is linked directly to the institutions meeting the minimum education requirements within the jurisdiction of residence.

It would seem (based on the small sample size) from the results of this study that California (USA), Australia and Canada do not require this additional regulation.

4.6.1.2 Funding

Table 4.6: A2.1. How is the qualification funded?

Country	State	Private	Alumni
Australia	1	1	0
Canada-Ontario	0	1	0
New Zealand	1	0	0
South Africa	1	1	0
United Kingdom	0	1	0
USA-California	0	1	1
USA-Florida	0	1	0
USA-New York	0	1	0

Table 4.7: A2.2. Percentage of funding (State)

Country	State Funding			
	0%	30%	75%	Unknown
Australia	0	0	1	0
Canada-Ontario	1	0	0	0
New Zealand	0	1	0	0
South Africa	0	0	1	0
United Kingdom	0	0	0	1
USA-California	0	0	0	1
USA-Florida	0	0	0	1
USA-New York	0	0	0	1

Table 4.8: A2.2. Percentage of funding (Private)

Country	Private Funding			
	0%	25%	100%	Unknown
Australia	0	1	0	0
Canada-Ontario	0	0	1	0
New Zealand	1	0	0	0
South Africa	0	1	0	0
United Kingdom	0	0	0	1
USA-California	0	0	0	1
USA-Florida	0	0	0	1
USA-New York	0	0	0	1

Table 4.9: A2.2. Percentage of funding (Alumni)

Country	Alumni Funding	
	No Contribution	Unknown
Australia	1	0
Canada-Ontario	1	0
New Zealand	1	0
South Africa	1	0
United Kingdom	1	0
USA-California	0	1
USA-Florida	0	1
USA-New York	0	1

4.6.1.2.1 Discussion

Of the sample population, only three regions have confirmed funding from the state: Australia, New Zealand and South Africa. South Africa and Australia receive the largest amount of funding from the state in the region of 75%, the rest is funded privately or through fees for tuition paid by attending students. This public funding of the programmes (in these countries) allows for greater access to students in general. Additionally allows greater ability of the programmes to sustain themselves financially without undue cost to the student. This, however, requires that the universities subscribe to and comply with minimum regulations and standards as put forward by the state (DoHET / CHE, QAA, NZQA, AHPRA, Commission on Higher Education (New York) and the Commission for Independent Education (Florida)). This is consistent with the results in Section 4.6.1.1.1, but it is unusual that the regulatory structures in Australia do not have a requirement for accreditation through a state or national regulator (Section 4.6.1.1.1).

By contrast, the funding of programmes in the USA varies among the programmes. Several what have affiliation with public universities and thus access to limited public funding. This limited funding makes the programmes more reliant on alumni support and student tuition funding. It is suspected that for this reason, the programmes were not willing to release the percentage of funding from alumni support, as this would disclose their degree to which they are “privately funded” and therefore may indicate their financial stability – or lack thereof.

Notwithstanding the lack of this disclosure, the funding of institutions and their programmes are a factor that may affect a prospective student’s choice of university for study, as accessibility is directly linked to the student’s financial capability (Grant, 2006). It could be argued that although the university programmes in the USA are more expensive in relation to other countries, their programmes are generally shorter which may reduce the overall financial burden on the prospective student.

This latter discussion may also be applicable to Canada, which has universities that are mostly privately funded.

4.6.1.3 Educational trajectory

Table 4.10: A3.1. Stages in education (pre-chiropractic qualification)

Country	School	Qualification	University credits	Other
Australia	1	0	0	0
Canada-Ontario	0	0	1	0
New Zealand	0	0	1	0
South Africa	1	0	0	0
United Kingdom	1	0	0	0
USA-California	0	0	1	0
USA-Florida	0	0	1	0
USA-New York	0	0	1	0

4.6.1.3.1 Discussion

Of the sample population, Australia, South Africa and the UK require completion of school (secondary education) to gain entry to their respective chiropractic programmes. This outcome may also explain why the programmes in these jurisdictions are of longer duration than their North American (Canada and USA) counterparts.

By contrast, Canada, New Zealand and the USA not only require secondary education but also various degrees of university credits to gain entry into their respective chiropractic programmes. For the USA, the specifics are stipulated as follows:

California	:	High school plus 60 credits.
New York	:	Two years (60 semester hours) to include prescribed subjects.
Florida	:	Bachelors' degree based on four years of study. It was noted that after July 2000, the final year of study could be earned while in chiropractic school but the student was no longer able to gain credits toward both undergraduate and professional degree requirements from the same programme.

When this is contextualised with the discussion in (Section 4.6.1.2.1), it seems to point to the fact that institutions receiving public funding are better able to provide longer programmes with a decreased effect on their financial viability. However, the students need to pay more for their tuition. This contrasted with the privately funded institutions that may be pressured to have larger numbers of students; to achieve a higher turnover of students, in shortened

programmes in order to maintain financial viability. This assertion, according to the results of this study; agree with the published numbers of students that take the NBCE examinations (which varies from 7 000 – 15 000 students annually in the USA alone (Christensen et al., 2005; Christensen et al., 2010) as compared to non-USA based schools. The significance of an institution's financial viability may be determined through the numbers of students and their impact on the programme delivery (Grant, 2006). This however, requires further investigation as it is beyond the scope of this current study to comment any further.

Table 4.11: A3.1. Duration of chiropractic school

Country	Years	Trimesters	Trimesters converted to minimum time
Australia	5	.	-
Canada-Ontario	4	.	-
New Zealand	4	.	-
South Africa	5	.	-
United Kingdom	5	.	-
USA-California	.	10	3 1/3 year
USA-Florida	.	10	3 1/3 year
USA-New York	.	10	3 1/3 year

4.6.1.3.2 Discussion

In support of the discussions in the previous sections concerning educational programme regulation (Sections 4.6.1.1.1 to 4.6.1.3.1), the results of the reported duration of programmes in South Africa, Australia and New Zealand, indicate that their programme structure are longer than that of the USA. The latter utilises a system whereby the programme is structured around trimesters which usually equates to approximately 3.5 years within chiropractic school. The only programme that does not fit in with the prior discussion is that of Canada, which is primarily privately funded. It would perhaps be of interest to further study the Canadian model as represented by CMCC (located within Ontario, Canada). CMCC have achieved a sustainable financial model that allows programme autonomy without resulting in a significant increase in tuition.

In terms of professional accreditation agencies, it is of interest to note that there are some large differences between the programmes in the jurisdictions studied (Table 4.11). This may be accounted for by those programmes that run over 10 trimesters (3.5 years), whose focus

is primarily on Chiropractic defined coursework and have pre-requisites for pre-chiropractic sciences (basic sciences) (NBCE, 2013). Therefore, in totality, the required professional outcomes and time equate to similar quantitative numbers both for years and credits attained for chiropractic specific components of the different programmes.

Table 4.12: A3.2. Average number of hours required for completion of the qualification?

Country	Mean
Australia	4 500
Canada-Ontario	4 200
New Zealand	5 000
South Africa	5 652
United Kingdom	5 500
USA-California	4 680
USA-Florida	unknown
USA-New York	4 620

Table 4.13: A3.1. Post-graduate requirements (prior to being eligible for registration)

Country	PRT/ Internship	Board exams / equivalent	Masters	PhD
Canada-Ontario	1	1	0	0
New Zealand	0	1	0	0
South Africa	1	0	1	0
United Kingdom	1	0	0	0
USA-California	0	1	0	0
USA-Florida	0	1	0	0
USA-New York	0	1	0	0

Table 4.14: A3.3. Existence of reciprocity/ mobility for students between schools in other countries

Country	No	Yes	Limited period exchange student	Unlimited period exchange student	Pre-Clinical training	During clinical training	Other
Australia	0	1	0	0	1	0	0
Canada-Ontario	1	0	0	0	0	0	0
New Zealand	1	0	0	0	0	0	0
South Africa	0	1	0	0	1	0	0
United Kingdom	1	0	0	0	0	0	0
USA-California	0	1	Unknown	Unknown	Unknown	Unknown	Unknown
USA-Florida	0	1	Unknown	Unknown	Unknown	Unknown	Unknown
USA-New York	0	1	Unknown	Unknown	Unknown	Unknown	Unknown

Table 4.15: A3.4. Structure of programme delivery

Country	Traditional (didactic)	Non-Traditional	Mixed mode curriculum
Australia	0	0	1
Canada-Ontario	0	0	1
New Zealand	0	0	1
South Africa	0	0	1
United Kingdom	0	0	1
USA-California	0	0	1
USA-Florida	0	0	1
USA-New York	0	0	1

4.6.1.3.3 Discussion

From the responses received, it seems that only South Africa and Australia allow student mobility between schools, which seems to be limited to pre-clinical training and within their national jurisdictions. The USA schools do allow mobility, but it is assessed on a case by case merit system and not on structured protocols (viz. credit transfer or recognition of prior learning models) (Liewer, 2013). This may be due to the USA programmes not having much in the way of basic sciences in their programmes (by contrast to Australia and South Africa).

In terms of programme delivery, it seems that all regions in the sample population use a mixed mode curriculum whereby theoretical and practical components of subjects are

presented in a variety of forms and does not conform only to didactic presentation of material. It would, however, seem that online facilities are utilised primarily for testing purposes.

However, one aspect that may affect mobility (outside of outcomes), is the timing of examination and structure of the programme (viz. in the northern hemisphere e.g. Canada the academic year runs from September to August, whereas in the southern hemisphere, the same academic calendar runs from January through November). This annual calendar is further complicated by the use of trimester versus semester programme structures. In principle, it would be easier to transfer from northern to southern hemisphere without losing as much time as attempting the transfer in the opposite direction. This formal programme structure as an obstacle for transfer would therefore require further investigation, not only for purposes of student transfer, but also student exchange programmes.

4.6.1.4 Examination/Qualification

Table 4.16: A4.1. Stages of registration

Country	Intern	Student	Temporary intern	Temporary student	Travel	Exchange-student
Australia	0	1	0	0	0	0
Canada-Ontario	1	1	0	0	0	0
New Zealand	1	1	1	1	0	0
South Africa	1	1	0	0	0	0
United Kingdom	0	1	0	0	0	0
USA-California	1	1	0	0	0	0
USA-Florida	0	1	0	0	0	0
USA-New York	0	1	0	0	0	0

Table 4.17: A4.2. Types of qualifications

Country	B.Tech	Bachelors	DC	Double Bachelors	Masters	N.dip
Australia	0	1	0	1	1	0
Canada-Ontario	0	0	1	0	0	0
New Zealand	0	1	0	0	0	0
South Africa	1	0	0	0	1	1
United Kingdom	0	0	0	0	1	0
USA-California	0	0	1	0	0	0
USA-Florida	0	0	1	0	0	0
USA-New York	0	0	1	0	0	0

Table 4.18: A4.3. Requirement of dissertation for qualification?

Country	No	Yes	Partial Masters
Australia	1	0	-
Canada-Ontario	1	0	-
New Zealand	1	0	-
South Africa	0	1	1
United Kingdom	1	0	-
USA-California	1	0	-
USA-Florida	1	0	-
USA-New York	1	0	-

Table 4.19: A4.4. Is the school registered in the country of origin?

Country	Yes	DoE	DoH	Both	Unknown
Australia	1	1	0	0	0
Canada-Ontario	1	0	0	0	1
New Zealand	1	0	0	1	0
South Africa	1	0	0	1	0
United Kingdom	1	0	0	1	0
USA-California	1	0	0	1	0
USA-Florida	1	0	0	1	0
USA-New York	1	0	0	1	0

4.6.1.4.1 Discussion

Registration for students is common across all jurisdictions. By contrast, registration for interns[1] was reported to apply only to Canada, New Zealand, South Africa and California-USA (in this sample group). By contrast, New Zealand offers a temporary registration for students and interns.

This reported outcome may be related to the fact that programmes within the USA offer a Doctor of Chiropractic (DC) degree as the first professional level degree required for licensing by any of the USA professions' agencies (CCE-US, NBCE, FCLB, New York State Education Department-Office of the Professions, Florida Board of Chiropractic Medicine and the Board of Chiropractic Examiners (California)). Canada also offers a DC qualification. Although various Masters' programmes are offered (USA and Canada) (CMCC, 2013; Palmer College of Chiropractic, 2013), registration as a practitioner (completion of the DC programme) is required for entrance into these programmes. This structure allows for regulators to have specific registration periods for students, interns and practitioners defined explicitly for purposes of registration.

This is in contrast to the South African programme structure, where the student is required to complete a National Diploma, Bachelors of Technology and Masters of Technology in Chiropractic. The sequencing and completion of these three components of the qualification takes students variable amount of time to complete and therefore it becomes structurally more difficult for the regulators to define particular periods or categories of registration. As a result, there is an overlap between the termination of the qualification and registration as an intern (AHPCSA, Internship Handbook).

In Australia and New Zealand, the CQU-A and Macquarie programmes graduate chiropractors with an M.Chiro degree (Bachelors equivalent) while Murdoch University graduates attain a double Bachelors degree. NZCC and RMIT graduate its chiropractor's with a Bachelors degree. Thus, the minimum requirement for registration with the regulator seems to be a Bachelors degree or the equivalent. Chiropractors, who are registered with either the Chiropractic Board of Australia (CBA) or New Zealand Chiropractic Board (NZCB),

[1] Note that the definition of an intern in South African terms refers to a postgraduate, who has completed their qualification and is registered with the AHPCSA as an intern (viz. it is a phase between being a student and a practitioner). This definition is in contrast to other jurisdictions in which an intern refers to the student who is in their student clinic years prior to their qualification.

are legally able to apply to practise in both Australia and New Zealand under the provisions of the Trans-Tasman Mutual Recognition Act of 1997 (New Zealand).

The UK structure is similar to the Australian and New Zealand structure, in which a minimum of a Bachelors degree is required for purposes of regulator registration as a practitioner (M. Chiro).

Therefore, it would seem that the principle difference in terms of the jurisdictional educational requirements is that the formal requirement at both the Durban University of Technology (DUT) and the University of Johannesburg (UJ) in South Africa is a Masters degree. This indicates that South Africa is the only jurisdiction that requires this level of training for purposes of registration as a practitioner (Regulations In Terms Of The Allied Health Professions Act, 1982). This higher educational requirement would therefore represent an obstacle to students and / or practitioners' mobility from Australia, Canada, UK, NZ and USA to SA. By contrast, the transfer of students and practitioners from South Africa internationally remains uninhibited, with the exception of specific juristic requirements in those countries to which South African graduates immigrate (Shobbrook, 2013).

This latter fact should perhaps increase the numbers of international students in the South African programmes, when combined with the lower fee structure and comprehensive programme that does not require pre-programme credits. This is, however, not reflected in the student demographic of the South African programmes (Korporaal, 2013). Reasons for this should perhaps be explored more thoroughly in future research, as it stands to reason that this may be an alternative for students from Africa, who are unable to afford the higher tuition fees in the USA, UK or Australia (as examples).

4.6.2 Standards/ Ethics/ Fitness to Practise (FTP)

4.6.2.1 Professional regulation

Table 4.20: B1.1. Does a code of ethics exist for the profession?

Country	Yes	Regulator	Professional association
Australia	1	1	0
Canada-Ontario	1	1	0
New Zealand	1	1	0
South Africa	1	1	1
United Kingdom	1	1	0
USA-California	1	0	1
USA-Florida	1	0	1
USA-New York	1	0	1

4.6.2.1.1 Discussion

In all regions, a code of ethics exists for the profession. All regions besides the USA have this code of ethics instituted by the regulator. The USA code of ethics is regulated by their professional association. The only region in which both the regulator and the association institute a code of ethics is in South Africa.

This what implies that in the USA, the professional associations (two major national (International Chiropractors Association and the American Chiropractic Association) and many state associations) have codes of ethics that are not legally enforced on all registered chiropractors, as it is not an obligated requirement for chiropractors to be members of an association (Berry, 2013) (in contrast, the obligated requirement is for all countries studied to be registered with the statutory regulator) (Berry, 2013). This outcome required that the USA regulatory boards structured another mechanism for disciplining practitioners; therefore, all US regulatory boards specify grounds for sanction of the license for unprofessional behaviour. Whereas some boards offer proactive guidance on minimum expectations for certain issues, such as documentation and recordkeeping, advertising and working in an interdisciplinary practice, and sexual boundaries. Therefore, it would seem that the force of law rests in the descriptions of prohibited behaviours in statutes and regulations which have been lawfully adopted (Liewer, 2013; Mckinney's Consolidated Laws Of New York

Annotated, 1997; West's Annotated California Codes, 1997 and West's Florida Statutes Annotated, 1997), as opposed to a code of ethics *per se*.

This uniform agreement between the various jurisdictions has the ability to ensure a profession has a uniform professionalism and that chiropractors maintain good character. Further, it places an obligation on people to take responsibility for their own conduct with maintaining patient safety (NSW Department of Education & Training Code of Conduct, n.d). According to the South African HPCSA CPD guidelines for health care professionals (2011), ethical practice of the health professions requires consistent and on-going commitment to lifelong learning. This updates and develops the knowledge, skills and ethical attitudes that underpin competent practice. As a code of ethics is instituted across all the sample regions, it would seem that this is a constant requirement for all regions. It also assists in determining when practitioners have strayed or breached the code of ethics. This would hinder mobility or transfer between jurisdictions (most jurisdictions are hesitant to consider acceptance of transfers where indiscretions with subsequent disciplinary action have been brought before a regulator with a resultant negative decision). An example of such is seen in section 304 of the Rules and Regulations of the State of California Chiropractic Board (Brown, 2013).

These actions are communicated between jurisdictional structures through a known database such as "The Chiropractic Information Network/Board Action Databank" (CIN-BAD) (Liewer, 2013), which ensures that different jurisdictions have access to information on practitioners who have breached the code of ethics, to what degree and why. This enables the jurisdictions to determine who they would or would not allow entering their jurisdiction (Federation of Chiropractic Licensing Boards, 2013).

The process of continued professional development / continual medical education (Table 4.21) is also part of the required code of ethics which includes re-registration on an annual basis. It also requires a particular portion of the continued professional development / continual medical education to include issues surrounding ethics (California Board of Chiropractic Examiners, 2013; New York State Education Department: Office of the Professions, 2013 and The Florida Department of Health, 2013).

Table 4.21: B1.2. Are there CPD requirements in place?
If yes- are they legally enforced?

Country	No	Yes	N/A	Formal CPD	Formal and Informal CPD	Unknown/ Missing
Australia	0	1	0	0	1	0
Canada-Ontario	0	1	0	1	0	0
New Zealand	1	0	1	0	0	0
South Africa	0	1	0	0	1	0
United Kingdom	0	1	0	1	0	0
USA-California	0	1	0	0	0	1
USA-Florida	0	1	0	0	0	1
USA-New York	0	1	0	0	1	0

Table 4.22: B1.2. By whom are CPD requirements legally enforced?

Country	N/A	Regulator	Professional association	Both
Australia	0	1	0	0
Canada-Ontario	0	1	0	0
New Zealand	1	0	0	0
South Africa	0	1	0	0
United Kingdom	0	1	0	0
USA-California	0	1	0	0
USA-Florida	0	1	0	0
USA-New York	0	1	0	0

Table 4.23: B1.2. Distribution of CPD hours

Country	Formal hours								Informal Hours	
	N/A	>12.5	24	20/20	20	30	36/3y	40/2y	N/A	>12.5
Australia	0	1	0	0	0	0	0	0	0	1
Canada-Ontario	0	0	0	1	0	0	0	0	1	0
New Zealand	1	0	0	0	0	0	0	0	1	0
South Africa	0	0	0	0	1	0	0	0	1	0
United Kingdom	0	0	0	0	0	1	0	0	1	0
USA-California	0	0	1	0	0	0	0	0	1	0
USA-Florida	0	0	0	0	0	0	0	1	1	0
USA-New York	0	0	0	0	0	0	1	0	1	0

4.6.2.1.2 Discussion

All regions except for New Zealand have CPD requirements in place.

By contrast, however the NZCB requirements for registration are more detailed than any other jurisdiction, requiring a mechanism that ensures competency of its chiropractors (based on competency testing). This mechanism requires that if a chiropractor is deemed incompetent for any reason, they are required to re-sit the NZCB board exam in order to retain their competency and thus their registration (Sinclair, 2013). Other requirements that they include in their detailed outline of requirements are: chiropractor's curriculum vitae, their detailed work history while away from practice in New Zealand and certificates of good standing required from all jurisdictions in which they practiced. Failure to meet these requirements result in conditions being placed on their Annual Practicing Certificate (APC) (required to engage in practice) or refusal to issue APC (therefore, their ability to practice is impaired). Notwithstanding the above, it was noted that the implementation of CPD in New Zealand has been earmarked for introduction in 2015. How this, along with their stricter guidelines, may affect the number of chiropractors migrating to or remaining in New Zealand remains to be seen.

In the other jurisdictions (as seen below), CPD requirements are more formal, and structured and legally enforced:

- In the UK, practicing chiropractors are required to complete 30 hours of CPD per year.
- In California, practicing chiropractors must complete 24 hours of CPD per year,
- whereas in Florida, chiropractors must complete 40 hours every two years (renewal cycle is every 2 years)
- In New York, practitioners are required to complete 36 hours every three years.
- In Canada, CPD requirements currently constitute 20 hours of structured activity and 20 hours of unstructured activity over a two year period.
- In Australia, CPD requirements are >12, 5 hours of formal activity and >12, 5 hours of informal activity every year.
- South African requires practicing chiropractors to complete 20 formal CPD hours per year.

New Zealand will have CPD requirements in place by 2015, where chiropractors will be required to complete 50 hours per two year cycle, 25 hours formal and 25 hours informal learning.

The Health Professions Act, 1974 (South Africa) (Act No. 56 of 1974) (as amended) endorses Continuing Professional Development (CPD) as the means for maintaining and updating professional competence, to ensure that the public interest will always be promoted and protected, as well as ensuring the best possible service to the community (HPCSA, 2011). It goes onto say and underline the purpose of CPD to that of: assisting health professionals to maintain and acquire new and updated levels of knowledge, skills and ethical attitudes that will be of measurable benefit in professional practice and to enhance and promote professional integrity. Depending on the opportunities and how the regulator enforces and structures CPD, the chiropractor is provided with a means to keep his or her standards of practice at a respectable level, which aids in patient safety. The latter being the principle motivator for regulators.

However, when looking at the differences between the CPD requirements of the studied countries, the legislation may need to be revisited to attain a level of congruency and therefore similarity in the level of professional competency (i.e. to standardise CPD requirements internationally). This standardisation would enable chiropractors to move between countries more easily.

Table 4.24: B1.3. Are there disciplinary procedures in place?

Country	Yes
Australia	1
Canada-Ontario	1
New Zealand	1
South Africa	1
United Kingdom	1
USA-California	1
USA-Florida	1
USA-New York	1

4.6.2.1.3 Discussion

As can be seen in Table 4.24, all jurisdictions have disciplinary procedures in place. This agrees with the discussion as stated under Table 4.20, which indicated that jurisdictions have a code of ethics which is enforceable. This implies that all jurisdictions have a structure to protect the patient and regulate the practice of the profession within particular guidelines.

In the USA, the disciplinary process may vary slightly in every jurisdiction due to the various regulatory or governing bodies that regulate chiropractic practice. At state level, there are different operating procedures and legislation (California, Florida and New York) (Liewer, 2013. This is dictated, in part, by the Administrative Procedures Act of 1946. Examples of differences include the presence or absence of independent complaint review panels, which may be composed of former board members, current board members and /or a combination of both. Additionally, New York is different in that the Board members are advisory in nature. However, this is not common (California Code of Regulations, 2012; Florida Statutes: Chiropractic Medicine, 2012 and the Rules of the Board of Regents, 2011).

Notwithstanding the differences, all USA jurisdictions, in every disciplinary protocol, follow a similar sequence: a complaint is filed, reviewed, investigated, and determined whether it should be / can be addressed by state law. If so, disciplinary proceedings commence. Depending on the severity of the complaint, informal or formal dispositions may occur. Some boards use independent hearing judges while others rely on the board itself (Liewer, 2013) to hear the case. Those with hearing judges may empower the Board to make the final determination of sanction. Depending on the case, legal counsel may include lawyers for the board, lawyers for the state (prosecutors), and / or lawyers for the accused, or no lawyers at all (as per the chiropractor's wish or choice). In all cases, discipline is a matter of public record (Liewer, 2013). The positive implications for above are that every case is handled on its personal merit. Cases may also be handled and judgement made by board members that may have better knowledge of the offence at hand (in chiropractic terms). This allows for a more accurate understanding of the case and the most appropriate judgement being made without external influence (without the appropriate knowledge of chiropractic).

In the UK, the disciplinary process starts with the investigative committee which will then be followed by the professional conduct committee (Cuncliffe, 2013).

By contrast, in New Zealand, once a complaint is received or referred to the regulator by the Health and Disability Commissioner, the board may have the following options (which escalate depending upon the severity of the complaint) including

- Low level investigations;
- Competence Review Committee investigations;
- Professional Conduct Committee investigations;
- Referral to the Health Practitioners Disciplinary Tribunal.

The first two investigation scenarios (Low level and Competence Review Committee investigations) are designed to be a conciliatory and educative process and are utilized in minor cases. If the case is found to be more serious, it is referred to the Professional Conduct Committee Investigations, which take on a more formal approach and the Committee has legislated power to make decisions and inform the Board of those decisions. For the most serious cases, the Health Practitioners Disciplinary Tribunal is utilized and the penalties handed down by the Tribunal may include suspension and deregistration (NZCB E-Newsletter, 2010).

In a similar manner to New Zealand, the Canadian disciplinary process initially involve the Inquiries, Complaints and Reports Committee, who will refer a matter for disciplinary procedures when the allegations are serious and/or require a hearing (Question B1.3, Appendix B).

In a simpler manner, Australia deals with non-compliance as a disciplinary matter under the Health Practitioner Regulation National Law (Part 8). Using a similar straight forward procedure, the South Africa disciplinary process is clearly described in Section 23 of the Allied Health Professions Act 63 of 1982 (See Appendix J).

The common denominator in the above processes, in all of the regions, is that the reporting of offences committed by chiropractors has consequences and is handled by officials who have received the necessary authorisation from the regulator to do so. Some countries have an initial inquiry to determine the severity of the offence whereas other countries handle all matters by the same structures independent of their severity. The details of above are all similar in that any offence reported is investigated and is handled expediently, effectively and appropriately. The outcomes are variable depending on the degree of severity of the complaint. The outcomes of these disciplinary actions are usually noted within their respective jurisdiction (and made a matter of public record).

There is, however, a move to develop the international component of the database known as CIN-BAD, that aims to develop a global list of all practitioners and whether or not they have had action brought against them for infringements within their respective jurisdictions (FCLB, 2013). Currently, CIN-BAD is only active in North America / Canada with some limited international input. This structured approach to management of practitioners that have previously infringed laws, rules and / or regulations may pose a legitimate obstacle to migration of practitioners when history checks are done on the practitioner within these types of databases.

Table 4.25: B1.4. Is there a complaint procedure for patients?

Country	Yes
Australia	1
Canada-Ontario	1
New Zealand	1
South Africa	1
United Kingdom	1
USA-California	1
USA-Florida	1
USA-New York	1

Table 4.26: B1.5. Are there structures for self-reporting (e.g. adverse reactions)?

Country	No	Yes	Unknown
Australia	1	0	0
Canada-Ontario	0	1	0
New Zealand	0	0	1
South Africa	1	0	0
United Kingdom	0	1	0
USA-California	1	0	0
USA-Florida	1	0	0
USA-New York	1	0	0

4.6.2.1.4 Discussion

All regions have a system whereby patients or the public have the ability to lodge a complaint against a chiropractor. The outcomes shown on Table 4.25 are not unexpected, based on the discussion linked to Table 4.24. In Canada, members are asked on their

annual renewal form if they have been found guilty of any offences; or been found liable for any acts of professional negligence or malpractice or if there have been any findings of professional misconduct made against them. Practitioners are then required to report this information as soon as a finding has been made. Similarly, in the USA, most boards do not track adverse clinical outcomes, but they do track practitioner behaviour (e.g. chiropractors may self-report substance abuse problems) via CIN-BAD system (FCLB, 2013).

Where patients perceive that adverse clinical outcomes are as a result of a practitioner's actions, the complaints most often appear in a civil (not administrative) court proceeding, where they are addressed through processes involving malpractice insurance. Some regulatory boards require that malpractice settlements be reported directly to the licensing board by the malpractice carrier (California Business and Professions Code, n.d; Florida Statutes, 2012). This is particularly for purposes of recording and maintaining records on each practitioner.

The above may inhibit mobility and affect transferability of a practitioner by virtue of a possible "civil" record if a patient is successful in a claim against a chiropractor or as a result of their name appearing on the CIN-BAD where transgressions are noted. Similarly, if the transgression was serious enough to warrant police record, then mobility will be affected as police clearance will not be attained during the registration process.

By contrast, only Canada and the UK have known structures in place for practicing chiropractors to self-report any events experienced by their patients (Question B1.5, Appendix B). The UK uses an electronic system called "The Chiropractic Patient Incident Reporting and Learning System" (CPiRLS) to report events. Once a report is logged, the CPiRLS team are able to identify trends among submitted reports to provide feedback for the profession. This helps to ensure the whole profession learns from the collective experience in the interests of patients and hence acts as a development tool for the profession. This ultimately has a positive impact on patient care and helps avoid similar incidents or, in the case of near-misses and potential incidents, generate insight to minimise risk (CPiRLS, 2013). The impact of such is decreased litigation which eases mobility when compared to countries such as the USA who do not have a self-reporting system.

4.6.2.2 Fitness to Practice (FTP)

Table 4.27: B2.1. Are there minimum standards or expected requirements for FTP?

Country	No	Yes	Unknown
Australia	1	0	0
Canada-Ontario	0	1	0
New Zealand	0	1	0
South Africa	0	1	0
United Kingdom	0	1	0
USA-California	0	1	0
USA-Florida	0	1	0
USA-New York	0	1	0

Table 4.28: B2.2. If minimum requirements are not met, are sanctions in place?

Country	No	Yes	Unknown
Australia	1	0	0
Canada-Ontario	0	1	0
New Zealand	0	1	0
South Africa	1	0	0
United Kingdom	0	1	0
USA-California	0	1	0
USA-Florida	0	0	1
USA-New York	0	0	1

4.6.2.2.1 Discussion

All regions besides Australia have minimum requirements that must be met before the practitioner is considered fit to practice. In Canada, a chiropractor must have the physical and mental capacity to practice or their registration will be stated as 'inactive' or 'temporary inactive' until such a time that they have rectified the reason for altered registration status.

In South Africa, according to the Allied Health Professions Act 63 of 1982, a chiropractor would be considered unfit to practice should they become addicted to the use of any scheduled substance as defined in section 1(1) of the Medicines and Related Substances Control Act, 1965 (Act 101 of 1965) and should they become mentally or physically disabled

to such an extent that it would be detrimental to the public interest to allow them to continue to practise.

Similarly, in the UK, a chiropractor must display good conduct, be competent, have no criminal offences or convictions and be physically and mentally fit to practice. Failure to keep to these ideals could result in suspension, conditions placed on registration or deregistration (GCC, 2013).

In New Zealand, according to the Health Practitioner's Competence Assurance Act of 2003, a chiropractor must meet the following requirements:

- Communicate effectively for the purposes of practising within the scope of practice;
- Communicate in and comprehend English sufficiently to protect the health and safety of the public;
- He or she must not have been convicted by any court in New Zealand or elsewhere of any offence punishable by imprisonment for a term of three months or longer;
- Mentally and physically capable;
- He or she is not the subject of professional disciplinary proceedings in New Zealand or in another country;
- He or she is under investigation, in New Zealand or in another country, in respect of any matter that may be the subject of professional disciplinary proceedings;
- He or she is subject to an order of a professional disciplinary tribunal (whether in New Zealand or in another country) or to an order of an educational institution or to an order of an authority or of a similar body in another country and / or;
- Not be a danger or threat to the public.

In California, mental fitness, competence and remaining without an upheld conviction are mentioned under good practice guidelines. Consequences of failure to maintain these are: probation, deregistration and suspension. Information in this regard concerning New York and Florida was not available.

Being considered fit to practice is an integral part in maintaining the competency of chiropractors within specific jurisdictions. Maintaining competency as a chiropractor is

essential to ensure patient safety and avoid any mismanagement or malpractice. These latter two concerns are detrimental to the profession and its development within that region or even worldwide. An example of this situation was the case in 2013 where a chiropractor in Australia was accused of fracturing a child's neck by means of spinal manipulation (Corderoy and Medew, 2013) which subsequently caused public outrage and negatively affected the reputation of the profession within Australia and the rest of the world although found not guilty at the end of the investigation.

Similarly, a chiropractor who due to age or simply under other circumstances (mental or physical inability) is unable to successfully and safely fill their role as a chiropractor, should be considered unfit to practice and sanctions should be put in place until such time when that chiropractor is able to prove his / her competency that is required to return to practice.

Much as fitness for practice includes personal problems (mental or physical health) that may exclude the practitioner from continuing in practice, another exclusionary criteria that was common amongst regions was "a history of prior convictions".

Australia being the only region without minimum FTP standards, other professions may question the safety of the chiropractic profession. Doubt has been raised where different practices may considered unfit in other regions. Should treatment have an adverse reaction from a patient and following investigation it was determined that the chiropractor was indeed unfit to practice, the knock-on effects for the profession could be potentially dangerous with people then questioning the legitimacy and practice guidelines of the profession. As referred to in Section 4.6.2.2.1, the news that a chiropractor broke a baby's neck – this was not mentioned was spread worldwide (Corderoy and Medew, 2013). This story had a negative impact on the reputation of the chiropractic profession. This led to the following consequences: the chiropractor came under investigation and subsequently the legitimacy of paediatric chiropractic came under question. The public perception of the profession was negatively affected as was the chiropractor's reputation. The chiropractor was subsequently found to be not-guilty. However, should he have been found guilty, the negative implications of such would have led to worldwide scrutiny of the profession and the legitimacy of paediatric chiropractic would have been questioned. .

Although this would not affect jurisdictional mobility of chiropractors, within the context of this study, the effects of such an event would most definitely be negative. This would be the result of movement of chiropractors out of the country so as not to not face possible public scrutiny or in fear of their reputations and hence their business being negatively impacted.

4.6.2.3 Disciplinary procedures and characteristics of staff implementing discipline

Table 4.29: B3.1. Constitution of panel

Country	Chair person	Note Taker	Members of profession	Expert witness	Defendant	Accused	Accused's Counsel	Other
Australia	1	1	1	1	1	1	0	1
Canada-Ontario	1	0	1	0	0	0	0	0
South Africa	1	1	1	1	1	1	1	1
United Kingdom	1	1	1	1	1	1	1	0
The other countries reported that the constitution was variable and case dependant								

Table 4.30: B3.2. Are lay members present? Are they required to have an affiliation to the case?

Country	No	Yes	Variable	No	Yes	Variable
Australia	0	1	0	1	0	0
Canada-Ontario	0	1	0	1	0	0
New Zealand	0	0	1	0	0	1
South Africa	1	0	0	1	0	0
United Kingdom	0	1	0	1	0	0
USA-California	0	0	1	0	0	1
USA-Florida	0	0	1	0	0	1
USA-New York	0	0	1	0	0	1

Table 4.31: B3.3. Involvement of lawyers

Country	Yes	Legal counsel	Defence attorneys
		Yes	Yes
Australia	1	1	1
Canada-Ontario	1	1	1
South Africa	1	1	1
United Kingdom	1	1	1

4.6.2.3.1 Discussion

In the USA, the constitution of the disciplinary panels was highly variable by case type as well as by board decision. The involvement of lawyers is determined on a case by case basis (it may be influenced by the severity of the case) and is variable.

In Canada, a chairperson, members of the profession (panel members) and lay members are all part of the disciplinary process. A court reporter, expert witnesses, the prosecutor, the member and lawyers are present but not part of the panel. Lawyers represent the College of Chiropractors, Ontario –, the member and independent legal counsel advises the panel (Question B3.1, Appendix B).

In Australia and the UK, a Chairperson, note taker, members of the profession, expert witnesses, the defendant, the accused and the accused's counsel are part of the panel. Lay members are appointed by the board but have no affiliation with the case. Lawyers are present, but in Australia, lawyers may be present prior to hearings only and no legal representation takes place at professional hearings unless it is a state tribunal.

By contrast, in New Zealand, the constitution of the panel varies according to the type of procedure. All details and procedures are outlined in the Health Practitioner's Competence Assurance Act of 2003.

In South Africa, the disciplinary process is described under Section 23 of the Allied Health Professions Act 63 of 1982 (see Appendix J).

The disciplinary process and proceedings are similar across the sample. This may contribute to a fair and ethical practice and reflect the function of these juristic bodies as protectors of public / patient interest. As a result, it would be nonsensical that their processes and procedures differ greatly. The fact that hearings for disciplinary actions take place and are enforced in each region may indicate that it would not affect the mobility of chiropractors. This as a result of misdemeanours being handled uniformly and similarly across all regions However, when moving from jurisdiction to jurisdiction, a practitioner may be hindered from accessing the second jurisdiction if they have been disciplined previously. This is because the juristic bodies understand and recognise each other's processes (which are similar) and therefore result in decreased mobility. However, should the disciplinary process be sub-standard and not meet similar standards of other medical professions, the practitioner may not be dealt with effectively (viz. panel hearings are not affected and actions against the

practitioner are not upheld), which may positively affect mobility of practitioners between regions.

4.6.3 Registration process and requirements

4.6.3.1 Registration and licensing process (Local)

Table 4.32: C1.1. Categories of registration

Country	Chiropractor	Education	Intern	Other	Student	Temporary	Travel-sport
Australia	1	0	0	1	1	0	0
Canada-Ontario	1	0	0	1	0	1	0
New Zealand	1	0	0	0	0	0	0
South Africa	1	1	1	0	1	1	1
United Kingdom	1	0	0	0	0	0	0
USA-California	1	0	0	0	0	0	0
USA-Florida	1	0	0	1	0	1	0
USA-New York	1	0	0	0	0	0	0

Table 4.33: C1.2. Types/classes of registration (Specializations)

Country	Other	Rehabilitation	Sports
Canada-Ontario	1	1	1

4.6.3.1.1 Discussion

All regions have registration for individuals under the “chiropractor” title and most of the countries / states surveyed had title protection (Chiropractic Diplomatic, 2013). The Australian regulatory bodies also register chiropractic students and non-practicing chiropractors. Limited registration however, is available for teaching or research or public interest.

Similarly, South Africa also registers individuals under the chiropractor title in categories on the register that include persons under the student, intern, education and travel-sport titles.

Canada has temporary registration and registration for retired or inactive chiropractors. Canada is the only region that has registration for a specialization within practice, that being rehabilitation and sport.

In the USA, Florida offer temporary registration in which case they may issue a "chiropractic medicine faculty certificate" for full or part-time faculty for programmes located in Florida (under certain conditions). There are also temporary licensure provisions for spouses of active military duty.

The ability for chiropractors to register under different categories may aid in the mobility of chiropractors across the globe (as could be seen with temporary registration for sports, education or travel purposes). The process of registration as a chiropractor versus temporary registration could involve additional costs and a longer process. Should a chiropractor be required or want to travel abroad for purposes other than practicing or even short-term registration (e.g. educational or sports events), then the possibility to register as such, at a reduced cost and administrative burden would aid in the mobility of chiropractors.

Another question which may warrant further investigation for those regions that do not have registration for the various categories, is the process of regulation for those that are entering the country under these categories (and may not comply with all the requirements for full registration).

Table 4.34: C1.3. Is there automatic registration during / after education?

Country	No	Yes
Australia	1	0
Canada-Ontario	1	0
New Zealand	1	0
South Africa	0	1
United Kingdom	1	0
USA-California	1	0
USA-Florida	1	0
USA-New York	1	0

Table 4.35: C1.4. Are there any constraints by supranational (international) bodies?

Country	No	Yes	Unknown
Australia	0	0	1
Canada-Ontario	0	1	0
New Zealand	1	0	0
South Africa	0	1	0
United Kingdom	1	0	0
USA-California	0	0	1
USA-Florida	0	0	1
USA-New York	0	0	1

Table 4.36: C1.5. Are there constraints imposed by legislation e.g. privacy laws, constitution etc.?

Country	No	Yes	Unknown
Australia	0	1	0
Canada-Ontario	0	1	0
New Zealand	0	1	0
South Africa	0	1	0
United Kingdom	1	0	0
USA-California	0	0	1
USA-Florida	0	0	1
USA-New York	0	0	1

4.6.3.1.2 Discussion

Licensing in the US is strictly state-based in all cases. In some cases, boards may accept accreditation offered by non-USA accrediting agencies. All constraints are imposed by legislation in each state and all boards require that patient records be kept confidential (for example).

Similarly, in the UK, there are no international bodies that have power to constrain or impose constraints on any legislation. By contrast, in Australia, it is unknown to the researcher whether there are any constraints imposed by supranational bodies, however there are constraints imposed by legislation in the form of the Health Practitioner Regulation National Law.

In Canada, chiropractic educational programmes are accredited by members in good standing with the Council on Chiropractic Education (International) so there is a constraint imposed by supranational bodies. The Chiropractic Act of 1991 and the registration regulation under this act specify the requirements for registration with respect to education, examinations, good character, ability to work in Canada and other related requirements.

In New Zealand, constraints imposed by legislation under the following acts are (New Zealand Legislation, 2013):

- All relevant Accident Insurance Regulations;
- Code of Health and Disability Services Consumers' Rights 1996;
- Commerce Act 1986;
- Consumer Guarantees Act 1993;
- Electronic Transactions Act 2002;
- Employment Relations Act 2000;
- Fair Trading Act 1986;
- Health and Disability Commissioner Act 1994;
- Health and Safety in Employment Act 1992;
- Health Information Privacy Code 1994;
- Holidays Act 2003;
- Human Rights Act 1993;
- Medicines Act 1981;
- Parental Leave and Employment Protection Act 1987;
- Privacy Act 1993;
- Radiation Protection Act 1965 and the
- The Health (Retention of Health Information) Regulations 1996.

In South Africa, constraints are imposed by the ECCE and the AHPCSA which limits the entry of chiropractors into South Africa. Other national constraints are those of the constitution health care charter, patient's rights charter and occupational health and safety.

Constraints by supranational bodies have to be considered a factor affecting the mobility of practitioners. Accreditation with international bodies such as the CCEI plays a huge role in determining whether a chiropractor is allowed to practice abroad. Schools not having accreditation status may graduate their students with a chiropractic qualification that may not be recognised in another country and hence limits the options for that graduate.

Supranational bodies that regulate the profession, also constrain the profession and limits mobility of practitioners. This is seen in South Africa, as stipulated in Chapter Six, Section 44 of the Regulations in Terms of the Allied Health Professions Act, 1982, where the AHPCSA have limited the entry of chiropractors into South Africa to those only having an equivalent qualification to that offered in South Africa.

Also, a note must be made that if there are other acts / rules / regulations imposed by the state, the mobility of the chiropractor may be impaired – e.g. green card in the USA.

Table 4.37: C1.7. Possibility of appeal against rejection of registration

Country	Yes
Australia	1
Canada-Ontario	1
New Zealand	1
South Africa	1
United Kingdom	1
USA-California	1
USA-Florida	1
USA-New York	1

4.6.3.1.3 Discussion

All regions offer the possibility of appeal. In the UK and South Africa, a chiropractor may do so by submitting the appeal specifically to the council; however in South Africa, this process must be done within three months of registration being rejected.

In the USA, all boards permit due process which includes appealing any decision of the board. Appeals may go up the chain of authority of the governmental agency which is; ultimately accessible to the USA Courts at all levels. By contrast, in New Zealand and according to the Health Practitioners Competence Assurance Act of 2003, an appeal: "must be brought to the appropriate court by way of notice of appeal in accordance with rules of court; And (b) must be lodged within 20 working days after notice of the decision or order is communicated to the appellant, or within any further time a District Court Judge or, as the case requires, a High Court Judge allows on application made before or after the period expires."

In Canada, members may appeal to the Health Professions and Appeal Board for a review of a registration committee decision.

Under Question C1.6 (Appendix B), which was not graphically represented in table form, information regarding the process of registration was only found for Ontario, Canada (See Appendix I) and South Africa. The process of registration is found under Section 15 of the Allied Health Professions Act 63 of 1982 (see Appendix K).

An individual's ability to appeal a decision advocates diplomacy within a profession and creates transparency (McQuoid-Mason and Dada, 2011). As seen in courts of law today, mistakes regarding judgement do happen and individuals may be deemed guilty when in fact they have been proven innocent (McQuoid-Mason and Dada, 2011). Should the appeal process be removed from the standard operating procedures within a jurisdiction, this could possibly be a deterrent for a chiropractor wanting to practice within that region.

4.6.3.2 Foreigner registration

Table 4.38: C2.1. Board examination If yes- state/national/both

Country	No	Yes	State	National	Both
Australia	0	1	0	1	0
Canada-Ontario	0	1	0	0	1
New Zealand	0	1	0	1	0
South Africa	1	0	0	0	0
United Kingdom	0	1	0	1	0
USA-California	0	1	0	0	1
USA-Florida	0	1	0	0	1
USA-New York	0	1	0	0	1

Table 4.39: C2.2. Board examination examining body

Country	National	National and state
Australia	1	0
Canada-Ontario	1	0
New Zealand	1	0
United Kingdom	1	0
USA-California	0	1
USA-Florida	0	1
USA-New York	0	1

Table 4.40: C2.3. Content of Board examination

Country	Basic Sciences	Chiropractic principles	Chiropractic practice	Jurisprudence	Ethics	Other
Australia	1	1	1	0	1	0
Canada-Ontario	1	1	1	1	1	0
New Zealand	1	1	1	1	1	0
United Kingdom	0	1	1	1	1	0
USA-California	1	1	1	1	0	0
USA-Florida	1	1	1	1	0	0
USA-New York	1	1	1	0	0	0

Table 4.41: C2.3. Structure of Board examination

Country	Written			OSCE	
	MCQ	Narrative	Mixed	Narrative	Mixed
Australia	0	0	1	0	1
Canada-Ontario	1	0	0	0	1
New Zealand	0	1	0	0	1
United Kingdom	0	0	1	1	0
USA-California	0	0	1	0	1
USA-Florida	0	0	1	0	1
USA-New York	0	0	1	0	1

Table 4.42: C2.5. Requirements from bodies for registration of foreigners

Country	Academic record	Certificate of qualification	Educational equivalence record	Fee for Application	ID	Marriage Certificate (female)	Other	Passport	Police clearance	Proof of CPD compliance	Proof of registration in country of origin	Reference Letters
Australia	0	1	0	0	1	0	0	1	1	0	0	0
Canada-Ontario	1	0	0	1	1	0	1	0	1	0	1	1
New Zealand	0	1	0	1	0	1	1	1	1	0	0	1
South Africa	1	1	1	1	0	1	1	1	1	1	1	1
United Kingdom	0	1	0	1	0	1	0	1	1	0	1	1
USA-California	1	1	0	1	0	0	1	0	1	1	0	1
USA-Florida	1	1	0	1	0	0	1	0	1	1	0	1
USA-New York	1	1	0	1	0	0	1	0	1	1	1	1

4.6.3.2.1 Discussion

Chiropractors that have graduated outside of Australia and are wishing to practice in Australia need to complete board examinations conducted by the Council on Chiropractic Education Australasia (CCEA). According to the CCEA website (CCEA, 2013), the CCEA assists with the provision of safe and competent chiropractic for the Australasian community by:

- inspecting, accrediting and continually monitoring entry level chiropractic programs in Australasia;
- A skills assessment process and assessment for chiropractors trained outside of Australia and New Zealand for migration and work visa eligibility.

Successful completion of this process allows eligibility to apply to the relevant independent regulatory authority for registration in Australia; however the CCEA does not register chiropractors in Australia. That role is entirely handled by the Chiropractic Board of Australia (CBA).

The structure of the board examination and assessment process involves two stages: a desktop audit which is a paper-based application that is required by all candidates wishing to

migrate and register in Australia. Stage Two involves a competency based assessment consisting of three parts undertaken over three consecutive days in Australia:

- Part 1 – Written Basic Competency
- Part 2 - Written Clinical Competency
- Part 3 – Practical Clinical Competency

To be eligible to write the board examinations, a chiropractor must have graduated from chiropractic school. Chiropractors that have completed their qualification from a CCEI agency accredited school are exempt from certain parts of the competency based assessment. As mentioned previously under the discussion in Section 4.6.1.4.1 concerning examination/ qualification, and according to the Trans-Tasman Mutual Recognition Act of 1997. Chiropractors that have graduated within New Zealand and registered with the NZCB are eligible to apply for registration with the CBA and vice versa.

Theoretical content includes: Basics sciences, Chiropractic principles, neurology, orthopaedics, diagnostics and radiographic practice and ethics. Practical components include: a verbal clinical case assessment including ethical aspects manipulative skills technique and radiographic imaging and interpretation.

The CCEA exams are written 3 times a year in either Sydney or Perth, (Australia) and cost in the range of $ 4550- $ 4700 (CCEA, 2013).

In Canada, Chiropractors wishing to practice in Ontario need to complete board examinations conducted by the Canadian Chiropractic Examining Board (CCEB) as well as the College of Chiropractors of Ontario (CCO) legislation and ethics examination. According to the CCEB website (CCEB, 2013), the Canadian Chiropractic Examining Board (CCEB) conducts clinical competency exams for individuals seeking licensure to practice chiropractic in Canada.

The structure of the CCEB Examination consists of three components:

- Component A – Chiropractic Knowledge
- Component B – Clinical Decision Making and Diagnostic Imaging
- Component C – Clinical Skills Evaluation

To be eligible to write the CCEB exams, the individual must be at or graduated from a CCEI agency accredited school and follow the following stipulations:

Component A:

- Must be taken ten months before graduation from an accredited chiropractic educational institution.
- Component A exam must be completed before taking Components B or C.
- Requires an Eligibility Letter, with current GPA and date of graduation, or an official transcript from the accredited programme.

Component B:

- May be taken six months before graduation from an accredited chiropractic educational institution, subsequent to passing Component A.
- May be taken with Component C if within three months of graduation.
- Requires an Eligibility Letter, with current GPA and date of graduation, or an official transcript from the accredited programme.

Component C:

- May be taken three months before graduation from an accredited chiropractic institution.
- Component B and C exams must be completed within three years of each other.
- Requires an Eligibility Letter, with current GPA and date of graduation, or an official transcript from the accredited programme.

The Examinations are offered three times annually and the CCEB have testing sites in Canada, New Zealand and the UK. The CCO examination is offered during the same week as the CCEB examinations.

The cost of writing the exams ranges from approximately $ 3 330 to $ 4 180 (CCEB, 2013) depending on the chiropractor's nationality.

In New Zealand, chiropractors graduating outside of Australia and New Zealand need to complete the NZCB registration examination to register with the NZCB and practice in New Zealand. According to the NZCB website (NZCB, 2013) this examination fulfils the Board's responsibilities in relation to functions (b), (c) and (i) as set out under Part 6, Section 118 of the Health Practitioners Competence Assurance Act 2003.

According to the NZCB examination handbook (2012), the purpose of the examination is to determine whether internationally educated graduates of chiropractic programmes meet a

minimum standard of practice that is required, before becoming eligible to register to practice chiropractic in New Zealand. The examination therefore aims to ensure the safety of the public in interactions with chiropractors and within chiropractic practice in the New Zealand health environment. The examination is designed to evaluate the essential knowledge, skills and abilities required to safely and effectively practice chiropractic. The examination includes the following for assessment:

- History taking
- Physical examination
- Data interpretation
- Clinical problem solving
- Treatment skills (but not methodology)
- Ethics
- Safety
- Interviewing and patient communication
- Interdisciplinary communication
- Recording of data and information
- Case management and
- Planning

The examination is held over two days and is approximately four hours and forty five minutes in length. The examination covers core clinical practice areas as they relate to the Chiropractic Scope of Practice in New Zealand. In order to be issued with an Annual Practicing certificate (APC), candidates must successfully complete the examination and meet all other registration requirements (NZCB, 2013).

To be eligible to write the examinations in New Zealand, the chiropractor must have an accredited degree from a CCEI agency accredited school and must be proficient in the English language. Should a candidate be from a country where English is not the first language, they may be required to complete the International English Language Testing System (IELTS) assessment.

There are 4 components to the examination:

- Component 1 – Written Case
- Component 2 – Patient Interview and oral examination
- Component 3 – Chiropractic Technique
- Component 4 – Radiology

Costs are approximately $ 3 220 to write the NZCB registration examination and then between $ 408 and $ 1 124 for the Annual Practicing Certificate (APC) which allows the chiropractor to practice in New Zealand (NZCB Examination Handbook, 2012).

To register as a chiropractor within the UK, a chiropractor must have an accredited qualification from either Anglo European College of Chiropractic (AECC), Welsh Institute of Chiropractic (WIOC) or McTimoney College of Chiropractic. Currently, the General Chiropractic Council (GCC) which is responsible for regulating the profession in the UK does not recognise any non-UK chiropractic qualifications. To register in the UK, foreign graduates must complete the GCC test of competence and meet the requirements of the GCC code of practice and standard of proficiency (GCC, 2013).

According to the GCC website (GCC, 2013), the GCC Test of Competence assesses the ability of the candidate to meet the standards of safe and competent chiropractic practice in the United Kingdom. The assessment components evaluated include the following:

- Technical knowledge of chiropractic skills and procedures,
- Physical examination skills,
- Ability to apply technical knowledge appropriately,
- Ability to make appropriate clinical decisions,
- Knowledge and application of professional ethics and jurisprudence and the
- Ability to communicate clearly, concisely and appropriately.

There are four components in the GCC test of competence:

- Component 1: The Clinical Objective Structured Clinical examination (Clinical OSCE);
- Component 2: The Radiology and Radiography Objective Structured Clinical Examination (Radiology/radiography OSCE);
- Component 3: Case studies with discussion and
- Component 4: The UK healthcare environment and the chiropractor (based on the GCC code of practice and standard of proficiency).

The exam is written at the Welsh Institute of Chiropractic, at the University of South Wales twice a year and costs approximately £ 1 500 (GCC, 2013). To be eligible to write the Test of competence, the chiropractor must provide evidence of their chiropractic qualification,

showing how it meets the criteria for registration as set out in the GCC (Registration of Chiropractors with Foreign Qualifications) Rules 2002 (GCC, 2013).

In the USA, all chiropractors are required to complete the National Board of Chiropractic Examiners (NBCE) examinations in order to practice. According to the NBCE website (NBCE, 2013), the NBCE is the international testing agency for the chiropractic profession. The NBCE develops, administers and scores standardized exams that assess knowledge, higher-level cognitive abilities and problem-solving in various basic science and clinical science subjects.

Individuals typically take NBCE exams whilst completing their Chiropractic qualification. The results of which are made available to licensing authorities within and outside the United States. In the USA, all 50 states either accept or require candidates to pass NBCE exams Parts I, II, III, and IV for licensure (NBCE, 2013).

The NBCE written examinations are administered twice each year, in March and September at test sites in the United States, Canada, UK, France, South Korea, Australia and New Zealand. Examinations include Part I, Part II, and Part III, as well as the optional Physiotherapy Examination. The NBCE Part IV examination is the practical component.

These parts include:

- Part 1: Basic sciences: general anatomy, spinal anatomy, physiology, chemistry, pathology, and microbiology.
- Part 2: Clinical science areas, including general diagnosis, neuro-musculoskeletal diagnosis, diagnostic imaging, principles of chiropractic, chiropractic practice, and associated clinical sciences.
- Part 3: Addresses nine clinical areas: case history, physical examination, neuro-musculoskeletal examination, diagnostic imaging, clinical laboratory and special studies, diagnosis or clinical impression, chiropractic techniques, supportive interventions, and case management.
- Part 4: X-ray interpretation and diagnosis, chiropractic technique and case management.

To be eligible to write the NBCE exams, the applicant must have graduated from a CCEI agency accredited school and the cost of the exam is approximately $ 3 100 (NBCE, 2013).

In Florida, chiropractors may be required to complete the NBCE Spec exam should they have NBCE scores older than 10 years. Jurisprudence examinations are required for licensure in California and Florida. In New York, if the applicant has not completed part 3 and 4 NBCE exams, they may accept a state-administered clinical competency examination that tested hands-on demonstration of skills and knowledge in X-ray, Neurological and Orthopaedic Testing, Physical Diagnosis, and Chiropractic Technique as attested to by the licensing authority. In addition, applicants who do not complete a clinical competency licensing examination for skills and knowledge (practical examination) may meet the exam requirement by successfully completing the NBCE Special Purposes Examination in Chiropractic (SPEC). This along with submitting verification of seven out of the immediate past ten years of acceptable practice experience attested to by two licensed colleagues allows for competence to be verified (New York Education Department: Office of the Professions, 2013).

In South Africa, to practice Chiropractic, a chiropractor must have a Masters degree from one of the two schools offering the programmes within South Africa. Registration to those graduating from schools outside of South Africa requires the qualification be equivalent to that of the Masters degree in South Africa (Regulations In Terms Of The Allied Health Professions Act, 1982). This means that chiropractors trained outside of South African borders are required to complete a post graduate qualification (elective Masters) in order to have the equivalent educational standards as those received by chiropractors graduating in South Africa. Should a chiropractor meet the requirements to practice in South Africa, they may have to sit a jurisprudence examination.

One similarity amongst the countries offering board examinations is the requirement of graduation from a CCEI agency accredited school. Only Australia allows non-accredited graduates to sit their exam, however they are required to sit a basic sciences exam at an additional cost to assess their knowledge of the basic sciences. The testing methods remain similar across all regions (CCEA Handbook, 2012).

In the USA, the requirement of state examinations, in addition to the NBCE examinations, could be a deterrent to those wishing to practice within those states. However, with the top three states being used in the sample group based on practicing chiropractors and with both Florida and California requiring state administered exams to be sat, it does not seem to indicate that this is a deterrent or a factor and does warrant further investigation.

Of the sample group, only South Africa does not make use of board examinations for foreign graduates. However, the requirement of South African graduates to sit board exams to practice outside of South Africa could be a reason that is affecting the mobility of chiropractors out of its borders. This may be the possible reason behind the regulatory bodies in South Africa requiring foreign graduates to have a Masters degree equivalent.

This may also be a contributing factor that adds to the difficulty of mobility of chiropractors to regulated countries. One negative of the enforced board examinations is that a practitioner may seek work in an unregulated country. Without legislation and therefore no patient protection this opens up the possibility of unethical practice and chiropractor's not maintaining competence through a system that ensures competent chiropractors.

The need for students in the USA and Canada to sit board examinations in their own country may be a deterrent to students wishing to study chiropractic in those countries from outside those respective countries when compared to the other countries on the sample group. This is particularly true as seen in the context of the high cost of board examinations across those requiring it. Within the sample group this may also deter graduates wishing to sit these exams and further limits mobility of practitioners. In addition some boards require the individual to be tested abroad thereby increasing costs to the individual wanting to sit these exams.

The sole purpose of board examinations is to assess the competency of the chiropractor to practice within its jurisdiction. However within the CCEI and its member agencies, there is also a requirement that universities adhere to a certain level of quality within education. Both have the same purpose and are recognised by each other reciprocally. However the need for both these barriers is questioned. Particularly as the added stress, inconvenience and cost of a board examination seem to indicate a significant barrier to the mobility of chiropractors across the globe and subsequently may negatively affect the profession in countries without chiropractic regulation.

4.6.3.3 Interaction between regulators and chiropractors

Table 4.43: C3.1. Are there procedures in place to verify applicant's personal details?

Country	Yes
Australia	1
Canada-Ontario	1
New Zealand	1
South Africa	1
United Kingdom	1
USA-California	1
USA-Florida	1
USA-New York	1

Table 4.44: C3.2. Mode of registration

Country	Online	Written	Physical Appearance
Australia	0	1	0
Canada-Ontario	0	1	0
New Zealand	0	1	0
South Africa	0	1	0
United Kingdom	1	1	0
USA-California	0	1	0
USA-Florida	1	1	0
USA-New York	0	1	0

4.6.3.3.1 Discussion

All regions require written applications for registration with only Florida and the UK allowing an additional option of online registration. No physical appearance is necessary which allows easier registration for those that may reside in other regions.

All documents that are received by regulatory boards across the sample group must be notarized to verify the applicant's details. In the USA, additional documents such as letters of reference and transcripts must be requested and mailed directly from the source to the board.

The mode of registration in modern times does not seem to affect mobility of practitioners. With technology today, the shift seems to have moved toward online availability of registration documents followed by physically posting written applications along with the required documents seems to be the standard.

Documents required by boards for applications are required to be notarized meaning that the documents are ensured of their legitimacy. The registration process remains safely guarded and protected against fraudulent documents and thus fraudulent applications made by those not meeting requirements for registration will be identified. The requirement of notarizing as well as having all additional documents to support the application ensures that the chiropractor meets requirements to safely practice chiropractic in that region. This in turn, assures the public of the safety and standards of the profession and how regulation ensures and maintains these standards.

Should a regulatory board not require supporting documents for application or notarizing of such, it may open the doors to fraudulent applications and possibly the entry of chiropractors that do not meet the standards required to practice within that region. The implications of this are similar to those mentioned under discussion in Section 4.6.2.2.1 in which unsafe practice could question the safety of the practice and legitimacy of the profession. The possible effects of such have not been determined in this study.

4.6.4 Revalidation/ Competency Assurance/ Recertification

4.6.4.1 Assessment process

Table 4.45: D1.1. Are tools or processes used to assess or ensure performance / competency?

Country	No	Yes
Australia	0	1
Canada-Ontario	0	1
New Zealand	0	1
South Africa	0	1
United Kingdom	1	0
USA-California	0	1
USA-Florida	0	1
USA-New York	0	1

Table 4.46: D1.2. What tools are used?

Country	Basic medical science testing	Chiropractic principles testing	Jurisprudence testing	CPD	Other
Australia	0	0	0	1	0
Canada-Ontario	0	1	1	1	1
New Zealand	0	0	0	0	1
South Africa	0	0	0	1	0
USA-California	1	1	1	1	1
USA-Florida	1	1	1	1	1
USA-New York	1	1	1	1	1

Table 4.47: D1.3. Any procedures in place to re-validate chiropractors that have been de-registered or have inactive practices

Country	No	Yes
Australia	0	1
Canada-Ontario	0	1
New Zealand	0	1
South Africa	1	0
United Kingdom	0	1
USA-California	0	1
USA-Florida	0	1
USA-New York	0	1

Table 4.48: D1.4. Are there consequences for chiropractors not meeting re-validation requirements?

Country	No	Yes
Australia	0	1
Canada-Ontario	0	1
New Zealand	0	1
South Africa	1	0
United Kingdom	0	1
USA-California	0	1
USA-Florida	0	1
USA-New York	0	1

4.6.4.2 Role-players

Table 4.49: D2.1. Is there involvement of professions own representative body/ies to assess revalidation/competency?

Country	No	Yes
Australia	1	0
Canada-Ontario	1	0
New Zealand	0	1
South Africa	1	0
United Kingdom	1	0
USA-California	0	1
USA-Florida	0	1
USA-New York	0	1

4.6.4.2.1 Discussion

Although there is a CPD requirement within the UK, the UK currently does not have any means of ensuring competency or revalidating chiropractors that have been inactive in practice. The GCC have stated though that by 2015 this will come into effect and will most likely be portfolio based. Failure to maintain set standards will result in deregistration.

A CPD system to ensure competency was the most utilized option within the sample group except for New Zealand, which requires a review of the chiropractors CV, their detailed work history while away from practice in New Zealand, and certificates of good standing required

from all jurisdictions in which practiced (Sinclair, 2013). Failure to meet requirements can result in conditions being placed on their APC, refusal to issue an APC or they may be required to sit/resit the NZCB examination. There is also involvement of the professions own representative body as five of the board members are practicing chiropractors.

Canada uses CPD, jurisprudence, chiropractic principles and in addition a peer and practice assessment to ensure competency. If the practitioner is inactive for more than two years, a chiropractor must demonstrate competency to a registration committee (e.g. peer and practice assessment, legislation and ethics examination, record keeping workshop). If the practitioner is inactive for more than five years, the chiropractor must sit the CCEB competency examinations. If unsuccessful, the chiropractor faces possible de-registration.

Australia utilizes a CPD system to ensure competency amongst registered chiropractors. If inactive for a certain amount of time (unspecified), the CBA may request the chiropractor to sit the CCEA test of competence, failure of which would result in deregistration.

In the USA, the requirements vary between states and a CPD system is utilized by all three states in the sample group. If complaints are received and determined to be valid, all boards have a variety of tools including that which requires retraining, monitoring, examinations for clinical competency, ethics examinations and jurisprudence examinations. The NBCE offers both post-graduate clinical and ethics examinations to be used at the discretion of the licensing boards. The post-graduate clinical examination is used for both licensure transfer and disciplinary purposes. The Ethics and Boundaries examination is used to assess ethical competency. Failure to meet requirements is treated as a disciplinary offence.

In South Africa, a CPD system is used to maintain competency amongst chiropractors, however, no system is in place yet to revalidate or assess competency in chiropractors who have been inactive in practice.

The use of CPD to ensure competency amongst chiropractors is common in the majority of the sample group with consequences of failure to maintain these requirements also being enforced. This type of system being used in the UK, USA, Australia and Canada may be the reason why New Zealand and the UK are in the process of creating a CPD system for its chiropractors.

4.6.5 Entitlement with registration

Table 4.50:E1.1. Does registration entitle you to the use of the "Dr" title?

Country	Yes
Australia	1
Canada-Ontario	1
New Zealand	1
South Africa	1
United Kingdom	1
USA-California	1
USA-Florida	1
USA-New York	1

Table 4.51: E1.2. Rights as a chiropractor for further investigations

Country	X-ray	MRI/CT	Laboratory testing	Other
Australia	1	0	0	0
Canada-Ontario	1	0	0	0
New Zealand	1	0	1	1
South Africa	1	0	1	1
United Kingdom	1	1	1	0
USA-California	1	0	1	0
USA-Florida	1	0	1	0
USA-New York	1	0	1	0

Table 4.52: E1.3. Do you have the right to prescribe drugs?

Country	No
Australia	1
Canada-Ontario	1
New Zealand	1
South Africa	1
United Kingdom	1
USA-California	1
USA-Florida	1
USA-New York	1

4.6.5.1 Discussion

In the sample group, all chiropractors once qualified are allowed to adopt the “Dr” title and be referred to as doctors of chiropractic.

The chiropractor’s rights to order further investigations vary within regions. One similarity is that in all regions, the ordering of radiographs is consistent. By contrast in the UK, chiropractors are authorized to order MRI/CT compared to regions like South Africa where a chiropractor is obliged to refer to a medical specialist who then can authorize the MRI/CT.

Ordering of laboratory tests (e.g. blood tests) is not allowed in Australia and Canada. Other tests that a chiropractor can order or perform in countries such as New Zealand include (but not limited to): neurocalometry, thermography and surface electromyography.

Another similarity found is that no region allows a chiropractor to prescribe scheduled medication. However, the chiropractor may refer a patient to a healthcare professional that can do so (General Practitioner). This does not limit the chiropractor to recommend unscheduled medications or drugs such as Non-steroidal anti-inflammatory drugs (NSAIDs).

Across all regions, the entitlement as a chiropractor remains very similar. The entitlement to adopt the “Doctor” title is used all over the world. Should a country not allow the use of the “doctor” title, the effects of such on the mobility of chiropractors into that region warrants further investigation and is beyond the scope of this study. Differences appear mostly in the scope of practice and the rights that a chiropractor has to order further diagnostic

investigations. However, all the chiropractors from the sample group have permission to request radiographs (primary diagnostic tool for musculoskeletal conditions).

4.7 Summary

This study showed that a variety of factors may either aid in or hinder the mobility of chiropractors across jurisdictions. By analysing the legislative documents, similarities and differences were identified and discussed in depth. How these affect mobility has also been discussed.

Factors affecting the mobility of practitioners across jurisdictions as well as significant differences will be discussed in chapter five.

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusion

The aim and purpose of the study was to aid in increasing the understanding of the values, structures and operations of various international chiropractic regulatory systems with the goal of identifying the similarities and differences between these chiropractic regulatory systems.

With respect to the hypotheses made in Chapter One the following is applicable:

Hypothesis one: The regulatory systems were similar.

Hypothesis one can be accepted based on evidence presented in this study. However, differences were also identified and in some cases were significant. These include:

- The type of chiropractic qualification
- Funding of the qualification
- Requirement for acceptance to study a chiropractic qualification and subsequently the duration of the chiropractic programme.
- Existence of reciprocity/ mobility for students between schools in other countries.
- In a South African context: The requirement of the completion of a thesis or dissertation to practice.
- Stages of registration within tertiary education
- The distribution of CPD hours
- FTP requirement and guidelines
- Disciplinary procedures and characteristics of staff implementing discipline
- Registration categories as a chiropractor
- Foreigner registration requirements (including board examinations)
- Structures for self-reporting
- Rights as a chiropractor for further investigations.

Significant factors identified that could or do affect mobility included:

- The type of chiropractic qualification attained affects the mobility of chiropractors into South Africa according to juristic requirements by South African regulatory bodies.
- Inconsistencies in CPD hours.
- The ability to self-report adverse events and the ability for patients to lodge complaints.
- Sub-standard disciplinary procedures.
- The various categories for registration as a chiropractor.
- Constraints by supranational bodies
- International accreditation of the qualification
- Board examinations
- The outcomes of disciplinary actions against chiropractors within their respective jurisdiction being made available on an international database.

In conclusion, legislated regions remain very similar in structure and regulation. However, the differences identified were unexpected and in some cases significant with possible negative implications. A variety of factors were identified that could possibly affect the mobility of chiropractors as well as chiropractic students across jurisdictions (see bulleted points above). Where the CCEI create standards that are accepted and enforced within these regions, the question as to why such vast differences in some regions exists, still needs to be asked.

5.2 Recommendations

- Instead of desk based research, which proved timeous, a questionnaire sent to the regulatory authorities would have been a better option and one that would yield more accurate answers to the questions.

5.3. Areas identified for future investigation

- The financial viability of an institution determines or may determine the numbers of students and therefore its impact on the programme delivery (Grant, 2006). This is an area for further investigation.

- It would perhaps be of interest to further study the Canadian model in terms of university funding as represented by CMCC (located within Ontario, Canada). It seems to have achieved a sustainable financial model that allows programme

autonomy without resulting in a significant increase in tuition fees (even over a long period of time).

- Programme structure in the northern hemisphere versus southern hemisphere is vastly different. In principle it would be easier to transfer from northern to southern hemisphere without losing as much time as attempting the transfer in the opposite direction. This formal programme structure as an obstacle for transfer is therefore an area for further investigation.

- When combined, a lower fee structure and comprehensive programme that does not require pre-programme credits should see an influx of international students into South African programmes. This is, however, not reflected in the student demographic of the South African programmes. Reasons for this should perhaps be explored more thoroughly in future research.

- It was noted that the implementation of CPD in New Zealand has been earmarked for introduction in 2015. How this, along with their stricter guidelines, may affect the number of chiropractors migrating to or remaining in New Zealand remains to be seen.

- In countries that have multiple categories for registration as a chiropractor (temporary/ sport/education etc.), this could be confusing for chiropractors wishing to register in that country and could possibly deter them from such. This is an area for further investigation.

- The entitlement to adopt the title “Doctor” is used all over the world. Should a country not allow chiropractors to use the title, the effects of such on the movement of chiropractors into that region warrants further investigation and is beyond the scope of this study.

- Future studies could utilize a broader sample population reflective of countries outside of the commonwealth which was the predominant focus of this study.

- Future research in this area could focus on the impact on regulation within a jurisdiction by policy.

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APPENDIX A

6 December, 2012

Student No: 20700404

Mr J Adams
117 Highlands Road
Durban North
4051

Dear Mr Adams

MASTER'S DEGREE IN TECHNOLOGY: CHIROPRACTIC

I am pleased to advise that:

1. The Research and Higher Degrees Committee approved the following:

    (i) Your research proposal and dissertation title, being:

A comparative analysis of six international chiropractic regulatory systems

Please note: ANY PROPOSED CHANGES in the DISSERTATION TITLE require the approval of your supervisor and the Research and Higher Degrees Committee.

    (ii) Supervisor – **Dr C. Korporaal**

2. Your request for funding totalling **R 5000.00** subject to any literature referred to in Section A of the PG 4a form being accessioned by this University, and any equipment purchased shall become the property of the department.

NOTE: - This funding is not paid directly to you but is controlled by your Head of Department. Any proposed changes to this funding allocation needs the approval of your supervisor, and Research and Higher Degrees Committee

The University Research Committee has stipulated that:

(a) Ownership of any patent registered in respect of the results of your Master's Degree in Technology studies is retained by you as the initiator of the project;

(b) Should you make any Drift from the results of your Master's Degree in Technology studies, you will be required to repay pro rata, the **R 5000.00** investment which the University Research Committee has made in approving your request for funding;

(c) If the Durban University of Technology provided the equipment/materials for the creation

of artefacts, this cost would be refunded to the University if such artefacts were sold and

(d) Durban University of Technology is given first refusal in respect of any possible future sale by you of any patent that may be registered in respect of your said project.

(e) All journal articles, referenced in your dissertation, are to accompany your ring-bound copies when submitting for examination purposes.

May I remind you that notwithstanding Rule LX.CM2, if a student fails to obtain the Masters Degree within two years of first registering for the fifth year, re-registration may be denied. The Academic Board may refuse to renew such registration or may impose any conditions it deems fit.

Should you experience any problems relating to your research studies, your supervisor must be informed as soon as possible. If the difficulty persists, you must then approach your Head of Department and thereafter the Dean of the Faculty.

I attach:

A duplicate of this letter which **you are required to sign,** where indicated, acknowledging your acceptance of the above conditions. Please return it to the Faculty of Health Sciences office **as soon as possible**. Failure to comply will necessitate the Research and Higher Degrees Committee reviewing their decisions set out in the 2002 General Rules governing the submission of your dissertation.

Please do not hesitate to contact me if I can be of any assistance.

Yours sincerely

Mrs S Perumal
FACULTY RESEARCH OFFICER

______________________________ ______________________

Student's signature in acceptance of the conditions contained herein. **Date:**

APPENDIX B

REVISED DATA COLLECTION TOOL

A	CHIROPRACTIC EDUCATION			
A1	**REGULATION**			
A1.1	What is the product after the qualification (needed for registration and licensure as a chiropractor) is complete?	N.Dip	B.Tech	Honours
		Bachelor	Masters	PhD
		DC	Double bachelors	
A1.2	Is the institution regulated	Yes	No	
		If Yes-By Whom?		
A1.3	Is the qualification regulated	Yes	No	
		If yes- on what level	Institutional	Regional (state)
			National (country)	International
		By whom?		
A1.4	Is the qualification registered	Yes	No	
		If yes- by whom?	Dept Education	Both
			Dept Health	Other
A2	**FUNDING**			
A2.1	How is the qualification funded	State	Private	Alumni
A2.2	What is the percentage of above	%	%	%
A3	**EDUCATIONAL TRAJECTORY**			
A3.1	Stages in Education (please circle, tick or cross)	Pre-Chiropractic qualification	School	Qualification (E.g. BSc required)
			University credits required	Other
		Chiropractic School		
		Years	1 2 3 4 5 6 7 8 9 10	
		Trimesters	1 2 3 4 5 6 7 8 9 10	
		Post-graduate requirements (prior to being eligible for registration e.g. masters degree)	PRT or internship	
			Board examinations or equivalent	
			Masters	
			PhD	
A3.2	Average amount of hours required for completion of qualification?	hrs	hrs	hrs
A3.3	Existence of reciprocity/ mobility for students between schools in other countries?	Yes	No	
		If yes- to what degree?	Limited period exchange student	Unlimited period exchange student
			Pre- clinical training	During clinical training
		Other : (specify)		

A3.4	Structure	Traditional curriculum (Didactic)	Non traditional curriculum (Online, case-based etc.)	Mixed mode curriculum
A4	**EXAMINATION/ QUALIFICATION**			
A4.1	Stages of registration	Student	Intern	Temporary student
		Temporary intern	Travel	Exchange student
A4.2	Types of Qualification	N.Dip	B.Tech	Honours
		Bachelor	Masters	PhD
		DC	Double bachelors	
A4.3	Requirement of dissertation for qualification?	Yes	No	
		If yes- at what level	Partial masters	Full masters
			Partial bachelors	Informal in programme
A4.4	Is the school registered in the country of origin?		Yes	No
	If registered – is it registered with the DoE		Yes	No
	If registered – is it registered with the DoH		Yes	No
	If registered – is it registered with the DoE+ DoH		Yes	No
B	**STANDARDS/ETHICS/FITNESS TO PRACTICE AND RELATED DISCIPLLINARY PROCEDURES/SANCTIONS**			
B1	**CONTENT**			
B1.1	Does a code of ethics exist for the profession?	Yes	No	
		If Yes by who?	Regulator	Professional association
B1.2	Are there CPD requirements in place?	Yes	No	
	If yes – are they legally enforced	Formal	Informal	Formal and informal
	If yes- by whom?	Regulator	Professional Association	Both
	If yes- how many are required per year	Hrs	Hrs	hrs
B1.3	Are there disciplinary procedures in place?	Yes	No	
		If yes- please supply algorithm/flow of procedures		
B1.4	Is there a complaints procedure for patients?	Yes	No	
B1.5	Are there structures for self-reporting (e.g. adverse reactions)	Yes	No	
		If Yes-what format (specifiy)		
B2	**FTP**			
B2.1	Are there minimum standards or expected	Yes	No	

	requirements for FTP?		If Yes- what are they?			
B2.2	If minimum requirements are not met, are sanctions in place		Yes	No		
			If Yes- what are they?			
B3	**DISCIPLINARY PROCEDURES ANDCHARACTERISTICS OF STAFF**					
B3.1	Constitution of panel		Yes	No	Chairperson	
			Yes	No	Note taker	
			Yes	No	Members of the profession	
			Yes	No	Expert witnesses	
			Yes	No	The defendant	
			Yes	No	The accused	
			Yes	No	The accused's counsel	
			Yes	No	Other (state)	
			Yes	No	Other (state)	
B3.2	Are lay members present?		Yes	No		
	Are they required to have an affiliation to the case?		Yes	No		
			If yes- what or who ?			
B3.3	Is there involvement of lawyers?		Yes	No		
			If Yes- to what extent?			
			Legal counsel	Yes	No	
			Defense attorneys	Yes	No	
C	**REGISTRATION PROCESS & REQUIREMENTS**					
C1	**REGISTRATION AND LICENSING PROCESS (LOCAL)**					
C1.1	Categories of registration		Student	Intern	Chiropractor	
			Travel – work / non-sport	Temporary	Temporary due to sanction	
			Travel - sport	Educational only		
			Other (specify):			
C1.2	Types/classes of registration? (specializations)		Pediatrics	Sports	Orthopedics	
			Neurology	Rehabilitation	Geriatrics	
			Diagnostic	Forensic	Medico-legal	
			Other (specify):			
C1.3	Is there automatic registration during / after education		Yes	No		
	If yes. Is this applicable to any of the following categories?		Student	Intern	Chiropractor	
			Travel – work / non-sport	Temporary	Temporary due to sanction	
			Travel - sport	Educational only		
			Other (specify):			
C1.4	Are there any constraints by supranational (international) bodies		Yes	No	Alternative one	
			If Yes-what extent ? (specify)			
			If Yes-by whom ? (specify)			

		Yes	No	Alternative two	
		If Yes-what extent ? (specify)			
		If Yes-by whom ? (specify)			
C1.5	Are there constraints imposed by legislation e.g. privacy laws, constitution etc.	Yes	No	Alternative one	
		If Yes-what extent ? (specify)			
		If Yes-by which laws ? (specify)			
		Yes	No	Alternative two	
		If Yes-what extent ? (specify)			
		If Yes-by whom ? (specify)			
C1.6	Process of registration (please provide flowchart or algorithm)				
C1.7	Possibility of appeal against rejection of registration	Yes	No		
		If yes- how? (specify)			
C2	**FOREIGNER REGISTRATION**				
C2.1	Board examination?	Yes	No	if Yes- state/national/both	
C2.2	Board examination examining body?	State	National	International	
		National and State	State and international	National and International	
		Other (specify)			
C2.3	Content of Board examination?	Basic sciences	Chiropractic principles	Chiropractic practice	Jurisprudence
		Ethics			
	Structure of Board examination?	*Written:*	MCQ	Narrative	Mixed
		OSCE	Patient based	Skills based	Mixed
		Review	Journal clubs	Report based	PRT based / clinical overview
C2.4	Countries excluded from registering in country?				
C2.5	Requirements from bodies for registration of foreigners	Passport	ID	Police clearance	Fee for application
		Academic record	Certificate of qualification	Syllabus outline	Educational equivalence clearance
		Reference letters	Proof of registration in country of origin	Proof of CPD compliance	Marriage certificate (if female)
		Other (specify):			

C3	**INTERACTION BETWEEN REGULATOR AND CHIROPRACTORS**				
C3.1	Are there procedures in place to verify applicant's personal details?	Yes		No	
		If Yes- specify how?			
C3.2	Mode of registration	Online	Written	Physical appearance	
D	**RE-VALIDATION/ COMPETENCY ASSURANCE/ RE-CERTIFICATION**				
D1	**ASSESSMENT PROCESS**				
D1.1.	Are Tools or processes used to assess or ensure performance / competency	Yes	No		
		If Yes- next question			
D1.2	What tools are used?	Basic medical sciences testing	Chiropractic principles and practice Testing	Jurisprudence testing	
		CPD			
D1.3	Any procedures in place to re-validate chiropractors that have been de-registered or have inactive practices?	Yes	No		
		If yes- Describe (eg. Recency requirements)			
D1.4	Are there consequences for chiropractors not meeting re-validation requirements	Yes	No		
		If Yes- List			
D2	**ACTORS**				
D2.1	Is there involvement of professions own representative body/ies to assess revalidation/competency?	Yes	No		
		If yes- to what extent?			
E	**ENTITLEMENT WITH REGISTRATION**				
E1.1	Does registration with your regulatory body entitle you as a practitioner to the use of the "Dr" title?	Yes	No		
E1.2	Rights as a chiropractor for further investigations	X-ray	MRI/CT	Laboratory testing	
		Other:			
E1.3	Do you have the right to prescribe drugs?	Yes	No		
		If Yes- to what degree (eg. Class/ type/schedule)?			

APPENDIX C

Expert Group Letter of Information

Dear Participant

I would like to welcome you into the expert group of my study, the title of my research project is: **A comparative analysis of six international chiropractic regulatory systems.**

Name of Supervisor: Dr C Korporaal (M.Tech: Chiropractic, CCFC, CCSP, ICSSD)

Name of Research Student: Mr Justin Adams (0835725237)

Name of Institution: Durban University of Technology

The purpose of this expert group is to refine and validate the use of the data collection tool in terms of gathering information from the various legislative documents. You are asked to assist in the development of the data collection tool through the use of this expert group, by means of discussing the criteria and their validity in the above mentioned study. The discussions will expert on the changes that are necessary in order to alter the data collection tool in order to convert it into a more accurate and appropriate tool.

Discussions will focus on the main criteria that should be included in the study in order to fulfil the aims and objectives of the study. You are at any point permitted to disagree with the findings if such is the case, however please give your reasons for disagreement as this will help in the research process. 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 my supervisor or myself.

Thank you for your participation

Justin Adams Dr C. Korporaal

(Researcher) (Supervisor)

APPENDIX D

Code of Conduct (members of the Expert group)

This Form needs to be completed by every member if the expert group prior to commencement of the expert group.

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

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

Member represents	Members name	Signature	Contact details

APPENDIX E

Informed Consent (Members of the Expert group)

Date:

The Title: **A Comparative analysis of six International chiropractic regulatory systems**

Name of Supervisor: Dr C. Korporaal (M.Tech: Chiropractic, CCFC, CCSP, ICSSD)

Name of Research Student: Mr Justin Adams (0835725237)

Name of Institution: Durban University of Technology

Please circle yes or no (as is appropriate for yourself):

1. Have you read the patient information sheet? Yes / No
2. Have you had time to ask questions about the 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. Who have you spoken to regarding this study? ____________________
7. Do you understand the implications of your involvement in this study? Yes / No
8. Do you understand that you are free to drop out of this study at any time? Yes / No
9. Do you agree to voluntary participate in this study? Yes / No

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

Please print in block letters

Participant ___________________________ Signature ________________ Date ________________

Witness's name ______________________ Signature ________________ Date ________________

Researcher's name ___________________ Signature ________________ Date ________________

Supervisor's name ____________________ Signature ________________ Date ________________

APPENDIX F

Confidentiality Statement (members of the Expert group)

Important: This Form is to be completed and understood before the expert group commences

4. All information contained I the research documents and any information discussed during the expert group meeting will be kept private and confidential
5. The Patient files will be coded and kept anonymous in the research process
6. None of the information shall be communicated to any other individual or organisation outside of this specific expert group as to the decisions of this expert group.
7. The information of this expert group will be made public in terms of journal publication, which will in no way identify any participants of this research.

Member represents	Members name	Signature	Contact details

APPENDIX G

Structure and nature of regulation and regulatory body (ies)	
Purpose of Chiropractic regulation	Stated Purpose
	Drivers and influential Events

Chiropractic education	
Regulation	Governance/regulation of chiropractic education through chiropractic oriented regulators
	Governance/regulation of chiropractic education through educationally oriented regulators
Funding	Payers
	Annual total cost of chiropractic education
	Annual total cost of regulation of chiropractic education
Educational Trajectory	Different stages in education
	Average length (years) to complete each stage
	Extent to which education is embedded in healthcare system
	Extent to which chiropractic students are allowed to train overseas (% that are)
Examination and qualification	Entry requirements for each of the stages
	Pass/fail percentages at the end of each stage
	Extent to which communication skills and behaviour are tested
	Extent of language testing
	Nature of examination

Standards & Ethics	
Content	Main pillars of standards
	Values underlying the standards
Legal basis for standards and process	Ways in which standards are assessed
	Extent to which doctors are actively seeking guidance on their expected performance
	Ways in which guidance is kept up-to-date

Fitness to practise (FTP) and related disciplinary procedures and sanctions	
Content and substantive characteristics	Objective of FTP (e.g. deterrence or education/persuasion)
	Naming / definition of FTP
	FTP minimum standards / requirements
	Relation of FTP standards to civil/criminal law
	Procedures to verify FTP
	Nature/type of possible sanctions if minimum requirements are not met
Characteristics of staff (within the regulator) dealing with FTP procedures	Constitution of panels
	Extent of representation of lay members
	Extent of involvement of lawyers

Registration process and requirements	
Registration and licensing process	Extent of differentiation between licensing and registration
	Extent of differentiation between types/classes of registration
	Initiation of registration (e.g. automatic during/after education)
	Constraints imposed by supranational bodies
	Constraints imposed by legislation outside medical regulation (e.g. privacy laws)
	Process of re-registration
	Possibility and process of appeal against rejection of registration
Interaction between regulator and medical professionals	Extent to which applicants from different countries/origin are treated differently from national applicants
	Procedures/materials to verify applicant identity and credentials
	Mode of registration (on-line, written, physical appearance)

Revalidation/competence assurance/recertification	
Purpose	Extent of involvement with quality improvement
Assessment process	Characteristics of process
	Tools used to assess performance
	Evidence required for revalidation
	Extent to which revalidation applies to all doctors or is limited to certain groups
	Procedures to assess integrity of evidence
	Consequences for doctors not meeting revalidation requirements (e.g. impact on registration)

Actors	Extent of involvement of professions own representative bodies
	Extent of involvement of employers (e.g. hospitals)
	Extent of reliance on self-reporting

APPENDIX H

A	CHIROPRACTIC EDUCATION			
A1	**REGULATION**			
A1.1	What is the product after the qualification is complete?	N.Dip	B.Tech	Honours
		Bachelor	Masters	PhD
		DC	Double bachelors	
A1.2	Is the institution regulated	Yes	No	
A1.3	Is the qualification regulated	Yes	No	
		If yes- on what level?	Institutional	Regional (state)
			National (country)	International
A1.4	Is the qualification registered	Yes	No	
		If yes- by whom ?	Dept Education	Both
			Dept Health	Other
A2	**FUNDING**			
A2.1	How is the qualification funded	State	Private	Alumni
A2.2	What is the percentage of above	%	%	%
A3	**EDUCATIONAL TRAJECTORY**			
A3.1	Stages in Education	Pre-Chiropractic qualification	School	Qualification (E.g. BSc required)
			University credits required	Other
		Chiropractic School		
		Years	1 2 3 4 5	6 7 8 9 10
		Trimesters	1 2 3 4 5	6 7 8 9 10
		Post-graduate requirements (prior to being eligible for registration e.g. masters degree)	PRT or internship	
			Board examinations or equivalent	
			Masters	
			PhD	
A3.2	Average amount of hours required for completion of qualification?	hrs	hrs	hrs
A3.3	Existence of reciprocity/ mobility for students between schools in other countries?	Yes	No	
		If yes- to what degree?	Limited period exchange student	Unlimited period exchange student

			Pre- clinical training	During clinical training
		Other : (specify)		
A3.4	Structure	Traditional curriculum	Non traditional curriculum	Mixed mode curriculum
A4	**EXAMINATION/ QUALIFICATION**			
A4.1	Stages of registration	Student	Intern	Temporary student
		Temporary intern	Travel	Exchange student
A4.2	Types of Qualification	N.Dip	B.Tech	Honours
		Bachelor	Masters	PhD
		DC	Double bachelors	
A4.3	Requirement of dissertation for qualification?	Yes	No	
		If yes- at what level	Partial masters	Full masters
			Partial bachelors	Informal in programme
A4.4	Is the school registered in the country of origin?		Yes	No
	If registered – is it registered with the DoE		Yes	No
	If registered – is it registered with the DoH		Yes	No
	If registered – is it registered with the DoE+ DoH		Yes	No
B	**STANDARDS/ETHICS/FITNESS TO PRACTICE AND RELATED DISCIPLLINARY PROCEDURES/SANCTIONS**			
B1	**CONTENT**			
B1.1	Does a code of ethics exist for the profession ?	Yes	No	
B1.2	Are there CPD requirements in place?	Yes	No	
	If yes – are they legally enforced	Formal	Informal	Formal and informal
	If yes- are they enforced by the association?	Formal	Informal	Formal and informal
	If yes- how many are required per year	Hrs	Hrs	hrs
B1.3	Are there disciplinary procedures in place?	Yes	No	
B1.4	Are there structures for self-reporting (e.g. adverse reactions)	Yes	No	
		If Yes-what format (specifiy)		
B2	**FTP**			
B2.1	Are there minimum standards for FTP?	Yes	No	
		If Yes- what are they?		
B2.2	If minimum requirements are not met, are sanctions in place	Yes	No	
		If Yes- what are they?		
B3	**DISCIPLINARY PROCEDURES ANDCHARACTERISTICS OF STAFF**			
B3.1	Constitution of panel	Yes	No	Chairperson
		Yes	No	Note taker
		Yes	No	Members of the profession
		Yes	No	Expert witnesses

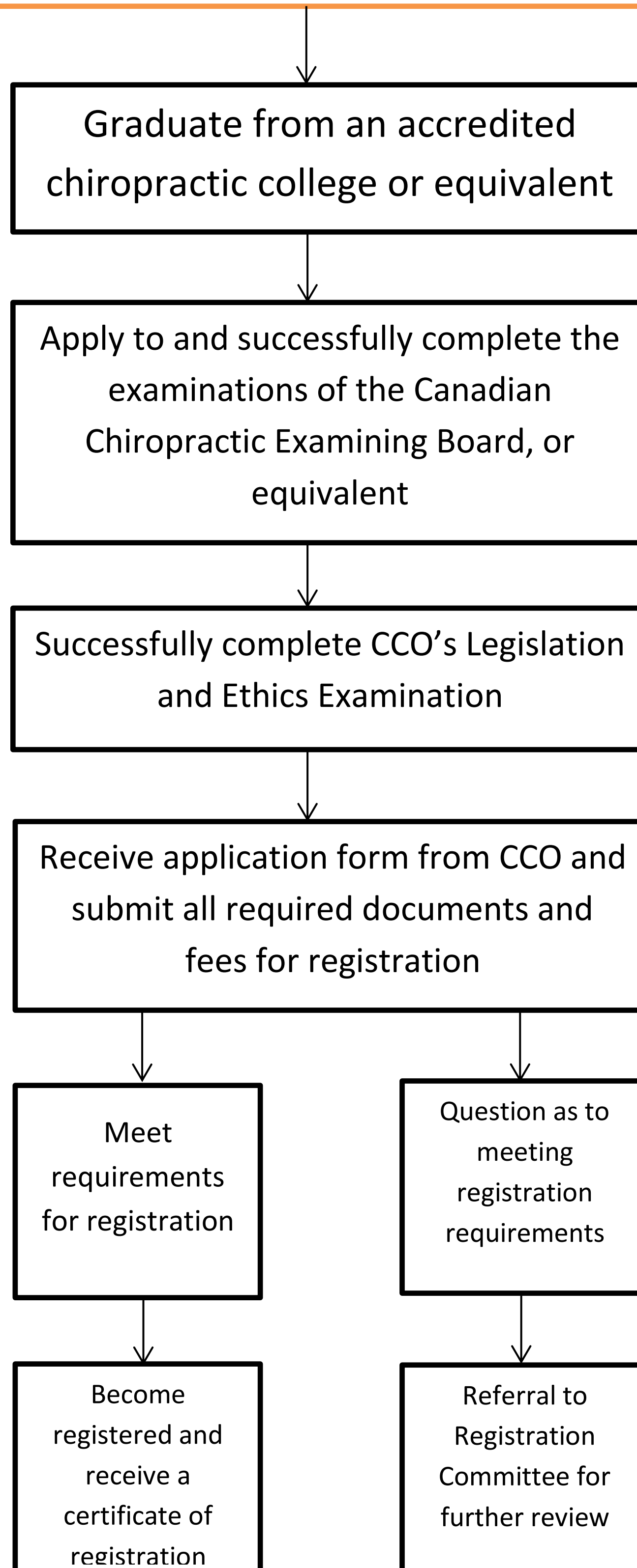
		Yes	No	The defendant
		Yes	No	The accused
		Yes	No	The accused's counsel
		Yes	No	Other (state)
		Yes	No	Other (state)
B3.2	Are lay members present?	Yes	No	
	Are they required to have an affiliation ?	Yes	No	
		If yes … what or who ?		
B3.3	Is there involvement of lawyers?	Yes	No	
		If Yes- to what extent?		
		Legal counsel	Yes	No
		Defense attorneys	Yes	No
	REGISTRATION PROCESS & REQUIREMENTS			
C1	**REGISTRATION AND LICENSING PROCESS (LOCAL)**			
C1.1	Categories of registration	Student	Intern	Chiropractor
		Travel – work / non-sport	Temporary	Temporary due to sanction
		Travel - sport	Educational only	
		Other (specify):		
C1.2	Types/classes of registration? (specializations)	Pediatrics	Sports	Orthopedics
		Neurology	Rehabilitation	Geriatrics
		Diagnostic	Forensic	Medico-legal
		Other (specify):		
C1.3	Is there automatic registration during / after education	Yes	No	
	If yes. Is this applicable to any of the following categories?	Student	Intern	Chiropractor
		Travel – work / non-sport	Temporary	Temporary due to sanction
		Travel - sport	Educational only	
		Other (specify):		
C1.4	Are there any constraints by supranational bodies	Yes	No	Alternative one
		If Yes-what extent ? (specify)		
		If Yes-by whom ? (specify)		
		Yes	No	Alternative two
		If Yes-what extent ? (specify)		
		If Yes-by whom ? (specify)		
C1.5	Are there constraints imposed by legislation e.g. privacy laws, constitution etc.	Yes	No	Alternative one
		If Yes-what extent ? (specify)		
		If Yes-by which laws ? (specify)		
		Yes	No	Alternative

				two
		If Yes-what extent ? (specify)		
		If Yes-by whom ? (specify)		
C1.6	Process of registration			
C1.7	Possibility of appeal against rejection of registration	Yes	No	
		If yes- how? (specify)		

C2	**FOREIGNER REGISTRATION**				
C2.1	Structure				
C2.1.1	Board examination	Yes	No	if Yes-state/national/both	
C2.1.2	Board examination examining body	State	National	International	
		National and State	State and international	National and International	
		Other (specify)			
C2.1.3	Content of Board examination?	Basic sciences	Chiropractic principles	Chiropractic practice	Jurisprudence
		Ethics			
	Structure of Board examination?	*Written:*	MCQ	Narrative	Mixed
		OSCE	Patient based	Skills based	Mixed
		Review	Journal clubs	Report based	PRT based / clinical overview
C2.1.4	Countries excluded from registering in country?				
C2.2	Requirements from bodies for registration of foreigners	Passport	ID	Police clearance	Fee for application
		Academic record	Certificate of qualification	Syllabus outline	Educational equivalence clearance
		Reference letters	Proof of registration in country of origin	Proof of CPD compliance	Marriage certificate (if female)
		Other (specify):			
C3	**INTERACTION BETWEEN REGULATOR AND CHIROPRACTORS**				
C3.1	Are there procedures in place to verify applicant's personal details?	Yes	No		

		If Yes- specify how?		
C3.2	Mode of registration	Online	Written	Physical appearance
D	**RE-VALIDATION/ COMPETENCY ASSURANCE/ RE-CERTIFICATION**			
D1	**ASSESSMENT PROCESS**			
D1.1.	Are Tools used to assess performance / competency	Yes	No	
		If Yes- next question		
D1.1.1	What tools are used?	Basic medical sciences testing	Chiropractic principles and practice Testing	Jurisprudence testing
D1.2	Any procedures in place to re-validate chiropractors that have been de-registered or have inactive practices?	Yes	No	
		If yes- Describe		
D1.3	Are there consequences for chiropractors not meeting re-validation requirements	Yes	No	
		If Yes- List		
D2	**ACTORS**			
D2.1	Is there involvement of professions own representative body/ies	Yes	No	
		If yes- to what extent?		

APPENDIX I



APPENDIX J

23. Inquiry into alleged misconduct

(1) The council may, in respect of a practitioner registered in any allied health profession in terms of this Act, institute an inquiry into any written complaint, charge or allegation of unprofessional conduct against such practitioner.

(1A) The council may refer allegations of conduct referred to in subsection (1) to the relevant professional board and delegate to such board the power to investigate such complaint and to hold an inquiry in the prescribed manner.

(1B) When requested to hold an inquiry, the professional board in question must seek information from any person, including the practitioner against whom the complaint, charge or allegation was lodged and must investigate the matter fully before holding an inquiry.

(1C) The council or the professional board may, on finding the practitioner concerned guilty of such conduct, in the case of the council, impose any of the penalties referred to in section 24 (1) or, in the case of a professional board, recommend the imposition of any such penalty in terms of subsection (3): Provided that in the case of a complaint, charge or allegation which forms or is likely to form the subject of criminal proceedings, the council or the professional board concerned, as the case may be, may postpone the holding of an inquiry until those proceedings have been disposed of.

(2) Whenever the council or a professional board, as the case may be, is in doubt as to whether an inquiry shall be held, it may in connection with the complaint, charge or allegation in question consult with or seek information from any person, including the practitioner against whom the complaint, charge or allegation has been lodged.

(3) If a professional board holding an inquiry under this section, finds the person charged guilty of unprofessional conduct or of conduct which in consideration of the profession in respect of which that person is registered, is unprofessional, it shall note its finding and inform such person thereof, and shall at the same time inform such person of the penalty the imposition of which it intends to recommend to the council, and it shall before the next ensuing meeting of the council submit to the council the minutes of the proceedings at the inquiry together with the recommendation concerning a proper penalty.

(4) Any person found guilty in terms of subsection (3), may at any time before the next ensuing meeting of the council, submit to the council written representations in regard to the finding made by the professional board and the penalty recommended by it.

(5) If the council, after having considered the minutes kept by the professional

board, and the representations referred to in subsection (4), is of the opinion-

(a) that the finding should not be upheld, it shall set such finding aside, and inform the person and the professional board concerned thereof; or

(b) that the finding is correct, it may impose upon the person concerned any penalty referred to in section 24.

(6) The provisions of sections 24(2) up to and including (8) and 25 shall mutatis mutandis apply in respect of any inquiry conducted by any professional board referred to in subsection (1), and for the purposes of the said provisions any reference in section 24 -

(a) to the chairperson of the council shall be deemed to be a reference to the chairperson of such professional board;

(b) to the prescribed form of a summons shall be deemed to be a summons as prescribed for use by a professional boar

APPENDIX K

15. Registration of practitioners

(1) Any person who desires to be registered as a practitioner of an allied health profession in terms of this Act, shall in the prescribed manner apply to the council for registration, and such application shall be accompanied by-

(a) the qualification which in the applicant's submission entitles him to registration;

(b) the prescribed registration fee and, in the case of an applicant who does not possess the prescribed qualification, also the prescribed application fee;

(c) proof of identity, citizenship, good character and the authenticity and validity of the qualification submitted; and

(d) such further documents and information as may be prescribed.

(2) For the purpose of considering any application contemplated in subsection (1), the council may require the applicant in support of the application to furnish such further proof, whether orally or in writing, regarding his identity, good character, training and experience, as the council may deem necessary and may require him to sit for such examination as the council may determine.

(3) The council may request the relevant professional board to consider an application in terms of subsection (1) and if after such investigation and enquiries as the relevant professional board may deem necessary, it is satisfied that the applicant concerned may be registered in terms of this Act, such professional board shall recommend to council the approval of such an application.

(3A) If the council is satisfied that an applicant may be registered in terms of the Act, it shall approve the application and the registrar shall thereupon register the applicant by-

(a) issuing an appropriate certificate of registration to him or her; and

(b) entering the prescribed particulars in respect of him or her in the appropriate register.

(4) If the council refuses to approve an application, the applicant concerned shall be notified in writing of such decision and of the grounds on which it is based.

(5) Any person who is registered or deemed to be registered in terms of this

Act shall, in the practice of his or her profession, only state particulars of those degrees, diplomas or certificates entered in the appropriate register against his or her name and any other qualification recommended by the professional board and approved by the council.

(6) (a) The council may delegate any of the powers conferred upon it by this section to the registrar, but shall not be divested of any power so delegated.

(b) Any registration or refusal of registration by the registrar in the exercise of a power delegated to him in terms of paragraph (a), shall be of full force and effect, unless it is set aside or amended by the council at its first meeting following upon the date on which such registration or refusal of registration occurred.

(7) Every person who desires to have a qualification registered, other than the qualification by virtue of which he or she has in the first instance been registered, or to have a speciality registered, shall, upon payment of the prescribed fee and subject to the provisions of subsection (2), be entitled to have such other qualification or such speciality entered in the register.