

**THE USE OF TRADITIONAL MEDICINES AND RITUALS IN
PROFESSIONAL SOCCER IN SOUTH AFRICA**

By

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DECLARATION

I, Dr L.C.Mulungwa, hereby declare that the work on which this dissertation is based is my original work (except where acknowledgements indicate otherwise) and that neither the whole work or any part of it has been, is being, or has to be submitted for another degree in this or any other University.

No part of this dissertation may be reproduced, stored in a retrieval system, or transmitted in any form or means without prior permission in writing from the author or the University of the Free State.

It is being submitted for the degree of Masters of Sport Medicine in the School of Medicine in the Faculty of Health Sciences of the University of the Free State, Bloemfontein.

A handwritten signature in black ink, appearing to read 'L.C. Mulungwa', with a long horizontal flourish extending to the right.

Dr L.C. Mulungwa

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LIST OF ABBREVIATIONS

ARV:	Antiretroviral treatment
B.C:	Before Christ
CAM:	Complementary or Alternative Medicine
DoH:	Department of Health
FIFA:	Fédération Internationale de Football Association
GACP:	Good Agricultural and Collection Practices
GMP:	Good Manufacturing Practice
HIV:	Human Immunodeficiency Virus
INT-group :	Interviewed group
PSL:	Premier Soccer League
RDP:	Reconstruction and Development Plan
T/CAM:	Traditional Medicine and Complementary or Alternative Medicine
TM:	Traditional Medicine
TR:	Traditional Rituals
WADA:	World Anti-doping Agency
WHA:	World Health Assembly
WHO:	World Health Organization

ABSTRACT

Key words:Traditional medicine, traditional rituals, sport, soccer.

Objectives:

Anecdotal and from observation there is wide spread use of traditional medicine (TM) and traditional rituals (TR) in sport in South Africa. It is predominantly practiced by ethnic black athletes, and is an apparent common occurrence in professional soccer. No scientific literature could be found on TM and TR in sport in South Africa. In order to advise athletes on the use of TM and TR, scientific evidence is required on the prevalence of TM and TR use, the types and substances used, efficacy, adverse effects, and possible content of banned substances. The aim of the study was therefore to gather baseline data on the use of TM and TR, to assess the prevalence and the role thereof in sport, and to identify substances and rituals in order to guide future research on this very relevant topic.

Methods:

Semi-structured interviews were conducted on former South African professional soccer players. The interview guide was constructed by identification of key questions to elucidate the prevalence and importance of TM and TR use in South Africa, to identify specific medicines and rituals, the perceived effectiveness thereof, and to understand the role and importance of secrecy that apparently surrounds TM and TR practices. Data was analysed by transcription and classification of the interviews, to produce predominantly qualitative data.

Results:

It was confirmed that TM and TR use is common practice in South African professional soccer. TM is used for minor ailments, stamina, injury healing, protection, improved performance, and as part of team rituals. A list of commonly used TMs has been identified and presented. Even though TM and TR are commonly used and regarded as important, the majority of participants preferred to use western medicine before they resort to TM. A list of TR has been identified and presented. The majority of participants (80%) did not believe that TR improves sport performance. Secrecy about the use of TM and TR is an important component of the traditional culture, which complicates research on this topic.

CHAPTER 1

INTRODUCTION AND SYNTHESIS OF STUDY

1.1 SCOPE OF THE RESEARCH

Herbal medicines and traditional practices are an important part of the culture and traditions of African people. About 80% of the South African population use traditional medicines and it is mostly used as a substitute for conventional pharmaceuticals (Fennell,*et al.*, 2004).

This study investigates the use of traditional medicines (TM) and traditional rituals (TR) in sports in South Africa among the athletes.

1.2 AIMS

The aim of this study is to investigate aspects of the use of (TM) and (TR) among South African athletes. The purpose of this research was to collect baseline data on the prevalence and importance of TM and TR in South African sport, to identify specific medicines and practices in order to eventually identify possible effective agents, adverse effects, and banned substances.

1.3 STUDY SYNTHESIS

Chapter 1 is a short summary commenting on the scope of the study, what the study aims to achieve, study synthesis and a short conclusion.

Chapter 2 is a review of available literature on the use of TM and TR in general and in sports around the globe. The chapter starts with the history of TM followed by the definition of TM. The positioning of TM in the health care system is discussed with WHO giving the green light to the integration of TM to primary health care.

The scientific basis of Traditional, Complementary or Alternative medicines (T/CAM) was discussed under the following headings:

- Efficacy;
- Safety;

- Adverse effects; and
- Regulation.

Different types of TM which were scientifically researched were labelled and discussed. The use of traditional rituals in the general population as well as their perception was discussed. It also includes the discussion on the combination use of TR and TM in sports and its perceived effect on the results of sports.

The chapter concludes with the secrecy of the use of TM and TR.

Chapter 3 describes that a descriptive study was conducted, with qualitative and quantitative components. This chapter also gives a brief discussion on sampling which is used in the social and behavioural sciences, but is also applicable in other domains to explain the reason why purposive sampling was used. The study was conducted on a cohort of five former South African professional soccer players. The chapter also discussed the measuring instrument used in this study which was a semi-structured interview guide after a failed questionnaire on a pilot study. The chapter explains how the data was recorded and care was taken to identify possible measurement and methodology errors, which were:

- Lay terms were used when asking questions in order to make sure that the participants understand;
- Participants were encouraged to answer questions as honestly as possible as giving false answers held no advantage to them;
- Participants were assured of anonymity to protect them against possible victimisation.
- Interviews were conducted by one researcher to avoid inter-observer bias;
- Interviews were recorded for verification of data collected in the interviews;
- To limit respondent variation, related questions were asked in the questionnaire to highlight inconsistencies (if any); and
- Recall bias was anticipated to be very limited.

The failed pilot study in which a questionnaire was used was discussed and possible reasons were:

- Membership bias may have occurred where members of a team felt obliged to give certain answers to be in line with team spirit;

- The different ethnic groups which represented the sample population presented a confounding variable, as non-ethnic black participants in the teams do not have the same background regarding TM and TR as the ethnic black participants; and
- The secrecy surrounding the use of TM and the belief that the “spell will be broken” when use of TM or TR is revealed, could have influenced the responses.

The chapter also comments on the method of data analyses, implementation of findings and ethical aspects considered for the study.

Chapter 4 describes the results found in the study from interviewed participants. Brief explanation about their experience and their ethnic grouping was made. Results on the use of TM and TR in general were documented with emphasis on the importance and age at first exposure.

The results on the use of TM in sports were mentioned under the following headings:

- Indications for use of TM;
- Types of TM used;
- TM versus Western Medicine; and
- Awareness of other players using TM.

The results on the use of TR were analysed based on the types of rituals used by participants and their perceptions on efficacy to improve sport performance. This chapter concludes with the comments made by participants on the role of secrecy in the use of TM and TR.

Chapter 5 discusses the results found in this study with detailed discussions on aspects that are of scientific significance. It starts by giving a full explanation on the results of the pilot study and the reasons why the desired results were not achieved. The discussion on the importance of TM/R and age at first exposure augurs well with literature.

The indications for the use of TM were extensively discussed under the following headings:

- Medical use;
- Performance enhancement or self-protection;

- Team performance enhancement; and
- Adverse effects on opponents.

The types of TM used by participants with known scientific information were each discussed and the banned substances in sports were also mentioned. There are other medicines and traditional procedures which are used by participant but do not have any scientific information which will require further research on them.

With regards to TM versus Western medicine, all participants use both but the effectiveness of TM is not known. The majority still believe in Western medicine first. All participants deny the awareness of others using TM/R in sports which might be due to secrecy.

Different types of rituals were mentioned by participants and were done before games as a team with the majority of participants not believing in their effectiveness.

In this chapter the conclusion was discussed in depth on experience throughout the study where it was found that there is a scarcity of literature on TM and TR in medical literature and challenges on methodology. Recommendations and achievements were also highlighted in this chapter.

1.4 CONCLUSION

The major achievement on this study was to document for the first time the use of TM and TR, indications for the use of TM and TR, types of TM and TR and also surgical procedures used in South African professional soccer.

The recommendation on this study is to invite a social scientist with insight into the cultural complexities of TM and TR use to the research the team, to analyse the identified substances and test them for efficacy, safety and legality and scientific analysis of TM and TR use in sport in South Africa.

CHAPTER 2

LITERATURE REVIEW

2.1 TRADITIONAL MEDICINE HISTORY AND DEFINITION

2.1.1 History of traditional medicines

According to literature from the University of Maryland Medical Centre, plants had been used for medicinal purposes long before recorded history. Ancient Chinese and Egyptians described medicinal uses for plants as early as 3000 BC. Indigenous African and Native American cultures used herbs in their healing rituals, while others developed traditional medical systems in which herbal therapies were used (University of Maryland Medical Centre, not dated).

People in different parts of the world tend to use the same or similar plants for the same purposes according to herbal literature of Maryland Medical Centre. Traditional Medicine (TM) is holistic, providing treatment for physical illness as well as psycho-spiritual conditions. According to their users it prevents and eliminates the effects of witchcraft, appeasing spirits and curing chronic illness (Tabuti, *et al.*, 2003).

TM takes a holistic view of the person. In traditional practice, psychological, social and spiritual aspects play a large role and this holistic treatment can be very effective treatment for many conditions when compared to western biomedicine. The need for this type of care has led to a rapid growth of traditional medicine in urban areas in South Africa where western medicine dominates (Jager, 2005).

In the researcher's experience, according to African culture traditional medicine is commonly introduced to people at birth and they usually stay exposed to and sustain a belief in the practice. A child is 'baptized' after birth for protection and introduction into the world. It is for this reason that some people can even see or notice if a person has been introduced to the world the traditional way (ukuthusa) or not. This practice is passed on from generation to generation spiritually, verbally or written, the latter being less used. Among some ethnic groups it is regarded as a culture which needs to be preserved.

Most uses of herbal medicines are based on historical or cultural beliefs rather than on scientific findings. These medicines are widely used in most parts in Africa, Asia and Latin America where it forms an integral part of primary health care. Recently TM has gained popularity in many parts of the world as complementary medicines (Awodele, *et al.*, 2011).

2.1.2 The definition of traditional medicine

According to the World Health Organization (WHO) (2006), traditional medicine is the total combination of old knowledge, skills and practices based on the theories, beliefs and experiences indigenous to different cultures, whether explicable or not, used in either diagnosing, preventing or eliminating a physical, mental or social disease. In some countries, terms like Complementary or Alternative Medicine (CAM) are used interchangeably with TM. These refer to a broad set of health care practices that are not part of that country's own tradition and not integrated into the dominant health system. The people who used traditional medicine are called traditional healers and they mainly rely on past experience, anecdotes and observation from generation to generation, verbally or in writing (Awodele, *et al.*, 2011).

There are four kinds of traditional healers, namely Inyanga (herbalist or traditional doctor), Sangoma (diviner), Ababekisi (traditional birth attendants) and Ingcibi (traditional surgeons) (Van Niekerk, 2012). Diviner healers use listening, observation and experience to make a diagnosis aided by supernatural powers (communication with Ancestors) and throwing of bones. Among certain cultures it is believed that diviner healers do not make a conscious decision to become a diviner healer but it is rather a calling from their ancestors. If the calling is disobeyed there might be a risk of serious illness or harm to the called person. The herbalist healer acts as a druggist, dispensing medicines made from natural substances including bark, roots, leaves, animal skin, blood or parts of animals, herbs or sea water. Herbalist healers use herbal medicines which include herbs, herbal materials, herbal preparations and finished herbal products, of which the active ingredients might be parts of plants, or other plant materials, or combinations of these, animal parts and minerals. The herbal medicines are the most widely used of the four according to WHO definition of traditional medicine.

Herbal medicines and traditional practices are an important part of the culture and traditions of African people. There is greater acceptance of traditional practices among

South Africans in more rural communities and they are more reliant on these traditional practices for their health care needs. The reasons for this include that TM is more affordable and accessible despite different cultural beliefs of the users. As a result there is an increased trend of integrating traditional medicine with primary health care (Fennell, *et al.*, 2004).

2.1.2.1 Positioning of traditional medicine in health care systems

Traditional healing and medicines existed in South Africa long before western medicine arrived and will no doubt continue to exist in the future. About 80% of the South African population use traditional medicines and it is mostly used as a substitute for conventional pharmaceuticals. If a system can be devised that allows the cultural expression of traditional medicine combined with the scientific advantages of western medicine both types can profit and the community will reap the benefits of an improved health care system (Fennell, *et al.*, 2004).

It is estimated that up to 80% of Zulu patients who consult medical practitioners (Western medicine) also consult Traditional healers. The situation is evolving in South Africa and the rest of the world where there is an active movement towards integration of the traditional health system into the official healthcare system. The trend correlates well with the philosophy of the reconstruction and development plan (RDP) of the South African Government. For this integration to go well, urgent evaluation of traditional methods and treatment is needed. The WHO has already given the green light for this (Jager, *et al.*, 1996).

According to Okoro, *et al.* (2011) due to the increased use of complementary and alternative medicine (CAM), public health strategies are needed to promote patient disclosure of CAM use to health care providers, promote more screening of CAM safety and efficiency or interactions that will promote patient-health care provider as well as evidence-based treatment protocols.

2.2 THE USE OF TRADITIONAL MEDICINE IN SOUTH AFRICA

2.2.1 Types of traditional preparations used in South Africa

Many traditional medicines are made from roots, bark, stems and fresh leaves of several plants. For example, fresh leaves of *vertex negundo* were found to have an anti-

inflammatory and pain suppressing activities (Dha, *et al.*, 2003). Another example of well documented herbal medicine which is commonly used throughout the world is Ginseng, the root of the panax species. It has been used as a traditional medicine in China, Korea and Japan for thousands of years and is now a popular and worldwide used natural medicine. In recent research it has been established that Ginseng has beneficial effects on ageing, central nervous system disorders and neurodegenerative diseases. In general, antioxidant, anti-inflammatory, anti-apoptotic and immune-stimulatory activities are mostly underlying the possible ginseng-mediated protective mechanisms (Radad, *et al.*, 2006).

The root of *acanthi folia* has been used in the treatment of various disorders including stomach and skin disease. It was found to have antimicrobial, anti-inflammatory activity and is also active against *Candida albicans* (Dordevic, *et al.*, 2007).

Prostaglandins are involved in the complex process of inflammation and are responsible for sensation of pain. Several plants in South Africa which are used in traditional preparations to treat headache and inflammatory diseases were screened for prostaglandin-synthesis. Two-thirds of these were found to have a high inhibitory activity on prostaglandins. This finding indicates that an ethno-approach is of considerable value and accentuates the value to transfer the knowledge of traditional practitioners to future generations. (Jager, *et al.*, 1996).

Apart from treating different diseases, traditional medicines are also used for bringing good luck, expelling bad spells (evils) and maintaining well-being of the individual (Cocks & Moller, 2002). Most Africans believe that for an individual to have a healthy life there should be a healthy environment. Ill-health may be due to Ancestral spirits, sorcerers with evil intention and witches. Traditional medicines are used to counteract these forces and to strengthen people's resistance and that of family members (Ngubane, 1997).

A study done at the University of KwaZulu-Natal in South Africa confirmed that self- and infant medication with indigenous remedies augmented by indigenised medicines play an important role in primary health care (Cocks & Moller, 2002).

Traditional medicines usually contain a range of pharmacologically active compounds that produces therapeutic effects which are not known.

2.2.2 Prevalence of traditional medicine use in South Africa

According to Kumara (2001), WHO has established that about 80% of the world population relies mainly on plant-based drugs.

The growth of public interest in and use of traditional medicine and complementary and alternative medicine (T/CAM) has been well documented. Almost half the population in many industrialized countries now regularly use some form of T/CAM. About 80% of African countries use T/CAM (Okoro, 2011).

Traditional medicine use in South Africa has come under the spotlight following political changes in 1994, which introduced renewed challenges to provide accessible primary health care to all. These medicines can be self-administered after buying them from herbal shops or through the Traditional healers. (Please note that Traditional healers are not witchdoctors.) They are more accessible, affordable and have extensive knowledge of plants (Street, *et al.*, 2008).

An estimated 27 million South Africans are using traditional medicines. In South Africa herbal medicines are freely available in stores, on the street and at the homes of traditional healers (Cocks & Moller, 2002).

2.3 PERCEIVED PERFORMANCE-ENHANCING EFFICACY OF TRADITIONAL MEDICINE

According to an African belief, good health is holistic and extends to a person's social environment. As stated above most traditional medicines which are used for power secrecy such as protection, bringing good luck and expelling bad spells or personal well-being are freely available and may be self-medicated or prescribed by a traditional healer. There are many performance enhancers which are also available in most pharmaceutical shops without prescription (Cocks & Moller, 2002).

Indigenous remedies play an important role in primary health care by allaying fears and anxiety of everyday life within the Xhosa belief system, thereby promoting personal well-being. Furthermore, several medications are perceived to give athletes secret power or diminish opponents 'strength, enhance performance by giving them more stamina, invite

luck or good fortune, give protection from evil spirits, and protect from injury (Cocks & Moller, 2002).

Many local medicines have incorporated popular remedies from countries such as China, India and Holland, and are readily available in most pharmaceutical outlets as over-the-counter medications. These remedies have become absorbed in people's knowledge and they are re-interpreted for other medical use such as giving the body more energy and keeping the brain awake. The most common example of this is Ginseng, which has been used widely primarily in China, Korea and Japan but now is in popular use around the world to invigorate weak bodies and help in restoration of homeostasis (Zhang, *et al.*, 2012).

Vigorous testing of these dietary supplements and education to athletes, doctors and coaches needs to be done for the sake of athletes who participate in professional sporting codes to prevent them being testing positive for prohibited substances, thereby violating WADA code (Theist *al.*, 2012)

2.4 SCIENTIFIC BASIS OF TRADITIONAL, COMPLEMENTARY OR ALTERNATIVE MEDICINES (T/CAM)

2.4.1 Evidence base (International, Africa, South Africa)

Scientific evidence of the efficacy of T/CAM is limited. A few references in this regard could be found in the literature.

Research (trials) to investigate the efficacy of single traditional medicine constituents has been carried out at the University of KwaZulu-Natal. It was found that several T/CAMs have Antimicrobial, Antifungal, Anti-inflammatory, Anthelmintic, Antischistosomal, Anti-amoebic and Anti-oxidant properties, and even anti-cancer effects (Fenell, *et al.*, 2004). Traditional medicines are used mostly around the world for those effects. Most traditional medicines have a combined effect. Neither traditional medicine nor western medicine has all treatment effects. It has been well established that herbal medicines contain a range of pharmacological active compounds but it is not known which one of those constituents produce the therapeutic effects (Ndhlala, *etal*, 2009).

Researchers have renewed interest now to discover the novel compounds of pharmaceutical value rather than only determining the scientific rationale for the plants' usage (Fenell, *et al.*, 2004).

According to research by Morris (2002), China, India as well as most African countries are using traditional medicine for the treatment of HIV. Such herbs are used to alleviate the symptoms of HIV which have fewer side-effects compared to Anti-Retroviral treatment (ARV). Most of the lay people in KwaZulu-Natal province in South Africa preferred traditional medicine as the first therapeutic choice in treating sexually transmitted infections, emphasizing the importance of T/CAM in primary health care (De Wet, *et al.*, 2012).

One medicine can be used for the treatment of various diseases. A medicinal plant called *Toddalia Asiatica* when administered orally is used for the treatment of stomach problems, malaria, cough, chest pains, food poisoning and sore throat. Traditional healers claim to have adequate knowledge of this plant and its medicinal uses as a fruit, its leaves and roots (Orwa, *et al.*, 2008).

Even though many TM plants have been found to have medicinal effects, it is important that more research is done on efficacy and safety of known remedies as emphasized by the new strategy for traditional medicine of the WHO (WHO, 2006).

2.4.2 Safety of T/CAM

There is limited or no quality control of traditional medicines in South Africa. Most users regard the use of traditional medicine as medically safe (Street, *et al.*, 2008).

The WHO and European Union issued several guidelines and acts concerning safe and appropriate use of herbal medicine. Quality is often poor and production is not controlled or regulated. People involved in production and distributions, including traditional healers, are not properly trained. Popular use of T/CAM has been accompanied by a growth in research and associate literature with an increase in an evidence-based approach over the past decade. In developing countries, interest has been building over the past decade for a policy framework within national health care systems and some guidelines have been created. WHO has identified challenges in four areas for T/CAM to

be maximally utilized in public health: policy and regulation; safety, efficacy and equality; access and rational use (Bodeker&Kronenberg, 2002).

Some manufactures illegally included synthetic drugs in their products which are used as dietary supplements for the prevention of disease, treatment of chronic disease and maintenance of physical fitness. These manufacturers claimed that the effects of their products are purely natural, but most of them have violated regulations and laws of various countries including sporting bodies (Bogusz, *et al.*, 2006).

Traditional medicines were tested for adulteration of allegedly natural medicine and it was found that several undeclared drugs like Sildenafil, Testosterone and Glibenclamide were present. Many traditional Chinese medicines analysed in Taiwan were adulterated with synthetic drugs with various pharmacological activities, mostly Non-steroid Anti-inflammatory Drugs, steroids and analgesics. Pharmacological properties of the detected drugs corresponded with the claims of natural remedies. Adulteration of herbal remedies with undeclared synthetic drugs is a common problem which may potentially cause serious adverse effects or put an athlete in trouble with WADA (Bogusz,*et al.*, 2006).

The safety of medicines is an essential part of patient safety. Global drug safety depends on strong national systems that monitor the development and quality of medicines, report their harmful effects and provide accurate information for their use (Zhang, *et al.*, 2012).

In many countries, the side-effects of medicines are among the leading causes of mortality. The side effects of herbal/traditional medicine depend upon the herbal remedy, the dosage and any pharmaceutical medications taken by the patient. (Stewart, *et al.*, 1998).

According to WHO traditional medicine strategy 2002-2005, many traditional medicines remain untested and there is little relevant monitoring or control. Our knowledge of the adverse effects of such medicines and practices is therefore very limited and this hampers the identification of the safety and most effective traditional practices and medicines.

The evolution of traditional medicine has been influenced by cultural and historical conditions making systematic evaluation difficult since factors such as a philosophy and theory which underlies its use must be taken into account. Lack of co-operation and sharing of information among countries that use traditional medicines make regulation

and legislation of herbal products difficult. Lack of appropriate training for providers and proper qualifications and licensing schemes in the use of traditional medicines hamper its rational use among the community, thereby opening the gap of more side effects according to WHO strategy document on traditional medicine (WHO 2002-2005).

The same dilemma applies in South Africa where the use of traditional medicine is not regulated. Plants commonly used in traditional medicine are assumed to be safe. This safety is based on their long usage in the treatment of diseases according to knowledge accumulated over centuries. However, recent scientific research has shown that many plants used as food or in traditional medicine are potentially toxic, mutagenic and carcinogenic (Fenell, *et al.*, 2004).

2.4.3 Adverse effects of traditional medicine

Poisoning from herbal medicine is not uncommon among the traditional medicine in developing countries like South Africa and is associated with considerable morbidity. In developed countries, on the other hand, it is mainly due to accidental ingestion of toxic plants (Fenell, *et al.*, 2004). Herbal poisoning due to toxic compounds which constitute the herbal medicine can be determined through forensic methods which are available and reliable (Stewart, *et al.*, 1999).

As the world evolves, a plant also evolves its chemical defence in order to deter, poison or kill the threatening species. So plant extracts are not harmless anymore and toxicity should be taken into account. Inappropriate methods of collection, processing and storage with undesirable contaminants in the products may lead to toxicity of traditional medicines (Street, *et al.*, 2008).

Many adverse events of herbal medicines can be attributed to the poor quality of raw materials or the finished products. Quality issues of herbal medicine can be classified into external and internal. The external issues include contamination, adulteration and misidentification whereas internal issues are non-uniformity of ingredients and complexity of herbal medicines, i.e. pharmacologically active photochemical contained in these medicines (Zhang, *et al.*, 2012).

The rigorous implementation of Good Agricultural and Collection Practices (GACP), Good Manufacturing Practices (GMP), use of modern analytical methods and pharmaceutical techniques will contribute to the safer use of traditional medicines (Zhang, *et al.*, 2012).

2.5 REGULATION OF T/CAM

2.5.1 Internationally

According to WHO, Traditional Medicine/CAM has maintained its popularity worldwide and its use has increased significantly over the last decade. Its safety and efficacy as well as quality control have become an important concern for both health authorities and the public (Awodele, *et al.*, 2011).

Various traditional medicine practices have been developed in different cultures and in different regions, but with no parallel development of international standards and appropriate methods for evaluating traditional medicine. Therefore, sharing national experience and information is crucial to develop international policies and regulation of traditional medicine use (Awodele, *et al.*, 2011).

Countries face major challenges in the development and implementation of the regulation of T/CAM. These challenges are related to regulatory status, assessment of safety and efficacy, quality control, safety monitoring and lack of knowledge about TM/CAM within national drug regulatory authorities according to WHO statement at the fifty sixth World Health Assembly in May 2003.

In order to meet above challenges, the WHO Traditional Medicine Strategy was developed with its four primary objectives: framing policy; enhancing safety; efficacy and quality; ensuring access; and promoting rational use. Resolution WHA56.31 on traditional medicine was adopted at the fifty sixth World Health Assembly in May 2003 according to WHO website (WHO, 2013).

The resolution requested WHO to support Member States by providing internationally acceptable guidelines, and technical standards and evidence-based information to assist Member States in formulating policy and regulations to control the safety, efficacy and quality of traditional medicines. The response from 141 countries had been received and

entered into the WHO Global Database for survey and is ongoing to develop an international policy on T/CAM, which includes amongst others:

1. The integration of traditional and western medicines use;
2. The committee comprising of Traditional healers, Pharmacists, Doctors and Scientists to oversee the integration;
3. The documentation of the effects of traditional medicines;
4. The continued research on traditional medicines; and
5. The regulation in the use of T/CAM.

2.5.2 South Africa

According to the Department of Health, South African government is a member of WHO and accepts its recommendation with regard to the need for policies and strategies that institutionalise traditional medicine as well as guidelines for the formulation of such policies. (DoH, 2008).

In recognition of the reality that the majority of South Africans use and continue to rely on traditional medicine for their primary health care needs, there is a need for a policy to regulate and institutionalise TM/CAM (Ndhlala,*et al.*,2011;Street ,*et al.*,2008).

South African policy on TM differs from WHO recommendations in that it encompasses all the diseases that afflict mankind and it has made a significant progress in the integration of traditional and complementary medicine into the legislative framework for health care Practitioners. In South Africa, traditional medicine should not be confused with complementary and alternative medicine (CAM) (Ggaleni, *et al.*, 2007).

In the gazette of the Department of Health on traditional medicine 1996, the Department of Health developed the national drug policy that recognizes the potential role and benefits of available remedies of traditional medicine in the national health system and potential role of traditional healers in the formal health care sector. The funding of research and development of traditional medicines to manage and control diseases with the formation of Traditional Health Practitioners Council further illustrates the importance of regulating the TM/CAM in South Africa (NTSF, 1996).

2.6 RITUALS

Rituals are measures to ensure good health. These are well documented in the literature in cases of individuals seeking professional help, mainly from Traditional healers (Cocks & Moller, 2002).

Many Africans have retained elements of traditional world views and it is believed that ancestral spirits, sorcerers with evil intentions and witches may all be causally related to ill-health (Cocks & Moller, 2002). Anecdotally, it is believed that there is a possibility of absorbing harmful elements from the environment, causing misfortune and ill-health. Thus Africans often take measures to protect themselves and family members to withstand harm. A number of activities are engaged in to maintain health at a conceptual or symbolic level. Ancestral communication is the most important of these. Other strategies of maintaining good health include avoiding envy and jealousy, maintaining dignity, limiting the effects of bad luck, using medicines and remedies and wearing protective necklaces.

Ill-fortune is often blamed on supernatural powers or witchcraft and is generally attributed to a breach of custom and traditions of ancestors to evil spirits who are instructed to cause harm by sorcerers or traditional healers at a request of an enemy. The treatment or prescription may be an animal sacrifice, purification using enemas or vomiting and use of traditional medicines. These rituals are performed in the family and it becomes a norm within a family if such a thing happens in future. Young ones are exposed to such norms and they adopt as their beliefs (Cocks & Moller, 2002).

2.7 T/CAM IN SPORT

2.7.1 Prevalence of use

The researcher observed that traditional medicine is used for various reasons in sports among South Africans. It is more prevalent among black athletes. Since white sportspeople are also integrating in more predominantly black sports after South African democracy, the use of traditional medicine is not uncommon in white people. Reasons for using this medicine include giving one more strength, increasing one's luck and weakening members of the opposite team. Mostly traditional medicines are used in conjunction with rituals.

Some athletes use traditional medicine for healing purposes. They prefer to use traditional medicine for their injuries in conjunction with western medicine.

These traditional medicine can be obtained from Amayeza stores (Xhosa meaning for muthi stores).The use of this medicine varies between body wash, emetic (vomiting mixture),smoke or steam, enema to be sprayed or planted around the house or playing fields, or smearing the whole body or specified body parts (Cocks &Dold, 2000).

2.7.2 Medicines versus rituals

2.7.2.1 Traditional medicines (TM)

There are different names for traditional medicines which are used for specific purposes. They may be ointments, inhalants, emetics, of which some are listed below in Table 2.1 with a brief explanation (Cocks &Dold, 2000; Ndhlala,*et al.*, 2011; Semenya&Potgieter, 2014).

TABLE 2.1: DIFFERENT TRADITIONAL MEDICINES (TM)
(Table continues on next page...)

NAME OF TM	SCIENTIFIC NAME/PLANT FAMILY	TM FORM AND PREPARATION	USES
Impepho	Helichrysummodoratissimum	Made from leaves which are burned.	Protect from evil spirit.
ItsheAbelungu	Not known	Brightly coloured viscous liquids and salts. It is mixed with water or wash with it or vomit with it.	For good luck.
Nyengelezi	Not known	Synthetic fat which is smeared over legs and feet.	Protection from injuries while playing sports.
Vimbela	Not known	This product resembles petroleum jelly and is smeared over the face.	Ward off evil spirits.
Umzimbamuti	Not known	It's an ointment which is applied directly to skin.	For treating wounds and fungal infection.
Inthubezi	Not known	Is in a liquid form used as enema or emetic.	For body cleansing and to stimulate blood production.
Sekaname	Scientific name is DrimiaElata from Hyacithaceae family	Made from a bulb, boiled for 5-20 minutes and taken as a liquid form thrice a day.	For blood purifier, female infertility, gonorrhoea and hypertension.
ImbizaEphuzwato	It is mixture made from	Prepared in a liquid	Broad range of

	21 plants species from 17 families.	form. A mixture made from 21 plants species from 17 families. Made from roots, bulbs, leaves, corns, rhizomes, stems and in one case whole plant.	therapeutics use include cough, gastrointestinal problems, venereal diseases, arthritis, inflammation wound healing, bladder cleaning, womb infections.
Umhlabelo	Scientific name is <i>hedebouriaovatifolia</i> from Hyacinthaceae family	Made from bulb.	For faster bone healing.
UMhlondlo	Berkheys speciose	Made from leaves.	Leaves are used as bandage to stop wound bleeding.

2.7.2.2 Rituals

Rituals in sports are well documented and differ across ethnic and racial groups. These include praying, dancing and using certain gestures before games. Most sports people across different sporting codes believe in rituals or superstitious behaviours which are often bizarre. These are well documented in literature and include practices such as using a different entrance than opposite teams, not using the dressing rooms of home teams, praying before the game or not shaking hands with the opponents, which may influence the performance (Bleak & Frederick, 1998).

Supporters are also involved in the use of traditional medicine for the benefit of their teams using sangomas (traditional healers). Fans do gather before the match with the habit of eating *Inhlokoyemvu*, (a boiled sheep head) which symbolises the eating of their clubs opponents and supporters (Kaminju&Ndlovu, 2011).

South African supporters are more passionate about their clubs to such an extent that they do things which are entertaining before and during club matches. They also have a vibrant supporter culture (Kaminju&Ndlovu, 2011).

2.7.2.3 Combinations

In African culture the use of Traditional Medicine and rituals go together. Traditional Mpondo medicines and charms are called *Amayieza* and include many plants used to treat a wide range of illnesses. When rituals are performed in the family in most cases the Traditional medicines are applied (Cocks & Moller, 2002).

To the researcher's knowledge most soccer teams perform rituals before the game and when it involves a Traditional healer, he will come with muthi to smear them or wash with muthi for luck and perform rituals thereafter.

2.7.3 Aspects of performance enhancement

Several medications are perceived to give the athletes secret power or diminish opponents' power, enhance performance by giving them more stamina, invite luck or good fortunes, protect from evil spirits, and protect from injuries (Cocks & Moller, 2002).

2.8 BANNED SUBSTANCES IN TRADITIONAL MEDICINES

WADA (World Anti-Doping Agency) has been called upon to analyse the traditional medicines as there was a concern that they have stimulants or produce steroid by-products thus giving athletes an unfair advantage over others, according to FIFA Medical Committee Chairman Michel D'Hooghe during the FIFA 2010 World Cup (Nzouankeu, 2010).

Traditional Chinese Medicines, which are used for various diseases such as asthma, common colds, skin diseases, cardiovascular stimulation, anti-inflammatory medication and androgenic hormone therapy, were found to contain ephedrine and structural analogue such as norephedrine, pseudoephedrine, cathine and steroids which would lead to positive test result if urinary threshold is exceeded (Thevis, *et al.*, 2013).

The National Doping Control Centre in Thailand has published information indicating that ingestion of the leaves of *Metragynaspeciose*, an indigenous Thailand tree, can combat fatigue and produce narcotic-like action. The leaves can be ingested, smoked, chewed or taken as infusion drink. The metabolites of *Metragyna* preparations are on the WADA list of prohibited substance and have been detected in urine (Schanzer, *et al.*, 2005).

Ingestion of *Butea superb Roxb*, an herb in the family of *Papilionaceas* which is used as traditional medicine for the promotion of physical strength, was found to have a selective elevation of endogenous steroids in urine (Schanzer, *et al.*, 2005).

This proves that traditional medicines do violate the anti-doping rule and it is worthwhile to issue a general warning to athletes, doctors and International federations on the use of traditional medicines in sports.

2.9 SECRECY

In the author's experience, the use of Traditional Medicine or performing rituals is regarded as a personal and secretive thing to do. In African traditional culture, when we perform rituals only family members are invited and this is done behind closed doors. This is done also when we have to visit Traditional healers where we are supposed to go at night or in the early hours of the morning so no one can see that you have visited the Traditional healer. It is common knowledge that no one must know that you have fortified yourself or your family or that the house is well protected.

For most Africans good health requires not only a healthy body but also a healthy environment. They take measures to protect themselves by strengthening their own resistance and that of family members to withstand harm. It is important to establish and maintain a form of balance with one's surroundings by using medicines, remedies and wearing protective necklaces for family members (Cocks & Moller, 2002).

The study done by King (2012) about South Africans who use TM shows that culture and environment plays a role. Most of the participants were Christians or believe in Western medicines but because of their culture they visit sangomas at night for other ailments for which they think they do not need Western medicine and during the day continue with their Christianity.

Former soccer players that were interviewed by the researcher intimated to him information of rituals which they performed before games during training camps. This was a closely guided secret to their victory and was part of a contract clause stipulating that there were not to divulge this to other teams as long as they were contracted to the team.

2.10 CONCLUSION

Traditional Medicine is becoming widely used worldwide and is being increasingly incorporated into the health system.

Despite the high prevalence of traditional medicine in South Africa and the potential benefits and dangers thereof, no studies have been done to determine the prevalence of use, attitudes and beliefs on traditional medicines and rituals amongst South African athletes. This study intends to contribute to the small body of knowledge on the use of traditional medicines amongst South African athletes.

CHAPTER 3

METHODOLOGY

3.1 INTRODUCTION

The aim of this study was to investigate aspects of the use of traditional medicines (TM) and traditional rituals (TR) among South African athletes. The purpose of the research was to collect baseline data on the prevalence and importance of TM and TR in South African sport, to identify specific medicines and practices in order to eventually identify possible effective agents, adverse effects, and banned substances. The value of the study is that no studies in the use and effects of TM and TR in sport in South Africa have ever been published in the literature. The study was prompted by the identification of this lack of information by Dr Michel D'Hooghe, chairperson of the medical committee of the International Football Federation (FIFA) in the planning of the medical services of the 2010 FIFA Football World Cup.

3.2 STUDY DESIGN

A descriptive study was conducted, with qualitative and quantitative components.

3.2.1 Sample population

Sampling can roughly be divided into random and non-random sampling, and is selected according to purpose of the research (Bowling, 2002). Four broad categories of sampling are used in the social and behavioural sciences, but are also applicable in other domains. These are probability sampling, purposive sampling, convenience sampling and mixed-methods sampling. In each of these categories different sampling techniques are recognised (Plano Clark & Cresswell, 2008).

Probability sampling involves selecting relatively large numbers of units from a population, or subgroups thereof, in a random manner where the probability of inclusion of every member of the population is determinable (Tashakkori & Teddlie, 2003). Probability sampling aims to achieve representativeness of an entire population.

Purposive sampling, on the other hand, is primarily used in qualitative studies and may be defined as selecting participants based on specific purposes associated with answering a research question. In using this technique, particular settings, persons or events are deliberately selected for the important information they can provide that cannot be obtained elsewhere (Maxwell, 1997).

Convenience sampling involves inclusion of units that are easily accessible and willing to participate in the research. Captive samples and volunteer samples are the two types of convenience sampling commonly found. Mixed-methods sampling involves the selection of participants for a research study using both probability sampling (to increase external validity) and purposive sampling (to increase transferability) (Plano Clark & Cresswell, 2008).

Because of the relative rarity of professional athletes willing to divulge information on the topic at hand, the unique cultural barriers, and the need to collect qualitative baseline data, purposive sampling was the most appropriate method to select a sample population for this study. The study was conducted on a cohort of five former South African professional soccer players.

3.2.1.1 *Inclusion criteria*

- Former professional soccer player in South Africa (Professional Soccer League (PSL) or national team);
- Ethnically black; and
- Willing to share experience on use of traditional medicine and rituals in sport.

3.2.1.2 *Exclusion criteria*

- Not a former PSL or national football player in South Africa;
- Not ethnically black; and
- Unwilling to share experience on use of traditional medicine and rituals in sport.

3.3 MEASUREMENT

3.3.1 The measuring instrument

The measuring instrument used in this study was a semi-structured interview guide. The interview guide was constructed by identification of key questions to elucidate the prevalence and importance of TM and TR use in South Africa, to identify specific medicines and rituals, the perceived effectiveness thereof, and to understand the role and importance of secrecy that apparently surrounds TM and TR practices. Specific questions were formulated from the literature, lack of information in the literature, discussions with individuals involved in provision of TM to soccer teams, team doctors, sports physicians and scientists. A questionnaire was then compiled. The questions were grouped according to demographics, exposure to TM and TR, perceived effectiveness of TM and TR, specific indications, medicines and rituals used, and the role of secrecy in the use of TM and TR.

3.3.2 Procedure

The semi-structured interviews (cf. Appendix B) were conducted and recorded with a digital voice recorder. Interviews were conducted in English, the official language used in professional soccer in South Africa. Each individual interview was conducted privately. All data were recorded on the interview schedule (cf. Appendix B).

3.4 METHODOLOGICAL AND MEASUREMENT ERRORS

The following measures were taken to optimise the quality of data and minimise methodological errors:

- Lay terms were used when asking questions in order to make sure that the participants understand;
- Participants were encouraged to answer questions as honestly as possible as giving false answers held no advantage to them;
- Participants were assured of anonymity to protect them against possible victimisation;
- Interviews were conducted by one researcher to avoid inter-observer bias;
- Interviews were recorded for verification of data collected in the interviews;

- To limit respondent variation, related questions were asked in the questionnaire to highlight inconsistencies (if any); and
- Recall bias was anticipated to be very limited.

3.5 PILOT STUDY

In order to restrict possible biases to the minimum, special care was taken to explain the anonymity and confidentiality of the study to all participants. They were also assured that no possible harm can come to themselves, other team members, or any other party because of their responses. They were requested to be entirely honest in answering the questions. Participants were also reminded that their participation was voluntary, and should they feel unable to answer the questions honestly, they would be free to withdraw without any negative consequences.

Despite these measures to ensure reliable data, it was found that much of the information obtained was contradictory, and therefore unreliable and not trustworthy. Possible reasons for this apparent failure to obtain reliable data include:

- Membership bias may have occurred where members of a team felt obliged to give certain answers to be in line with team spirit;
- The different ethnic groups which represented the sample population presented a confounding variable, as non-ethnic black participants in the teams do not have the same background regarding TM and TR as the ethnic black participants; and
- The secrecy surrounding the use of TM and the belief that the “spell will be broken” when use of TM or TR is revealed, could have influenced the responses.

The questionnaires were subsequently abandoned as measuring instruments. The research protocol was amended and semi-structured interviews were used to obtain data.

3.6 DATA ANALYSIS

Due to the exploratory nature of this study, descriptive statistics and qualitative data were used to report the findings from this study. A statistical analysis was done with the assistance of the Department of Biostatistics, University of the Free State. Open-ended responses were listed and presented in tables.

Data analysis of the semi-structured interviews was done by transcription of the recordings of the five interviews and listing of all responses, categorized according to the interview guide.

3.7 IMPLEMENTATION OF FINDINGS

The information gathered from this research regarding the use of traditional medicines and rituals amongst professional soccer players in South Africa will lay a foundation for future research to determine the safety and ethics surrounding their use in elite sports. Noteworthy findings will be published in scientific, peer reviewed journals.

3.8 ETHICAL ASPECTS

Approval was obtained from the Ethics Committee, Faculty of Health Sciences at University of Free State (ECUFS Nr 56/2012). No approval from a regulatory body was required for the interviews, as the participants volunteered to take part in the study as individuals.

Participants in the semi-structured interviews were recruited voluntarily and informed consent was obtained from all participants. Participants were reminded that participation was voluntary and that they could withdraw from the study at any stage. Participants were not remunerated for participation in the study. Interviews were recorded anonymously.

3.9 CONCLUSION

The design of this study as such provided a tremendous learning curve into the world of TM and TR. It became clear that conventional quantitative research methods would not be effective in obtaining information of any value. Because of a variety of cultural influences, some of which are still uncertain, it was more effective to identify reliable sources of information by means of purposive sampling, and to add opportunity to collect qualitative data.

The results of the semi-structured interviews are presented in Chapter 4.

CHAPTER 4

RESULTS

4.1 INTRODUCTION

This chapter presents results obtained from semi-structured interviews which were conducted on a group of former professional soccer players, in order to obtain quantitative, but also qualitative data which may reveal additional information and assist in the interpretation of the data.

4.2 POPULATION AND DEMOGRAPHICS

4.2.1 Study population

Semi-structured interviews were conducted on five former professional soccer players.

4.2.2 Experience

All five interviewees had more than six years' experience as professional soccer players in the South African Premier Soccer League (PSL).

4.2.3 Ethnic groups

The ethnic groupings of the cohort are presented in Table 4.1. Of note is that all participants are ethnically black. As traditional medicines and rituals are mainly expected in ethnically black cultures in South Africa, the inclusion of other groupings may have skewed the data.

TABLE 4.1: THE STUDY POPULATION PER ETHNIC GROUP

ETHNIC GROUP	(n=5)(%)
Ndebele	1 (20%)
Sotho	3 (60%)
Tswana	1 (20%)

4.3 USE OF TRADITIONAL MEDICINES AND RITUALS

4.3.1 The importance of traditional medicines and rituals

When asked to grade the importance of TM and TR in their cultures according to unimportant, of little importance, fairly important and very important, all the participants (100%) considered both TM and TR as very important in their cultures.

4.3.2 Age of first exposure to TM and TR

Four (80%) of the participants were exposed to TM use before age 10, and one (20%) was older than 18. Concerning TR, three participants (60%) were exposed to TR at an age younger than ten, and two (40%) at age 10-15.

4.4 USE OF TM FOR SPORT-RELATED PURPOSES

All of the participants admitted to using TM for soccer-related purposes.

4.4.1 Indications for use of TM

The whole group revealed the use of TM for purposes shown in Table 4.2.

TABLE 4.2: THE INDICATIONS FOR THE USE OF SPORTS-RELATED TM

RESPONSE NO.	INDICATIONS FOR USE OF SPORT-RELATED TM
1.	Injury healing
2.	Stamina
3.	Minor ailments
4.	Illness
5.	Protection
6.	Strength
7.	Team Sangoma medicine used for improved performance
8.	Team Sangoma medicine to counteract opposition TM or TR
9.	Would be excluded from the team if TM was not taken by an individual
10.	Because the rest of the team took it

The uses can be divided into three groups – for physical ailments, for individual enhanced sport performance, and as part of a team ritual. It is interesting to note that, at least from one participant it was evident that the use of team-related TM was mandatory.

4.4.2 Types of TM used

The types of TM and procedures to heal injuries used for sport-related purposes that were revealed in the interviews, are presented in Table 4.3. The list can be subdivided in “true” African TM, other TM (e.g. Ginseng), and procedures to assist in healing of injuries.

TABLE 4.3: TYPES OF TRADITIONAL MEDICINES AND PROCEDURES USED FOR SPORTS RELATED PURPOSES

RESPONSE NO.	TRADITIONAL MEDICINE
	TRUE AFRICAN TM
1.	Imbiza
2.	Impepa
3.	Sikanama/Sikanema
4.	ZCC-tea
5.	Mhlabelo (for fracture healing)
6.	Umathemba
7.	Vimbela
8.	Umhlabelo
9.	Muthi
	GENERAL TRADITIONAL MEDICINES
10.	Cannabis
11.	Ginseng
12.	Sardines
13.	Unknown substances given by the Sangoma
	MEDICINAL PROCEDURES
1.	Razor cut over injury
2.	Suction with tennis ball over injury

4.4.3 Traditional medicines versus western medicine

In this study group, two participants (40%) indicated that they use TM before reverting to western medicine, and three participants (60%) preferred to use western medicine first. The responses on their perceptions of efficacy of TM versus western medicine are presented in Figure 4.1. Even though the participants indicated that TM is very important in their cultures (cf. 4.3.1), they were less convinced of the superiority of TM over western medicine, with 40% being unsure or regarded both as equally good, and 60% regarded western medicine as definitely better.

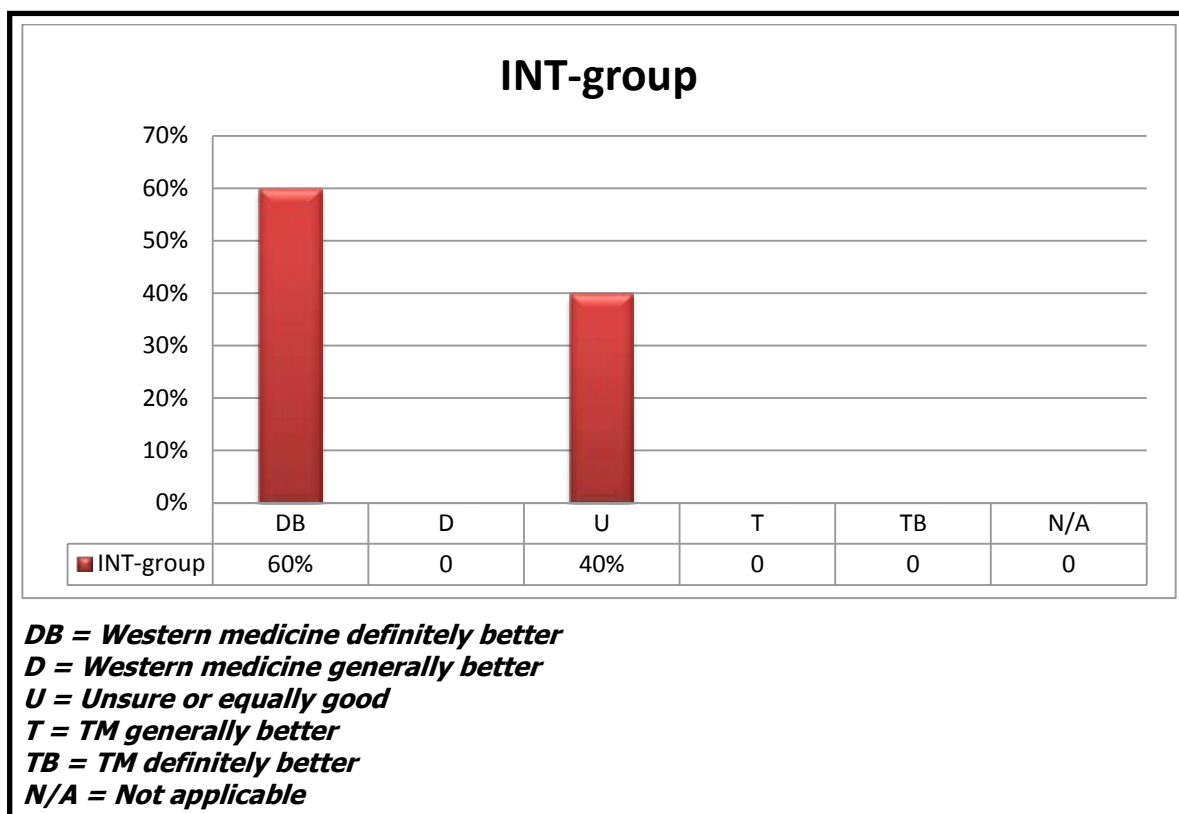


FIGURE 4.1: PERCEIVED EFFICACY OF TM VERSUS WESTERN MEDICINE

4.4.4 Awareness of other players using TM

The results of replies to the question whether participants were aware of other players using TM, were conflicting, even when the participants have replied that they often used TM. Three (60%) of participants indicated that they are not aware of others using TM, while one (20%) indicated that it happens quite often, and one (20%) indicated that it happens very often.

4.5 USE OF TRADITIONAL RITUALS (TR) FOR SPORT-RELATED PURPOSES

4.5.1 Prevalence of TR use for sport-related purposes

All the participants indicated that they used TR very often (n=5; 100%). A list was compiled of TR that they and others were involved in. These rituals are listed in Table 4.4.

TABLE 4.4: TRADITIONAL RITUALS (TR) FOR SPORT-RELATED PURPOSES

RITUALS USED BY PARTICIPANTS THEMSELVES		
RITUAL NO.	TRADITIONAL RITUAL	NUMBER OF PARTICIPANTS (and %)
1.	Praying	1 (20%)
2.	Burning incense	3(60%)
3.	Using animal products	3(60%)
4.	Dancing	3(60%)
5.	Chanting	2(40%)
6.	Bath in goats' intestines before match	1 (20%)
7.	Urinate in a secret mixture (muthi) and bath in it before match	1(20%)
8.	Entire team bathes in secret mixture (muthi) before match	2 (40%)
9.	Application of tortoise fat to make the opposition slower	1(20%)
10.	Hand jerseys to Sangoma for treatment before match	1(20%)

Concerning knowledge of the use of TR by others, the results are again conflicting with the admission of use of team rituals. In this study group, one participant (20%) indicated that TR is used seldom by others, one (20%) indicated that it is used quite often, and three (60%) indicated that it is used very often.

4.5.2 Perceived efficacy of TR to improve sport performance

The perceived efficacy of TR to improve individual performance is summarised in Table 4.5.

TABLE 4.5: PERCEIVED EFFICACY OF TR TO IMPROVE INDIVIDUAL SPORT PERFORMANCE

LEVEL OF CONFIDENCE	(n=5)(%)
Not applicable	0
No, definitely not	4(80%)
No, I do not think so	0
Not sure (neither agree nor disagree)	0
Yes, I think so	1(20%)

The perceived efficacy of TR on the collective effort to make the team win, is presented in Table 4.6.

TABLE 4.6: THE PERCEIVED EFFICACY OF TR TO MAKE A TEAM WIN A MATCH

LEVEL OF CONFIDENCE	(n=5)(%)
Not applicable	0
Never	2(40%)
Seldom	2(40%)
Quite often	1(20%)
Very often	0

4.6 THE USE OF TM AND TR OUT OF SPORT CONTEXT

None of the participants (n=5; 100%) ever used TR or TM for reasons other than sport.

4.7 THE ROLE OF SECRECY IN THE USE OF TM AND TR

The participants were asked in an open question to comment on the role of secrecy in the use of TM and TR. The responses are given in Table 4.7.

TABLE 4.7: COMMENTS ON THE ROLE OF SECRECY IN THE USE OF TM AND TR

PARTICIPANT	COMMENT
1.	"Players don't know anything about muthi, only Sangomas. Players were informed what to do only".
2	"The other team must not be aware of our medicines which we are using, for that other team's medicine might overpower our team".
3.	"The use of traditional medicine is very secretive so the opposition does not know the origin and name of muthi. The Inyanga is the only one who knows the content of muthi".
4.	"Opponents should not know about your traditional medicines and rituals for you to remain strong".
5.	"The team manager is the only one who organises Sangoma and muthi, and as players we don't know anything about the muthi or rituals, but we just carry out orders".

4.8 CONCLUSION

The chapter presented the uses and perceptions about TM and TR in the sport context. Some of the results are conflicting and may have been confounded by the role of secrecy in TM and TR use, team culture, and the influence of the presence of the researchers which were western doctors.

The results are discussed according to the literature, and conclusions and recommendations are made in Chapter 5.

CHAPTER 5

DISCUSSION

5.1 INTRODUCTION

In this chapter, the results of the semi-structured interviews are discussed. The results suggest that the use of traditional medicine (TM) and traditional rituals (TR) in professional soccer in South Africa occurs generally. There are many indications and types of TM and TR in use. These will be discussed and analysed in detail below and compared to the available literature. Recommendations will be made and conclusions drawn.

5.2 STUDY POPULATION

A pilot study indicated difficulties in obtaining reliable information by means of conventional research methodology. Randomly selected participants in sport teams, using questionnaires, produced deliberate false answers. The responses on the questionnaires could not be verified immediately, and discrepancies were identified only later.

The reasons for the poor outcome probably relates to the cultural complexity of Traditional medicine use. Three specific reasons were identified. Firstly, membership bias may have occurred where members of a team felt obliged to give certain answers to be in line with the team spirit. Secondly, the different ethnic groups that represented the sample population presented a confounding variable, as non-ethnic black participants in the teams do not have the same background regarding TM and TR as the ethnic black participants. Lastly, the secrecy surrounding the use of TM and the belief that the "spell will be broken" when use of TM or TR is revealed, could have influenced the responses. According to African beliefs, the use of TM and TR among the families is secret and cannot be discussed in public. The blame of ill-fortune is generally attributed to a breach of customs and traditions of the ancestors or of evil spirits who are instructed to do harm by sorcerers or traditional healers at the request of an enemy (Cocks & Moller, 2002). Furthermore, it has been shown that pre-existing beliefs and expectations can influence how health information is judged (Chang *et al.*, 2011).

Purposive sampling was found to be the most appropriate way of selecting a study population. Participants who were willing to discuss TM and TR use freely and truthfully

CHAPTER 5

DISCUSSION

5.1 INTRODUCTION

In this chapter, the results of the semi-structured interviews are discussed. The results suggest that the use of traditional medicine (TM) and traditional rituals (TR) in professional soccer in South Africa occurs generally. There are many indications and types of TM and TR in use. These will be discussed and analysed in detail below and compared to the available literature. Recommendations will be made and conclusions drawn.

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Purposive sampling was found to be the most appropriate way of selecting a study population. Participants who were willing to discuss TM and TR use freely and truthfully

were identified and selected. As was pointed out above, semi-structured interviews were used for data collection. During interviews, discrepancies in responses could be identified and clarified immediately. Furthermore, the semi-structured format allowed participants to describe or explain the context of certain replies, adding rich insights to the information obtained.

Sensitivity for the cultural complexities around TM and TR use is therefore advised when planning research on the topic. Qualitative methods seem more appropriate to obtain information in this context. Random sample selection carries the risk of obtaining false information and is not advised.

The final population was five ethnic African former professional soccer players, with whom semi-structured interviews were conducted.

5.2.1 Ethnicity

The following ethnic groups participated in this study: Sotho, Ndebele and Tswana. The Sotho group constituted 60% whereas the Tswana and Ndebele groups were at 20% each.

These ethnic groups are geographically located next to one another in our country. The Sotho group related to the Northern (Bapedi) group in Limpopo Province; the Ndebeles are in Limpopo and Mpumalanga and the Tswana group in North West.

From the literature review (Semenya & Potgiter, 2013; Cocks & Moller, 2002; Jager, et al., 1996) it follows that studies had been done on Sotho (Bapedi), Xhosa and Zulu groups respectively and that it was found that there is extensive use of TM among these groups. The majority of these ethnic groups consult Traditional healers for their primary health care.

In this study, there were Sotho and Ndebele participants and all agreed concerning the use of TM and TR.

5.3 USES OF TM AND TR

5.3.1 Importance of TM plus TR

Traditional healing has always been part of health care in African countries and the contribution of healers to primary health care has been well documented across Africa. In South Africa, the roles and profiles of traditional healers of some cultural groups are well documented (Semeya & Potgieter, 2013).

In this study, all (100%) of the participants considered TM and TR very important to their culture. This might also be because of their sport environment - which is an African culture-dominated sport (soccer) in this country. No studies could be found on TM and TR use in South African soccer, but anecdotally, the use thereof occurs generally. Selection bias could have influenced this result.

5.3.2 Age at first exposure

In African culture, infants are considered to be vulnerable to harm from evil spirits, so there is a need to give them a good start in life by protecting them from evil spirits, thus increasing the consumption of TM (Cocks & Moller, 2002).

All participants were exposed to TM and TR at a young age. More specifically 80% and 60% of the players were exposed to TM and TR respectively before the age of ten, which fits the tradition of TM and TR use in South Africa.

5.4 THE USE OF TM FOR SPORTS-RELATED PURPOSE

All the participants admitted the use of TM for soccer-related purposes when they played professional soccer. They also revealed the types of TM used. It is the first time that this information is recorded.

5.4.1 Indications for the use of TM sport related

The types and indications of TM in soccer are varied. It can be categorised in four broad categories.

A. Medical use

- Injury healing-This may include soft tissue injuries, fractures and dislocations;
- Minor ailments-This may include abdominal discomfort, headache, fatigue and muscular cramps; and
- Illnesses-Minor illnesses like respiratory infection, urinary tract infection.

B. Performance enhancement or self-protection

- Stamina –This refers to endurance, thereby improving the performance;
- Protection-For protection from evils or being witched; and
- Strength-This refers to aid more power to the team or an athlete.

C. Team performance enhancement

- Improved performance-The team sangoma will bring medicine for the whole team for different purposes like performance improvement, protection of the team from bad luck or evils.
- Team order-When you are a member of the team and the team is ordered to take medicine, you are also obliged to take the medicine. Failure to do so may hold that you can be excluded from the team because you can bring bad luck to the team. This is usually done as part of team rituals.

D. Adverse effects on opponents

- Counteract opposition team-In this case the sangoma of the team gives the players medicine (*muthi*) to counteract the TM or TR of the opposition team.

5.4.2 Types of TM and medicinal procedures used

According to South African case study done on the use of TM by Cocks and Moller (2002),herbal medicines are made from different parts of the plant, that is, bulbs, leaves, roots, tubers, stems, bark, or the whole plant. Some of the medicines reported were prepared for use in several ways, including as a body wash, emetic (vomiting mixture), smoke or steam, enema, to be sprayed or planted around the house, or smeared on the whole body or body parts. There were multiple uses of medicines found, including: for good luck/good fortune or to chase away or cleanse bad luck, to bring protection, chase away, ward off or smoke out evil spirits and provide protection from lightning.

Different names of TM and injury healing procedures in soccer were recorded here for the first time. They are listed and discussed below. Three categories were identified, namely African TM, general or international TM, and procedures.

5.4.2.1 African *Traditional Medicine*

1. Imbiza

- Traditional name: Imbizaephuzwato;
- Scientific name: Scillanatalensis;
- Preparation: Imbiza is a traditional herbal tonic made from a mixture of extracts of roots, bulbs, rhizomes and leaves of 21 medicinal plants and is used in Traditional medicine as a multipurpose remedy;
- Indications and uses: Some of the sport-related uses are for treating wounds, swelling and arthritis; anti-inflammatory, fracture healing and cleansing to make the body strong. It also has good antibacterial and antifungal effects;
- Adverse effect: Bradycardia, extrasystoles, vision abnormality; and
- Banned substance: Cardiac glycosides having a diuretic.

2. Sekaname

- Traditional name :Sekanama
- Scientific name: UrgineaSanguinea;
- Preparation: Boiled for 5-20 minutes and one tin cup is taken orally three times a day;
- Indications and uses: Blood purifier, diuretic, ritual use and cough;
- Adverse effect: cardiac and kidney failure; and
- Banned substance: Cardiac glycosides which have a diuretic effect.

3. Impepa

- Traditional name: Impepo;
- Scientific name: HelichrysumOdaratissimum;
- Preparation: It is made from leaves that are burned and inhaled;
- Indications and uses: To ward off evil spirits;
- Adverse effect: Not known; and
- Banned substance: Not known.

4. Vimbela

- Traditional name:Uvimba;
- Scientific name:Hypoxis rooperii;
- Preparation:It is made from leaves and prepared as an ointment;
- Indications and uses: Inflammations, arthritis, sorcery, ward off evil spirits and wounds;
- Adverse effect: Not known; and
- Banned substance: Dinitrogenous alkaloids which increase bone marrow production, growth promoter, gonadotrophin release stimulation, and diuretic and corticosterone induction.

5. Umhlabelo/Mhlabela

- Traditional name:Umhlabelo;
- Scientific name: Not known;
- Preparation: As an ointment;
- Indications and uses: Strengthening and healing of bones, reducing muscle cramps and speeding up the healing process;
- Adverse effect: Not known;
- Banned substance: Not known; and
- No information found on the database of traditional medicine in South Africa, more research is needed.

6. ZCC Tea

- Traditional name:Zion Christian Church Tea;
- Scientific name: Asparlathuslinearis;
- Preparation: It is prepared only by male members of the church from dried leaves to a liquid form;
- Indications and uses: Often used for cleansing, strengthening the body and general use;
- Adverse effect: Diarrhoea, dehydration and diuresis;
- Banned substance: Having a diuretic effect; and
- The tea is bought at the church headquarters in Morija Polokwane, Limpopo Province.

7. Sardines

- These are small, oily fish in the herring family of Clupeidae;
- Also called pilchards;

- According to the player's reports, they smeared themselves with sardines before playing so that they can run faster –move like sardines – and faster than their opponents, but there is no scientific evidence regarding this perception; and
- The only use known is as food.

8. Vimbela

It is the other type of TM used by players and there is no scientific information on it. Further research on this medicine should be carried out. Muthi is the general name used by Africans for TM.

5.4.2.2 *International Traditional Medicine*

9. Cannabis

- Traditional name: Dagga;
- Scientific name: Cannabis;
- Preparation: Leaves are dried and smoked; resins can be prepared in a liquid or powder form-mixed with food or taken orally in a liquid form;
- Indications and uses: migraine, stimulants, colds. Adverse effect: Euphoria, hallucination and muscular in coordination; and
- Banned substance: Cannabinoids.

10. Ginseng

- Traditional name: Ginseng;
- Scientific name: Panax;
- Preparation: can be prepared in tablet form, liquid and powder form. Mostly added to other energy drinks or food;
- Indications and uses: stress, immune booster, general tonic, increase exercise capacity; to slow the effects of detraining; to enhance concentration and alertness and for general well-being;
- Adverse effect: Nervousness, insomnia, breast tenderness, menstrual changes and headaches; and
- Banned substance: Ginsenosides that are not on WADA list.

5.4.2.3 Traditional Medicine procedures

1) Razor cut over injury

This procedure is done to soft tissue swelling due to injury. It is done by a Traditional healer who uses a razor to make multiple cuts over the swelling area. After the cuts, the muthi is applied over the bleeding sites and allowed to dry.

2) Suction with tennis ball over the injury

This procedure is also done to soft tissue swelling, more commonly used for swelling around the joints. The Traditional healer makes a cut around the swollen area and applies an open tennis ball to suck any fluid from the joint. The procedure might be repeated over several days until the swelling has subsided.

Limited scientific information is available on most of these substances and methods. Now that the use thereof has been confirmed in a scientific way, the important issues for the use of substances in sport should be addressed. These include efficacy, safety and legality of the identified substances and methods.

As mentioned in the literature review, Brodeker and Kronenberg (2002) have indicated that WHO has already identified challenges on TM use, which include policy and regulation (legality), efficacy, safety and equality and Street, *et al.* (2008) have also stated that there is a limited or no quality control of TM in South Africa.

Now the safety of this reported TM should be researched. Zhang, *et al.* (2002) has already mentioned that strong quality control is needed for global drug safety, including these TM practices discussed above.

There is a global problem with adulterations of herbal medicine with undeclared synthetic drugs, according to Bogusz, *et al.* (2006), which have to be eliminated for the sake of athletes' safety as part of future research on the above-documented TM.

Vigorous testing of dietary supplements has already been recommended by Thevis, *et al.* (2012) and must also include the above-documented TM. There are already articles on some of the mentioned TM, and future research should include umhlabele, vimbela, impepa and traditional medicine procedures.

5.4.3 Traditional medicines versus Western medicine

African traditional medicines characterised by a holistic approach to the spirit-mind-body concept of health, embracing people, animals, plants and inanimate objects in an inseparable whole from which all beings derive their living and healing forces (Hornsy,*et al.*, 2004).Herbal medicines form an important part of the culture and traditions of African people (Fennel,*et al.*, 2004).

The World health Organisation (WHO) estimates that botanical medicines are used by 75% of the world population (Casey,*et al.*, 2005).Herbal medicine and dietary supplements play an active part in people's health care, therapy and prevention of disease around the world. These products are considered harmless because of their natural origin and being helpful to some chronic illness treatment and maintenance of physical fitness (Liang,*et al.*, 2005).

It is estimated that around 27 million South Africans depend on traditional medicine for their primary health care needs (Street,*et al.*, 2008).Apart from their cultural significance, this is because herbal medicines are generally more accessible and affordable; consequently, there is an increasing trend worldwide to integrate it with Western medicine (Fennel,*et al.*, 2004).

An emerging feature of Traditional medicine in South Africa is the usage of herbal mixtures that are not new in other parts of world (like China) and also claim to treat a wide range of diseases and improve physical fitness. This practice shows signs of modernisation of Traditional medicine and is something in between ATM and Western medicine (Nohale, *et al.*, 2008).

In this study, the majority of participants (60%) prefer Western medicine before they think of traditional medicine. This might be due to a new generation in our society, the point of secrecy or traditional healers who are not officially recognised in South Africa.

As mentioned above, all the participants in this study had been exposed to TM at an early age and 100% of them agreed about the use of TM in sports but did not agree with the importance of it. This might be due to the new environment they are living in. Most of the new generation are moving to urban areas and are more into the use of Western medicine, whereas Traditional healers are more in rural areas and are mostly visited by

rural people as their first choice. Also, traditional healers do keep their herbs, type, location and preparations secret (Semenya & Potgieter, 2013).

This may lead to people having little interest in TM because less is explained about them. The other point is secrecy, as discussed above, and is more important to African culture. For a person to be fortified, they visit traditional healers for protection and it remains your secrecy or within the family (Cocks & Moller, 2002).

The issue of teamwork also played a role, but the individual, when out of team setting, do what they believe in - that is, visiting a Western doctor first. Interestingly, all of them do support an active movement toward integration of traditional healing in the official health care system. This shows that almost all participants (except four who abstained) do believe in both traditional and Western medicine.

On the efficacy of TM against Western medicine, the majority (60%) of the participants regarded Western medicine as definitely better compared to TM, while 40% were unsure or regarded them as being equally good.

From the results, it is noteworthy that all participants use both Western and traditional medicine and that the knowledge about the effectiveness of traditional medicine is not really known, which may be because of negative perceptions of the efficacy of TM. To my mind, they lack insight into TM because it is imposed on them at an early age and during the team setting, whereas information on Western medicine is widely available.

According to Casey,*et al.*(2005) it is clear that the provision of safe and effective treatments is an issue of growing relevance to those involved in the planning and provision of health care due to an increase in the use of herbal medicine. Traditional medicine has some strength that Western medicine is lacking, namely the holistic view of the patients' situations.

In Traditional practice, psychological, spiritual and social aspects play a large role and these holistic treatments can to some extent make up for the offer healer aspect, the medical treatment, when compared to Western biomedicine.

What should be kept in mind is that in South Africa, Traditional healers are flourishing in urban areas where Western health care is available; thus, Traditional Medicine is not

vanishing as the young flock to the city and may be forgetting their culture - as has been predicted (Jager, 2005).

5.4.4 Awareness of other players using TM

In African culture, the use of traditional medicine and traditional rituals is a family issue or a secret within the family. This cannot be communicated with other people who are not part of the family. In most cases, traditional healers are visited during the night and early hours of the morning. During the day, people prefer to visit a distant traditional healer where the family is not known in the area.

According to King (2012), patients visit traditional healers due to family pressure or due to lack of medicines at the clinic or when Western medicine is failing to cure their illnesses; others because of their religion; whereas Christians visit traditional healers at night so that they cannot be seen by people who know that they are Christian.

In this study, the reason why there were conflicting results might be because of secrecy as discussed above, lack of information on TM and Traditional healers' secrecy on their medications and rituals.

The participants admitted to performing and practising rituals together in a team context; individually they agreed that they use TM, but 60% of them they did not know others who are using TM. This anomaly can be explained only by the secrecy around TM and TR use.

5.5 THE USE OF TR FOR SPORT-RELATED PURPOSES

5.5.1 Prevalence of TR uses for sport-related purposes

Superstition is quite common in human society and is largely accepted among athletes. Female sports athletes are more likely to use rituals and are more in favour of supernatural attitudes than male athletes (Torgler, 2007).

In this study, all participants (100%) admitted participation in TR in professional soccer. They listed several rituals in which they themselves were involved and were performed as

a team. The majority of rituals involved dancing, chanting, and burning of incense and using ointments over their bodies.

These were done before matches, mostly in the dressing rooms. What also took place is praying and bathing in secret *muthi*; urinating in the mixture and bathing with it or with goat's intestines; while the application of tortoise fat also took place before the game.

Handing of team jerseys to a Sangoma for good luck before the match is also done. Rituals are performed to dispel ill fortunes, illness and evil spirits and to ensure good health, which may include a call for animal sacrifice participation or herbal medicine (Cocks & Moller, 2002).

Most of the mixture used are not known to soccer players, and are used in a team setup as prescribed by a team Sangoma who is appointed by the team. Players who do not participate in rituals run the risk of being left out because such a player might bring bad luck to the team. These rituals differ from team to team and no opposition should know that. The participants admitted the knowledge of most soccer players engaging in TR.

5.5.2 Perceived efficacy of TR to improve sports performance

Only one participant (20%) believed that TR can improve individual performance. It is interesting that the majority (80%) of participants who had been involved in different types of TR did not believe in improved performance from TR, based on extensive experience.

One participant from the group believed it has happened quite often that TR assisted in the team winning.

5.6 THE USE OF TM AND TR OUT OF A SPORT CONTEXT

None of the participants admitted to the use of TM and TR outside their sport context. This is contradictory, because the INT-group was exposed to TM/TR at an early age in a family set-up. In our African tradition, the new-born is exposed to Traditional medicine where the Traditional healer fortifies the new-born called *uthusiwa* in Venda for protection from evils, but when we grow up it is our choice to continue believing in TM or using it..

5.7 THE ROLE OF SECRECY IN THE USE OF TM AND TR

As discussed earlier, the use of TM/TR is regarded as a secret matter.

Most Traditional healers prefer to preserve secrecy about the plant habitat location, the traditional methods in healing and communication with ancestors (Semenya & Potgieter, 2013). In this study, all players who were interviewed told us about the secrecy the sangomas maintain concerning their muthi. They use muthi they did not know nor had an idea about - as illustrated Table 4.8. The conflicting results in this study might be also due to players' secrecy as they did not want other players to know that they do or did use traditional medicines or rituals.

5.8 CONCLUSION

The entire research study was challenging at many levels. There is an extreme dearth of literature on TM and TR use in the medical literature. What could be found, were studies in social sciences - which are interesting to contextualise the use of TM and TR, but do not have direct bearing on the current research topic. No literature could be found on the use of TM and TR in the athletic population in South Africa. The methodology also proved challenging. After two failed attempts at randomising study samples and collecting data via questionnaires, it was found that targeting and purposive sampling yielded better sources of information. Interviews also provided environments where replies could be contextualised and further information acquired.

An important recommendation from this study is to invite a social scientist with insight into the cultural complexities of TM and TR use to the research team. The methodology should include gathering of qualitative data, firstly because most TM and TR practices have to be interpreted in context, and secondly because the main need is to collect baseline information on substances and practices used, and not the science thereof. Scientific analysis would be a next step in gaining understanding of TM and TR use in sport in South Africa.

Even after all measures had been taken to collect reliable data, discrepancies were still forthcoming, emphasising the need for contextualising and interpreting the "first impressions" from an African cultural perspective. It was interesting to note that all participants used TM and TR and had an apparent intimate knowledge of the subject.

However, the majority of participants reverted to Western medicine as first healthcare choice. An overwhelming 80% of participants perceived TR to be ineffective in improving sport performance.

General use of TM and TR has now been documented for the first time in South African professional soccer. Moreover, a list of general indications for use of TM, and a list of substances have been identified and categorised in addition to the list of surgical procedures. A list of typical TR practices in professional South African soccer has also been compiled for the first time.

An extensive literature search was conducted to find information on the substances and rituals identified in the study. From a sport perspective, three main questions needed to be answered. Firstly, is the substance effective in doing what is claimed that it does; secondly, is it safe; and thirdly, is it allowed to be used in professional sport (not on the WADA list of banned substances). For none of the identified substances could these three questions be answered conclusively. The main conclusion from this study is therefore that there is not sufficient scientific evidence or knowledge on efficacy, safety and legality of TM and TR in South Africa for healthcare workers to recommend it to athletes. The consequent recommendation is that the identified substances are to be analysed and tested for efficacy, safety and legality – a mammoth task.

All participants (100%) in this research were Africans. The literature review indicated that Africans believe more in TM and TR for good health than other cultures.

Male soccer players were exposed to TM and TR earlier in their life and they experienced the use of TM and TR in their sporting career. They know different names for TM and TR used in sport. Many of the mentioned types of TM used boast scientific research on the ingredients. Except for one, the players did not believe that they have an effect on the sport results - even though they had experience of extensive use of them.

In nutshell, TM and TR are used in sport in South Africa.

I do recommend that WADA institute research to determine if the ingredients of the mentioned TM /TR do not give players an unfair advantage over others, and what effects they do have on players' performance.

APPENDIX A

INFORMATION SHEET AND INFORMED CONSENT (SOCCER)

INFORMATION SHEET AND INFORMED CONSENT (SOCCER)

INFORMATION REGARDING RESEARCH STUDY TO FORMER SOCCER PLAYERS**STUDY TITLE: THE USE OF TRADITIONAL MEDICINES OR RITUALS IN PROFESSIONAL SOCCER IN SOUTH AFRICA.**

Dear Sir

This letter is to inform you about a research project that will take place among former professional soccer players in South Africa, which will be conducted by Dr L.C. Mulungwa.

You have been invited for interviews as a former soccer player to participate in this research project for additional information regarding the use of traditional medicine or rituals in soccer in South Africa.

In this study we want to know if there is a use of traditional medicines or rituals by soccer players and their perceptions of their effectiveness. If you are willing to share your valuable experience with us, you will be interviewed by me personally.

The results of this research will be made available to you if you wish to see the results and may also be published in scientific journals. Once again, since your name will not be connected to the questionnaires, your name will not be connected to the data being published.

Your participation will be highly appreciated and will be rewarding to our society.

Regards

Dr L.C. Mulungwa
☎0153554807/8

INFORMED CONSENT

I, _____ (participant name) hereby consent voluntarily that I am willing to participate in this research study. I acknowledge that the study has been explained to me and that I understand the information given in the Information Sheet.

Signed at _____ 20__ on the ____ day of _____ 20__.

APPENDIX B

INTERVIEW GUIDE: TRADITIONAL MEDICINES IN SPORT

INTERVIEW GUIDE: TRADITIONAL MEDICINES IN SPORT

VERY IMPORTANT - Nowhere in the interview will you be asked to give your name, so there is no way that anybody will know what answers you gave. The transcriptions will also be held safe with Dr. Mulungwa, so nobody within the soccer community will have access to the answers given. The data will be treated confidentially at all times. You may withdraw from this study at any given moment during the completion of the interview. Findings from this study may be published.

When answering the questions, please refer to the following definitions:

Traditional medicines: Herbs or other non-pharmaceutical products which have been used by previous generations within your culture to treat or prevent illness and/or injuries or maintain well-being. Examples of such products include "muthi", "boereraad", Lennon's and homemade mixtures of different non-pharmacological products to mention a few. These products usually have been developed over generations and have cultural associations.

Rituals: Actions performed mainly for their symbolic or belief value, as practiced by a religion or tradition of a community. Examples include burning of incense, dancing, chanting and praying.

Thank you for taking part in this research project, your participation is very important and valuable.

Please note that by doing this interview you are voluntarily agreeing to participate in this research study. The data will be treated confidentially at all times. You may withdraw from this study at any given moment during the completion of the questionnaire. Findings from this study may be published.

		FOR OFFICE USE	
Participant number		1-2	<input type="text"/>
1.a	How many seasons have you been involved in professional sport? (<i>INCLUDING this current year</i>)		
<input type="checkbox"/>	This is my first season	3-4	<input type="text"/>
<input type="checkbox"/>	2 to 3 years		
<input type="checkbox"/>	4 to 5 years		
<input type="checkbox"/>	5 to 6 years		
<input type="checkbox"/>	More than 6 years		
1.b	In what capacity are/were you involved in sport?	5-6	<input type="text"/>
2.	Considering how and where you were raised, to which ethnic group do you belong <u>mainly</u>? (<i>Please tick <u>ONLY ONE</u> box</i>)		
<input type="checkbox"/>	Caucasian	7-8	<input type="text"/>
<input type="checkbox"/>	Ndebele		
<input type="checkbox"/>	Sotho		
<input type="checkbox"/>	Tswana		
<input type="checkbox"/>	Venda		
<input type="checkbox"/>	Xhosa		
<input type="checkbox"/>	Zulu		
<input type="checkbox"/>	Other (please specify)		
3.a	How <u>important</u> is the use of traditional <u>medicines</u> in your culture? (<i>Please tick <u>ONLY ONE</u> box</i>)	9	<input type="text"/>
<input type="checkbox"/>	Unimportant		
<input type="checkbox"/>	Of little importance		
<input type="checkbox"/>	Fairly important		
<input type="checkbox"/>	Very important		

3.b Please elaborate: _____

10-11		
12-13		
14-15		

4. At what age did you use traditional medicines for the first time?
(Please tick ONLY ONE box)

- ☐ Not applicable, I've never used traditional medicines before
☐ Under 10 years old
☐ 10-15 years old
☐ 16-18 years old
☐ Above 18 years old

16 ☐

5.a How important are rituals in your culture?
(Please tick ONLY ONE box)

- ☐ Unimportant
☐ Of little importance
☐ Fairly important
☐ Extremely important

17 ☐

5.b Please elaborate: _____

18-19		
20-21		
22-23		

6. At what age did you take part in a traditional ritual for the first time?
(Please tick ONLY ONE box)

- ☐ Not applicable, I've never taken part in traditional rituals before
☐ Under 10 years old
☐ 10-15 years old
☐ 16-18 years old
☐ Above 18 years old

24 ☐

7.a How often do/did you use traditional medicines for sport-related purposes?
(Please tick ONLY ONE box)

- ☐ Never, I don't use any form of traditional medicine for sport-related purposes
☐ Seldom (approximately once a month)
☐ Quite often (approximately every second week)
☐ Very often (at least once a week)

25 ☐

7.b Please elaborate: _____

26 ☐

8. What kinds of traditional medicines have you used in the past for sport-related purposes?

Take note: If you have never used any traditional medicines for sport-related purposes, please tick this box ☐.

27 ☐

Please list AS MANY as you can remember:

28-29		
30-31		
32-33		

9. For what reasons did you need to take traditional medicines?

(Please tick AS MANY boxes as you need to)

- ☐ Not applicable, I've never used traditional medicines or herbs
- ☐ Illness
- ☐ Injuries
- ☐ Strength
- ☐ Protection
- ☐ To counteract the effect of the traditional medicines or rituals of the opponents
- ☐ Because the rest of the team took it and I was expected to take it too
- ☐ Because I would have been excluded from the team if I didn't take it
- ☐ Other (please specify) _____
- _____
- _____
- _____
- _____
- _____

10. When you are/were ill or have an injury, do/did you first take traditional medicines before going to the doctor, or do you go to your doctor directly and immediately start taking the medication he/she gives you?

(Please tick ONLY ONE box)

- ☐ Traditional medicines first, including those given to you by family members
- ☐ Doctor's medicines first

11. Did you feel that the traditional medicines you used work better than the medication from doctors?

(Please tick ONLY ONE box which describes your feeling the best)

- ☐ Not applicable, I've never used traditional medicines before
- ☐ No, I strongly feel that the doctor's medicine is much better than the traditional medicine
- ☐ No, I don't think that the traditional medicine is necessarily better than the doctor's medicine
- ☐ I'm not sure, I think they are equally good
- ☐ Yes, I generally think that the traditional medicine is better than the doctor's medicine
- ☐ Yes, I definitely believe that the traditional medicine is much better than the doctor's medicine

12. From experience, how often do you think other athletes/players use traditional medicines for sport-related purposes?

(Please tick ONLY ONE box)

- ☐ I'm not aware that anyone uses traditional medicines
- ☐ Seldom (approximately once a month)
- ☐ Quite often (approximately every second week)
- ☐ Very often (at least once a week)

13. What kinds of traditional medicines are you aware of that are being used by other athletes/players?

Take note: If you are not aware of any traditional medicines that are being used by other athletes/ players, please tick this box ☐.

Please list AS MANY as you can think of:

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14. Which one of the traditional medicines mentioned in Question 13 are most widely used by other athletes/players?

Take note: If you did not name anything in Question 13, please tick this box

☐

Please name ONLY ONE: _____

15. How often are/were you involved with rituals to perform better or stay safe in sport?

(Please tick ONLY ONE box)

- ☐ Never
☐ Seldom (approximately once a month)
☐ Quite often (approximately every second week)
☐ Very often (at least once a week)

16. How often are other athletes/players involved with rituals to perform better or stay safe in sport?

(Please tick ONLY ONE box)

- ☐ I'm not aware that anyone is involved with rituals
☐ Seldom (approximately once a month)
☐ Quite often (approximately every second week)
☐ Very often (at least once a week)

17. What rituals have you performed as a complete team before a competition/match?

(Please tick AS MANY boxes as you need to)

- ☐ Praying
☐ Burning incense or something provided by a spiritual healer (Sangoma)
☐ Using animal products
☐ Dancing
☐ Chanting
☐ Not applicable, I've never been involved with any rituals as part of the team
☐ Other (please specify) _____

18. Do you think the rituals ever helped you to play better during a match?

(Please tick ONLY ONE box)

- ☐ Not applicable, I've never taken part in a ritual in a sport context before
☐ No, definitely not
☐ No, I don't think so
☐ I'm not sure, I neither agree or disagree
☐ Yes, I think so
☐ Yes, definitely so

19. How often do you feel the rituals helped you to win a match?

(Please tick ONLY ONE box)

- ☐ Not applicable, I've never used traditional rituals
☐ Never, the medicines and rituals didn't help us to win
☐ Seldom, I'm not sure that the traditional medicines and rituals really worked
☐ Quite often, but sometimes the other team's muthi or ritual worked better
☐ Very often, they were very effective

20. Do you participate in another sport on provincial or national level?

- ☐ Yes
☐ No

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FOR OFFICE USE

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21. Do you use traditional medicines in other sports?
☐ Not applicable, I answered "no" to the previous question
☐ Yes
☐ No

22. Do you use traditional rituals in other sports?
☐ Yes
☐ No

23. Do you use traditional medicines OUTSIDE of a sports context (e.g. at home or when visiting relatives)?
☐ Yes
☐ No

24. Do you use traditional rituals OUTSIDE of a sports context (e.g. at home or when visiting relatives)?
☐ Yes
☐ No

25. Please comment on the element of secrecy in using African traditional medicines and rituals:

72 ☐

73 ☐

74 ☐

75 ☐

FOR OFFICE USE

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This concludes the interview. Thank you very much for your time and willingness to participate, it is much appreciated and very valuable to us.

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