

**The Knowledge, Attitudes and Perceptions of Health
Care Professionals at the Mahalapye District Hospital
about the World Spine Care model in the Central District
of Botswana.**

By

Mufudzi Chihambakwe

Dissertation submitted in partial compliance with the requirements for
the Master's Degree in Technology: chiropractic at the

Durban University of Technology

I, Mufudzi Chihambakwe, do declare that this dissertation is
representative of my own work in both conception and execution
(except where acknowledgements indicate to the contrary)

Mufudzi Chihambakwe

Date

Approved for final submission by:

Supervisor: Dr Laura O'Connor

Date

M.Tech: Chiropractic

Co-Supervisor: Dr Penelope Orton

Date

PhD: Nursing

DEDICATION

To Dad.

Do not go gentle into that good night.

Rage, rage against the dying of the light.

-Dylan Thomas

He never got to see me graduate. But he burned with life to his last breath. May we too burn with passion for our dreams and resolve to do what we must do and be who we must be.

Till we meet again.

ACKNOWLEDGEMENTS

A huge thank you to all the participants who were so willing to give up some of their time to be interviewed.

To the amazing people at World Spine Care - thank you for being so patient and helpful and really helping me dig deep to ask meaningful questions. Special thanks to Dr Maria Hondras for meeting with me in Gaborone and believing in my study.

To the Mahalapye District Hospital administration and staff – you have been so generous – thank you.

To my supervisors Dr Laura O'Connor and Dr Penelope Orton – thank you for your support and mentorship in helping me become a health care professional.

To the National Research Fund who funded my study- thank you.

Mama. My rock. Your prayers and godly counsel have made me who I am today. Thank you.

To my family – Paddy Chihambakwe, Audrey and Trevor Barwa, Gamuchirai Chihambakwe, Tawanda and Diana Chihambakwe. Thank you. You have allowed me live away from home for over half a decade and supported my dreams. I can't say thank you enough.

To Dr Jessica Bohon-Lee. Thank you for believing in me and investing in me. I would not have pursued chiropractic had it not been for your mentorship and support.

To all the mentors and sponsors who believed in me. Pastor Fidelis Manyangadze and the family, – thank you for your constant support, Deacon Isaac Jeché and family – your support has been invaluable.

To my spiritual family at Every Nation Durban – Pastor Wayne Sandeman, Pastor Lindokuhle Khoza, Ayanda Meyiwa and all the amazing people at ENC DUT – thank you for believing in me.

To Dr Charmaine Korporaal for literally laying your life down so that we can move from being students to chiropractors. Thank you

To my friends at the World Congress of chiropractic Students – some of the best humans I have ever met – thank you for the inspiration.

To Tylah Strauss – you are a rock star, I appreciate your honesty and caring about details as much as you do. I probably would not have made it without you – Thank you.

To my best friend, Murunwa Mafadza. Thank you for always being there for me and fanning the flame when I ran out of inspiration and calling the best out of me always.

ABSTRACT

Background: The World Spine Care (WSC) is a non-governmental organization that provides evidence-based spinal care to underserved communities around the world. The WSC opened a clinic in the Mahalapye District Hospital (MDH) in 2011 (Haldeman et al., 2015:2304). The WSC aims for long term presence in Botswana. They will require 'buy in' from the local community including the health care professionals of the region. Little is known about how WSC has been received by other health care professionals in the settings where they are present. Hence, this study aimed to determine the knowledge, attitudes and perceptions of health care professionals working at the MDH about the WSC.

Method: A qualitative exploratory descriptive study was conducted using semi-structured interviews. Twenty health care professionals were interviewed at the Mahalapye District Hospital to ascertain their levels of knowledge, attitudes and perceptions. The interviews were semi-structured and conducted in English and later transcribed verbatim. The transcripts were then analyzed using the thematic analysis described by Graneheim and Lundman (2003:105). Thereafter codes, categories and themes were formed.

Results: A variety of health care professionals from different departments were interviewed. Three overarching themes emerged from the data: knowledge of WSC and the management of spinal related disorders at the MDH, the perceived role of WSC, challenges to integration and possible solutions. The HCPs had varying levels of knowledge of the WSC depending on the amount of interaction they had with WSC. Some HCPs who had greater inter-professional interaction with WSC displayed more positive attitudes towards WSC. Many of the

HCPs had a positive perception of the WSC though they were not confident in their knowledge of the WSC scope of practice which has limited referral by HCPs WSC. This is mainly due to an unclear referral pathway within the hospital and limited knowledge of WSC's scope of practice. Increased awareness and an improved system of referral was a strong recommendation made. Many mentioned an unclear referral pathway for their patients. Those who had interacted with WSC generally had pleasant personal interactions with the WSC. Several of the HCPs had themselves been patients of the WSC. Most HCPs felt that WSC was beneficial to patients and made suggestions for WSC to expand to other centres across Botswana.

Conclusion: Overall there was a positive perception of WSC however more effort to increase knowledge of what WSC offers and how it can be integrated into the hospital is necessary. Future studies should assess the perceptions of patients as well as knowledge and attitudes of HCPs towards WSC at other sites.

Key words: Health care professionals, spine care, perceptions, Botswana, WSC

CONTENTS

DEDICATION.....	ii
ACKNOWLEDGEMENTS.....	iii
ABSTRACT	v
CONTENTS.....	vii
LIST OF FIGURES	xi
DEFINITIONS	xii
ABBREVIATIONS.....	xiii
CHAPTER ONE: INTRODUCTION	1
1.1 Background to the study.....	1
1.2 Research problem and aims.....	2
1.3 Rationale for the study.....	3
1.4 Delimitations	4
1.6 Flow of dissertation.....	5
CHAPTER TWO: LITERATURE REVIEW.....	6
2.1 Introduction	6
2.2 Perception	6
2.3 Factors that influence perception	7
2.4 Spinal health care – global environment	12
2.5 The World Spine Care model - the perceived object	15
2.6 Botswana - local environment	18
2.6.1 Socioeconomic conditions.....	19

2.6.2	Health care in Botswana	21
2.6.3	Inter-professional relationships of health care workers	25
2.6.4	Organisational culture	26
2.7	Health care professionals working at the MDH - the Perceiver	28
2.7.1	Personal characteristics	28
2.7.2	Health care professional training	29
2.7.3	Experiences and Expectations	30
CHAPTER THREE: RESEARCH METHODOLOGY		33
3.1	Introduction	33
3.2	Study Design	33
3.3	Study population and permission to conduct the study	34
3.4	Research Setting	35
3.5	Sampling	36
3.5.1	Sample size and characteristics	36
3.5.2	Sampling strategy	37
3.6	Data collection	37
3.7	Study Procedure	39
3.8	Data analysis	40
3.9	Trustworthiness	41
3.10	Ethical considerations	43
CHAPTER FOUR: RESULTS		45
4.1	Introduction	45
4.2	Sample size and demographic characteristics	45

4.3	Thematic analysis of the data	45
4.3.1	Theme One: Knowledge of WSC and the management of spinal related disorders.	46
4.3.2	Theme two: The perceived role of WSC.....	56
4.3.3	Theme three: Challenges to integration of WSC and possible solutions 63	
4.4	Conclusion	70
CHAPTER FIVE: DISCUSSION		71
5.1	Introduction	71
5.2	Theme One: Knowledge of World Spine Care and the management of spinal related disorders at the MDH	71
5.3	Theme Two: The perceived role of WSC	73
5.4	Theme three: Challenges to integration of WSC and possible solutions	77
5.5	Conclusion	81
Chapter SIX: CONCLUSION.....		82
6.1	Conclusion	82
6.2	Limitations.....	83
6.3	Researcher reflections.....	83
6.4	Recommendations	85
6.4.1	Recommendations to WSC.....	85
6.4.2	Recommendations for further research.....	85
REFERENCES.....		86
Appendices		108
Appendix A- Letter of Information		108

Appendix B- Letter of Informed Consent 111

Appendix C: WSC Approval Letter 113

Appendix D: Ministry of Health Approval 114

Appendix E: MDH Approval..... 116

Appendix F: IREC Approval 117

Appendix G: Theme Tables..... 118

LIST OF FIGURES

Figure 1. Factors affecting the perceptions of health care professionals	8
Figure 2. Components of attitude	9
Figure 3. The Johari window	32
Figure 4. Paradigm, design and methods.....	34

DEFINITIONS

Health care professional: an individual trained and employed to provide health care in varying contexts ranging from diagnosis, treatment and preventative care.

Spinal related disorders: wide ranging conditions pertaining to the spinal column, spinal cord and associated musculoskeletal structures (Verkuilen 2005) In the context of this study, the large majority of these disorders are considered 'non-surgical' in nature.

Knowledge is defined as facts, information, and skills acquired through experience or education; the theoretical or practical understanding of a subject (Oxford dictionary 2017).

Attitudes are favourable or unfavourable evaluative statements that individuals make about objects, people or events (Robbins and Judge 2014:60). In relation to this study, the attitudes discussed will be those of the health care professionals working at the MDH towards the WSC.

Perception is the process of selection, organization and interpretation of stimuli from the environment (Milton 1981:22). In relation to this study, the perceptions discussed will be those of the health care professionals working at the MDH towards the WSC.

ABBREVIATIONS

HCPs	Health care professionals
IREC	Institutional Research Ethics Committee
MoH	Ministry of Health
n	sub sample size
NGO	Non-governmental organization
SRD	Spinal related disorder
USA	United States of America
UK	United Kingdom
WHO	World Health Organization
WSC	World Spine Care

CHAPTER ONE: INTRODUCTION

1.1 Background to the study

Spinal health care globally is in crisis (Buchbinder et al., 2013:575) with neck and low back pain identified as the leading cause of disability worldwide (Hoy et al., 2010). Current strategies of spine care have been ineffective in dealing with this challenge with health care systems of developed countries grappling with effective management of this burden (Haldeman and Dagenais, 2008:1). Furthermore, no single profession has organized itself around this growing burden of spinal related disorders that has burdened health care systems of both the developed and developing world (Deyo et al., 2009:65). Those worst affected are people in low income countries who tend to receive inferior health care, let alone musculoskeletal care (Moosa et al., 2014). One non-governmental organisation called World Spine Care has set out to try address this challenge.

The World Spine Care (WSC) is a non-governmental organization that is devoted to providing evidence-based spinal care to underserved communities around the world. The organization was founded in response to the growing burden of spinal related disorders, particularly in lower to middle income countries. The WSC mission is to improve lives in underserved communities through sustainable, integrated, evidence-based spine care. The WSC set up their pilot project in the Sub-Saharan African country Botswana in 2011 (Haldeman et al., 2015:2304), having set up two clinics in the Central District of Botswana, providing spinal care for patients in the local community (Haldeman et al., 2015:2303). The Mahalapye District Hospital (MDH) houses one of the WSC clinics and the other clinic is located in Shoshong. The model is evidence-based

and makes use of sustainable practices to try and curb the burden of spinal disorders. The patients of the WSC clinics in Botswana have been described as being female, elderly in age and of low income and education levels, often presenting with at least one co-morbid condition (Armstrong, 2017).

Long term presence of the WSC clinics in Botswana requires “buy in” from the various community stakeholders including the local health care community. A relationship exists between how individuals perceive a phenomenon and how they behave towards it, for example a positive attitude may influence compliant behaviour with a new system (Robbins and Judge, 2014:59). Given (2008) describes perceptual disparity, where the subjective interpretations of two different groups about a given phenomenon are contradictory and are often the basis for friction between these groups.

There are a number of factors that have been noted to affect perception, and these will influence the manner in which health care professionals of the MDH interact with the WSC. Perception and attitudes affect behaviour (Pickens, 2005:44). One of the aims of the WSC is to provide care that is culturally relevant and locally adapted (Haldeman et al., 2015: 2308). Thus a greater understanding of their perceptions of WSC would prove instrumental in meeting this aim.

1.2 Research problem and aims

1.2.1 Research problem

WSC has been implementing a spine care model in the MDH since 2011. The nature of the inter-professional relations between the WSC and the health care professionals of the WSC have been unexplored to date. The

perceptions that the health care professionals at the MDH have of the WSC may impact on the integration of WSC into the local health care system. Thus, this study will explore the perceptions of the health care professionals of the MDH in order to assist in its integration in the MDH and possibly other sites where WSC has established clinics.

1.2.2 Research questions

1.2.2.1 Primary research question

What are the perceptions, attitudes and knowledge of the health care professionals at the Mahalapye District Hospital (MDH) on the World Spine Care in the Central District of Botswana?

1.2.2.2 Sub- questions

1. What knowledge do the health care professionals working at the MDH have of the WSC?
2. What are the attitudes of the health care professionals working at the MDH towards the WSC?
3. What perceptions do the health care professionals of the MDH have of the WSC?

1.3 Rationale for the study

The WSC has made it a priority to create a model of care that is acceptable to local health care communities (Brady, et al., 2016:2). One reason why the work of several non-governmental organisations have been short lived is the failure of these organisations to fully engage local

stakeholders to cooperate and participate with the initiatives that are introduced (Adebayo, 2010). This presents the need to understand the local health care community which includes institutions, policymakers, patients as well as health care professionals. Hence the perceptions that HCPs have of the WSC will influence the level of integration of WSC in the hospital. The findings of this study may prove useful to WSC for better implementation of the model in multidisciplinary settings in Botswana and other countries.

1.4 Delimitations

The study is limited to health care professionals who are currently working at the MDH and consequently did not include patients nor representatives from the Ministry of Health of Botswana. The study is limited to the WSC clinic in the hospital setting as there was greater diversity of health care professionals at the MDH than the clinic in Shoshong.

1.5 The Researcher

I, the researcher, am a chiropractic student from Harare, Zimbabwe. I did not grow up seeing a chiropractor and may not have ever heard of the profession had it not been for a unique exposure to the profession in Harare where I met some missionary chiropractors. There are less than ten chiropractors in Zimbabwe currently, with many other African countries having fewer if not less, with South Africa being the exception. I volunteered at a chiropractic clinic in Harare and I saw first-hand the value of spine care to a community that may have otherwise never had such care. It is almost criminal that such care is not available to so many

on the continent. As a student I have been involved with the World Congress of chiropractic students having had the privilege to travel to chiropractic schools in Spain and the United States of America and be a part of the student leadership of the chiropractic profession. I am an advocate for improving health care in underserved communities. I am passionate about chiropractic and its role in the health care systems of Africa.

1.6 Flow of dissertation

Chapter one has presented the background to the study, along with the study aims and objectives. Chapter two will present the relevant literature pertaining to perceptions, how they are formed and the various factors that affect the manner in which health care professionals at the MDH perceive the WSC. Chapter three will outline the research methodology. Chapter four will present the results of the interviews conducted, while Chapter five will discuss these results with relevance to the current literature. Lastly, Chapter six will present the recommendations and conclusions to the study.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter will provide an overview of how perceptions are formed and the various factors that can influence a perception. It will then describe the state of global spinal health care, with focus on the World Spine Care (WSC) organization and its involvement in Botswana.

The literature for this chapter was sourced from the following search engines: Google, Google Scholar, EBSCO host, ProQuest, PubMed, Research Gate, Science Direct, Summon, SAGE Research methods, SA e-publications and Sabinet. The following keywords were used to search for relevant literature: primary spine care, chiropractic, musculoskeletal health in Africa, health inequities, globalization, World Spine Care, global burden of disease, Botswana, globalization of health care, perception, attitudes.

2.2 Perception

Perception has been described by Milton (1981:22) in his seminal work as “the process of selection, organization and interpretation of stimuli from the environment”. This process of interpretation allows individuals or groups to create their own truths about the realities they experience (Given, 2008). Hence, perceptions help individuals recognise stimuli or phenomena and extract meaningful and useful representations of their world from it (Bergh and Theron, 1999:116).

Pickens (2005:57) describes the perceptual process as one that involves a four-step process of stimulation, registration, organisation and

interpretation. The stimulus is picked up by the senses, is registered as a relevant stimulus, is organized based on previous experiences or beliefs and lastly interpreted through the understanding of these past experiences and beliefs. However not all stimuli enter this mechanism of processing perception, some are not paid attention.

Perceptions arise from the backgrounds of individuals or groups and are influenced by the various factors that have contributed to the worldview that each individual or group share. There are a number of factors that serve to influence perception which include influences from the environment in which the perception is taking place, the object itself that is being perceived, and factors within the perceiver (Bergh and Theron, 1999: 127).

2.3 Factors that influence perception

The Neiss classification of perception as described by Bergh and Theron (1999: 127-128) describes a model for understanding the factors that influence an individual or groups' perception of a phenomenon or object. It discusses factors relevant to the perceiver, the environment and the perceived object that can influence how the object is perceived. Figure 1. shows the non-exhaustive list of factors relevant to this study presented using this model.

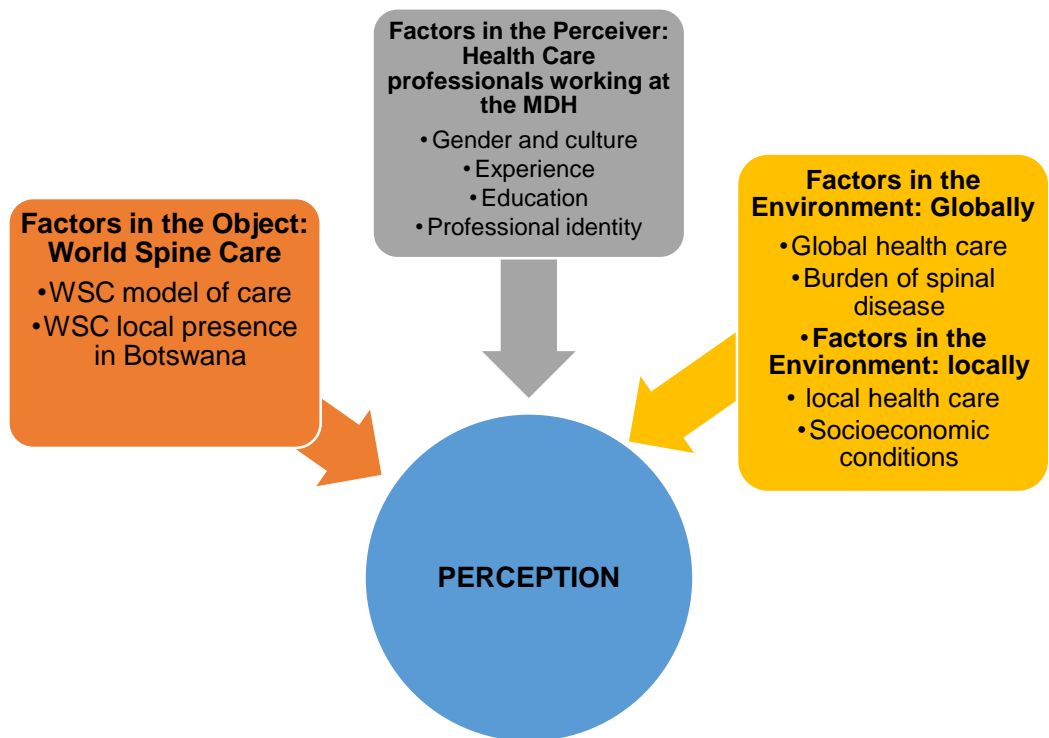


Figure 1. Factors affecting the perceptions of health care professionals

Adapted from Bergh and Theron (1999:198)

One important subjective factor that affects perception is attitude (Bergh and Theron, 1999:127). Attitudes have been described by Robbins and Judge (2014:60) as favourable or unfavourable evaluative statements that individuals make about objects, people or events. While the cognitive constructs of attitude and perception often seem difficult to distinguish, it is important to describe these as somewhat separate entities and then explore how they influence one another. Attitudes are made up of three components as seen in Figure 2.

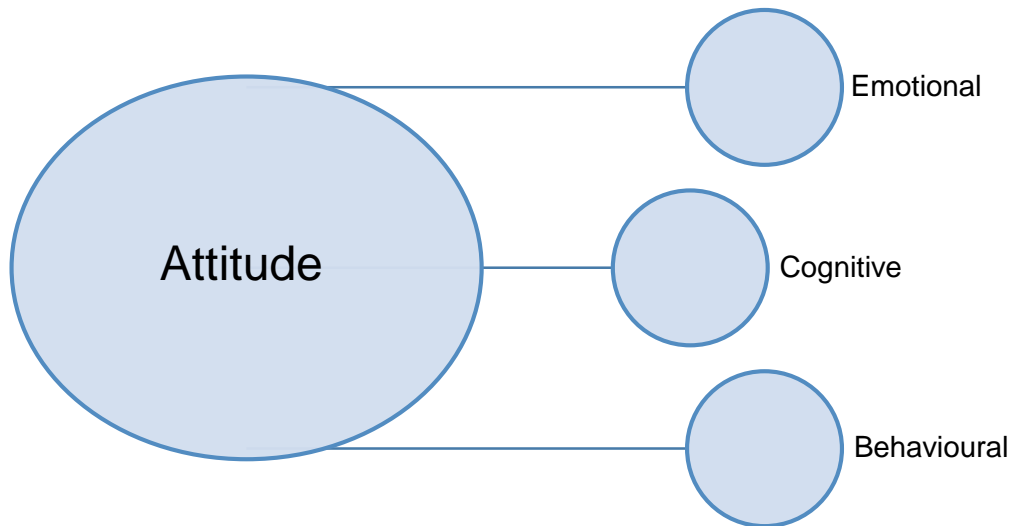


Figure 2. Components of attitude

Adapted from Pickens (2005:44); Greenburg and Baron (2008) cited by Kruger et al. (2015).

The emotional aspects of attitude are the feelings one has towards a particular stimulus on the basis of a reaction from the central nervous system (Kruger et al., 2015:163) which is often understood as 'like' and 'dislike'. When an attitude is based strongly on an emotion, this attitude can remain even in the presence of facts that disconfirm this attitude (Bergh and Theron, 1999:186). The cognitive aspects of an attitude include beliefs which may or may not be based on facts but are always subjectively true to the individual expressing these attitudes. This is because the cognitive aspect of attitude is based on the value systems of the individual. However, attitudes that are based more on cognition rather than emotion are more likely to be less subject to the values of the individual and more to available facts or evidence (Kruger et al., 2015:163)

The behavioural components of an attitude are the observable manifestations of the given attitude. While behaviour has been described as a component of attitude it is possible for attitudes (the emotive and cognitive) and behaviour to diverge. When this occurs, it is described as cognitive dissonance, which is described as 'any inconsistency that a person perceives between two or more of one's attitudes or between one's behavior and attitudes' (Festinger, 1957 cited by Pickens, 2005:45). When this occurs, an individual may act in four ways to reduce this dissonance (Kruger et al., 2015:172):

1. Changing thoughts (cognition) about the behaviour which may involve rationalizing the behaviour.
2. Changing attitudes (emotion and cognition) to correspond with their behaviour which involves self-persuasion.
3. Obtaining new information that helps improve emotions about the behaviour.
4. Decrease the importance of the dissonance.

Attitudes can change depending on the level of knowledge available. In a study conducted on the attitudes of health care workers towards people living with Human Immunodeficiency Virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS) in Nigeria, Adebajo et al. (2003) found that health care professionals' attitudes were influenced by what they understood about the way in which HIV/AIDS is transmitted. This suggests that the attitudes are influenced by the level of knowledge that a health care professional has about a given phenomenon.

Regarding the behavioural component, it has been argued that attitudes influence behaviour, for example, a positive attitude would predispose one to behaving with more compliance; a counter argument proposes that attitudes stem from behaviour (Festinger, 1957 cited by Robbins and Judge, 2014:60). One aspect of this relationship exists between attitude and personal experience, where an attitude arises from the personal experience an individual has had (Robbins and Judge, 2014:61). Attitudes and perceptions have been said to be regularly influenced by the personal experiences of the perceiver (Lewicki, 2010:11). The potential for errors or distortions in perception lie in factors such as having insufficient information about a given subject or even prejudice (Kruger et al., 2015: 192). However, personal experience with a given stimulus can change this.

It has been reported that the attitude that a health care provider has about spinal disorders influences the kind of care they offer based on the beliefs and attitudes they have about pain (Rainville et al., 2000). Similarly, the professional education one has received may influence a person's attitude. It was shown that the attitudes of health care students towards people with disability, were distinct within each discipline suggesting that attitudes are sometimes taught and learned within a profession (Tervo, 2004). Hence, similar attitudes of health care professionals could be expected amongst health care professionals belonging to each discipline.

2.4 Spinal health care – global environment

Globalization is influencing health care around the globe. Reading (2010) when investigating the effect of globalization of health care in Pakistan, found that as foreign aid increased over the years, the government did little to maintain its health care standards. Hence the unintended consequence of globalization in the developing world, may be an over-reliance on private entities such as charities for support while governments are not held accountable for their contributions. This echoes the sentiments of the economist, Moyo (2009) who argues in her book that African nations have been the recipients of aid, and African governments have absolved themselves of the responsibility to offer consistent public goods to their citizens. As much as foreign expertise is welcome, many have concluded that for any interventions to be truly successful, governmental involvement as well as buy in from local communities is critical for producing desired outcomes (Adebajo et al., 2010; Reading 2010; Moyo 2009; Haig et al., 2009).

According to the Global Burden of Disease 2010 study (Hoy et al. 2010), spinal disorders have become the leading cause of disability worldwide with the most vulnerable groups being under resourced communities around the world. This is compounded by the fact that means of alleviating spinal pain and disorders have been profuse yet inefficient (Deyo et al., 2009: 65). Haldeman and Dagenais (2008: 1) identified over 200 modalities available for the alleviation of chronic low back pain yet stated that there is a comparatively low impact on the burden of spinal disorders and that there was no one type of care suited to deal with spine pain exhaustively. They further stated that the problem is compounded by practitioners utilising one modality making recommendations against the use of other modalities. This affirms that, given the global burden of

spinal disorders, there is a need for a comprehensive, multidisciplinary model of spinal care (Murphy et al., 2012)

In response to this global spine care crisis some have advocated for a 'primary spine physician (PSP)', a 'general practitioner' for spinal disorders (Murphy et al., 2012:1). The PSP is described as a health care professional well able to take into consideration all the specific nuances of spinal disorders by being an expert in treatment of spinal related disorders making use of evidence-based practices and knowing when and to whom to refer for specialist management of spinal related disorders (Erwin et al., 2013: 287). The PSP role and the subsequent model of health care is essentially a paradigm shift, from systems of health care centred around the skills of the practitioners to a system of care built around specific disorders. The role of the PSP would be to serve as a first point of call for all spinal disorders and make the incumbent clinical decisions as to whether the presenting patient requires invasive or conservative treatment (Erwin et al., 2013:287). Hence this PSP would have a role working alongside other health care professionals so that each patient is given the best possible spinal care.

When Murphy et al. (2012:2) describe PSP within the greater context of health care, the PSP was portrayed as the 'team captain' of the group of practitioners who are involved in the management of a spine disorder. Hence a kind of meritocracy exists where the best equipped practitioners handle each aspect of care, the PSP can quickly determine whether a patient requires conservative care or otherwise.

Currently it seems that no particular profession has assumed the PSP identity head on. This is likely because institutions rarely educate health care professionals around specific disorders but rather build systems of

care around the skills of the professionals being educated (Murphy et al., 2011:2).

Despite the increased funding that many industrialized nations have given towards spinal disorders it appears that the burden of spinal disorders is only becoming greater (Murphy et al., 2011:1). Paskwoski et al. (2010:100-102) found that in the Jordan Hospital in Massachusetts, United States of America (USA) it appears that the primary spine care model has led to a decrease in the burden of spinal disorders and more efficient health care spending. It is important to note that the successful implementation of the spine care model in other parts of the world have been attributed to the fact that the model was adopted with the support of the hospital. The spine centre in the Jordan Hospital benefited from several factors that led to the success of the programs within the hospital. Hospital-wide education about the basic tenets of effective, evidence-based musculoskeletal care where the basic role of the PSP was understood did allow for the flourishing of the model within this context. Furthermore, engagement with the larger community which included other health care professions, institutions and patients, with educational drives about spinal health as well as upholding the PSP is the ideal first point of call.

The PSP is bringing about a paradigm shift from a model of care based on the skills of the health care professional to one of being a primary spine physician (Murphy et al., 2011:3). This represents a shift in the chiropractic profession where some in the profession are calling for chiropractors to adopt the role of the primary spine care physician and galvanize collective efforts around a set of conditions as opposed to the skills of the practitioner being the centre focus (Erwin et al., 2013:288).

2.5 The World Spine Care model - the perceived object

World Spine Care (WSC) was conceptualised in light of the growing burden of spinal disorders with the goal of seeking to alleviate the burden of spinal disorders in underserved communities around the globe. Little has been documented about efforts to deal with spinal disorders in an evidence-based manner impacting on the burden of these conditions in underserved communities. It was also necessary that the model be sustainable and culturally relevant to best serve the most vulnerable groups across the globe (Brady, et al., 2016:2).

WSC was established in 2008 as a non-governmental organisation with the goal of creating a multidisciplinary, sustainable spine care model with a vision of providing the best quality spine care for all. WSC envisaged opening up clinics in underserved communities around the world that are evidence-based and easily accessed. The WSC pilot site is in Botswana, one clinic in Shoshong and another within the Mahalapye District Hospital (MDH). In 2011, WSC signed a memorandum of understanding with the Botswana Ministry of Health (MoH) wherein a partnership was formed. This is in partnership with local government with plans in place to train local *Batswana* (the people of Botswana) practitioners to later manage and run this new model of care within the existing health care system. (Hondras et al., 2015:2 a).

The primary clinical team that runs the clinics, to date, has consisted of chiropractors and physiotherapists with specialist training. The clinical team is made up of the clinical director and clinic supervisors who serve to implement the model at grassroots level by providing evidence-based care, supervising the clinics, and administering relationships with the local communities. While the clinical director position has been constant the clinic supervisor role has been cyclical as most supervisors have

served the volunteer position for a year on average. Throughout the years, volunteer clinicians have gone to work under the clinic supervisors in these clinics for various periods of time ranging from a few weeks to several months (Haldeman et al., 2015: 2305-2307).

The model of spinal care implemented by WSC involves the use of evidence approved modalities including manual spinal treatment such as manipulation and mobilisation, soft tissue therapy, education, exercise and lifestyle modification. The model has drawn on the expertise of a number of professions from medicine, chiropractic, rheumatology, physiatry, orthopaedics, radiology and physiotherapy (Haldeman et al., 2015:2309). While WSC has not formally adopted the PSP role it is the role that WSC clinicians are envisaged playing on the ground (16 May 2017 email communication with Geoff Outerbridge and Scott Haldeman). The WSC clinicians achieve this by providing spinal care for patients in the clinics that are equipped for diagnostics and triage for spinal conditions. Furthermore, WSC clinicians are trained to refer patients when necessary to other health care professionals in secondary and tertiary health care settings (Haldeman et al., 2015: 2307).

Below is a list of some of services that WSC clinicians provide (Haldeman et al., 2015: 2308):

Primary spine care

- Clinical evaluation and treatment at WSC.
- Recognizing red flags and referring when appropriate.
- Reassurance and education of prognosis.
- Manual therapy joint mobilization and manipulation, soft-tissue therapy and assessment of range of motion.
- Stretching and/or exercise therapy.
- Plan of care or coordination of care.

Health promotion

- Community education such as hospital presentations and conferences.
- Health information.
- Community outreach including spinal screening in schools.

Prevention

- Ergonomics and Posture assessment and advice.
- Basic nutritional advice.
- Exercise therapy and advice.

Capacity building

- Training other health-care providers.
- Training family members of patients to equip them to improve care-giving for both the care-giver and the patient.
- Supporting and training locally run health-care initiatives such as exercise classes

WSC has made efforts to provide education on spinal care to the local community, as well as hosting regular meetings catered to health care professionals in the area on the best evidence practices with regards to spinal care. In Botswana, the WSC has hosted two conferences; one in 2013 and another in 2016 (Botswana Spine Care Conference: Putting Evidence Based Care into Practice, 2016) bringing international speakers to the area discussing evidence-based approaches to spinal care. WSC has now been in operation for over five years in Botswana.

WSC's model is a novel phenomenon not just in Botswana but globally as the project has developed over the past six years and is still in its infancy as a part of the Botswana health care system. Since its first

project in Botswana, WSC has subsequently started projects in the Dominican Republic, India and Ghana (worldspinecare.org 2017)

The vision of WSC is to create “a world in which everyone has access to the highest quality spine care possible.” (Haldeman et al., 2015:2305). Limited resources such as funding and volunteers have kept the project relatively small. To ensure sustainability, WSC has made provisions for the training of two *Botswana* nurses to study chiropractic and return to Botswana to continue running the program. Despite its size, WSC has sought to establish itself as a leader in sustainable spinal care creating a model that could be used as a template for similar projects around the globe (Haldeman et al., 2015:2310).

WSC has further adopted a shift away from short term, mission type interventions that have generally had temporary benefits, often demonstrating a failure of engaging in the local community to create sustainable means of care (Haig et al., 2009; Haldeman et al., 2015). This shift concurs with a move away from a form of aid to Africa that has perpetuated dependency for decades and is placing the responsibility of sustaining a meaningful alleviation of spinal disorders on the people of Africa (Adebayo 2010; Moyo 2009 and Haig et al., 2009). The patients attending the WSC clinics in Botswana are mostly middle aged and elderly with ages ranging from 5-96 years of age, mostly women with low to medium levels of education and who reported having manual labour and office work as their main activities (Armstrong, 2017).

2.6 Botswana - local environment

Botswana is a Sub-Saharan land locked country with a population of just over two million. The country has ten urban districts of which the Central

District is the largest land area with about a quarter of the country's population. Both Shoshong and Mahalapye are in the Central District (Botswana Info Directory 2016).

2.6.1 Socioeconomic conditions

The past decade has seen many African countries growing beyond roles of dependency that had been predominant on the continent in the early post-colonial era (Thakkar, 2015). *The Economist* famously ran a headline titled “*Africa: The hopeful continent*” that highlighted the few African countries credited with being among the fastest growing economies in the world. This sparked a wave of optimism across the continent with hope of attracting more foreign investors. Some who had previously overlooked the continent and had written it off for serious investment have since begun to look for the new opportunities of this season of a rising Africa (The Economist, 2011).

This contrasts with a previous article released by the Economist that portrayed Africa as the hopeless continent. Bloom and Poplak (2016) present case studies of eight Sub-Saharan countries, including Botswana, which gives reference to the changing fortunes of the African continent. Over the past few years, there have been several African voices making rallying calls to take Africa more seriously (Adichie, 2009, Awuah, 2007), in terms of investment with aims of allowing for greater development. However, a group of social scientists from over 30 African countries who conducted a series of surveys on public opinion of Africans about democracy, governance, economic conditions in their countries found some disparity between macroeconomic statistics and the living conditions of the average African (www.afrobarometer.org 2017). One such study, noted that despite over a decade of steady

economic growth in their countries a number of Africans still felt dissatisfied with the state of their lives citing unemployment and inequality amongst other things as reasons for this discontent (Hofmeyer, 2013:1). Consequently, there exists a tension between the perceptions about Africa that have been portrayed to the international community and even perpetuated by their governments and other institutions and those of the people of Africa itself.

While the vision of WSC is to provide multidisciplinary care to underserved communities around the world (World Spine Care 2017), the WSC model functions best in countries with collaborative government wherein the local health care system adopts a spine care model into their health care system. Hence the WSC program would only be functional in a country with a government progressive enough to seek to adopt this.

For years, economists considered Botswana somewhat of an anomaly in the developing world with the nation boasting the highest rate of per-capita growth over a period of 35 years (Acemoglu et al., 2011:2). This growth was attributed to good policy decisions, the minimally disruptive form that British colonialism took, the economically favourable use of revenues from the diamonds in the country as well as good decision making by two of Botswana's early presidents. All this occurred in a season in time when Afro-pessimism was on the rise that highlighted African countries as poor nations only getting poorer (The Economist, 2000). In 2008, when the economic recession placed the global economy into a tailspin, Botswana, too, felt the pinch as much of its economy was based on foreign markets with regard to its main mineral export (Boom and Poplak, 2016:58) and has since placed a greater emphasis on

economic diversification. However, the nation still boasts one of the better economies on the African continent.

Despite this, concerns remain about high unemployment, inequality, and one of the highest HIV/AIDS prevalence rates in the world, which have been identified as points of discontent for the average African (Hofmeyer, 2013:1).

2.6.2 Health care in Botswana

Perhaps the most prominent health care statistic associated with Botswana is HIV/AIDS prevalence, which in 2015 was 22.2% of the population between the ages of 15 and 49 according to the Joint United Nations Programme on HIV/AIDS UNAIDS (UNAIDS, 2017). Though there has been a recent growth in the country's private health care sector, the majority of health care in Botswana is provided and funded by the government (Botswana Health Financing Profile, 2016). For every 10,000 people there are 4.3 doctors and 41.3 nurses and while by comparison, this ratio is better than most other countries in the region, not every citizen in Botswana has access to quality health care (Nkomazana et al., 2014:2).

The burden of musculoskeletal disorders in Africa, is significantly greater in terms of disability adjusted life years than the developed world (Adebajo et al., 2010: 1). One major reason for this is the lack of accessibility of care for musculoskeletal conditions in Africa (Mody, 2017:1). However, as Adebajo et al., (2010:3) suggest, to sustainably close the gap there is a need for African stakeholders to be engaged in conjunction with foreign assistance to help alleviate the burden of musculoskeletal disorders in Africa.

It is also important to recognize how ubiquitous African traditional medicine is on the continent and though somewhat eccentric to the Western mind, is a source of affordable health care that addresses some of Africans' health care needs in their own context (Arie's et al., 2007: 568). However, among health care professionals trained in Western scientific medicine, knowledge of and attitudes towards African traditional medicine have been demonstrated to be lacking and somewhat negative (Mbutho et al., 2012:21) potentially because of the unclear relationship between African traditional medicine and Western medicine. Furthermore, in a study of health care workers in Durban, South Africa it was found that health care workers did not have enough knowledge about the complementary and health care professions such as homoeopathy, chiropractic and Ayurveda medicine to know when to refer to them. This was problematic because many of the patients that these health care workers treated were receiving alternative medical treatment and hence the health workers were ill prepared to co-manage these patients. There were also concerns about herb-drug interactions and the scientific validity of these professions. Regarding manual therapies such as chiropractic and acupuncture some questioned their effectiveness and had reservations about what was seen as invasions of personal space. Hence some of these health care professionals had a negative attitude towards these complementary and traditional medical fields (Mbutho et al., 2012:21).

Tangwa (2007), described a potential relationship between African traditional and Western medicine; it was argued that to relegate African traditional medicine as an adjunct of Western medicine would perpetuate colonial tendencies of African and Western relations. This commentary

made the case for the need for merits of traditional medicine to be recognized and discouraged calls of subjecting African traditional medicine to the “canons of Western scientific medicine.” In the case of Ghanaian bonesetters, a musculoskeletal form of African traditional medicine in that region, it was found that patients would often choose either to receive treatment from the hospital or the bonesetter and the reason for their choices included - convenience of the treatment, perceived safety, cost of care and accessibility to care (Arie’s et al., 2007:568). Thus, health care professionals and patients in Africa live and work within such contexts of potential duality of care; Western medicine and African traditional medicine, each with its merits and flaws and an unclear relationship between them. This could make health practitioners sceptical about new models of treatment especially those of an alternative or complementary nature.

In the context of musculoskeletal health, literature seems to indicate that provision of care for musculoskeletal conditions in Africa is quite limited (Dada et al., 2011) even with simple rehabilitation programs (Marias 2008:1) and hence there is little context for many people especially in rural communities to which they can relate. A recent ethnographic study in Botswana into perspectives of individuals living with the burden of musculoskeletal disorders showed that there was little to no access to adequate care for musculoskeletal disorders (Hondras et al., 2016:450-51). This study found that the lived experiences of musculoskeletal pain had a negative impact on livelihood, ability to manage daily chores as well as social consequences. These were attributed to the demanding physical activities of day to day life, navigating the rough terrain of their area as well as physical strain involved with care-giving.

In a recent study exploring the way *Batswana* reported their musculoskeletal complaints, Hondras et al. (2015:1 b) noted that respondents had never been asked by anyone to describe their complaints in such detail, for example, not distinguishing between emotional and physical pain when reporting their symptoms. This implies the lack of care received in this community from modern health care and hence the lesser extent of care given for musculoskeletal conditions. It is yet to be determined how the paradigms of Western health care that WSC have been received in such an environment. Furthermore, a recent study of the demographic profile of patients seen at the WSC showed that the main complaint that patients who attended the WSC clinics had was low back pain (Armstrong, 2017). To further illustrate the lack of manual therapy in Africa, Haig et al. (2009) noted that there is an equal chance of 'a penguin in Antarctica to receive adequate rehabilitation care from a trained physiatrist than an individual in Africa in need of rehabilitation to have access to a physiatrist'. There is a large lack of adequate musculoskeletal care available in Africa to help alleviate the burden of spinal disorders (Marias et al., 2008:317).

The MDH is an orthopaedic specialty hospital and there are a variety of health care professionals including orthopaedic surgeons, medical officers (medical doctors with no specialist training), family medicine physicians, nutritionists, radiographers, orthoptists, physiotherapists, health care auxiliaries, nurses, emergency care personnel as well as pharmacists. A study (Nkomazana et al 2014) on the health care workforce of Botswana found that just 21% of the medical doctors in the country's health workforce are Batswana with most of the rest coming from other countries including Zimbabwe, Democratic Republic of Congo, Zambia, Spain, Cuba and India. This high expatriate dependence poses instability to the Botswana health care system

because while migrant workers come to Botswana for better employment these same workers are more likely to migrate to other higher income countries for better work opportunities (Nkomazana et al., 2014:7). This high number of expatriates in Botswana, have been pushed by economic and or political hardship in their own countries (Nkomazana et al., 2012:7). This diversity of backgrounds could result in various perceptions and attitudes towards WSC based on the various educational and work backgrounds of these health care professionals. Prior exposure to complementary and alternative forms of health care (Mbutho et al., 2012) as well as previous work in collaborative health care settings (Herbert et al., 2007:1322) have been shown to make health care professionals more receptive to new models and forms of care.

2.6.3 Inter-professional relationships of health care workers

Inter-professional working is highly dependent on the level of the effectiveness of the collective team, and one essential component of this is clear communication channels (Barr and Downing, 2016: 110). Often poor teamwork arises because of ineffective communication and hence a lack of shared knowledge. In a study done in a hospital setting where a chiropractor was working in Kimberly, South Africa, Meyer (2009:60) made one recommendation highlighting the need for an educational drive to be done within the hospital to make the general staff more aware of the services that the chiropractor could offer.

There are a number of reasons based on a lack of knowledge that could negatively affect inter-professional relations, particularly between chiropractors and medical doctors. Three common ones are lack of knowledge of the education of chiropractors, the scientific soundness of spinal manipulation as well as the perceived safety of chiropractic

manipulation (especially cervical spine manipulation) - all of which have been answered and resolved (Chapman-Smith, 2010:5). This may be relevant because, although WSC does not promote itself as a chiropractic organisation, several of the clinicians and volunteers that work for WSC are chiropractors. Hence there could be similarities drawn between the attitudes and perceptions that health care professionals have had towards chiropractic in various parts of the world and those that health care professionals have had towards WSC in Botswana.

Referrals between health care professionals are affected by the level of knowledge that each professional has of other health care professions. Mbutho et al. (2012: 71) found that one major inhibitive factor in the referral of health care workers to traditional and complementary medicine practitioners was due to a lack of knowledge about these professions. Similarly, Meyer (2009: 60) identified a lack of knowledge amongst medical doctors about the kind of care offered by chiropractors as the reason for poor communication or referral at the Kimberly hospital in South Africa complex. Studies of various health care professionals in South Africa found that the general perception of chiropractors was positive though many health care professionals felt that they did not know enough as to know when to refer (Palmer 2007, Heslop 2008). The attitudes towards chiropractors were more nuanced but generally more positive with health professionals that had had greater interaction with chiropractors or who were manual therapists themselves (Naidoo, 2008).

2.6.4 Organisational culture

Organizational culture has been described as 'the collection of traditions, values, policies, beliefs and attitudes that constitute a pervasive context for everything we do and think in an organisation' (Handy, 1985:16 cited

by Barr and Lesley, 2016:220). The culture of the MDH will have an impact on the way the health care professionals that work there interact with and perceive the WSC. Organisational culture consists of formal influences such as structures, stated goals and financial resources and informal influences that include beliefs and assumptions, perceptions, informal interactions and group norms (French and Bell, 1990:19 cited by Barr and Dowding, 2012:221).

The organizational culture can have a significant impact on the levels of commitment and resultant attitudes and behaviour of the individuals within that organization (Hsiao et al., 2012:10893). In a study done on the organizational culture of a private hospital in the Western Cape, South Africa (Zwaan, 2006:89) it was found that there can even be differences in how various departments within the same hospital can perceive the traits of that organization's culture. It is important to note that WSC is coming to the hospital with its own organizational culture, and that the interaction between these cultures is important to anticipate and try to understand.

The organisational culture of the MDH was found to be 'overwhelmingly negative' for staff in a study of the organizational culture in the Mahalapye and Ngamiland health districts. Some of the problems that emerged included a lack of job satisfaction, poor communication within the hospital, long work hours and lack of staff recognition. Furthermore, some staff, particularly nurses reported feeling overworked and bore the weight of the implementation of new initiatives and reported having little time to rest (Nkomazama, 2015:7). This has implications for how health care professionals of the MDH may perceive the WSC, in that a new model of care may add more weight to an already strenuous daily schedule.

2.7 Health care professionals working at the MDH - the Perceiver

Individual perception is highly subjective and is influenced by factors such as attitudes, motives, interests and expectations (Kruger et al., 2015:18). Furthermore, these perceptions can change over time as an individual's experiences change where new phenomena cease to be new and various encounters lead to new perspectives. This can further be affected by expectations, where individuals 'see what they expect to see' (Bergh and Theron, 1999:127) and hence perceptions can distort reality.

2.7.1 Personal characteristics

It has been shown that younger health care professionals are more likely to have an open and receptive attitude toward complementary and alternative medicine (Sawni and Thomas, 2007). This could be a result of younger health care professionals not having been exposed to organisational regulations that maintain the status quo and hence make them more supportive of new therapies (Shorofi and Arbon, 2010).

Gender has been shown by various authors (Richardson, 2014; Ek, 2015) to influence a person's perception. A Finnish study found that women were more likely to seek out and discuss current information about health and were also more likely to obtain and give out such information in informal settings such as in conversation with co-workers, friends and family (Ek, 2015: 742). This could be a by-product of the perceived gender roles where women are considered more responsible for knowing about health issues than men. It could also be that women

pay greater attention to, or perhaps are more susceptible to certain health risk factors. (Richardson, 2014:427).

One Australian study was carried out on government workers to try and understand why female workers reported greater upper body musculoskeletal complaints than male workers. It was found that women experienced greater bodily stresses from having a greater responsibility of child care and chores at home than men and hence experienced work-related bodily stresses more severely (Starzdins and Bammer, 2004:1003). This could make work more stressful for women. The combination of these factors could lead to differences in the way men and women working at the MDH perceive the WSC as well as the likelihood of the health care professionals seeking help themselves at the WSC.

2.7.2 Health care professional training

The country has trained its citizens both locally and internationally in the various health sciences, though recently there has been a greater focus on training health care professionals locally. Many that were trained internationally did not return to Botswana but pursued careers in higher income countries, leaving a deficit in Botswana. Of the *Batswana* that are in the health workforce up to 77% of them were trained in Botswana. The University of Botswana graduated its first cohort of medical doctors in 2014 with hopes to increase the number of local health care professionals (Nkomazana et al., 2014:2-8).

It is difficult to ascertain how the education of a health care professional may impact on how they perceive the WSC because of the relative novelty of the model, not just in Botswana but globally. Many health care professions have traditionally been educated in silos or with few other

health care professionals despite the growing need for inter professional collaboration (Karim and Ross, 2008:76). This tendency to operate in isolation comes from each profession holding to its own professional identity and presents a threat to the creation of successful inter-professional education models (Meleis, 2016). In fact, one review of the effectiveness of inter-professional education has shown mixed results in the clinical and practice outcomes because of work in such inter-professional settings (Reeves et al., 2008). However, it has been noted that prior positive experiences in multidisciplinary settings can predispose a health care professional to be more willing to engage in further collaborative settings (Herbert et al., 2007:1322). One of the major professions involved with WSC, chiropractic, has had a history of isolation from the mainstream of health care though there are efforts currently for greater integration (Carey, 2011:147). Some HCPs who may have had exposure to chiropractic in other settings may have experienced this tendency towards isolation which could lead to some HCPs of the MDH to perceive WSC as operating in a silo from the outset.

2.7.3 Experiences and Expectations

Prior exposure to a new or alternative form of health care treatment has been shown to predispose health care professionals to being more receptive to that form of treatment (James and Bah 2014, Mbutho et al., 2012, Shorofi and Arbon, 2010). While spinal manipulation has been shown to be effective in the treatment of lower back pain, it has also been shown that patients receiving spinal manipulation will report an increase in pain after treatment before getting better (Paige et al., 2017). Prior exposure to or an understanding of the nature of spinal manipulation may impact the perceptions that patients or other health care professionals

have towards WSC. Hence a more positive attitude may be anticipated towards WSC from those health care professionals who have had prior exposure to chiropractic or similar allied health professions.

Regarding expectations, a phenomenon can be said to have 'assimilation effects' or 'contrast effects' (Lewicki, 2005:10) that effect the way a said phenomenon or stimulus is perceived. An assimilation effect is where a given stimulus or phenomenon has characteristics that are congruent with the expected stereotype or a contrast effect where characteristics exhibited by a phenomenon are divergent from the expected stereotype. It is possible for health care professionals in hospital settings to have a misunderstanding of each other's' roles in the patient management process (Muller-Juge et al., 2013: 1) which could create tension that could strain inter-professional relations.

Many NGOs have failed to create sustainable change as a result of a lack of self-awareness. For WSC, it is important to gain self-awareness to ensure sustainability. Luft and Ingham (1955) developed a model for self-awareness. This model, Figure 3, explores four quadrants of human interaction where there are elements seen or unseen by ourselves and the people around us (Luft and Ingham, 1955 cited by Barr and Lesley 2016:13).

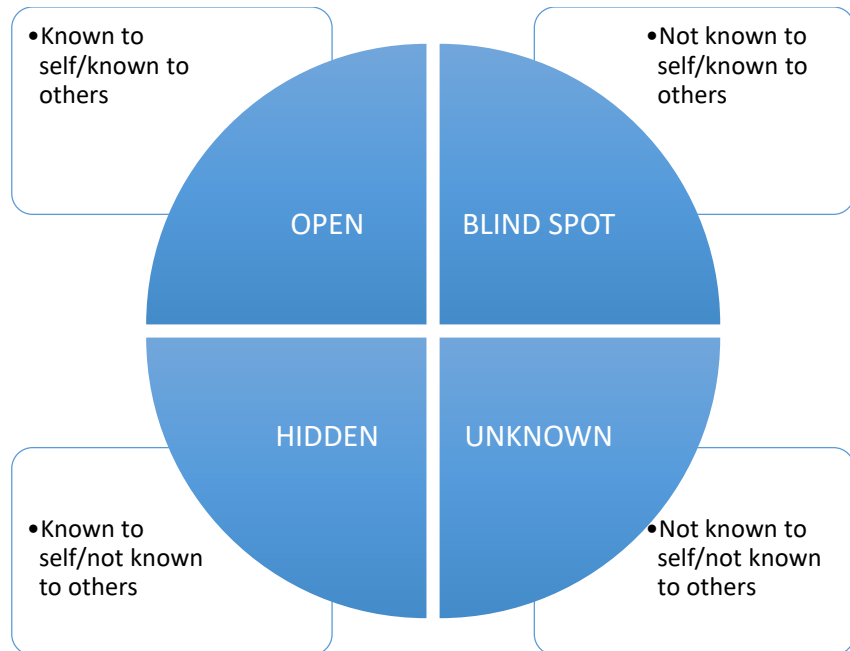


Figure 3. The Johari window

Adapted from Barr and Lesley (2016:13)

From the position that WSC is in, there may be “Blind spots” where WSC is not aware of the perceptions that health care professionals of the MDH have of the WSC. Health care professionals may also be aware of opportunities for improved implementation of the model that WSC may not be aware of. It is this quadrant that will be the main focus of this study.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

In this chapter, the qualitative research methods that were used in this study will be presented including the study design, sampling, procedure of data collection and analysis.

3.2 Study Design

The paradigm of this study is that of constructivism, making use of a qualitative approach and an exploratory descriptive design. Constructivism is the philosophical position whereby human beings create their own versions of reality based on their previous experiences, backgrounds and beliefs to explain the various events that occur in life (Mathison, 2005). Based on this understanding, it is assumed that each person actively seeks meaning to explain the reality in which they live. This is relevant to this study because it allows for the participants to describe their knowledge and perceptions of World Spine Care in their own words. A qualitative approach was chosen to conduct this study as qualitative inquiry allows for the details of individual perspectives through interviews (Denzin and Lincoln, 2008:16) in ways that quantitative studies cannot explore. Furthermore, it seeks to answer the questions of social experiences, considering social constraints faced by the individuals. An exploratory descriptive design is beneficial to this study because it allows for the existing relationships between phenomena or individuals to be investigated (Thomlison, 2011:131). The methods used included purposive and snowball sampling, semi-structured interviews

as well as thematic analysis of the data which will be described in further detail. The study design is outlined below in Figure 4.

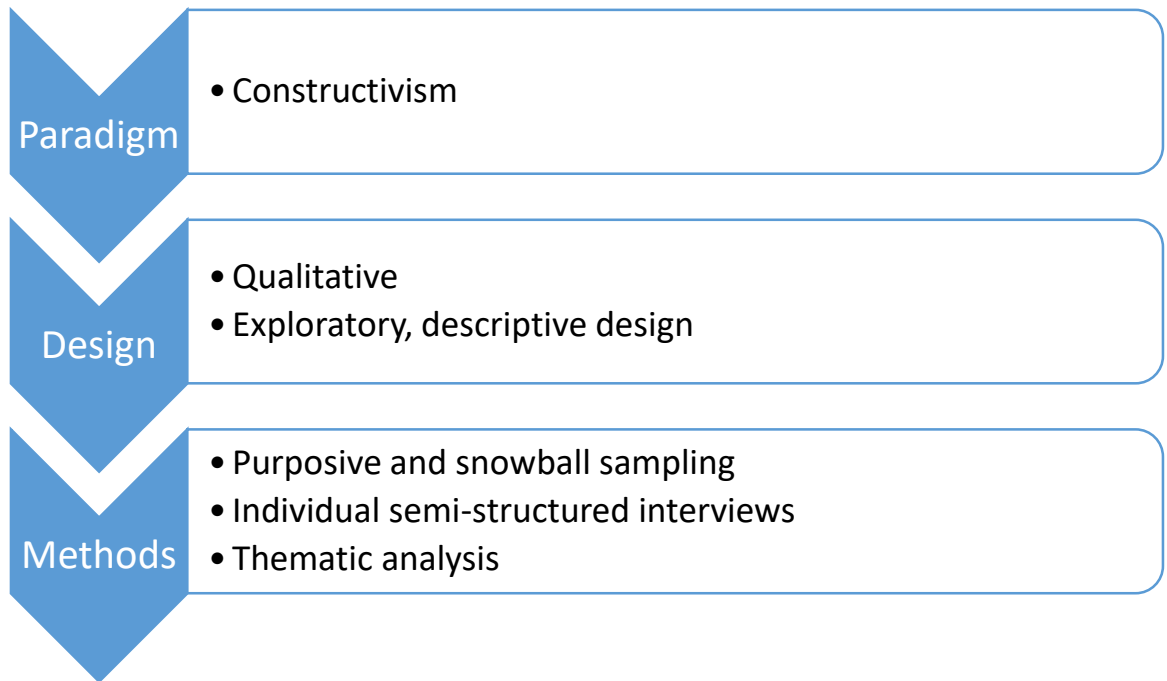


Figure 4. Paradigm, design and methods

3.3 Study population and permission to conduct the study

The participants of this study were the health care professionals of the MDH which included medical officers, manual therapists, nurses and surgeons. The site of the study was chosen as it is one five of WSC clinics globally and it the first clinic to open, thus being in operation for the longest. Permission to conduct the study was obtained from the World Spine Care Research Committee (Appendix C), the Botswana Ministry of Health (Appendix D), the Mahalapye District Hospital

(Appendix E), and the Durban University of Technology Institutional Research Ethics Committee (Appendix F).

3.4 Research Setting

The study was conducted in the Mahalapye District Hospital (MDH) in the Central District of Botswana. The WSC clinic is located within the physiotherapy ward of the MDH that serves the outpatients of the MDH. With a population of 41,000, Mahalapye is a town located nearly 200km northeast of Gaborone along a major highway connecting Botswana's two largest cities, Gaborone and Francistown. The MDH is found on a turn off directly from the highway with a large tarred road without pavements. Vendors set up their stalls directly across from the hospital entrance, preparing for the lunch hour meals and snacks during the workday where many of the health care professionals come for a meal.

The superstructure of the hospital rises starkly against the surrounding areas of sparsely vegetated dry plains. The hospital is a large, red brick structure with blue finishes, blending well with the national Botswana colours of sky blue, white and black. The early mornings are a rush, with day shift health professionals coming in various forms of transport, some in cars, some by public transport and some who live nearby walking to the hospital. Patients can be seen sitting patiently on benches within the hospital early in the day; elderly women, aged men slowly shuffling by and having hushed conversations, and most younger patients are either mothers with children or trauma cases waiting to be attended. The hospital tends to quieten down in some departments by mid-day, while other departments always seem to have patients waiting. The MDH sits as a hub of activity within the area.

3.5 Sampling

3.5.1 Sample size and characteristics

At the time of the study there were 430 health care professionals working at the hospital excluding drivers and outsourced staff (email communication with MDH superintendent Dr Kunal Bose on 18 August 2017). To participate in the study, the participants were required to meet the following inclusion and exclusion criteria:

Inclusion Criteria:

All the participants needed to:

1. Have at least heard of the WSC.
2. Be a health care professional working at the MDH.
3. Read and agree to the Letter of Information and consent (Appendix A and B).
4. Agree to be interviewed and voice recorded to be confirmed by a letter of consent.
5. Be able to understand and speak English as this is the official medium of communication in the MDH.

Exclusion Criteria:

1. If a participant had not read and agreed to the letter of information (Appendix A) and the letter of informed consent (Appendix B).
2. If a participant was unable to understand and speak English, as no interpreters were employed for this study.

The sample size was not predetermined but rather the researcher strived to conduct interviews until a point of data saturation was reached. This was the point where no new themes or ideas were emerging from the interviews (Guest et al., 2006:59). This was determined by the researcher after listening and beginning the process of analysis after each interview.

3.5.2 Sampling strategy

Participants were recruited either by purposive or snowball sampling. Purposive sampling was used where participants were selected particularly for their knowledge and experience relating to the research question. Snowball sampling is where participants in the study refer the researcher to other participants who could potentially join the study for their relevance to help answer the research question (Flick 2014). This included selected health care professionals who the researcher had identified from previous visits to the site which included physiotherapists, medical assistants and radiographers. It was important to sample in this way as it could not be assumed that every employee of the MDH had knowledge of the WSC. The research question could be adequately answered by individuals who had some knowledge of WSC, but was answered best by individuals who had interacted with the WSC.

3.6 Data collection

The study made use of semi-structured interviews which are interviews that have a basic guideline but are not too constrained as to impose the interviewer's frame of reference onto the interviewee (Given, 2008:811). The interviews were conducted in English with each of the health care

professionals who agreed to participate in the study. The interviews were conducted in the workspaces of the participants and were captured electronically by a digital voice recorder. The voice recording was transcribed into a text document and then used for analysis.

The researcher began by asking a ‘grand tour’ question where the interviewee was asked to give a virtual tour of a phenomenon that is intended to allow the interviewee to share their knowledge on the subject unencumbered by the interviewer’s frame of mind (Leech, 2002: 667). These were open ended questions with the intention of allowing the interviewee to set the pace of the conversation (Silverman, 2013:206) allowing them to construct their responses based on their own experience.

Interview questions:

Grand tour question – “Tell me about your thoughts of WSC and its place in the Botswana health care system?”

The researcher used other interviewing techniques such as probing questions which were asked if the participants’ responses to open ended questions did not address the main research problem (Leech, 2002:668).

Probing questions included:

Knowledge	Attitudes/ Perceptions
<ul style="list-style-type: none"> • What do you know about WSC’s model of health care? • What do you know of the WSC activities? 	<ul style="list-style-type: none"> • What has been your experience of WSC? • What is your opinion of the WSC?

<ul style="list-style-type: none"> • What is your understanding of WSC's goal at the MDH? 	<ul style="list-style-type: none"> • How can WSC improve their service? • Describe your view of WSC
--	---

3.7 Study Procedure

The interviews were conducted at the MDH. The researcher contacted each of the participants in person and after introducing himself as a Masters of chiropractic student, requested an interview. Most health care professionals who were approached agreed to be interviewed though in the process of snowball sampling four declined to participate on grounds that they felt they did not know enough about WSC to participate in the study. An information letter (Appendix A) and a letter of consent (Appendix B) were given to each of the participants informing them about the study and what was required of them to participate. The researcher then described the overview of the study and discussed inclusion and exclusion criteria. Participants were requested to sign the letter of consent. Each participant was asked to confirm their identity and role at the MDH and was given an assurance of confidentiality. The interviews then commenced with the voice recorder turned on. The researcher began each interview with a grand tour question allowing the participant to respond, then followed up with probing questions as necessary. The interviews lasted ten to fifteen minutes on average and twenty interviews were conducted altogether. After many of the interviews and throughout the research process the researcher made entries into a reflexive journal, making note of his own reflections. The use of a reflexive journal is a recognised tool used in qualitative research where the researcher makes known the personal perspectives, opinions and biases that

ultimately influence the outcome of the study (Ortlipp, 2008:703). Once each interview was complete, the researcher thanked each participant and listened to the recording and then made preparations for the next interview.

3.8 Data analysis

Once the researcher transcribed all the interviews into written transcripts in a Microsoft Word document the data was analysed using the Graneheim and Lundman (2003:105) framework. The data was manually condensed into meaning units, codes, sub-categories, categories and themes. The researcher began by reading over each of the transcripts to get a sense of all the data and then went on to identify key paragraphs within each transcript that covered areas of interest. These were grouped together to form content areas that allowed for horizontal analysis across all the interviews. Key words and phrases were then identified from the content areas to make up the codes. These codes were then further abstracted to obtain sub-categories and categories. Ultimately each category was then analysed in context of all the transcripts to obtain themes.

The researcher subsequently analysed and prepared his interpretations based on the data collected. These interpretations were regularly reviewed with the research supervisors to ensure fair and acceptable interpretations were rendered.

In addition, basic demographic data was collected to describe the study sample, including: age, gender, occupation, length of service at MDH and department of employment at MDH.

It is important to note that as is the nature of qualitative research, the researcher understands and acknowledges that he brings his own perceptions into the research process (Silverman, 2010). The researcher is a Zimbabwe-born chiropractic student with a clinical background outside of a hospital setting in South Africa. It is through such an implicit lens that the researcher analysed the data.

3.9 Trustworthiness

Validity and reliability have been described as conventions of quantitative enquiry to ensure trustworthiness. For the purposes of qualitative research, it has been argued to be more appropriate to discuss trustworthiness using the terms credibility, dependability, transferability, confirmability and authenticity as opposed to positivist constructs such as internal and external validity, objectivity and reliability (Graneheim and Lundman, 2003:106; Lincoln and Guba, 1994 as cited by Polit and Beck, 2008:584). These are discussed below.

Credibility can be defined as confidence in the truth and interpretation of the data. This was ensured by using a reflexive journal where the researcher noted thoughts, feelings and actions that the researcher had during the research process that were surprisingly, remarkable or noteworthy. These will be included in the conclusion of the study where the researcher will make note of his reflections throughout the research

process and how this influenced the outcomes in the end (Ortlipp, 2008:703). Another strategy used to ensure credibility was in the striving to reach data saturation in this study. Data saturation is the point where no new data nor codes nor ability to reproduce the study is reached and is usually dependent on the complexity of the research question and the homogeneity of the participants (Guest et al., 2006:76). The researcher made allowance for this by beginning the transcription process straight after each interview and listening to each recorded interview at the end of each data collection day. The researcher spent ten days at the MDH and managed to conduct twenty interviews

Confirmability, as described by Shenton (2004:72) is achieved by taking steps towards ensuring that the results of the study are not simply the ideas and preferences of the researcher but more the ideas and perceptions of the participants. This requires transparency where the researcher documents decisions made in the data collection and analysis process in the researcher's reflections at the end of the study

Transferability is described as the extent to which findings can be transferred or applied to other groups. This was ensured through striving to collect data until saturation was reached as well as providing a thick description of the setting and providing reflections that allow the reader to appreciate the environment in which the study was conducted.

Lastly, authenticity which is the extent to which the findings faithfully and accurately represented the actual activities on the ground was ensured by audiotaping and transcribing as well as the use of cross checking of themes with the supervisor/s during analysis

3.10 Ethical considerations

Permission to conduct this study was granted by the World Spine Care Research Committee (Appendix C), the Mahalapye District Hospital Health Research and Development Division (Appendix D) the Health Research Development Committee of the Botswana Ministry of Health (Appendix E) and the Durban University of Technology Institutional Research Ethics Committee (Appendix F).

Participant autonomy was maintained in this study by using an informed consent document (See Appendix B) which was given to each participant. This provided an explanation of the purpose of the study, risks and benefits, methods to ensure confidentiality, the voluntary nature of the study and the right of the participant to leave the study at any point. This was made available prior to any interviews being conducted and given to all the relevant authorities to ensure transparency. Each participant was given a letter of information (Appendix A) as well as a consent form (Appendix B) with the assurance that the names of each participant will not be used in any reports or publications resulting from this work. Each participant was assigned a pseudonym during analysis, to ensure non-maleficence. Non-maleficence was also ensured by keeping the interview recordings and transcripts on a password protected laptop to which only the researcher had access.

Justice was taken into consideration as there was no discrimination in terms of age, gender or ethnicity in participant recruitment for this study ensuring fairness. All MDH staff who met the inclusion criteria had a fair and equal chance to participate if they wished.

All the data collected in this study will be stored in a safe facility at the Durban University of Technology, Department of chiropractic and Somatology for a period of five years and thereafter will be destroyed by shredding.

Beneficence was ensured by allowing the results of this study to be made available to WSC and the MDH in hopes to provide recommendations that could further aid implementation of the WSC model in Botswana.

CHAPTER FOUR: RESULTS

4.1 Introduction

This chapter presents the thematic analysis of the data that were collected during the interviews.

4.2 Sample size and demographic characteristics

Over a period of two weeks, twenty interviews were conducted that ranged from approximately ten to thirty minutes. Seven females and thirteen males participated in the study. The length of service of the HCPs at the MDH was divided into four groups, those that had been in service for less than one year (n=4), less than five years (n=6), less than ten years (n=6) and greater than ten years (n=4). The health care professions in the study were from diverse backgrounds including medical officers (n= 4), orthopaedic surgeon (n=1) a clinical psychologist (n=1), nurses (n=4), an orthoptist (n=1), a radiographer (n=1), hospital administrators (n=2), a physiotherapist (n=1), pharmacist (n=1), dentist (n=1), dental assistant (n=1) and health auxiliaries (n=2).

4.3 Thematic analysis of the data

The process of thematic analysis allowed the key aspects of the participant's stories to be presented and three overarching themes emerged from the data:

1. Knowledge of WSC and the management of spinal related disorders (SRDs).

2. The perceived role of WSC.
3. Challenges to integration of WSC and possible solutions.

Each theme contained various categories and sub categories that illuminated various ideas that were discussed in each interview. The themes and their categories will be presented below as well as in thematic tables (Appendix G).

In the presentation of the results and analysis the researcher considered using pseudonyms but did not feel entirely familiar with the cultural context and was unsure what pseudonyms would best describe the participants. Hence the researcher decided to refer to the HCPs in this study as 'Participant' followed by a number, for example Participant 7.

4.3.1 Theme One: Knowledge of WSC and the management of spinal related disorders.

This theme contained four categories: knowledge about WSC activities, knowledge of spinal related disorders, knowledge of the management of spinal related disorders and lastly the burden of spinal related disorders

4.3.1.1 Knowledge of WSC

All the HCPs interviewed had heard of the WSC before. Most HCPs knew that WSC also had a clinic in Shoshong, though few mentioned that WSC also had clinics in other parts of the world. HCPs who had interacted with WSC either professionally or as a patient consulting the clinic described what they had seen and experienced about WSC. They included details of WSC using manual therapies to treat SRDs, community projects conducted by WSC, exercise programs as well as educational programs

or workshops hosted by the WSC. One administrator spoke of the various educational drives that WSC provided:

...but I know they are training people Like, I think there will be a training – there was a training last Thursday- you know, they had. They showed people how to examine. Then we also had exposure to international people coming here for conferences...There, apart from the spine people, our orthopedic surgeons – this is an orthopedic centre – our orthopedic surgeons also get exposed to these high class people that are doing a lot of spine ehh. operations and things like that so it's a lot of learning ehh upscaling of skills and things involved there. Plus, the community, they have gone to schools, they have encouraged – I mean, they have shown teachers what they should look for in students and so it's very, very good. – Participant 1

One nurse who was also a patient of the WSC said:

Akere if you, if you are a client they do give some exercise as part of the treatment.

- Participant 6

A family physician who had referred patients to WSC described his understanding of WSC based on his interaction with them:

. about the chiropractors because they are.... with regards to what I have, you know encountered in primary care, you know musculoskeletal pains and such kinds of thing they can be highly at help. - Participant 3

Other health professionals felt that their understanding of WSC was only superficial or even inadequate, as a number of participants stated they would not be sure when to refer to WSC. Some mentioned that they did not know the scope of practice or the daily operations of WSC.

One participant who had had limited interaction with WSC put it this way:

The problem is we don't know much about.... the department. Or the services that are provided. If you were to ask me like, 'what services are they providing?'... (shrug) I wouldn't know much. I wouldn't know much. I'd be just talking of no... let them teach us how to...take care of ourselves. – Participant 11

Other participants considered WSC as the experts of all things related to SRDs, though were somehow not clear on what exactly WSC did:

What I know is, mostly what I know is eh, trying to relieve whatever pain that is related to any musculoskeletal issues. That is what I know. Correction of deformities and things like that. That is what I know... their major role is – Participant 7

Regarding the scope of practice of WSC, a physician mentioned a general lack of understanding when the care that WSC has to offer would be indicated:

No, I don't think it's out there yet. Because we had requested indications, like for referral. What they, they...would usually like to see. What they deal with. But I haven't seen it yet. So most of us wouldn't know who they would see, how they would help them. –Participant 18

Or with regard to referral, another medical officer said:

If I was more informed about what exactly what they do, what their specialty entails, so that when I spot their client somewhere in the wrong environment I can get it to them. You see what I mean? I don't know much about them. - Participant 7

Furthermore, there seemed to be a blurring of professional boundaries regarding what various manual therapies do for musculoskeletal disorders. An orthoptist mentioned that:

Not knowing what other activities, they do besides what I have seen them do here in the Mahalapye hospital I don't know what they do. Because yes, there are thin lines in between. We are almost in the same rehabilitation side. So there are those confusions there. –Participant 6

The HCPs also seemed to be unclear about how long WSC was planning to remain in the MDH and in what capacity the WSC is existing in the MDH. One administrator described her uncertainty as follows:

So, I don't know who...whether they are private sector...or they are part of the main hospital setup? But if you are going to- like now, if I want to

go there I will not know whether to go through somebody else or go straight to them.

- Participant 11

Another participant also mentioned his uncertainty about the longevity of the WSC program but he also knew the WSC had a plan for continuation of the program:

Don't know how long they will stay as World Spine care, but I know they are training people to take over the clinic. – Participant 1

Other participants had never heard of the WSC until the week before the researcher arrived at the MDH when the WSC had given a presentation about their services. One participant said:

Yeah because, I didn't know much about WSC. After what they told us, last week.... what they sensitized last week about their services and others...now I think I have a knowledge about WSC. Because we didn't know, we were just clueless most of us. Yes. - Participant 17

4.3.1.2 General Knowledge about spinal related disorders

While speaking about the WSC, the participants often referred to SRDs and their management. What HCPs said revealed some of the ideas that HCPs have about the causes of SRDs and provides a context for their understanding of WSC and its role:

I would say Africans, are not really well educated about spine care, how to care for their spines, you know. The type of exercise they do, maybe the type of job they do, somebody will just lift something heavy without caring for the spine. –Participant 10

...there are so many things that we don't understand. well actually we understand them but we ignore them. –Participant 12

It also seems that SRDs have been somewhat overlooked or not given as much attention as other conditions until perhaps an emergency arises. A health care auxiliary described her experience in the following way:

I have heard about it but it's not something which clicks my mind to say, 'It's so serious or whatever. But eh the time my family member got sick it's when it opened my mind. Because we have been going to so many hospitals you know, it's when you open up your mind. Otherwise before that it was not much into me. – Participant 15

Some participants described SRDs as something to be prevented as opposed to being treated. An administrator asserted the need to try avoid waiting for SRDs to develop:

Even the wellness. Because when you talk of spine care, akere you are not saying people.... people should come to you when you are sick?

People should be able to take care of their backs because at the end of the day... it plays a very pivotal role. Once you are down with that low back ache, you are doomed. – Participant 11

This shows that some HCPs perceived a need for better care of SRDs and hence an appreciation for the work that WSC is seeking to do within their context.

4.3.1.3 Management of SRDs

As the HCPs described what they knew of WSC, many stated that they felt they did not have enough knowledge of SRDs to adequately manage them. Participants spoke about SRDs ranging from spinal cord trauma to backache but regardless of severity HCPs felt ill equipped to deal with these SRDs:

A lot of ignorance even in the medical fraternity exists. Uh. not just amongst uh ... physicians, even amongst those who, you know, have to go to the accident scenes, the paramedics. You will be surprised, many of them don't know what they ought to do, you know, to either prevent or minimize the effects of spinal cord trauma. – Participant 20

And,

Honest truth is ...I don't think as health providers, I don't think many of us know as much as we need to know about lower back pain. Because you find that for most of the time you don't really pay attention to the first two letters of lower back – it's just pain. And you just prescribe analgesia

and go. Which is not really the proper management for lower back pain, you know? So I don't think we know as much as we need to about lower back pain. - Participant 19

One surgical orderly described how, after attending a presentation by WSC saw how his perspective on management of SRDs changed:

I'd say these are the first people who sees the patients, so to me they can diagnose the problems that the patients are presenting with... eh, they can eh, identify those patients. They do eh these yoga things and what-what. eh they will be meditating with the patients. They do the massages.....I knew that if you complained of the spine the first thing that I thought of was surgery but I just learned that now there are some red flags and the x-ray are not important as long as they are not going to change anything from your management. You don't have to request a lot of the x-ray.... But from the clinical point of view we usually request for the x-rays from each and every other patient complaining of this – go and do the x-ray. But when you sit down and look, that x-ray is not even going to change how you thought of your management. I think from that I could pick that a lot of things have not been going well. We have been spending a lot of money on the cases where we see that we could have done with less resources and less costs. –Participant 4

Hence it appears that the presence of WSC in the hospital is challenging the current status quo of SRD management among HCPs at the MDH.

4.3.1.2 Burden of SRDs

From the interview responses of the HCPs it became apparent that SRDs affected patients as well as the HCPs themselves. Some HCPs of the MDH consider WSC as a resource made available to them for the management of their own SRDs as they relate to the day to day work they do in the hospital. A nurse described how the nature of her work predisposed her to SRDs and how she hoped WSC would help with this:

How to lift, akere. Akere, we work in a hospital setting where people will be lifting boxes, patients collapsing and what have you. They should be able to train people on those parts of...because I talk of wellness...wellness you are talking prevention, isn't it?

.. a lot of people here are suffering from back problems. – Participant 11

A common attitude was displayed among the HCPs that SRDs are considered a norm somewhat amongst *Batswana*, because of the rural lifestyle that many have in the country. One HCP said:

We do get a lot of uhmm lower back pains. That's what we often see in our consultations, especially in the elderly because of all the manual labour. You know Batswana tend to use a lot of manual labour to get by. So lower back pain is quite a significant problem in our population. – Participant 19

Furthermore, one nurse said that WSC was helping to mitigate the effects of SRDs:

And it's good for us Batswana because we are always (higher pitched voice), you don't have time... Sometimes we are...we neglect ourselves akere, sometimes we will have something. Maybe like I said I fell, maybe when I am having a pain that pain back, I'll say, no its because I once fell. But when they are here and they have opened up, we are so.... free Eh..i think that will be uh- lessen the burden of coming to the hospital like what I am saying. I can say I am no more a... a patient who is trouble to orthopedic surgeon and whatever.

– Participant 16

The burden of SRDs is further compounded by the lack of emphasis of spinal health or the prevention of SRDs:

Spinal pain is very common, especially to us Africans and us Batswana. So that's the most complaint that people come with alone. They try to minimize, maybe to reduce the effects of the lower back pain that we experience here as the Batswana. By nature, our duty as Batswana, we do... I say, more laborious work. We put more strain on our backs, we don't know how to carry our spine so I think that's the entry point as to how can we prevent the lower back pain and moving forward what can we do if we experience post symptoms of the lower back pain. – Participant 4

Hence it appears that SRDs are not only considered to be common, but somehow also 'normal' or expected given the context of life for some in Botswana. Furthermore, the HCPs portrayed welcoming attitudes towards WSC to help mitigate the effects of the burden of SRDs.

4.3.2 Theme two: The perceived role of WSC

This theme consisted of three categories. These were the professional interactions that HCPs had with WSC, the interactions that HCPs had with WSC as patients as well as the impact of WSC on the health care system.

4.3.2.1 Professional interaction with the WSC

The HCPs interviewed interacted with the WSC in various capacities. There were mixed attitudes towards the WSC as some participants felt WSC was not doing enough to promote their services in the hospital while others felt WSC was doing relevant work in the hospital based on their personal interactions. One physician stated that he had never had any personal interaction with WSC but had a desire to:

It's just that I think we need to find time we meet and you know and you know sit down and iron out some issues and how we should really, you know, kind of interact. – Participant 8

One administrator considered the limited inter-professional collaboration to be as a result of WSC 'operating in isolation':

...they should be able to occasionally invite people to go there and see what is it that they do. So that is why they should also... keep in touch. They should continuously inform the incoming officers that there is this department. You guys are functioning in isolation according to me...

According to me being me in this hospital you are functioning in isolation ...could have informed myself. But how? Actually being part of management I could have informed myself when I went there, but then somebody who is not in management may not even go there. How do they know about WSC? Why are they not coming forth? – Participant 11

Others had attended workshops and conferences hosted by the WSC and found them to be informative:

Yeah I did attend the WSC conference in Cresta.... Yes, last year. I learned a lot of things there. Of course from the clinical perspective. – Participant 4

When it came to professional interaction, HCPs that interacted with WSC such as physiotherapists, radiographers and medical officers had a positive perception of how the WSC clinicians treated patients. One physiotherapist remarked:

I feel quite satisfied. Because I talk to the uh. health professionals of the WSC and uh and some of the patients I discuss with them. I think they are here in Shoshong and Mahalapye. And even in Shoshong I discuss with them. Actually, in Shoshong they are doing quite a remarkable job. – Participant 2

A radiographer displayed a positive attitude towards WSC based on his interaction with WSC clinicians:

They once sent a patient for x-ray of the shoulder. and then I did the x-ray. I did a couple of views and they. they came by to find out.... I explained to them. They didn't understand some of the things. so. that showed to me that they came... and then they – you know if you don't understand something you make the effort to reach out to another person and you reach out to somebody. You learn and they learn. So I think they are quite open to outside views. Yeah that's what I learnt from that interaction. Yes. And uhm...but they... they are nice. They had the courtesy to come by and introduce their new members of staff. They were not in a hurry I showed them around the department... I think they are quite open. - Participant 7

4.3.2.2 Experiences with WSC as patients

Some HCPs were also patients of the WSC and described how their interactions with them as patients influenced how they perceived WSC. It seems that had it not been for the back pain that one nurse was suffering from, she would have not interacted with the WSC:

Mina I heard about it when I was suffering- I had ah...I used to have a pain on the... on the lower back. So the doctors used to give me analgesics but with no improvement so I heard about those people, the spine care program. So I referred myself to... to them. When I got there they said, 'no, go and see the doctor then you should come with an x-ray.' So I went back to OPD (outpatient department). I was seen and I went back to them. So they reviewed my x-ray but there was nothing much abnormal about my x-ray. So they recommended exercises...eh...so the first time it was very painful. But after that in the evening you will sleep nicely without any pain. The second visit I went

there again. Same problem again. It was painful, the procedure was very painful. They use their elbows on your back like this and they had some instruments like a... it's a metal rod. Curved. So they are using it like this (motioned with her hand in a rolling motion) ... for the... it's painful. But the effect is very good... after, after that exercise. So I went there about maybe six times. So after that I, uhh I discharged myself and the pain there.. I can't bear. Last year they phoned me, 'Ma where are you?'. 'Hey mina I am fine now.' 'No please come, we have to come and discharge you.' 'ehh...ok I'll come'; I haven't been there (laughter). – Participant 14

It is also interesting to note that she referred herself to the WSC and discharged herself from care. This suggests a disparity in expectations on her part as a patient of the WSC and the WSC treatment schedule.

Some of the participants identified with being patients themselves of the WSC and had negative perceptions of their treatment experience. A common thread among these participants was the unexpected nature of the treatment experience:

Because when I went there my expectation is to get better. But when I don't get better and no one is telling me as to why I am getting the symptoms which are worsening. – Participant 4

In spite of the initial discomfort experienced one HCP noted how her condition improved after returning for treatment:

I was scared because I knew I was going to experience that pain. But at the end of the tunnel, I am going to be better. So that's what happened to me. But since then I am much, much better. - Participant 16

Though these HCPs found the treatment to be initially painful, they did still find improvement in their spinal complaints. However, two of the participants referred to discharging themselves from care as opposed to being discharged by the WSC clinicians. One participant described how three of his friends had different experiences as patients at WSC:

The first two they went there as walk-ins after hearing of the spine care so they were complaining of the back ache so they have since discharged themselves from the therapy on the basis that it is very painful. So it means like the first two, three days they went there they came there with the back being more painful than when they went there. So they decided not to go there. So there is this other one – he went there, he continued with the therapy and I still think even now he is doing the therapy. Yes, at first he was complaining to say it was painful at times also, but now I think he is enjoying. – Participant 4

This suggests a difference in the expectations that these patients of the WSC had with the actual care they received and points out how differently patients' experience care with the WSC.

4.3.2.3 Role of WSC in the Health care system

This category explored the role that HCPs perceived the WSC to be playing in the health care system. A number of HCPs felt that WSC played a role in the greater health care system to fill in gaps that had not been addressed. As one medical officer said:

It's a very important role they are playing. There are things that we hadn't done – you know it's much more because of you're probably sensitizing the community – that's where you start from. So it's much more of the promotive and maybe also preventative aspect there in the community.
– Participant 1

HCPs considered the role that WSC played differently according to their own role within the health care system. For one radiographer WSC was complementary:

I think its complementary to uh other departments which deal with any issues that have to do with uh spinal eh problems and probably their management. So, it is quite – I think its quite important to...to highlight the need for uh their techniques within the Botswana system of uh- especially when you are looking at ...uh spinal rehabilitation ah I think it's a very good option other than physiotherapy. – Participant 7

Further insight into this role was made clearer by one of the physiotherapists who felt that while the methods of treatment were not the same, WSC was reducing the workload for the physiotherapists at the MDH:

Actually they assist for us, so that we can share our workload with them.... So I think WSC is doing uh...uh. its beneficial you know. Uh. it has been supporting our patients, so I uh don't find any problem with them. – Participant 2

Another HCP perceived the benefit of WSC and suggested that WSC expands to other parts of the country:

I said they play a big role, I mean we see changes a lot of eh- especially access to health care and things like that. There are a lot of people who some uh, who need chiropractic care and facilities. So we think they have a big role to play. –Participant 8

Several HCPs perceived WSC as an effective option for management of SRDs within the hospital as well as key specialists for management of SRDs. One nurse described it this way:

They have to tell the doctors to identify the patients which are...which they can benefit from them that side. its in the doctors they are not- they are far-fetched with the information from the spine care. That's most of the doctors. Mostly they refer patients for physio even if is a back problem. –Participant 14

A health auxiliary who herself was a patient of the WSC, described the role she felt WSC played as a preferred alternative option for treatment:

There's some who are scared to go for therapy... and WSC is the best place to go. Because it's not as, as... as scary as it sounds when you are told, go to physio or occupational.... I think it's for everyone, it's for you it's for me it's for...the people that we provide service to. Yeah. Its eh... it covers almost all of us. That's my perspective. –Participant 12

4.3.3 Theme three: Challenges to integration of WSC and possible solutions

The last theme was made up of three categories; referral, the organizational culture of the MDH and lastly recommendations that HCPs made for expansion and improvement of the WSC.

4.3.3.1 Referral

Referral was a common thread in a number of the interviews. For the most part most HCPs said that they were willing to refer patients to the WSC. Some of the descriptions that emerged about their referral experiences with WSC included WSC being a *better way of managing a condition*, but pointed out that currently the referral pathway to WSC is unclear. Some participants said:

I will refer the patient there. But I don't know...like detailed, specific instances that are related with the spine. Ahh but if I think that it's something general then I will refer the patient to them. –Participant 13

So to me there was still no proper channels of referral. Maybe if I see the patients here in the orthopedic and they could benefit from the WSC, that

standard of referral it is still not yet established. I think that is why maybe you are losing a lot of patients in between.... To me, we need to have some standards as to when and how are we going to do those referrals because sometimes when you knock there, there is no one. Sometimes they do come here and they look for someone but there is no one to speak to. So we, we need a system of referral. –Participant 4

The participants expressed a lack of clarity about their understanding of the role WSC played with management of patients in the hospital. This was a matter of concern to participants as one participant felt that some patients were not being adequately cared for:

I think that is why maybe you are losing a lot of patients in between. Sometimes patients they do present themselves to the WSC and there is a need to refer those patients to the new medical officers or the surgeons but we still doing it haphazardly. – Participant 4

One participant blamed this on her own lack of experience in general as a new doctor at the hospital. Referral could also be affected by the inter-referral culture within the MDH itself. Regarding health professions that generally deal conservatively with musculoskeletal conditions such as physiotherapy and occupational therapy, there seems to be some lack of clarity as to when and how to refer, as alluded to by Participant 6:

You know there is a big problem of knowing some of the professions which were not in the mainstream medical treatment. So you tend to find that even the... referring people... people who see patients first the

surgeons - if they are not aware of who is around and what services they provide they will not [refer]. Some even confuse [us] because they don't have the in depth of really what some other professions are doing...for example there is big confusion between prosthetics and orthotics, occupational therapy, physiotherapy. You find somebody just writes [an unclear referral letter] ...he knows something is there but he doesn't know what, how they really...what their parameters are.

Those HCPs that did refer to WSC, had a favourable perception both on an inter-professional basis as well as for their patients and few participants noted that they too had received referrals from WSC. However, Participant 8 noted that more inter-professional relations are needed:

"Well sometimes I call them, they write letters to us, referral letters you know but I think somehow we need to meet and see how we can work together".

The attitudes of some of the HCPs is shown by the patterns of referral between the HCPs of WSC. The referral, as Participant 6 put it, '*really depends on individuals*' and is reliant on the relationship that each individual HCP has with WSC based on their knowledge of and experience with the WSC.

4.3.3.2 Organizational culture

When considering the impact of the organizational culture of the MDH, a number of participants cited constraints that seemed to hinder their

interaction with other health care professionals in general. These included constraints of manpower as well as a tendency to operate in silos:

Because of so many patients coming in...you can't pause. You can't even pause to talk to each other, you know. –Participant 7

Another participant said:

Perhaps our constraint, is a lack of, a shortage of space and a shortage of staff. If we had more perhaps more people perhaps it could have been rolled out better. –Participant 1

These constraints of time are further compounded by the high staff turnover within the hospital as a number of professionals serve a few months' tenure in the hospital and are then transferred to other hospitals. One participant noted:

Right now the rehabilitation team includes physiotherapists, orthotics, occupational therapists but occupational therapists right now we don't have any. They are all transferred. So they are not there.

-Participant 2

When combined, all these factors contribute to limited or even strained inter-professional communication amongst the professionals and departments themselves:

I have a high volume of patients so for me it's difficult to communicate to others very frequently. –Participant 9

Similarly, some departments seem to have little inter-professional interaction with the rest of the hospital. One participant, a dental assistant made the point when she said:

Our dental department, most of the time, we are the last people to know about anything that is new in the hospital because from communications that occur in the hospital, you know we are not involved. Because, well, we deal with the head. - Participant 12

The researcher felt that because of the high turnover of health professionals in the hospital and the general shortage of manpower many of the HCPs at the MDH did not have many opportunities to forge relationships with other HCPs. Several of the participants were new to the hospital and seemed to expect to not be at the MDH more than a few months.

4.3.3.3 Expansion and Improvement

Throughout the interviews, it seems that from the perceptions that HCPs had of WSC came recommendations of how WSC can expand and

improve. There was consensus among participants that the WSC should expand their services to other centres within the country from busier hospitals in larger cities to smaller, remote villages where there is limited access to care. Though the HCPs had varying levels of interaction with WSC, the general impression was that HCPs consider WSC's service to be relevant and needed in their local context and beyond. As a senior nurse put it:

I think they have got some preliminary results that shows that indeed this thing is needed in Botswana and we have seen how a lot of people they go untreated for a lot of years up until they die. But its time now its spread to other areas where people are still suffering.

- Participant 4

Participants referred to the fact that for this to happen WSC would need to increase staffing, gain greater government support and integrate more with local health care professions. Two participants made specific suggestions on how this can be achieved:

I think maybe if they can train even some nurses there. Nurses are the core of the health system. So for your program to kick-start from the ground up you need the necessary drivers. Because these are the people who are always there seated with patients. So these are the nurses who can bring the masses of the patients in a blink of eye.

Participant 4

And,

Not only health based care as well as community based care, because we are moving now in terms of primary care to be more community based than uh... eh institutional based.

Participant 3

In terms of improvement, HCPs identified some concerns including the turnover rate of WSC clinicians. This has also led to uncertainty about the longevity of the program and limited understanding of the aims of the WSC within the country:

I think the issue of volunteers coming in and going, I think it's going to disturb the program in a way moving forward. Because as Motswana we normally establish that rapport with the people we first see. We need continuity. (Long pause). Because as it stands it's like you are piloting – you want to see whether this thing will run or what. Eventually you won't have that faith and belief in them because we need to see you being established and being yeah, like, well established and should be having that faith in you. Because you start to ask yourself, what if volunteers are not going to come? Already you have started people with the therapy so what is going to happen to them?

-Participant 4

Most participants gave suggestions on practical things that WSC could do to improve and expand their reach. Some of these were greater use

of media to advertise their services, continuous education of health care professionals within the hospital about WSC, as well as more education of patients regarding the nature of the care that they may receive.

4.4 Conclusion

The categories presented above depict the responses that the HCPs gave during the interviews. It was found that several HCPs had a general idea that WSC helped people that suffer from 'back problems' though they displayed various levels of knowledge of WSC activities. Furthermore, some HCPs described their experiences with WSC on an inter-professional basis and others from their experiences with WSC as being patients themselves. Many HCPs noted how their busy work schedules limited the degree of interaction they have had with WSC. Lastly, the HCPs emphasized how WSC needs to expand to other regions of the country.

CHAPTER FIVE: DISCUSSION

5.1 Introduction

The chapter will present the discussion of the three themes that emerged from the data and relate these to relevant literature

5.2 Theme One: Knowledge of World Spine Care and the management of spinal related disorders at the MDH

In this study all the HCPs knew about WSC to varying degrees. Those who had attended workshops, referred patients or had been to the WSC for treatment were more informed about WSC and had more positive perceptions. This is consistent with Bergh and Theron's (1999) model of perception that notes that experience and knowledge affect perception. In international studies done in multidisciplinary settings it has been reported that many HCPs have demonstrated limited knowledge of complementary medicine because of limited interaction (Christiana et al., 2016; Topuz et al., 2015). Similarly, HCPs at the Kimberley hospital in South Africa noted having seldom interacted with the chiropractor working in their hospital and hence did not have much knowledge about the services the chiropractor offered (Meyer, 2009: 60). It is important to note that while WSC has had mostly chiropractors as clinicians, it is not a chiropractic organization (Haldeman et al., 2015). As such it is possible that it is perceived as complementary alternative medicine though this did not emerge strongly from the interviews.

In discussing the WSC, many of the HCPs highlighted the shortcomings of the management of SRDs in their setting and described WSC as 'filling in a gap'. The HCPs noted that the current protocols for SRD management in the MDH were not meeting the needs of their patients. These sentiments concur with those of Abou-Raya and Abou- Raya (2010: 1125) who lament the lack of emphasis on musculoskeletal education at undergraduate and postgraduate medical schools as well as inadequate musculoskeletal diagnostic ability in clinical settings. Akkeson et al, (2003:681) stated that many medical personnel are not adequately prepared to deal with the daily burden of musculoskeletal conditions of the patients they treat. Some general practitioners perceive management of low back pain to be a source of frustration and have described feelings of being inadequately equipped to deal with many low back complaints (Breen et al., 2007:25). A similar attitude was portrayed by some of the HCPs in this study noting that the current approaches to SRD management for patients in the MDH was limited.

In some district hospitals in Botswana, it was found that the local health care workers expressed frustration about their experiences of treating pain, especially among the elderly as result of a paucity of effective diagnostic procedures and treatment protocols between the practitioner and the patient with regard to pain management. This presents challenges in using contemporary modern medicine to diagnose and treat pain in the Botswana cultural context (Monteiro and Tlhabano, 2015:5). In this present study, several of the HCPs described how SRDs were given little emphasis in their patient management experiences. Considering this, the evidence-based approach of WSC for the management of SRDs was perceived as beneficial by some of the HCPs in this present study. Hence it appears that the presence of WSC in the

hospital is challenging the current status quo of SRD management among HCPs at the MDH and thus many of the HCPs appeared to have welcoming attitudes towards the WSC.

5.3 Theme Two: The perceived role of WSC

The HCPs had various ideas about the WSC and about the roles that WSC plays in the health care system. The perceptions of the HCPs were influenced by the personal experiences that the HCPs had with WSC as well as the professional identities of the HCPs. This is consistent with the finding that health care professionals who had had prior exposure to chiropractic, homeopathy and other allied health professionals had more positive attitudes (Mbutho et al., 2012). Furthermore, attitudes can be displayed by behaviour (Robbins and Judge, 2014:16) and hence attitudes were displayed by the way the HCPs behaved towards the WSC. In this study some HCPs interacted with WSC professionally while others personally as patients. Most HCPs who had had interactions with WSC described their experiences on an inter- professional basis. They described the system of patient care as being efficient though 'different', the WSC workshops and conferences as informative and interactions with WSC clinicians as pleasant indicating a positive perception. Others who had not interacted with WSC expressed a desire to interact with WSC clinicians and blamed the lack of interaction on time constraints and heavy workloads. In contrast some HCPs felt that the WSC was operating in isolation and were not forthcoming as these HCPs knew about WSC but did not know enough to interact with them. Hence a variety of attitudes emerge from the variety of experiences that the HCPs

have had with the WSC which concurs with the relationship between experience and attitudes (Lewicki, 2010:11).

The extent of inter- professional interaction is influenced by the willingness of HCPs to participate and collaborate and may be influenced by various factors inherent to that HCP and his/her experience. Furthermore, HCPs who had attended WSC presentations and workshops were more receptive to WSC as their understanding of what WSC did increased their openness to interactions with WSC. This concurs with the model of perception described by Bergh and Theron (1999:128) where personal characteristics of the perceiver influence the resultant perceptions. Factors found to promote inter-professional collaboration include previous experiences with collaborative practice, personal attributes such as humility, openness to learning, introspection and reflection as well as willingness to learn about other health care professions (Herbert et al., 2007:1324). The HCPs in this study were all open to engaging with the WSC.

Some HCPs reported being patients of the WSC. These HCPs perceived WSC as a new facility made available to them for the alleviation of their own SRDs. People who suffer from low back pain have shown a willingness to receive care from new or adjunct sources other than medication and surgery (Allegretti et al., 2010:679). These HCPs positively perceived the WSC as they personally benefitted from care.

Some health care professions such as nursing and midwifery have been documented to have a high burden of musculoskeletal complaints, especially when taking factors such as patient handling, long shift hours, high workload and low opinion or control over the work they do into consideration (Long et al., 2012:464). Health care professionals in Sub-

Saharan countries experience several biological and non-biological occupational health hazards. Up to 10% of the complaints reported by health care professionals were musculoskeletal complaints in nature (Ndejjo et al., 2015). A UK based study found that nurses sought treatment from general practitioners, physiotherapists and chiropractors for their low back pain (Branney and Newell, 2009:133). In this present study many of the HCPs, particularly females, reported having musculoskeletal complaints such as neck and back pain that had led them to seek care at the WSC. This is consistent with a finding that working females are at a greater risk of musculoskeletal disorders (Starzdins and Bammer, 2004). Those HCPs who sought care from WSC perceived the WSC to be beneficial for the alleviation of SRDs.

Some HCPs had negative experiences of their treatment from WSC reporting the treatment to be painful and unfamiliar and some had discharged themselves from care. This could be a result of a lack of knowledge about the nature of care provided by chiropractors. It is possible that this message may have not been clearly communicated to patients due to language barriers. It has been reported that health care workers in Durban, South Africa have also expressed that they felt touch therapy was an invasion of their privacy and found it to be ineffective (Mbutho et al., 2012:69).

Most HCPs in this study, regardless of their level of knowledge of WSC expressed an appreciation of the care that WSC is providing to the patients in Mahalapye and Shoshong. Most of the patients who the WSC has seen to date are mostly from low socio-economic backgrounds (Armstrong, 2017). The inverse care law describes how those in the greatest need of health care are the least likely to receive it because of the effect that market pressures have on health care (Hart, 1971:405

cited by Watt 2002: 252). This is compounded by the trend of health care professionals in lower income countries migrating to higher income countries for better work opportunities and improved living conditions. The net effect is health care seekers who are most vulnerable to disease have the least access to essential health care (Dovlo, 2005:0376). Watt (2002) further explores this inverse care law, noting that due to resource constraints and the low market share of people living in underserved communities, epidemiological studies and clinical research does not often capture the data from these communities. Hence when interventions that are crafted from such clinical research emerge, they fail to appreciate the nuances of factors such as “comorbidities of socioeconomic deprivation” that ultimately have an impact on the health of people in underserved communities. Watt (2002:252) concludes that primary care in underserved communities is significantly different, if not more difficult. The mission statement of WSC is “To improve lives in underserved communities through sustainable, integrated, evidence-based, spine care” (Haldeman et al., 2015:2304). This is in direct contrast to the inverse care law whereby health care is currently being provided in these resource constrained communities to provide relevant, evidence-based spine care. The presence of WSC clinicians, who had been volunteers, providing treatment in this rural context led a number of the HCPs to perceive the WSC as a relevant and useful resource in their community.

The participants in this study reported that there were shortcomings in the effective management of patients with SRDs in the MDH. Some participants described how the status quo of care for spinal related disorders in various hospitals around the country was invasive and often

expensive. The result is the health care system struggling to relieve the burden of spinal disorders. Considering this, a few health care professionals thought that WSC was providing a solution to this problem and filling a gap in the local health care system. Some HCPs considered the WSC clinicians as complementary, serving patients that they themselves had struggled to serve effectively. As one manual therapist noted:

.... they give an alternative to the treatment of uh the spinal problems other than what I can provide, what physio, the mainstream rehabilitation sections do.

5.4 Theme three: Challenges to integration of WSC and possible solutions

The biggest challenge that HCPs identified about WSC was the lack of in depth knowledge about WSC particularly about the scope of practice of WSC and when to refer. This is a common finding among mainstream HCPs regarding their knowledge and perceptions of complementary and alternative models of health care (James and Bah, 2014, Mbutu et al., 2012, Shorofi and Arbon, 2010). It was found that the attitudes of nurses towards complementary alternative medicine was strongly associated with a positive attitude (Shorofi and Arbon, 2010:232) and similarly the attitudes of HCPs towards WSC was more positive with the more knowledge they had of WSC. One of the clearest demonstrations of the attitudes of the HCPs of the MDH towards the WSC was through referral.

Referral between HCPs is influenced by several factors including the perceived skill of the specialist being referred to and previous interactions that the health care professional has had with that specialist (Kinchin et al., 2004:249). In the case of the HCPs at the MDH, the participants of the study found that there was an unclear referral pathway to WSC. This could be because of limited interactions that the HCPs have had with WSC professionally. Several HCPs stated that while they had heard about WSC they did not know enough about the WSC system to refer their patients to them. This is consistent with other studies (Greene et al., 2006; Meyer, 2009) which have found that physicians are willing to refer to chiropractors, however, very few will initiate a formal communication with a chiropractor because of a lack of knowledge and experience with chiropractic. This means that patients themselves would often have to directly contact the chiropractor which poses issues for continuity and quality of care. It was stated that this may occur as physicians do not have a protocol to refer to chiropractors and possibly some degree of inter-professional bias (Greene et al., 2006:2-8). It is unlikely that inter-professional bias was the case in this study as none of the HCPs were opposed or resistant to the inclusion of WSC. Most HCPs ended their interviews with recommendations for WSC to expand to other centres across the country especially in rural settings indicating their support for WSC.

Factors such as gender and age have not been found to be large determinants of inter-referral between professionals but length of time in practice has been associated with referral patterns (Pillay, 2006:87). The more that medical doctors know about chiropractors, the more likely they are to have a positive attitude towards them and the more likely they are to refer (Neff, 2016). This concurred with the findings of this study where

the HCPs who had been at the MDH for longer displayed a receptive and open attitude as they had referred patients to WSC and had received patients in turn from WSC. The HCPs who had served shorter periods at the MDH and had limited interaction had more uncertainty about WSC and when to refer.

The MDH, as with many hospitals in Botswana, is short staffed (Nkomazana et al., 2015). Several of the HCPs spoke of heavy workloads, long hours and limited opportunity to interact with other HCPs within the hospital. This influenced the perceptions that HCPs had of WSC as they may have had limited interaction with WSC because of their busy work days in the hospital and hence had limited knowledge of WSC. This leaves very little time for HCPs to meet WSC clinicians and understand what WSC has to offer in terms of health care at the MDH. This concurs with the study conducted at the Mahalapye health district that found many staff members often report being tired and over worked (Nkomazana et al., 2015). For those HCPs who were WSC patients, it could be that they perceived WSC as a facility available for them to receive care for their own SRDs and not from an inter-professional basis as this could add more weight to already strenuous schedules.

Some HCPs described a lack of inter- professional interaction amongst different departments within the MDH. Specialized HCPs such as dental technicians and surgical assistants described that they often had little interaction with other HCPs and noted that the chances of interaction with WSC clinicians was slim. This may have been because the occupation of these HCPs did not provide much need for interaction or referral with WSC. The challenge of inter-professional communication is not new as HCPs in other hospital settings have experienced barriers in

inter- professional communication such as a lack of clearly defined roles and inter- professional training (Supper et al., 2015).

In a study of health professionals in hospitals in Mahalapye and Ngamiland, Botswana, there was a limited correlation between the personal values of the health care professional and current organizational values of the hospital. Some of the personal values that the health professionals self-identified with included accountability, caring, respect and responsibility. However, it was found that none of these personal values were shared by the respective hospitals where they work translating to a general dissatisfaction among health professionals. It was noted that many health workers felt over-worked, micromanaged and under supported in their work environments with limited capacity to enforce their own personal value (Nkomazana et al., 2015). While a discussion of such values was not deeply explored in this study it is interesting to note how most HCPs expressed a desire for greater inter- professional interaction but felt their daily schedules did not make allowance for this.

A major idea that emerged from the interviews was that HCPs felt that WSC should expand throughout Botswana in both rural and urban settings. They felt that the WSC could assist in areas where there were few medical personnel. In recent years a growing number of health care professionals from African countries have migrated from their home countries and are living and working in higher income countries around the world leaving large deficits of care in their local communities, particularly in primary care (Moosa et al., 2014). The WSC targeted areas such as rural Botswana to establish a spine care clinic allowing underserved communities access to care they previously would not have had (Haldeman et al., 2015: 2304).

Other ideas for expansion and improvement that emerged from the HCPs included greater incorporation of the WSC into the hospital. One HCP particularly noted that nurses would be an integral part of this process. Nurses have been described as the cornerstone of health care settings and incorporating nurses (Shorofi and Arbon, 2016: 233) may prove to be a valuable resource in wider adoption and acceptance of the WSC model.

5.5 Conclusion

The HCPs of the MDH had varying levels of knowledge of the WSC depending on the nature of interactions they had had with WSC. Many HCPs felt that they did not know enough about WSC as to know when to refer while others knew of the WSC based on being a WSC patient themselves. The local constraints of low manpower, inadequate SRD management and a heavy burden of SRDs in the community contribute to HCPs perceiving WSC as welcome support in the hospital. Most HCPs had a positive attitude towards WSC, however limited knowledge about WSC and an unclear referral pathway were hindrances to greater inter-professional collaboration.

CHAPTER SIX: CONCLUSION

6.1 Conclusion

This study aimed to evaluate the knowledge, attitudes and perceptions of health care professionals (HCPs) at the MDH on World Spine Care WSC in the Central District of Botswana. Twenty semi-structured interviews were conducted with HCPs at the MDH in Botswana making use of an explorative descriptive qualitative design.

The results found that the HCPs had varying levels of knowledge of WSC depending on the amount of interaction with WSC. Several HCPs knew that WSC commonly dealt with spinal related disorders but many did not know enough about WSC to refer patients to them. Those who have a fair amount of knowledge of WSC had positive attitudes towards WSC based on their interactions as professionals or patients. The HCPs who had limited interactions with WSC had limited knowledge of the WSC and were unsure of the role or scope of practice of WSC. Some HCPs displayed a positive perception about the WSC describing the benefits of having WSC being in their hospital. Some HCPs who interacted with WSC on a professional basis noted that they had few interactions with WSC clinicians because of a high workload and general limitations to inter-professional communication between departments in the hospital.

Negative perceptions about WSC also emerged. Some HCPs felt that WSC was operating in isolation and needed to interact more with other HCPs to be effective in the hospital setting. They also felt that there was an unclear referral pathway between WSC and the other departments in the hospital. Those HCPs who had been patients of the WSC noted discomfort and uncertainty with some of the treatment they received.

Moreover, the HCPs expressed a desire to receive more information about the treatment protocols as well as scope of practice of WSC. It also emerged that those HCPs who were directly involved in primary care felt that WSC could help them improve how patients presenting with spinal related disorders are treated in the hospital.

The HCPs also made strong recommendations for WSC to set up clinics in various settings around the country as they noted that there was a general lack of spinal care within the country.

6.2 Limitations

Due to the time constraints of the HCPs with busy schedules, the researcher was unable to have sustained interactions with the HCPs in this study. Furthermore, the study was conducted in English, which is the official language of communication in the hospital. However, the researcher did find some hesitancy in the responses from some of the participants who may have been more comfortable in their vernacular languages.

6.3 Researcher reflections

The MDH is set in a rural community with much need of medical assistance. Though many of the health care professionals had busy schedules with many patients to see they were open to the researcher coming in and interviewing them. None of the HCPs who were approached refused to participate in the study.

Many participants were mildly hesitant when the researcher informed them that the interviews would be recorded. They did however, give consent when the researcher assured them that their identities would not be revealed in the study. Most of the participants seemed to measure their words initially, possibly because, the researcher assumes, they were not sure what they should or should not say and whether there would be implications.

Many of the participants spoke of having worked at several hospitals and other health care facilities around the country prior to them coming to the MDH. Hence, many of the HCPs working at the MDH are not actually from Mahalapye and may have their families in other parts of Botswana. Hence there is a high turnover rate of health care professionals in the hospital with some only spending a few months in the hospital before transferring. However, some departments did not seem to suffer as much from this phenomenon as the researcher observed some of the health care professionals enjoying meals together during lunch or socializing in their offices.

The WSC clinic in the MDH runs differently from the rest of the hospital, they have their own paperwork, they do their laundry and at the time when the researcher was at the MDH the WSC clinicians were all volunteers. Perhaps this fact, that the clinicians of the WSC are volunteers or at least work without pay, is the distinguishing factor of WSC. While striving to create a model that can be incorporated into a government run health care system, the WSC still is a non-governmental organization within the system. In ways such as this, the WSC clinics in the MDH are a part of the MDH but exist somewhat separately.

6.4 Recommendations

Following from the outcomes of this study, some recommendations have been made for the WSC as well as for future research.

6.4.1 Recommendations to WSC

WSC should consider fashioning a system of referral within the hospital that is clear. This could involve notifying all primary care responders, including nurses, of a protocol for who to refer to and when for patients with SRDs. The WSC could perhaps include a system or protocol of inclusion for efficient triage of patients with SRDs. This way, the WSC could include other HCPs in the hospital in the effective triage of SRDs. Moreover, because of the constant cycling of HCPs in the MDH, it would be beneficial for the WSC to continue having workshops and presentations within the hospital to ensure that new HCPs to the hospital are aware of their services and how to refer.

6.4.2 Recommendations for further research

The WSC project is continuing in Botswana and it is unclear how the inter-professional dynamics may change once *Motswana* clinicians take over operations of the WSC clinics. Similar studies could be conducted at other WSC sites around the world to determine if there were similarities in the outcomes of the study. Furthermore, an investigation of the perceptions of lay patients as well as governmental officials about the WSC would also be of benefit.

REFERENCES

Abou-Raya, A. and Abou-Raya, S. 2010. The inadequacies of musculoskeletal education. *Clinical rheumatology*, 29(10):1121-1126. Available: <https://link.springer.com/article/10.1007%2Fs10067-010-1527-y> (Accessed 12 October 2017).

Acemoglu, D., Johnson, S. and Robinson J. A. 2011. An African Success Story: Botswana. Available: <https://economics.mit.edu/files/284> (Accessed 17 May 2017).

Adebajo, A. and Gabriel S. E. 2010. Addressing musculoskeletal inequity in Africa. *American College of Rheumatology*, 62(11):439-441. Available: <http://dspace.biblioteca-innsz.org/bitstream/handle/123456789/6612/1899B.pdf?Sequence=1> (Accessed 17 May 2015).

Adebajo S. B., Bamgbala A. O. and Oyediran M. A. 2003. Attitudes of Health Care Providers to Persons Living with HIV/AIDS in Lagos State Source: *African Journal of Reproductive Health / La Revue Africaine de la Santé Reproductive*, 7(1):103-112 Available: <http://www.jstor.org/stable/3583350> (Accessed: 17 May 2017).

Adichie C. N. 2009. The danger of a single story. Available: https://www.ted.com/talks/chimamanda_adichie_the_danger_of_a_single_story (Accessed 22 April 2017).

Afrobarometer. 2017. Available: <http://www.afrobarometer.org/about> (Accessed 16 April 2017).

Åkesson K., Dreinhöfer K.E. and Woolf A.E. 2003. Improved education in musculoskeletal conditions is necessary for all doctors Bulletin of the World Health Organization, 81(9): 677-683 Available: <http://www.who.int/bulletin/volumes/81/9/Akesson20903.pdf> (Accessed 6 July 2017).

Allegretti, A., Borkan, J., Reis, S. and Griffiths, F., 2010. Paired interviews of shared experiences around chronic low back pain: classic mismatch between patients and their doctors. *Family practice*, 27(6):676-683. Available: <https://academic.oup.com/fampra/article/27/6/676/497014> (Accessed 9 March 2018).

Andrews N. 2009. Foreign aid and development in Africa: What the literature says and what the reality is. *Journal of African Studies and Development*, 1(1):8. Available: <http://www.academicjournals.org/journal/JASD/article-full-text-pdf/9F397B48420> (Accessed 7 November 2017).

Arie's M. J. H., Joosten H. and Wegdam H. H. J. and van der Geest S. 2007. Fracture treatment by bonesetters in central Ghana: patients explain their choices and experiences *Tropical Medicine and*

International Health, 12(4):564–574 doi:10.1111/j.1365-3156.2007.01822.x (Accessed 27 April 2017).

Armstrong C. 2017. A profile of patients presenting with spinal pain at Mahalapye and Shoshong World Spine Care clinics in Botswana. MTech. Durban University of Technology.

Awuah P. 2007. How to educate leaders? Liberal arts. Available:https://www.ted.com/talks/patrick_auuah_on_educating_leaders. (Accessed 17 April 2017).

Barr, J. & Dowding, L. 2012, *Leadership in health care*, 2nd ed. Los Angeles. Sage Publications.

Barr, J. & Dowding, L. 2016, *Leadership in health care*, 3rd ed. London. Sage Publications.

Bergh Z. C, Theron A. L, Albertyn A., Badenhorst F., Geldonhuys D., Ungerer L., Gilliers F. and de Koker T. 1999. *Psychology in the worker*. Johannesburg. Thomson Publishing.

Bloom K. and Poplak R. 2016. *Continental Shift: a journey into Africa's changing fortunes*. Johannesburg. Jonathan Ball Publishers.

Botswana Info directory 2016. Central District. Available:
<http://www.botswana-info.com/country/province/17/central-district>
(Accessed 9 March 2018).

Brady, O.D., Nordin, M., Hondras, M., Outerbridge, G., Kopansky-Giles, D., Côté, P., da Silva, S., Ford, T., Eberspaecher, S., Acaroglu, E., Mmopelwa, T. and Hurwitz, E. L., Haldeman, S. 2016. Global Forum: Spine Research and Training in Underserved, Low and Middle-Income, Culturally Unique Communities: The World Spine Care Charity Research Program's Challenges and Facilitators. *The Journal of Bone and Joint Surgery*, 98(24):110.(1-9) Available:
<http://dx.doi.org/10.2106/JBJS.16.00723>. (Accessed 31 October 2017).

Branney, J. and Newell, D. 2009. Back pain and associated healthcare seeking behaviour in nurses: A survey. *Clinical chiropractic*, 12(4):130-143. Available:
https://www.researchgate.net/publication/236168203_Back_pain_and_associated_healthcare_seeking_behaviour_in_nurses_A_survey
(Accessed 13 August 2017)

Breen, A., Austin, H., Campion-Smith, C., Carr, E. and Mann, E., 2007. "You feel so hopeless": a qualitative study of GP management of acute back pain. *European Journal of Pain*, 11(1):21-21.

Available:

<https://www.google.com/search?client=safari&rls=en&q=%E2%80%98%E2%80%98You+feel+so+hopeless%E2%80%99%E2%80%99:+A+q>

ualitative+study+of+GP+management+of+acute+back+pain%0D&ie=UTF-8&oe=UTF-8 (Accessed 21 August 2017).

Buchbinder, R., Blyth, F. M., March, L. M., Brooks, P., Woolf, A. D. and Hoy, D. G. 2013. Placing the global burden of low back pain in context. *Best Practice & Research Clinical Rheumatology*, 27(5), pp.575-589. Available: <http://www.sciencedirect.com/science/article/pii/S1521694213000831?via%3Dihub> (Accessed 2 November 2017).

Carey, P. 2011. The chiropractic dilemma. To be isolated or integrated? *The Journal of the Canadian chiropractic Association*, 55(3):147. Available: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3154055/> (Accessed 17 October 2017).

Chapman-Smith 2010. The chiropractic Profession. The chiropractic report, 24(4):1-8. Available: <https://chiropracticreport.com/index.php/past.../48-no-4-the-chiropractic-profession> (Accessed 20 November 2017).

Dada A., Yinusa W. and Giwa S. 2011. Review of the practice of traditional bone setting in Nigeria. *African Health Sciences*, 11(2):262-265. Available: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3158503/> (Accessed 7 November 2017).

Denzin, N.K. & Lincoln, Y.S. 2008, *The landscape of qualitative research*, 3rd edn, Los Angeles, Sage Publications.

Deyo R. A., Mirza S. K.; Turner J. A. and Martin B. I. 2009. Over treating Chronic Back Pain: Time to Back Off? Journal of the American Board of Family Medicine, 2 (62-68). Available:
<http://www.jabfm.org/content/22/1/62.full> (Accessed 12 August 2015).

Dovlo, D. 2005. Taking more than a fair share? The migration of health professionals from poor to rich countries. PLOS Medicine, 2(5):109. Available:
<http://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.0020109> (Accessed 21 August 2017).

Ek S. 2015 Gender differences in health information behaviour: A Finnish population-based survey. Health Promotion International, 30 (3): 736-745. Available:
<https://www.ncbi.nlm.nih.gov/pubmed/23985248> (Accessed 21 May 2017).

Erwin W. M., Korpela A. D. and Jones R. C. 2013. chiropractors as primary spine care providers: precedents and essential measures. Journal of Canadian chiropractic 57(4). Available:
<https://www.researchgate.net/requests/r30198914> (Accessed 8 April 2017).

Flick, U. 2014, *The SAGE handbook of qualitative data analysis*, 1st ed, Los Angeles. Sage Publications.

Given, L. M. ed., 2008. The Sage encyclopedia of qualitative research methods. Sage Publications. Available:
<http://methods.sagepub.com.dutlib.dut.ac.za/base/download/ReferenceEntry/sage-encyc-qualitative-research-methods/n420.xml> (Accessed 31 October 2017).

Graneheim, U.H. and Lundman, B., 2004. Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse education today*, 24(2):105-112. Available:
<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.490.2963&rep=rep1&type=pdf> (Accessed 25 July 2016).

Greene, B.R., Smith, M., Allareddy, V. and Haas, M., 2006. Referral patterns and attitudes of primary care physicians towards chiropractors. *BMC complementary and alternative medicine*, 6(1):5. Available:
<https://bmccomplementalternmed.biomedcentral.com/track/pdf/10.1186/1472-6882-6-5?site=bmccomplementalternmed.biomedcentral.com> (Accessed 13 July 2017).

Guest, G., Bunce, A. and Johnson, L., 2006. How many interviews are enough? An experiment with data saturation and variability. *Field methods*, 18(1), pp.59-82. Available:

http://eprints.ncrm.ac.uk/2273/4/how_many_interviews.pdf (Accessed 7 November 2017).

Haig A. J., Im J, Adewole D., Nelson V. and Krabak B. 2009. The practice of physical and rehabilitation medicine in Sub-Saharan Africa and Antarctica: A white paper or a black mark? *Journal of Rehabilitation Medicine* (41):401–405. Available: <http://www.ingentaconnect.com/contentone/mjl/sreh/2009/00000041/0000006/art00001?crawler=true> (Accessed 17 April 2017).

Haldeman S and Dagesnais S. 2008. A supermarket approach to the evidence –informed management of chronic low back pain. *The Spine Journal*, 8(1):1-7. Available: https://www.researchgate.net/publication/5686011_A_supermarket_approach_to_the_evidence-informed_management_of_chronic_low_back_pain (Accessed 27 July 2017).

Haldeman, S., Nordin, M., Outerbridge, G., Hurwitz, E.L., Hondras, M., Kopansky-Giles, D., Ford, T. and Acaroğlu, E., 2015. Creating a sustainable model of spine care in underserved communities: The World Spine Care (WSC) charity. *The Spine Journal*, 15(11):2303-2311. Available: [http://www.thespinejournalonline.com/article/S1529-9430\(15\)00633-6/pdf](http://www.thespinejournalonline.com/article/S1529-9430(15)00633-6/pdf) (Accessed 7 November 2017).

Health Financing Profile: Botswana. 2016.

Available: https://www.healthpolicyproject.com/pubs/7887/Botswana_HFP.pdf (Accessed: 27 April 2017).

Herbert, C.P., Bainbridge, L., Bickford, J., Baptiste, S., Brajtman, S., Dryden, T., Hall, P., Risdon, C. and Solomon, P., 2007. Factors that influence engagement in collaborative practice. *Canadian Family Physician*, 53(8):1318-1325. Available: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1949257/> (Accessed 16 August 2017).

Heslop, S.J., 2008. *The knowledge and perceptions of Paediatricians in South Africa with respect to Chiropractic MTech*. Durban University of Technology. 2008. Available: <https://ir.dut.ac.za/handle/10321/376> (Accessed 9 March 2018).

Hofmeyr J. 2013 Africa Rising? Popular Dissatisfaction with Economic Management Despite a Decade of Growth. Available: http://afrobarometer.org/sites/default/files/publications/Policy%20paper/ab_r5_policypaperno2.pdf. (Accessed 16 April 2017).

Hoy, D., March, L., Brooks, P., Woolf, A., Blyth, F., Vos, T. and Buchbinder, R., 2010. Measuring the global burden of low back pain. *Best Practice & Research Clinical Rheumatology*, 24(2):155-165. Available: <http://www.sciencedirect.com/science/article/pii/S1521694209001259> (Accessed 19 October 2017).

Hondras, M. Myburgh C., Hartvigsen J. Haldeman S. Johannessen H. (2015) How we can assess the burden of muscle, bone and joint conditions in rural Botswana: context and methods for the MuBoJo focused ethnography. *chiropractic and manual therapies*, 23(11): 1-12. Available:
https://www.researchgate.net/publication/272362649_How_can_we_assess_the_burden_of_muscle_bone_and_joint_conditions_in_rural_Botswana_context_and_methods_for_the_MuBoJo_focused_ethn (Accessed 7 April 2017). (a).

Hondras, M., Myburgh, C., Hartvigsen, J. and Johannessen, H., 2015. Botlhoko, botlhoko! How people talk about their musculoskeletal complaints in rural Botswana: a focused ethnography. *Global health action*, 8(1):29010. Available:
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4685300/> (Accessed 4 May 2016). (b).

Hondras, M., Hartvigsen, J., Myburgh, C. and Johannessen, H., 2016. Everyday burden of musculoskeletal conditions among villagers in rural Botswana: a focused ethnography. *Journal of rehabilitation medicine*, 48(5):449-455. Available:
<https://www.medicaljournals.se/jrm/content/html/10.2340/16501977-2083> (Accessed 17 April 2017).

Hsiao H., Chang J. and Tu Y. 2012. The influence of hospital organizational culture on organizational commitment among nursing

executives. *African Journal of Business Management* Vol.6 (44), pp. 10888-10895, Available: <http://www.academicjournals.org/AJBM> (Accessed 27 April 2017).

James, P.B. and Bah, A.J., 2014. Awareness, use, attitude and perceived need for Complementary and Alternative Medicine (CAM) education among undergraduate pharmacy students in Sierra Leone: a descriptive cross-sectional survey. *BMC complementary and alternative medicine*, 14(1):438. Available: <https://bmccomplementalalternmed.biomedcentral.com/articles/10.1186/1472-6882-14-438>

(Accessed 22 November 2017).

Karim, R. and Ross, C., 2008. Interprofessional education (IPE) and chiropractic. *The Journal of the Canadian chiropractic Association*, 52(2): 76-78. Available: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2391014/> (Accessed 17 October 2017).

Kinchen, K. S., Cooper, L. A., Levine, D., Wang, N. Y., & Powe, N. R. 2004. Referral of Patients to Specialists: Factors Affecting Choice of Specialist by Primary Care Physicians. *Annals of Family Medicine*, 2(3):245–252. Available: <http://doi.org/10.1370/afm.68> (Accessed 11 July 2017).

Kruger F, Steyn J, Botha M. and Herron W. 2015. Basic Psychology for Human Resource Practitioners. Cape Town Juta.

Leech, L, B. 2002. Asking Questions: Techniques for Semistructured Interviews. PS Political Science and Politics, 35(4):665-668. Available: https://dornsife.usc.edu/assets/sites/298/docs/interviewing_techniques_asking_questions.pdf (Accessed 5 October 2016).

Lewicki, P., 2005. Internal and external encoding style and social motivation. Social motivation: Conscious and unconscious processes 194. Available: <http://www.sydneysymposium.unsw.edu.au/2003/papers/IE%20Style%20and%20Social%20Motivation%202003.pdf> (Accessed 7 November 2017).

Long, M.H., Johnston, V. and Bogossian, F., 2012. Work-related upper quadrant musculoskeletal disorders in midwives, nurses and physicians: A systematic review of risk factors and functional consequences. *Applied ergonomics*, 43(3): 455-467.

Mathison, S 2005, Encyclopedia of evaluation, Sage Publications. 1-5 Available: doi: 10.4135/9781412950558. (Accessed 7 April 2017).

Mbutho N.P., Gqaleni N.2 and Korporaal C.M. 2012. Traditional and complementary and alternative medicine: knowledge, attitudes and practices of health care workers in HIV and AIDS clinics in Durban

hospitals. *Afr J Tradit Complement Altern Med.* 9(3S):64-72. Available: <http://dx.doi.org/10.4314/ajtcam.v9i3S.8> (Accessed 20 April 2017).

Meleis, A.I., 2016. Interprofessional education: A summary of reports and barriers to recommendations. *Journal of Nursing Scholarship*, 48(1):106-112. Available: <http://onlinelibrary.wiley.com/doi/10.1111/jnu.12184/abstract> (Accessed 17 October 2017).

Meyer, J., 2009. The knowledge and perceptions of the medical staff about chiropractic at the Kimberly [ie Kimberley] Hospital Complex MTech.Durban University of Technology. Available: <http://hdl.handle.net/10321/414> (Accessed 17 July 2017)

Milton, C.R. 1981, *Human behavior in organizations: three levels of behavior*, Prentice Hall, Englewood Cliffs, N.J.

Mody, G.M., 2017. Rheumatology in Africa—challenges and opportunities. *Arthritis research & therapy*, 19(1), p.49. Available: <https://arthritis-research.biomedcentral.com/track/pdf/10.1186/s13075-017-1259-3?site=arthritis-research.biomedcentral.com> (Accessed 1 September 2017).

Monteiro, N. and Tlhabano, K., 2013. Treating Pain in Botswana: Exploring Doctors' Perspectives on Patient Experiences. Available: https://www.researchgate.net/publication/251238116_Treating_Pain_in

[_Botswana Exploring Doctors%27 Perspectives on Patient Experiences](#) (Accessed 24 August 2017).

Moosa, S., Wojczewski, S., Hoffmann, K., Poppe, A., Nkomazana, O., Peersman, W., Willcox, M., Derese, A. and Mant, D., 2014. The inverse primary care law in sub-Saharan Africa: a qualitative study of the views of migrant health workers. *Br J Gen Pract*, 64(623) :321-328. Available: <http://bjgp.org/content/64/623/e321/tab-pdf> (Accessed 18 August 2017).

Moyo D. 2009 *Dead Aid: Why aid is not working and how there is another way for Africa*. London. Penguin.

Muller-Juge, V., Cullati, S., Blondon, K.S., Hudelson, P., Maître, F., Vu, N.V., Savoldelli, G.L. and Nendaz, M.R., 2013. Interprofessional collaboration on an internal medicine ward: role perceptions and expectations among nurses and residents. *PLoS One*, 8(2): 57-70. Available: <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0057570> (Accessed 1 September 2017).

Murphy D.R., Justice B.D., Paskowski I.P., Perle S.M. and Schneider M.J. 2011. The establishment of a primary spine care practitioner and its benefits to health care reform in the United States. *chiropractic and manual therapies* 9:17. Available: https://www.researchgate.net/publication/51509947_The_establishmen

t_of_a_primary_spine_care_practitioner_and_its_benefits_to_health_care_reform_in_the_United_States (Accessed 7 February 2017).

Naidoo, M., 2008. *A survey to determine the knowledge and perceptions of biokineticists with respect to the chiropractic profession* (Doctoral dissertation). MTech. Durban University of Technology. Available: <https://ir.dut.ac.za/handle/10321/442> (Accessed 9 March 2018).

Ndejjo, R., Musinguzi, G., Yu, X., Buregyeya, E., Musoke, D., Wang, J.S., Halage, A.A., Whalen, C., Bazeyo, W., Williams, P. and Ssempebwa, J., 2015. Occupational health hazards among healthcare workers in Kampala, Uganda. *Journal of environmental and public health*, 2015 Available: <https://www.hindawi.com/journals/jeph/2015/913741/> (Accessed 7 August 2017).

Neff, S., 2016. Physician & Physician Assistant Attitudes and Referral Habits Concerning chiropractic. *Journal of the Academy of chiropractic Orthopedists*, 13(2). Available: <http://dcorthoacademy.org/journal-issues/physician-physician-assistant-attitudes-and-referral-habits-concerning-chiropractic/> (Accessed 31 August 2017).

Nkomazana, O., Peersman, W., Willcox, M., Mash, R. and Phaladze, N., 2014. Human resources for health in Botswana: the results of in-country database and reports analysis. *African journal of primary health care & family medicine*, 6(1): 1-8. Available:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4564932/> (Accessed 7 November 2017).

Nkomazana, O., Mash, R., Shaibu, S. and Phaladze, N., 2015. Stakeholders' perceptions on shortage of healthcare workers in primary healthcare in Botswana: focus group discussions. PLoSOne, 10(8), Available: <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0135846> (Accessed 18 August 2017).

Ortlipp, M., 2008. Keeping and using reflective journals in the qualitative research process. The qualitative report, 13(4): 695-705. Available: <http://nsuworks.nova.edu/tqr/vol13/iss4/8/> (Accessed 28 July 2017).

Paige, N.M., Miake-Lye, I.M., Booth, M.S., Beroes, J.M., Mardian, A.S., Dougherty, P., Branson, R., Tang, B., Morton, S.C. and Shekelle, P.G., 2017. Association of spinal manipulative therapy with clinical benefit and harm for acute low back pain: systematic review and meta-analysis. *Jama*, 317(14): 1451-1460. Available: <https://www.ncbi.nlm.nih.gov/pubmed/28399251> (Accessed 9 March 2018).

Palmer, D.C., 2008. *A study to determine the perceptions, attitudes and knowledge of selected South African pharmacists on the chiropractic profession* MTech. Durban University of Technology. Available: <https://ir.dut.ac.za/handle/10321/366> (Accessed 9 March 2018).

Paskowski, I., Schneider, M., Stevans, J., Ventura, J.M. and Justice, B.D., 2011. A hospital-based standardized spine care pathway: report of a multidisciplinary, evidence-based process. *Journal of Manipulative & Physiological Therapeutics*, 34(2). 98-106. Available: <https://www.ncbi.nlm.nih.gov/pubmed/21334541> (Accessed 8 March 2018).

Pickens J. 2005. Attitudes and Perceptions. Available: <http://healthadmin.jbpub.com/borkowski/chapter3.pdf> (Accessed 16 April 2017)

Pillay, K.D., 2006. A study of the demographic and epidemiological factors affecting referral patterns between chiropractors and homeopaths in the greater Durban metro area MTech. Durban University of Technology. Available: <http://hdl.handle.net/10321/201> (Accessed 19 July 2017).

Polit, D.F. & Beck, C.T. 2008, *Nursing research: generating and assessing evidence for nursing practice*, 8th edn, Philadelphia. Wolters Kluwer Health/Lippincott Williams & Wilkins,

Rainville J., Carlson N., Polatin P., Gatchel R.J., and Indahl A. 2000. Exploration of Physicians' Recommendations for Activities in Chronic low Back Pain. *SPINE* (25)17: 2210 –2220. Lippincott Williams & Wilkins, Inc. Available:

<http://insights.ovid.com/spine/spne/2000/09/010/exploration-physicians-recommendations-activities/12/00007632> (Accessed 14 April 2017).

Reading J.P. 2010 Who's Responsible for This? The Globalization of Healthcare in Developing Countries. Indiana Journal of Global Legal Studies, Vol. 17, No. 2 pp. 367-387 Indiana University Press. Available: <http://www.jstor.org/stable/10.2979/gls.2010.17.2.367> (Accessed 20 April 2017).

Reeves, S., Nelson, S. & Zwarenstein, M. 2008, The doctor–nurse game in the age of interprofessional care: a view from Canada, Nursing Inquiry, 15(1):1-2. Available: <http://onlinelibrary.wiley.com/dutlib.dut.ac.za/doi/10.1111/j.1440-1800.2008.00396.x/abstract;jsessionid=D687BDCBFD431B3A1F0771525131C76D.f01t01> (Accessed 9 March 2018).

Richardson N., 'The "buck" stops with me' – reconciling men's lay conceptualisations of responsibility for health with men's health policy. 2014. Health Sociology Review 19(4):419-436. Available: [10.5172/hesr.2010.19.4.419](http://www.jstor.org/stable/10.5172/hesr.2010.19.4.419) (Accessed 21 May 2017).

Robbins S.P. and Judge T.A. 2014. Essentials of Organizational Behaviour. Essex. Pearson.

Sawni, A. & Thomas, R. 2007, "Pediatricians' attitudes, experience and referral patterns regarding Complementary/Alternative Medicine: a

national survey", *BMC complementary and alternative medicine*, 7(1):18-18. Available: <http://web.a.ebscohost.com.dutlib.dut.ac.za/ehost/results?vid=0&sid=4d8b14c3-704f-47cf-999f-1e5e70b0cba3%40sessionmgr4007&bquery=PM+17547752&bdata=JmRiPW1uaCZ0eXBIPTEmc2l0ZT1laG9zdC1saXZlJnNjb3BIPXNpdGU%3d> (Accessed 9 March 2018).

Shenton, A.K., 2004. Strategies for ensuring trustworthiness in qualitative research projects. *Education for information*, 22(2), pp.63-75. Available: <http://www.crec.co.uk/docs/Trustworthypaper.pdf> (Accessed 28 July 2017).

Shorofi, S.A. and Arbon, P., 2010. Nurses' knowledge, attitudes, and professional use of complementary and alternative medicine (CAM): a survey at five metropolitan hospitals in Adelaide. *Complementary therapies in clinical practice*, 16(4):229-234. Available: https://ac.els-cdn.com/S174438811000040X/1-s2.0-S174438811000040X-main.pdf?_tid=43c5c46e-d109-11e7-bb52-00000aabb0f6b&acdnat=1511522518_15d8db6d9521ca2d8e7f87b26ba-dd974 (Accessed 24 November 2017).

Silverman, D. 2013, *Doing qualitative research*, 4th. Ed. London: SAGE.

Strazdins L. and Bammer G. Women, work and musculoskeletal health. 2004 *Social Science & Medicine* 58 (2004) 997–1005

<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.561.9521&rep=rep1&type=pdf> (Accessed 21 May 2017).

Supper, I., Catala, O., Lustman, M., Chemla, C., Bourgueil, Y. and Letrilliart, L., 2015. Interprofessional collaboration in primary health care: a review of facilitators and barriers perceived by involved actors. *Journal of Public Health*, 37(4):716-727. Available: <https://academic.oup.com/jpubhealth/article/37/4/716/2362834> (Accessed 8 November 2017).

Tangwa, G.B., 2007. How not to compare Western scientific medicine with African traditional medicine. *Developing world bioethics*, 7(1):41-44. Available: <https://www.ncbi.nlm.nih.gov/pubmed/17355331> (Accessed 9 March 2018).

Tervo R.C., Palmer G. 2004. Health professional student attitudes towards people with disability. *Clinical Rehabilitation*. (18) 8:908-915 Available: <http://cre.sagepub.com/content/18/8/908> (Accessed 14 April 2017).

Thakkar A.J., *The Lion Awakens: Adventures in Africa's Economic Miracle*. 2015. New York. St. Martin's Press.

The Economist. *Africa Rising*. 2011. Available: <http://www.economist.com/node/21541015> (Accessed 20 November 2017).

The Economist. Hopeless Africa. 2000. Available:
<http://www.economist.com/node/333429> (Accessed 27 April 2017).

Thomlison, B., 2011 Qualitative Interviews. SAGE Encyclopedia of Qualitative research methods.
131-141 Available: <http://dx.doi.org/10.4135/9781412986182>
(Accessed September 2017).

Topuz, S., Uysal, G. and Yilmaz, A.A., 2015. Knowledge and opinions of nursing students regarding complementary and alternative medicine for cancer patients. International Journal of Caring Sciences, 8(3):656.
Available:
http://www.internationaljournalofcaringsciences.org/docs/17_Topuz_orignal_8_3.pdf (Accessed 12 October 2017)

UNAIDS 2017. HIV and AIDS estimates (2015). Available:
<http://www.unaids.org/en/regionscountries/countries/botswana>
(Accessed 27 April 2017).

Verkuilen, P.E., Understanding Back Problems.
Available:<https://www.spine-health.com/conditions/spine-anatomy/understanding-back-problems> (Accessed 1 December 2017).

Watt, G., 2002. The inverse care law today. *The Lancet*, 360(9328) : 252-254. Available:

[http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(02\)09466-7/fulltext](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(02)09466-7/fulltext) (Accessed 9 March 2018).

World Spine Care 2017. Available: <http://www.worldspinecare.org>
(Accessed 14 April 2017).

Zwaan, L. 2006. Assessing organizational culture in a private hospital in the Western Cape. Available:
http://etd.uwc.ac.za/xmlui/bitstream/handle/11394/1813/Zwaan_MA_2006.pdf?sequence=1 (Accessed 27 April 2017).

APPENDICES

Appendix A- Letter of Information



LETTER OF INFORMATION

Dear Participant,

Welcome to my study, and thank you for showing interest in it.

Title of Research Study:

The knowledge, attitudes and perceptions of health care professionals at the Mahalapye District hospital about the World Spine Care model in the Central District of Botswana.

Principal Investigator/s/researcher: Mufudzi Chihambakwe

Co-Investigator/s/supervisor/s: Dr Laura O'Connor (MTech chiropractic), Dr P Orton (PhD Nursing)

Brief Introduction and purpose of the study:

This study involves research on health care professionals working in the Mahalapye District Hospital in order to determine the knowledge, attitudes and perceptions about the World Spine Care model's implementation within the Central District of Botswana.

Outline of the Procedures:

You will be requested to answer a series of questions about the World Spine Care in a recorded interview.

Benefits:

The results of the study will be forwarded to the World Spine Care in hope that they may better implement their program in the Mahalapye District Hospital.

Risks/Discomforts/Costs:

There are no risk/discomforts or costs involved from your participation in this study.

Reason/s why the participant may be withdrawn from the study:

Reasons for withdrawal include no longer working at the Mahalapye District Hospital or no longer filling the inclusion criteria. However, there will be no adverse reactions should a participant withdraw from the study.

Confidentiality:

All participant information is confidential and the results of the study will be used for research purposes only. The researcher will be the only person who has access to the letters of consent and questionnaire, and after the data collection process the transcribed interviews will be coded. You are entitled to be informed of any findings that are made from the study, and you are free to ask questions of an independent source. If you feel unsatisfied with any area of the study, please feel free to contact the Durban University of Technology Research Ethics Committee.

Persons to contact in the event of any problems or queries:

Researcher: Mufudzi Chihambakwe (B. tech chiropractic) (0766661857)

Supervisor: Dr. Laura O'Connor (M. tech chiropractic) (031-3732923)

Co-Supervisor: Dr Penelope Orton (PhD Nursing) (031-3732537)

Institutional Research Ethics administrator: complaints can be reported to the DVC:
TIP, Prof F. Otieno on 031 373 2900 or dvctip@dut.ac.za.

Thank you for your participation,

Yours faithfully,

Mufudzi Chihambakwe
Orton

Researcher

Dr Laura O' Connor

Supervisor

Dr Penelope

Co-Supervisor

Appendix B- Letter of Informed Consent



LETTER OF INFORMED CONSENT FOR PARTICIPANTS

Statement of Agreement to Participate in the Research Study:

- I hereby confirm that I have been informed by the researcher, Mufudzi Chihambakwe, about the nature, conduct, benefits and risks of this study- Research Ethics Clearance Number: 016/17
- I have also received, read and understood the above written information (Participant Letter of Information) regarding the study.
- I am aware that the results of the study, including personal details regarding my sex, age, date of birth, initials and diagnosis will be anonymously processed into a study report.
- In view of the requirements of researches, I agree that the data collected during this study can be processed by the researcher.
- I may, at any stage, without prejudice, withdraw my consent and participation in the study.
- I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.

- I understand that significant new findings developed during the course of this research which may relate to my participation will be made available to me.

Full Name of Participant

Date

Signature

I, Mufudzi Chihambakwe herewith confirm that the above participant has been fully informed about the nature, conduct and risks of the above study.

Full Name of Researcher

Date

Signature

Appendix C: WSC Approval Letter



IMPROVING LIVES IN UNDERSERVED COMMUNITIES THROUGH
SUSTAINABLE, INTEGRATED, EVIDENCE BASED SPINE CARE

December 14, 2016

To: Botswana Health Research Development Committee
RE: Research application from Mufudzi Chihambakwe

To whom it may concern;

This letter serves to certify that the World Spine Care Research Committee has approved of Mufudzi Chihambakwe's (CN 450021) study entitled: "The knowledge, attitudes and perceptions of health care professionals of the Mahalapye District Hospital on the implementation of the World Spine Care model in the Central district of Botswana."

We believe this study has potential benefit for the Mahalapye District Hospital as well as World Spine Care.

If there are any questions, please do not hesitate to contact us:

Sincerely,



Margareta Nordin Dr. Med. Sci., PT, CIE
WSC Vice-president
WSC Co-Chair Research Committee
e-Mail: dmn2@nyu.edu

cc. Eric Hurwitz, Scott Haldeman, O'Dane Brady

www.worldspinecare.org

Appendix D: Ministry of Health Approval

TELEPHONE: 363 2766
FAX: 391 0647
TELEGRAMS: RABONGAKA
TELEX: 2818 CARE BD



Republic of Botswana

MINISTRY OF HEALTH
PRIVATE BAG 0038
GABORONE

REFERENCE NO: HPDME 13/18/1 X (894)

23 January 2017

Health Research and Development Division

Notification of IRB Review: **New application**

Mufudzi Chihambakwe
P O BOX 1834
Mahalapye

Dear Mufudzi

Protocol Title:

**THE KNOWLEDGE , ATTITUDES AND
PERCEPTIONS OF HEALTH CARE
PROFESSIONALS AT THE MAHALAPYE
DISTRICT HOSPITAL ABOUT THE WORLD SPINE
CARE MODEL IN THE CENTRAL DISTRICT OF
BOTSWANA**

HRU Approval Date:	23 January 2017
HRU Expiration Date:	22 January 2018
HRU Review Type:	HRU reviewed
HRU Review Determination:	Approved
Risk Determination:	Minimal risk

Thank you for submitting new application for the above referenced protocol. The permission is granted to conduct the study.

This permit does not however give you authority to collect data from the selected sites without prior approval from the management. Consent from the identified individuals should be obtained at all times.

The research should be conducted as outlined in the approved proposal. Any changes to the approved proposal must be submitted to the Health Research and Development Division in the Ministry of Health for consideration and approval.

Furthermore, you are requested to submit at least one hardcopy and an electronic copy of the report to the Health Research, Ministry of Health within 3 months of completion of the study. Approval is for academic fulfillment only. Copies should also be submitted to all other relevant authorities.

Continuing Review

In order to continue work on this study (including data analysis) beyond the expiry date, submit a Continuing Review Form for Approval at least three (3) months prior to the protocol's expiration date. The Continuing Review Form can be obtained from the Health Research Division Office (HRDD), Office No. 7A.7 or Ministry of Health website: www.moh.gov.bw or can be requested via e-mail from Mr. Kgomo tso Motlhanka, e-mail address: kgmmotlhanka@gov.bw. As a courtesy, the HRDD will send you a reminder email about eight (8) weeks before the lapse date, but failure to receive it does not affect your responsibility to submit a timely Continuing Report form.

Amendments

During the approval period, if you propose any change to the protocol such as its funding source, recruiting materials, or consent documents, you must seek HRDC approval before implementing it. Please summarize the proposed change and the rationale for it in the amendment form available from the Health Research Division Office (HRDD), Office No. 7A.7 or Ministry of Health website: www.moh.gov.bw or can be requested via e-mail from Mr. Kgomo tso Motlhanka, e-mail address: kgmotlhanka@gov.bw. In addition submit three copies of an updated version of your original protocol application showing all proposed changes in bold or "track changes".

Reporting

Other events which must be reported promptly in writing to the HRDC include:

- Suspension or termination of the protocol by you or the grantor
- Unexpected problems involving risk to subjects or others
- Adverse events, including unanticipated or anticipated but severe physical harm to subjects.

If you have any questions please do not hesitate to contact Mr. L. Moremi at lamoremi@gov.bw, Tel +267-3914467 or Kgomo tso Motlhanka at kgmotlhanka@gov.bw at 3632751. Thank you for your cooperation and your commitment to the protection of human subjects in research.

Yours faithfully


L. Moremi
For /Permanent Secretary



Vision: *A Model of Excellence in Quality Health Services.*
Values: *Botho, Equity, Timeliness, Customer Focus, Teamwork.*



Appendix E: MDH Approval

MAHALAPYE DHMT

FAX:
TELEPHONE:



P.O. BOX 49 MAHALAPYE

Republic of Botswana

REFERENCE NO: MH/DHMT/1/7/7 (24)

23rd / 02/ 2017

To: Mr Mufudzi Chihambakwe
119 Botanic Gardens Road, Berea, Durban, RSA

Dear Sir

Protocol Title: The knowledge, attitudes and perceptions of health care professionals at the Mahalapye District hospital about the World Spine Care

Notification of IRB Review: New Application

Approval Status: Approval

Risk Determination: Low risk

The Mahalapye DHMT thanks you for submitting the documents for the above captioned protocol for evaluation. The application was reviewed and awarded an approval.

This approval is valid for a **period of ONE year effective 23rd Jan 2017**. The research should be conducted as outlined in the approved proposal. As we provide this permit prior to the Health Research and Development Division (HRDD) permit to ease the ethical clearance process to your training institution, you are required to submit as well your research proposal to the HRDD.

Your research sites are Mahalapye health facilities. Please notify the Mahalapye IRB when you start collecting data. Any changes to the approved proposal must be submitted to the Mahalapye IRB. Furthermore, you are requested to submit at least one hard copy to The Mahalapye IRB within three months of completion of the study or notify its publication.

If you have any questions/queries, please contact Dr S. T. Tshitenge at stephane.tshitenge@mopipi.ub.bw. Tel +267 3554762, + 267 71550036.

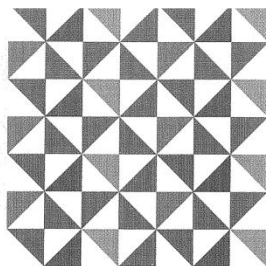
Thank you for your commitment in protecting human subjects in Research in the Mahalapye DHMT.

Yours faithfully



DrStephaneTshitenge
Mahalapye DHMT IRB CHAIR

Appendix F: IREC Approval



Institutional Research Ethics Committee
Research and Postgraduate Support Directorate
2nd Floor, Berwyn Court
Gate 1, Steve Biko Campus
Durban University of Technology

P O Box 1334, Durban, South Africa, 4001

Tel: 031 373 2375
Email: lavishad@dut.ac.za
http://www.dut.ac.za/research/institutional_research_ethics

www.dut.ac.za

8 March 2017

IREC Reference Number: **REC 11/17**

Mr M Chihambakwe
119 Botanic Gardens Road
Berea
Durban

Dear Mr Chihambakwe

The knowledge, attitudes and perceptions of health care professionals at the Mahalapye District hospital about the World Spine Care model in the Central District of Botswana

The Institutional Research Ethics Committee acknowledges receipt of your gatekeeper permission letters.

Please note that Full Approval is granted to your research proposal. You may proceed with data collection.

Yours Sincerely,



Professor J K Adam
Chairperson: IREC



Appendix G: Theme Tables

Theme	Knowledge of World Spine Care and the management of spinal related disorders at the MDH			
Category	Knowledge			Burden of SRDs
Sub-category	Knowledge about WSC activities	Knowledge about spinal related disorders (SRDs)	Knowledge about SRD management	
Codes	<ul style="list-style-type: none"> • WSC offers exercise and rehabilitation • WSC educates on spinal care • WSC educates about the body • WSC educates about prevention of SRDs 	<ul style="list-style-type: none"> • SRDs not considered 'serious' • WSC type of treatment new • Limited health consciousness around the spine 	<ul style="list-style-type: none"> • Severe SRDs rare • Mild SRDs common • Conservative care for SRDs is limited in Botswana • HCPs want to learn more about SRDs and their management • More knowledge required to care for patients • HCPs limited knowledge on care for SRDs 	<ul style="list-style-type: none"> • Lower back pain is common • <i>Batswana</i> do a lot of manual labor • Mismanaged spinal cases cost government • Women at greater risk of

	<ul style="list-style-type: none"> • WSC does community outreach programs • WSC has physiotherapists and chiropractors • WSC aims are similar to those of HCPs of MDH • WSC conducts exercise classes • WSC clinicians are musculoskeletal specialists 	<ul style="list-style-type: none"> • Spine care needs to be preventative • WSC educates on nature of SRDs 	<ul style="list-style-type: none"> • WSC cares for chronic patients • Evidence based care appreciated • Limited understanding of manual therapy scope of practice • Status quo of spinal care is inadequate • SRDs are hard to treat 	<p>spinal disorders</p> <ul style="list-style-type: none"> • Spinal disorders are chronic • spine pain is common • Ignorance about spinal hygiene • Hospital work predisposes spinal pain • Education on work ergonomics for HCPs required
--	---	---	---	---

	<ul style="list-style-type: none"> • WSC is evidence-based • WSC clinicians diagnose SRDs • WSC offers yoga and massage • WSC treats lower back pain • WSC does operations and physiotherapy • WSC gives exercises as treatment • WSC only does 			<ul style="list-style-type: none"> • Nurses' spinal disorders affect work • Doctors inefficient treatment of SRDs • Limited access to spine care in Botswana • Spine pain can be severe • People neglect their spinal health • WSC lessens the burden of SRDs on hospital
--	--	--	--	---

	<p>operations in Gaborone</p> <ul style="list-style-type: none"> • WSC scope of practice unclear • WSC has agreement with government • Unsure about how long WSC will be in Botswana • HCPs are unsure of WSC day to day operations • WSC gives exercises as treatment 			<ul style="list-style-type: none"> • Neglect of SRDs • HCPs suffer from SRDs • Elderly patients have spinal pain
--	---	--	--	---

	<ul style="list-style-type: none"> • Confusion between WSC and other manual therapies • WSC does research • HCPs lack knowledge about scope of practice of WSC • HCPs don't know when to refer to WSC • HCPs unfamiliar with WSC modalities • WSC run by Americans 			
--	--	--	--	--

	<ul style="list-style-type: none"> • WSC relieves pain and corrects deformities • There is little knowledge about WSC origins • Lack of knowledge about WSC daily operations • WSC clinicians work daily • Is WSC private or public? • Unsure how WSC obtains patients 			
--	--	--	--	--

	<ul style="list-style-type: none">• WSC is an initiative of Ministry of Health			
--	--	--	--	--

Theme	Challenges to integration of WSC and possible solutions		
Category	Referral	Organizational culture of the MDH	Expansion and Improvement
Sub-category			
Codes	<ul style="list-style-type: none"> • Unsure when referral to WSC is appropriate • Unclear what WSC scope of practice is • Referral to WSC is often for some chronic patients • Some inter-referral taking place • Unclear referral pathway • The poor referral system loses patients • Many patients self-refer to WSC • Some good results come from referring patients to WSC 	<ul style="list-style-type: none"> • MDH is short staffed • Limited inter-departmental communication within the hospital • Tendency to operate in silos • Heavy workload hinders inter-communication • WSC unknown in comparison to other manual HCPs • High staff turnover within the MDH • Limited inter-departmental communication • Limited understanding of scope of practice of other HCPs <ul style="list-style-type: none"> • Many HCPs at the MDH are transferred 	<ul style="list-style-type: none"> • WSC should expand to other hospitals in Botswana • WSC should partner with government • WSC needs to increase visibility in the hospital • Greater inter-professional relations needed • Room for greater impact within the hospital • WSC asked to invest more resources and manpower in Botswana • WSC to expand to rural communities • Patients with no access left untreated for SRDs

	<ul style="list-style-type: none"> • Referral is personal preference of the HCP • Referral to WSC is better patient management • WSC is good for low back pain patients • Lack of knowledge of services provided by WSC • Surgeons and medical offers responsible for main referrals • Those who know about WSC refer to them and benefit • Greater inter-professional interaction desired for better referral • Some HCPs refer their family members 		<ul style="list-style-type: none"> • Patients in rural areas have no access • WSC needs more manpower and focus in rural communities • Greater integration into local health care system • WSC program still in infancy • WSC should branch into primary care • Occupational health should be integrated • WSC should move to larger hospitals • WSC needs to care for neglected populace • More education about WSC services to establish greater cultural authority • Clearer instructions needed for patients to
--	---	--	---

			<p>understand their care</p> <ul style="list-style-type: none"> • WSC needs to integrate with local nurses • Government to co-lead spinal care with WSC in Botswana • WSC should oversee spine care in Botswana • Reduce turnover rate of WSC volunteers • WSC has been operating as though temporarily at the MDH • Greater integration into local health care system • Increased visibility of WSC in the community required • Greater integration into local health care system
--	--	--	--

			<ul style="list-style-type: none"> • WSC to use media to advertise their services • WSC to educate continually as HCPs in the hospital keep changing • Insufficient knowledge about WSC among HCPs • Clearer instructions to patients about nature of care • More inter-professional interaction • WSC to cater specifically for HCPs
--	--	--	---

Theme	Perceived role of WSC		
Category	WSC role in the local health care system	Experiences with WSC	
Sub-category		Inter-Professional interactions	HCPs as patients of WSC
Codes	<ul style="list-style-type: none"> • WSC provides specialty care that wasn't there before • WSC bringing in foreign expertise • Few HCPs effectively treat SRDs • WSC educates on SRDs • Inter-professional relationships better in Shoshong than in MDH • WSC workshop improved inter-professional relations • HCPs appreciate work that WSC is doing • Patients with SRDs given chronic medication 	<ul style="list-style-type: none"> • Willing to meet with WSC but have not interacted • Attended WSC workshop • No interaction as WSC due to system challenges • Knowing WSC clinicians from a distance • WSC are good team players • Good Interaction with WSC • WSC programs informative • WSC service is prompt • WSC clinicians are healthy themselves 	<ul style="list-style-type: none"> • Self-discharge from care • The pain gets worse before it gets better • Nature of care unexpected • More explanation about the treatment needed • Treatment is 'worth the pain' • Relief and recovery after treatment • Apprehension about care because of the 'painful treatment' • Patient experience is pleasant • HCPs getting help with SRDs at WSC

	<ul style="list-style-type: none"> • Care for chronic SRDs has been inefficient • WSC good initiative • WSC providing more knowledge on LBP management • WSC creating greater awareness on care for SRDs • MDH is an orthopedic specialty hospital • HCPs feel inadequately equipped to deal with SRDs • Care for SRDs needs to improve across the country • WSC filling a gap in Botswana health care system • WSC meeting need in the community • WSC well received • WSC will need to remain locally involved to keep spine care thriving in Botswana 	<ul style="list-style-type: none"> • WSC treatment protocols different though effective • WSC clinicians proactive and friendly • WSC providing good service to patients • Insufficient knowledge about WSC • WSC give advice for HCPs for management of SRDs • WSC operates in isolation • WSC functions like a private clinic • HCPs should self-refer to WSC • WSC should continually educate about what they do • HCPs have to investigate to 	
--	---	---	--

	<ul style="list-style-type: none"> • WSC is beneficial • WSC becoming popular among community • WSC provides crucial rehabilitation • WSC caring for chronic patients • WSC relieves burden of MSK disorders in local community • WSC needed long-term • WSC has a great rehabilitative role • WSC has a role in primary care • WSC should work with family doctors • WSC are good 'team players' • WSC is yet to fully take root • Adequate conservative spinal care is limited in Botswana. • WSC relevant and cost effective 	<ul style="list-style-type: none"> • know more about WSC • WSC is not forthcoming • Interaction with WSC only after HCPs personally suffering with a SRD • WSC has an efficient patient care system • HCPs don't know much about what WSC does 	
--	--	---	--

	<ul style="list-style-type: none"> • WSC clinicians are accessible • WSC is complementary • WSC provides alternative care for SRDs • WSC provides a service • WSC fills a gap in Botswana health • WSC is locally relevant • WSC doing a good job • WSC is becoming treatment of choice for SRDs • WSC is alternative treatment that should be offered to all patients with SRDs • WSC willing to help • WSC is cost effective management of SRDs • WSC role is unclear 		
--	---	--	--

	<ul style="list-style-type: none"> • WSC should offer treatment to HCPs with SRDs • WSC should educate HCPs on how to manage SRDs • WSC is yet to benefit everyone it can • WSC's role is like that of physiotherapists • WSC providing care for neglected type of care for SRDs • WSC is good with patients • WSC clinicians are open and friendly • WSC will be more efficient when Setswana clinicians are on board • Most doctors have limited knowledge of musculoskeletal care for SRDs • WSC is a good thing 		
--	---	--	--

	<ul style="list-style-type: none"> • WSC clinicians are very thorough • WSC treatment of choice for SRDs for HCPs • WSC relevant to entire population 		
--	--	--	--