DOCUMENTING INDIGENOUS KNOWLEDGE OF THE USE OF THE DWARF SAGE PLANT IN NAMIBIA

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Abstract

The study was conducted in 2009 in the Oshikoto and Khomas Regions of Namibia. The aim of the study was to document indigenous knowledge of the use of the Dwarf Sage plant in Namibia. The objectives of this study were: (a) to conduct a systematic recording of the body of indigenous knowledge of the Dwarf Sage, (b) to record and document the use of the Dwarf Sage, and (c) to document the types of diseases that can be treated with the Dwarf Sage. Qualitative research approach was used in the study. The study used purposive snowball sampling procedure to draw a sample from the population. Data was collected from Indigenous Knowledge Systems (IKS) practitioners and beneficiaries of the Dwarf Sage. Five (5) IKS practitioners and eight (8) beneficiaries of the Dwarf Sage were interviewed using open-ended interview questionnaires. Three of the five IKS practitioners interviewed reside in Oshikoto Region; while two (of the IKS practitioners interviewed) reside in the Khomas Region. Five of the beneficiaries interviewed reside in the Oshikoto region, while the other three beneficiaries reside in the Khomas Region. The study findings revealed that knowledge of the Dwarf Sage plant had been obtained through observation and informal apprenticeship training. All the IKS practitioners had undergone a small initiation rite process to complete their informal apprenticeship training and become recognised practitioners. All IKS practitioners and beneficiaries reported that the Dwarf Sage plant is used to treat wounds known as "*Ondhiya"* in the *Oshiwambo* vernacular language and

Shingles in English. The IKS practitioners used fresh or dried pounded Dwarf Sage plant leaves to treat their patients' wounds. All beneficiaries of this plant interviewed disclosed that they had consulted a clinic or hospital before consulting IKS practitioners. They all reported that hospital medication could not heal their wounds. The reports of the beneficiaries about being healed by the Dwarf Sage but not the hospital medication left the researcher curious to submit the plant to the scientific laboratory for further exploration and plant element analysis.

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Declarations

I, Victoria Magano Nakapipi-Amakali, hereby declare that this study is a true reflection of my own research, and that this work, or part thereof has not been submitted for a degree at any other institution of higher education.

..... [Signature] Date.....

Victoria Magano Nakapipi-Amakali

Dedication

This work is dedicated to my family members for their unconditional support during my studies.

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I would like to thank God the Almighty, who gave me the power to persevere throughout the years during my studies. The family members, friends and colleagues who supported me through this educational adventure, I thank you all. There are several individuals whose support and effort requires specific acknowledgement.

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Chapter 1: Introduction

Orientation of the Study

Since the dawn of creation, people on all continents have long used hundreds, if not thousands, of indigenous herbal plants for treatment of various diseases. Herbal plants have been the primary source of medicine for the human race. Finding healing powers in plants is an ancient idea. The first generally accepted uses of herbal plants as healing agents were illustrated in the cave paintings discovered in the Lascaux Caves in France, which have been radiocarbon dated to belong between 13,000 to 25,000 Before Christian Era (BCE). There is also evidence that Neanderthals (*Homo sapiens*) who lived 60,000 years ago in present-day Iraq used herbal plants for medicinal purposes. This evidence was found at a burial site at Shanidar Cave, Iraq, in which a Neanderthal man was uncovered in 1960. He had been buried with eight species of herbal plants. These species of herbal plants are still widely used as indigenous medicine around the world (Tapsell, 2006).

The European and the Mediterranean cultures have been using herbal plants as medicines for over 4,000 years. Herbal plants that are used have been referred to as "herbs". The word "herb" is a derivation of the Latin word, *herba*. Originally, the term "herb" applied only to non-woody plants. Today, "herb" refers to any part of any plant used for flavour or medicine. Though the term "herb" can also be equated with food

spices, it is generally used in reference to plants, or any part of a plant, having nutritional and/or medicinal value(s). Many of the "herbs" used by humans to season food yield useful medicinal compounds. The use of and search for dietary supplements derived from plants have accelerated in recent years; therefore, many modern drugs have been derived from plants (Tapsell, 2006).

The use of herbs to treat diseases is almost universal in non-industrialised societies. Certain traditions came to dominate the practice of herbal medicine at the end of the twentieth century, namely:

- The herbal medicine system, based on Greek and Roman sources;
- The Siddha and Ayurvedic medicine systems from various South Asian countries;
- Chinese herbal medicine (Chinese herbology);
- Unani-Tibb medicine;
- Shamanic Herbalism;
- African herb healing.

There are also several types of herbal medicine systems that are used today, namely: European, Native American, Chinese, Ayurvedic, African and Western medicine systems. These medicine systems are the most prevalent. There is a common thread that

joins these systems; and all of these systems treat the human body and they all make use of the energy of plants, together with the energy in each individual (Eldredge, 2003).

The World Health Organization (WHO) estimates that 80% of the world's population presently uses herbal medicine for some aspects of primary health care, especially for the reason that modern medicines are too expensive to most of the world's population. In comparison to modern medicines, traditional herbal medicines can be grown from seeds or gathered from nature at little or no cost, and form a major component in all traditional medicine systems (World Health Organization [WHO], 2008).

In Germany, about 600 - 700 plant-derived medicines are available and are prescribed by some 70% of German Physicians. In the last 20 years in the United States, public dissatisfaction with the cost of prescription medications combined with an interest in returning to natural or organic remedies, has led to an increase in herbal medicine use. There seem to be considerable health benefits in the uses of traditional medicinal plants for treatment of various diseases. Traditional medicinal plants are used for the treatment of several disorders such as heart attack, stroke, hypertension, kidney stones, infertility, and intestinal problems and also for the treatment of wounds. Moreover, due to unavailability of modern health facilities, plant-based medicines are still used today (WHO, 2008).

According to Bruneton (1995), in South Africa a large part of the day-to-day medicine is still derived from plants and large volumes of plants or their extracts are sold in both the informal and commercial sectors of the economy. Wild plants that many people once considered weeds are being turned into multi-million dollar industries in international businesses. The growing worldwide demand for herbal and natural products to meet the needs both for health care and dietary supplements has opened up new opportunities for medicinal plant-based industries. However, this market-propelled demand has created tremendous pressure on the natural resources due to over-harvesting (United Nations Educational, Scientific and Cultural Organization [UNESCO], 1998). Subsequently, cultivation of medicinal plants has become the most recent branch of agriculture and horticulture. One of the reasons for this cultivation is that for a very long time the gathering, preparation and application of medicinal plants were associated with traditional practices (Bruneton, 1995).

The major concern now is that many of these medicinal plants, including the Dwarf Sage which is the focus of this study, are in danger of becoming extinct due to over-harvesting of the plants, as well as removal of the roots or rhizomes. In addition, knowledge of these medicinal plants might become lost, due to non-recording.

The scientific name for the Dwarf Sage is *Litogyne / Epaltes gariepina,* and it is a plant used for medicinal purposes by IKS practitioners. The Dwarf Sage is found in large, dry riverbeds such as the Kuiseb, Swakop and Omaruru Rivers in Namibia. It grows around

the edges of pans in grassland, on riverbanks, along roadsides and also on cultivated land. It is also found in neighbouring countries such as Mozambique, South Africa, Zimbabwe and Botswana (Koenen, 2001). There are many types of Sage plants, but this study is focussing solely on the Dwarf Sage. Other types of Sage plants are mostly used as herbs and spices, while the Dwarf Sage is traditionally used as a medicinal healing plant for external use only. The Dwarf Sage plant, which is one of the indigenous plants, has been used as traditional medicine for several years, based upon the body of knowledge of indigenous medicinal plants that has been accumulated in the course of many years.

Statement of the Problem

Due to unavailability of modern health facilities and services in some rural communities, many people still rely on the use of traditional medicinal plants for the treatment of common diseases. A wealth of knowledge of the use of herbs such as the Dwarf Sage is expected to be accumulated among the IKS practitioners. However, there is an increasing loss of indigenous knowledge associated with traditional administration of medicinal plants such as the Dwarf Sage. Indigenous knowledge associated with the administration of the Dwarf Sage has not been recorded. In addition, modern Western scientific treatment practices have replaced traditional procedures; this has further contributed to the loss of indigenous knowledge of the healing powers of the Dwarf Sage. Despite the introduction of Western scientific medicine, a substantial number of

rural people still rely on traditional healing practices for the treatment of diseases. Positive outcomes of the Dwarf Sage have never been documented in Namibia and merely form part of the body of knowledge being transferred orally from one generation to another.

Indigenous knowledge is being lost because it is passed on from the experienced to the inexperienced by word of mouth. In the absence of formal recordings, this body of knowledge might be lost. The majority of present-day IKS practitioners in Namibia are aged, and there is a tendency by the young not to take up this traditional profession any longer. Moreover, due to urbanisation, some villagers have become accustomed to Western scientific-based medicine. Therefore, a wealth of knowledge in this area is gradually being lost due to lack of information transfer across generations, and due to lack of formal recording of traditional treatment practices. Since this body of knowledge forms part of the Namibian indigenous knowledge systems, it should not be allowed to become lost to posterity.

The present-day IKS practitioners are very old. A wealth of knowledge in this area is being lost due to lack of information transfer in written form for the younger generation. The younger generation has also lost touch with the older people, as they have a tendency to migrate to cities in search of what they believe to be lucrative jobs. Therefore, the knowledge and skills become easily forgotten as most of the indigenous knowledge transfer in the country is based on oral transmission. In addition, the younger

generation seems not interested in this knowledge. It has therefore become necessary to document indigenous knowledge of the use of the Dwarf Sage plant.

Purpose of the study

The purpose of the study is aimed at collecting and documenting indigenous knowledge of the Dwarf Sage as a medicinal plant, its usage and types of diseases it can treat (cure).

Research Objectives

The following research objectives were formulated for this study:

1. To conduct a systematic recording of the body of indigenous knowledge of the Dwarf Sage as a medicinal plant.
2. To record and document the use of the Dwarf Sage.
3. To document the types of diseases that can be treated with the Dwarf Sage.

Significance of the Study

The findings obtained from this study may contribute to the existing body of knowledge related to indigenous medicinal plants, and may be shared with health practitioners, community health educators and the world at large. More importantly, the traditional use

of this plant for healing purposes might be an indication of the presence of chemical elements valuable to medical use, which might be necessary to be integrated into modern community health care practices. The findings may further be used to educate rural community members about the Dwarf Sage as a medicine, since health education forms an integral part of community education. In addition, the study findings may raise the awareness of the preservation of the Dwarf Sage plant as a medicinal plant in Namibia.

Limitations

Considering the time and financial difficulties experienced by the researcher, the following decisions were taken:

1. The study was confined to two regions only.

2. IKS practitioners were able to refer the researcher to respondents (other IKS practitioners and beneficiaries) living outside the Onayena Constituency where the first respondent was identified. The prospective respondents whose residence was not specified could not be traced. Nonetheless, the number of IKS practitioners and beneficiaries interviewed for the study provided a sufficient amount of data.

Definition of Terms

Indigenous Knowledge

The compound concept "indigenous knowledge" refers to local data or information, whereas the concept "local" means originating in a particular place, e.g. local to Namibia. Hence, within the context of this research study, the concept "indigenous knowledge" refers to the body of data or information on the Dwarf Sage held by the indigenous inhabitants of a specific place, particularly those with a traditional culture (Wevell, 1996).

Indigenous Knowledge Systems

The concept "Indigenous Knowledge Systems" (IKS) refers to the complex set of knowledge, skills and technologies emerging and evolving from conditions specific to populations and communities within a particular geographic area. The concept therefore constitutes the body of knowledge that indigenous inhabitants of a particular place, particularly those with a traditional culture, have developed over time, and are still continuing to develop (Grenier, 1998).

Hence, within the context of this research project, the concept Indigenous Knowledge Systems refers to the schemata that traditional healers and other indigenous people have

developed over time regarding the cultural/traditional use of herbal plants for medicinal purposes.

Dwarf Sage

The word “dwarf” refers to a plant (or animal or person) that is much smaller than others of its species, usually as a result of selective breeding, i.e. a type of Sage that is much smaller than other Sage species. The Dwarf Sage is a plant with aromatic greyish green leaves, with the botanical name *Litogyne/ Epaltes gariepina*.

Traditional Medicine

The World Health Organization (WHO) defines the concept “traditional medicine” as “comprising therapeutic practices that have been in existence, often for hundreds of years, before the development and spread of modern scientific medicine and are still in use today. These practices vary widely, in keeping with the social and cultural heritage of different countries” (WHO, 1985).

For the purpose of this study, traditional medicine refers to health practices, approaches, knowledge and beliefs incorporating plant-based medicine derived from the Dwarf Sage. In addition, it also refers to manual techniques, exercises applied singly or in combination to treat and prevent illnesses or maintain well-being.

Summary

This chapter provided background information of the study, the statement of the problem, research objectives, and significance of the study, limitations, and definition of terms. The next chapter is aimed at reviewing related literature to examine what has already been done and what is still to be done in the area under investigation.

Chapter 2: Literature Review and Theoretical Framework

Introduction

The previous chapter provided background information to the present study on the documentation of the use of the Dwarf Sage plant. In this chapter, relevant literature is reviewed in order to expand the insight into the topic of this research. The literature reviewed concerns regarding the major characteristic of indigenous knowledge, production of indigenous knowledge and preservation of indigenous knowledge. In addition, the literature review will include African traditional medicine, recording of African traditional medicine, the importance of traditional medicine in African countries, the practice of traditional medicine in Africa, and finally, a view on the risk that information pertaining to medicinal use of herbal plants from the Namibian/African region might become extinct. The literature will also focus on the current situation in the use of plant-derived medicines, the legal status of plant-derived medicine and the use of plant-derived medicine in Namibia. Case studies of traditional medicinal plants have been reviewed to supplement the literature.

Major Characteristic of Indigenous Knowledge

Indigenous knowledge is characteristically passed on from the experienced to the inexperienced by word of mouth in everyday experiences (e.g. hunting, fishing, and social interactions) of all people in a community that are shared as stories representing myths, beliefs, and ceremonies. A major distinguishing characteristic of indigenous knowledge is that it is intergenerational. It is handed over from one generation to the next (Ocholla & Onyancha, 2005).

Production of Indigenous Knowledge

Indigenous knowledge is produced in an ongoing manner and accumulated from everyday experiences. Revision of knowledge is ongoing and people accomplish this through direct use of knowledge. All people, both young and old, are actors in indigenous knowledge production. This is why Ocholla and Onyancha (2005, p.248) say, "… indigenous knowledge is tacit or tangible knowledge which is inseparable from realistic knowledge…" and lament that it is unfortunate that due to "… ignorance and arrogance, indigenous knowledge has been neglected, vindicated, stigmatised, illegalised, and suppressed among the majority of the world communities…" However, Ocholla and Onyancha (2005) rejoice over the fact that indigenous knowledge has recently been brought back to the people because of interventions by governments and civil societies through legislation and policies that pertain to intellectual property rights,

research, alternative medicines and nutrition. These developments ease the fears that increasingly rose up due to globalisation pressures and also increasingly fostered melting down of indigenous knowledge.

Preservation of Indigenous Knowledge

Since indigenous knowledge is passed on from adults to younger generations, one would not expect this kind of knowledge to remain completely intact. Early ethnographers describe indigenous knowledge with negative connotations; nevertheless, time has shown that some of the knowledge is worthwhile (Reynar, 1999). According to Reynar (1999), indigenous knowledge has kept evolving and improving to the extent that the past fifteen years have noted an increase in indigenous knowledge systems. This is observed through a phenomenal increase of literature.

Nakashima and Elias (2002) recognise the value of indigenous knowledge of the local people of the world. Today, the International Science Organization agrees that some of the scientific contributions such as classification of plants were partly adapted and adopted from indigenous people. The local people's extensive knowledge of plants and animals was a source for compiling the extensive list for classifying living organisms. By the same token, Nakashima and Elias (2002) reported that the indigenous people accumulated knowledge of medicines, some of which has been upgraded using scientific techniques. Furthermore, recognition has been made that some indigenous people have

their own science covering among others, physiology, psychology and health. The only difference is that indigenous knowledge tends to come as a whole set of knowledge (holistic) and not compartmentalised, as done in the Western sciences (Nakashima & Elias, 2002).

African Traditional Medicine

African traditional medicine is the oldest and perhaps the most diverse of all medicine systems. Africa is considered to be the cradle of mankind with a rich biological and cultural diversity. This is evident in the marked differences between various regions of this continent when it comes to healing practices (Gurib-Fakim, 2006). Medicinal and poisonous plants, including a diverse array of woody plants, have always played an important role in African life. The traditions of collecting plants as well as processing herbal remedies and applying them have been handed down from generation to generation (Von Maydell, 1990).

Medicinal plants are particularly important as an integral part of traditional therapy of local people and as a possible source of valuable phytochemicals for the Western pharmaceutical trade. Despite the increasing adoption of Western-style medical practice by developing countries, plants still represent the main source of primary health care. In some countries, up to 90% of therapy is confined to medicinal plants (Penso, 1980). Reasons for this continued widespread use of medicinal plants are numerous. “Modern

medicines in developing countries are generally of poor standard and hampered by lack of funds and infrastructure. Drugs are expensive and often unavailable, hospitals lack the proper equipment, and facilities are inaccessible for many people living away from urban centres where these facilities tend to be concentrated" (Penso, 198, p. 183). As a result, many people continue to rely on traditional medicinal practice, using plants, which by trial and error over a period of time have proved to be safe, effective, cheap and readily available (Penso, 1980).

Recording of African Traditional Medicine

Most African cultures have an oral (*by word of mouth*) tradition, unlike other parts of the world where citizens rely on traditions and cultural beliefs to be transferred via written systems (text) (Hedberg & Staugard, 1989). Despite this scarcity of an extensive *written* body of knowledge of African traditions and cultural beliefs, there are some accounts of traditional medicine - the oldest is an account of historical events by the famous Arab doctor and historian, Avicema, during AD 980-1037. With the colonisation of Africa, European botanists started to explore the flora of various parts of the continent. The ethno-botanical information on the use of plants was sometimes documented on herbarium labels, and in this way ethno-botanical information on a number of plants began to accumulate (Hedberg & Staugard, 1989). Written systematic accounts dealing with medicinal plants in Africa are of fairly recent date, while reports dealing with ethno-pharmacological aspects are even more modern. An extensive review of African

traditional medicine and of the use of plants for medicinal purposes was written by Maurice Iwu, a Nigerian pharma-cognosist and ethno-pharmacologist (Iwu, 1993). A number of traditional national pharmacopoeias came into view, starting with Madagascar in 1957, followed by rapid development of research in the fields of ethno-botany and ethno-pharmacology across many African countries (Hedberg & Staugard, 1989). The African Pharmacopoeia, covering traditional medicine of many African countries, has been published by the Scientific Technical Research Commission of the Organization of African Unity, starting with volume 1 in 1985 (WHO, 1999).

Hence, the scarcity of publications dealing with African traditional medicine substantiates the need for systematic recording and notation of Indigenous Knowledge Systems, particularly information on medicinal plants in Namibia.

To obtain a clear view of the relationship between people and their natural environment and to suggest sustainable management options, it is necessary to gather data such as the type, source and quantity of resources used, their importance within the cultural context and alternatives if the resource is scarce and needs to be conserved for the preservation of genetic diversity and future benefits. Presently, more than 75 chemical substances derived from herbal plants are found in modern medicine. It would be difficult to screen systematically each of the approximately 400,000 species of plants in the world for potentially valuable chemicals. Therefore, indigenous knowledge of medicinal plants serves as an important pointer to the species, which might contain the most significant chemicals. A long and intimate association with their floras have enabled indigenous

peoples, through trial and error, to create systems of effective traditional medicine (Hedberg & Staugard, 1989). With the arrival of modern education and cultural Westernisation, this empirically acquired knowledge is being lost, especially amongst the younger generations. Since it is generally the older generation that holds much of the traditional knowledge, which is passed on orally, it is at risk of disappearing in the near future (Hedberg & Staugard, 1989).

Documenting medicinal plants and selecting those that are safe, effective and easily available or cultivated may integrate these plants into modern health care systems. A joint UNICEF/WHO study investigating the health needs of the developing world came to the conclusion that only by combining traditional with modern systems can health care be truly effective and affordable for low income groups in the developing world (Hedberg & Staugard, 1989). Examples of how this integration might be achieved include the establishment of a medicinal plant nursery within a hospital or carrying out a basic training programme aimed at domestic users that supports more effective home-based primary health care. As the population already has a tradition of using medicinal plants, such schemes are likely to succeed.

The Importance of Traditional Medicine in African Countries

Traditional medicine forms an important component of the primary health care systems in most of the African countries, since about 80% to 90% of African populations depend

on traditional medicine for their primary health care (Hostettman, Marston, Adobo, & Wolfender, 2000). For instance, in Sudan, traditional medicine plays an important role in health care, since access to hospitals and other medicinal facilities is limited and a high percentage of the population are nomads (Elegami, El-Nima, Tohami, & Muddathir, 2002). In Tanzania, over 60% of people seeking for medical treatment consult traditional healers as their first point of contact (Hedberg, Hedberg, Madati, Mshigeni, & Mshiy, 1982). To many Tanzanians living in the rural parts of the country, traditional healers remain their only medical practitioners available within reasonable distance (Hedberg et al., 1982). In addition, traditional medicine remains important in the big cities of Tanzania, such as Dar-es-Salaam (Swantz, 1974). The number of registered traditional healers in Tanzania is estimated to be about 30,000 to 75,000 (Mhame, 2000), in comparison with about 600 Western-trained doctors (Weenen, 1990).

In South Africa, it is estimated that about 27 million people depend on traditional herbal medicines for their primary health care needs (Mander, 1998). In Nigeria, traditional medicine is well acknowledged and the job of traditional medicinal practitioners (TMP) is established as a viable profession (Kafaru, 1994). Traditional medicine seems to have certain advances over “Western medicine”, because it forms an integral part of the people’s culture and is particularly effective in solving certain cultural health problems (Von Maydell, 1990).

The rising cost of Western medicine forces the people in African countries to increasingly turn to traditional medicine as an affordable alternative. The current policy in many African countries has been to incorporate traditional medicine into the formal health care sectors (Tsey, 1997). In some African countries, it is agreed that traditional medicine should be taught and practised as part of the formal health care sectors (Tamakloe, 1995). Gradually, traditional medicinal practitioners (TMP) are being officially accepted as part of African health services and their medical knowledge is finding its place in hospitals and clinics (Neuwinger, 2000). In South Africa, traditional medicinal practices have been officially recognised as a legitimate form of health care and traditional medicine is now being integrated into the official health care system under the Reconstruction and Development Plan (RDP) (Pick, 1992). In many African countries, traditional treatments are now being used for HIV infection (Morris, 2002) and malaria (Njoroge & Bussman, 2006), including the use of medicinal plants to help alleviate the symptoms associated with other diseases. These traditional treatments are sometimes claimed to cause less adverse side effects than conventional antiretroviral therapy (Morris, 2002). Evidence regarding the widespread use of traditional medicinal plants therefore substantiates the importance of systematic recording of the use of traditional medicines.

The Practice of Traditional Medicine in Africa

The experts of traditional medicinal knowledge differ across various indigenous groups in Africa. In some cases all members of the community may know how to treat a wide range of common ailments and they only seek the advice of a traditional healer for the treatment of specific diseases when their own treatments have failed. For example, in Tanzania, common herbal treatments are known and used by the majority of rural people, as well as by many people in the cities, although these people are not recognised as *waganga* (medicine men) since they are not "selling" their services to others (Swantz, 1974). The day-to-day uses of medicinal plants are often included as a part of the diet.

In many cases there are no clear indications of the extent to which medicinal plants grown in home gardens are used by households, as opposed to being prescribed by traditional healers. The TMPs (traditional medicinal practitioners) "sell" their services as part of their business enterprise (Swantz, 1974). Among some indigenous groups, TMPs hold most of the medicinal knowledge, and in these cases the knowledge is often passed down through certain families/tribes from generation to generation under a system of informal apprenticeship (Neuwinger, 2000; Swantz, 1974). In Dar-es-Salaam, among the Zaramo tribe, a considerable number of the traditional medicine men have learnt their *uganga* (medicinal practice) from other ethnic groups, since their *uganga* is thought to be more powerful (Swantz, 1974). Traditional healers collect medicinal plants from the wild and/or cultivate some at home for their medicinal practices (Hedberg & Staugard,

1989; Swantz, 1974). Among the Zaramo in Dar-es-Salam, almost every tree, shrub or grass is believed to have some medicinal value (Swantz, 1974). Traditional healers may sell some of their elements of medicinal plants at local markets, as could be observed in Dar-es-Salaam (Fyhrquist, 2002) and Johannesburg. In some African countries medicinal plants are sold in *Amayeza* stores, i.e. "medicine shops" (Swantz, 1974).

Disappearance of information on Uses of Medicinal Plants in Africa

The abundance of information on the traditional uses of medicinal plants in Africa is in danger of becoming extinct. Though some written information has been produced in some specific regions, indigenous knowledge of the use of medicinal plants is mostly passed down orally; the bulk of this body of knowledge is poorly documented (Gurib-Fakim, 2006). The large volume written by Iwu (1993) about medicinal plants and their uses within several African countries is extensive and covers much, but it appears that Namibian indigenous knowledge of herbal plants has not yet been adequately documented.

It is rare to find traditional healers with written documents, apart from minor memory aids as to plant characteristics, which help to find medicinal plants similar in appearance but different in healing effects. Oral transfer of knowledge is vulnerable to disruption and interference and may result in the loss and distortion of valuable ethno-medicinal information. This is likely to be even more of a problem among indigenous groups

where traditional healers hold most of the knowledge. The tendency of refusing to reveal information about medicinal plants even worsens the risk of indigenous knowledge becoming extinct (Hedberg & Staugard, 1989). Knowledge transfer from generation to generation is also problematic, since the younger generations understand traditional medicine as being a profession mainly conducted by members of an older generation (Ntemi & Bracebridge, n.d).

In light of the preservation of indigenous knowledge, sustainability of the use of medicinal plants has become an important issue, particularly due to an ever-increasing demand for medicinal plants among a growing African population, which demand exerts increased pressure on medicinal plant resources. The interest in plant-derived medicines has also increased among First World countries, as well as among the pharmaceutical companies, resulting in the extensive harvesting of plants in order to find Novel Chemical Entities (NCE).

The Current Situation in the Use of Plant-derived Medicines

Plant-derived medicine is widely used in the prevention, diagnosis, and treatment of an extensive range of ailments. There are numerous factors that have led to the widespread and increasing appeal of plant-derived medicine throughout the world, particularly in the past 20 years. In some regions, plant-derived medicine is more accessible. In fact, one-

third of the world's population and over half of the populations of the poorest parts of Asia and Africa do not have regular access to essential modern drugs.

However, the most commonly reported reasons for using plant-derived medicines are that they are more affordable; more closely correspond to the patients' ideology, and are less paternalistic (authoritarian) than allopathic medicines (mainstream western medicines). Regardless of why an individual uses it, plant-derived medicines provide important health care service to persons both with and without geographic or financial access to allopathic medicine.

Legal Status of Plant-derived Medicine and Complementary/Alternative Medicine: A Worldwide Review

Plant-derived medicine has demonstrated success in areas such as mental health, disease prevention, treatment of non-communicable diseases, and improvement of the quality of life for persons living with chronic diseases, as well as for the ageing population. Although further research, clinical trials, and evaluations are needed, plant-derived medicine has shown great potential to meet a broad spectrum of health care needs (WHO, 2008).

Each year the World Health Organization receives an increasing number of requests to provide standards, technical guidance, and informational support to member states

elaborating national policies on plant-derived medicine. The World Health Organization encourages and supports member states to integrate plant-derived medicine into national health care systems and to ensure their rational use. Facilitating the exchange of information between member states through regional meetings and the publication of documents, the World Health Organization assists countries in sharing and learning from one another's experiences in forming national policies on plant-derived medicine and developing appropriate innovative approaches to integrated health care.

In 1998, the World Health Organization traditional plant-derived medicine team issued the publication *Regulatory Situation of Herbal Medicines: A Worldwide Review* (1998). Although it includes only information concerning the regulation of herbal medicines, this document attracted the attention of the national health authorities of World Health Organization member states as well as of the general public (WHO, 2008).

Legal Status of Traditional Medicine and Complementary/Alternative Medicine: A Worldwide Review (WHO, 2001) is more comprehensive. It is both an update and an expansion of the 1998 document. It includes information on the regulation and registration of herbal medicines as well as of non-medication therapies and IKS practitioners. It is an easy reference, providing summaries of the policies enacted in different countries and indications of the variety of models of integration adopted by national policy-makers.

The Use of Plant-derived Medicine in Namibia

Before Namibia's Independence, health services were fragmented along racial lines, and the use of plant-derived medicine was not encouraged by colonial administration. After Namibia's Independence in 1990, plant-derived medicine was legalised. Since then, the Ministry of Health and Social Services has adopted the primary health care approach to the delivery of health services, and major restructuring has been undertaken (Lumpkin, 1994).

In 1994, Lumpkin (1994) carried out a preliminary survey on the use of plant-derived medicine in the Namibia. The resulting report, *Traditional Healers and Community Use of Traditional Medicine in Namibia*, was submitted to the Ministry of Health and Social Services. There is at least one IKS practitioner per 500 people in the Kavango and the North central Regions (Oshikoto, Oshana, Omusati and Ohangwena regions). In the Caprivi Region, there is about one IKS practitioner per 300 people. In Windhoek (Katutura), the ratio is one IKS practitioner per 1000 people (Lumpkin, 1994).

In 1994, the Namibian Parliament passed the Health Practitioners Act (Act No.20 of 1993) requiring all health workers, including IKS practitioners, to become legally registered. The Act directs each professional group to elect a board to facilitate the registration process. In 1996, the Namibian IKS Practitioners' Board was created. In 1997, the Ministry of Health and Social Services and the World Health Organization

jointly undertook a study entitled *Scientific Evaluation, Standardization, and Regulation of Traditional Medical Practices in Namibia* (WHO, 1997). The findings of this study informed the publication of *Legal Status of Traditional Medicine and Complementary/Alternative Medicine: A Worldwide Review.* The findings were also used to prioritise activities and to inform the planning process for the 2000–2002 programmes on the regulation and integration of traditional medicine (Lumpkin, 1994).

The Health Practitioners Act was authorizes the establishment of IKS Practitioners' Council to oversee the registration and regulation of the practice of plant-derived medicine providers. The Council was given the task of supervising and controlling the practice of IKS practitioners, fostering research into plant-derived medicines, and making loans or grants available to IKS practitioners. IKS practitioners in Namibia, some of whom come from other African countries, are not currently registered and operate without any guidelines from the Ministry of Health and Social Services. The aim of the Act is to protect the public from dangerous and opportunistic practices, as well as to promote acceptable aspects of plant-derived medicine in Namibia.

Once the Act was in place, the Government intended to include IKS practitioners in community-based health care programmes and incorporate the plant-derived medical system into the country's official health services referral system. In a joint study by the Ministry of Health and Social Services and World Health Organization in 1997, it was

recommended that all IKS practitioners, except traditional birth attendants, undergo apprenticeships ranging from one to three years (WHO, 1997).

A 1994 study, the report classified IKS practitioners in Namibia as herbalists, faith-herbalists, diviner-herbalists, diviners, faith healers, and traditional birth attendants (Lumpkin, 1994; WHO, 1997).

A total of 3159 plant species have been reported to occur in Namibia. Local communities use a wide variety of these plant species for medicinal purposes and other ailments (Craven et al., 1997; Cunningham, 1992; Marshal, 1998). In addition, traditional healing practices among different communities in Namibia have been studied by a number of researchers. These studies covered the following communities: Topnaar, San, Ovambo and Caprivian communities.

Eynden et al., (1992) described 42 plant species found in Kuiseb valley and 53 plant species in Sesfontein in a detailed ethno botanical study. Some of the plant species are used for medicinal purposes while others are consumed as food, food preservation, cosmetics and fodder. Another ethnobotanical survey by Eynden and van Damme (1993) also reported on the use of medicinal and aromatic plants. A list of plant species was compiled including plant names, systematic classification and ethnobotanical properties. Many plants were analysed for active substances. The Topnaar communities make their

own traditional medicine by using mixtures of animal and plant products but no specification on medicinal plant uses are given.

Leger (1997) reported medical plant use by communities of San people in the north-eastern part of the Otjozondjupa region. The report compiled a list of 110 plant species used by the !Kung for various purposes. The main community of the San is the !Kung, who belong to three different tribes, the Ju/`hoansi, Punguvlei and Vasekele. The !Kung hunter-gatherers have a particularly rich knowledge of tubers and roots with edible or medicinal value.

Leffers (2003) carried out a field study between 1999 and 2003 in Nyae-Nyae conservancy in the eastern Tsumkwe Constituency, Otjozondjupa region. Nine communities were studied using participatory approaches involving semi-structured interviews. The goal of the study was to document the wisdom and experience of indigenous people in order to contribute to preserving this part of the San people's heritage for future generations. Leffers (2003) further described 283 plant species occurring in the area and highlights their traditional uses. A wide range of different plants and plant parts are used but plant roots play a significantly important role. The study also noted that in some cases potentially toxic plants are used as medicines, hence determining appropriate dosage is very important. Some applications noted in the area were not compatible with western medical tradition, as locals have a different understanding of how certain diseases are caused. This is largely because traditional

healing is a very complex issue involving rituals and spiritual aspects, far more than simply the use of plants (Leffers, 2003; Lebeau, 2003).

Davies (1994) reported a detailed study on the medicinal culture of the Owambo people of Southern Angola and Northern Namibia. All aspects of the medical culture were considered on Owambo beliefs and practices relating to health and health maintenance. The research work paid particular attention to the use of plants as medicines by Owambo communities.

Chinsembu and Hedimbi (2010) reported that the Lozi people of Caprivi region especially in the capital city; Katima Mulilo, have very strong beliefs in the use and efficacy of ethnomedicines. They administered an ethnobotanical survey in Caprivi region on the uses of indigenous plants to manage HIV and AIDS opportunistic infections. They interviewed 14 IKS practitioners in June and November 2009 and April 2010. A total of 71 plants belonging to 28 families were identified. The most plant parts used were leaves, bark and roots. The IKS practitioners used these plants to treat various conditions such as, diarrhoea, malaria, herpes simples, tuberculosis, meningitis, skin infections, herpes and other ailments.

Case Study 1: Traditional Medicinal Plant Knowledge and Use by Local Healers in Sekoru District, Jimma Zone, South-Western Ethiopia

From December 2005 to November 2006 Yineger and Yewhalaw (2007) investigated the knowledge and use of medicinal plant species by traditional healers in Sekoru District, Jimma Zone, and in south-western Ethiopia. Traditional healers from this area were selected randomly and interviewed with the assistance of translators, in order to gather information on the knowledge and use of medicinal plants used as a remedy for human ailments in the studied area.

In their study, it was reported that 27 plant species belonging to 27 genera and 18 families were commonly used to treat various human ailments. Most of these species were wild and only their leaves were reported to be harvested for medicinal use. It was found that combinations of medicinal plant species were more frequently administered, as opposed to the administration of a single species for remedy preparations.

Traditional healers who participated in this study were found to play notable roles in the primary health care systems of the local people. They were treating poor people who had little access to or could not afford the cost of modern medications. Traditional healers also reported that the local people preferred traditional treatment regimes to modern pharmacological treatment. Underlying this preference seems to be the community's belief that traditional treatment regimes better address some of their diseases, compared to modern pharmacological treatment regimes.

Case Study 2: The Namibian Dwarf Sage as a Medicinal, Ritual and Poisonous Plant

According to a study by Koenen (2001) the Dwarf Sage is processed together with *Corallocarpus Welwitchii* and *Dregae* (Marsdenia) *Macrantha*, to produce a cancer remedy (especially gynaecological). It is further claimed that all three plants can be crushed, or dried, pulverised and worked into an ointment with fat. This preparation is then applied to the wound of the patient over a period of time, and after six months improvement could be expected; after eight months the patient would reportedly be cured.

In view of the fact that the Dwarf Sage plant remains green during the dry season, the danger of it being eaten by animals increases. The degree of toxicity varies according to location and time of the year. In animals, poisoning gives rise to a number of symptoms such as weakness, loss of appetite and accelerated, laboured breathing, to name but a few (United Nations Environment Programme(UNEP, 2009). The Dwarf Sage is traditionally used for:

- Medicines –Infections

The *Kwanyama* tribes of the *Oshiwambo*-speaking people roast the leaves and then powder the dried leaves into an ointment to be rubbed into syphilitic wounds. The

medicine made from this plant is believed to relieve pain (United Nations Environment Programme (UNEP, 2009).

- Rituals

The *Kwanyama* tribes of the *Oshiwambo*-speaking people prepare a special soap for washing the king.

The existing literature indicates a lot on the use of indigenous plants for medicinal purposes for only a handful of cultures in Namibia. The majority of cultures still need to be studied. Some work has been done in Owamboland, Damaraland and Caprivi but such information has a focused bias on food and other uses of plants, with medicinal plant use aspects superficially dealt with. This gap must be addressed in further research work. It has been demonstrated that the distribution of research efforts in Namibia on medicinal plant use has been skewed towards selected communities, especially the San communities, the Topnaar, and parts of Owamboland with other communities not being considered but may hold potentials. In general, detailed ethnobotanical studies are lacking, not just in Namibia, but also in many countries too. The literature review gives an overview of the application of indigenous knowledge by local communities in the utilisation of plant species for various purposes in Africa, including Namibia, with emphasis on medicinal plants. There is no doubt that indigenous knowledge is very important in the development process, which is why today, more efforts are devoted towards documenting it before it disappears. Communities are utilising a wide range of

plant species for medicine, food, fodder, and in social events. However, much still remains to be done to document the information in areas that have not been studied, or that have been little studied. The traditional healing knowledge of the use of the medicinal plants to treat diseases has been with IKS practitioners for generations but has not been recorded and this knowledge remains mostly with the IKS practitioners who are mostly old people. Since the use of plants has been demonstrated to sometimes be culture-specific, ethnic group in specific or location specific, efforts to document such information in detail in specific locations in the various Namibian regions should be worthwhile because the loss of the indigenous knowledge and practices on the traditional healing could negatively affect the healthcare system of the people in Namibia.

Theoretical Framework

A theoretical framework is a theoretical perspective. It can simply be a theory, but it can also be a more general basic approach to understanding something (Borgatti, 1997). This study is strongly embedded in phenomenology theory.

Phenomenology is sometimes considered a philosophical perspective as well as an approach to qualitative methodology. Phenomenology is a school of thought that emphasises a focus on people's personal experiences and interpretations of the world. Reference shown in the literature review referring to how indigenous people through

their own experiences discovered plants with healing properties and interpreted their discoveries to make sense to the rest of the world. That is the personal experiences of the IKS practitioners and beneficiaries on the use of the Dwarf Sage plant. Phenomenology as a theory assumes that truth lies within the human experience and is therefore multiple; it is time, space and context bound. Under these assumptions, a belief or claim coming from a culture one does not understand is considered consistent or correct (Chilisa & Preece, 2005). It explains how individuals give meaning to social phenomena in everyday lives. Phenomenology explores the essence of awareness as experienced from the first-person point of view. This study draws upon this theoretical framework/perspective as it concentrates on exploring how individuals make sense of the world in terms of the meanings and classifications they employ. As such, phenomenology aims to provide explanations that offer an insight into the subjective lived experience of individuals. Phenomenological studies do not attempt to generate wider explanations; rather their focus is on providing research accounts for individuals in a specific setting. In this case by collecting and documenting individual experiences from IKS practitioners and beneficiaries of the Dwarf Sage. The research accounts were based on the knowledge and use of the Dwarf Sage as a plant-derived medicine. The phenomenological perspective prides itself on being non-scientific; that is why, it describes conscious experience in all its varieties without reference to the question of whether what is experienced is objectively real (Eicherberger, 1989; Neuman, 1977). As indicated in this chapter, other researchers simply collected information pertaining to medicinal plant use, without scientific validation of that knowledge.

Summary

The literature reviewed covered the characteristic, production and maintenance of indigenous knowledge. The literature also uncovered information on medicinal properties of herbal medicine in Africa, on the recording of African herbal medicine, as well as its importance in African countries, and finally on the practice of herbal medicine in African communities. In addition, the literature also looked into the legal status of plant-derived medicine in Namibia. Two case studies were also reviewed, which concentrated on healing plants found in Ethiopia and Namibia. The first case study is aimed at gathering information on the knowledge and use of medicinal plants in Ethiopia, while the second case study focused on the Dwarf Sage as a medicinal and poisonous plant found in Namibia.

None of the literature uncovered focused on documenting indigenous knowledge of the use of the Dwarf Sage as a medicinal plant. In addition, the literature did not uncover any study aimed at documenting indigenous knowledge of the use of a single medicinal plant. The case studies also did not record the indigenous knowledge known by IKS practitioners. Hence, non-recording of this knowledge might result in loss of this knowledge.

The literature revealed that various plants were collected with the assistance of IKS practitioners and tested for active chemical properties by botanists. The aim of these studies was not to document the indigenous knowledge of the use of the plants. They were merely aimed at collecting and listing botanical names, local names and uses of these medicinal plants. The aim of this study was to address this gap, where the focus was on documenting the indigenous knowledge of the use of the Dwarf Sage plant. The study recorded the body of indigenous knowledge of the Dwarf Sage as a medicinal plant. It also documents the knowledge and use of the Dwarf Sage and the types of diseases that can reportedly be treated with the Dwarf Sage.

Chapter 3: Research Methodology

Introduction

The previous chapter focused on the review of literature relevant to the study. This chapter describes the methodology used to collect data from the respondents in two regions, namely Oshikoto and Khomas. It describes the research design, the population and sample, the research instruments, as well as the procedures used to collect and analyse the data.

Research Design

This is a qualitative study aimed at documenting indigenous knowledge of the use of the Dwarf Sage as a medicinal plant. Qualitative research is a naturalistic approach, where a phenomenon is understood through the personal experiences of the research respondents in their natural settings. Qualitative research has often been referred to as a paradigm that allows a deeper understanding of a phenomenon, practice or theory. It focuses on finding out what a person thinks, based on personal impressions and reactions and reporting events in relation to an experience (Choudhuri, 2005). Therefore, qualitative research was used to understand and provide rich data on the indigenous knowledge of the Dwarf Sage plant. Qualitative research relies on the collection of qualitative data (i.e., non-numerical data). The current research adopted this design to understand the

personal experiences of the Namibian IKS practitioners and beneficiaries of the Dwarf Sage plant.

The study employed a phenomenological design. Phenomenology refers to studies that focus on the meanings people attach to their experiences. In this case, the meanings IKS practitioners and beneficiaries of the Dwarf Sage attach to their experiences of using the plant for treatment and being treated with the Dwarf Sage plant. Phenomenological research seeks essentially to describe rather than explain and to start from a perspective free from hypotheses or preconceptions. In general, studies that draw upon a phenomenological approach gather data in the form of interviews (in-depth, semi-structured or unstructured). This (phenomenological) design aims to elicit, through interviews, the meanings respondents attached to their interactions and the classifications they employed to make sense of their working lives within this context. Data were analysed inductively, focussing on allowing meanings to emerge from the interviews. Specifically, this process involved examining statements from the interviews and clustering them to form common themes to understanding the meanings attached to their interactions (Burke & Larry, 2004).

Population

The population of this study comprised of IKS practitioners and those people treated with the Dwarf Sage plant residing in the Oshikoto and Khomas Regions of Namibia.

Sampling Procedure

A purposeful snowball sampling procedure was used to identify the respondents in both groups, i.e. IKS practitioners and beneficiaries of the Dwarf Sage plant. The chain of referral process allowed the researcher to reach respondents that were difficult to sample when using other sampling methods. The purposeful snowball sampling procedure involved identifying a respondent who fit the study criteria and asking them to identify others who also fit the criteria (IKS practitioners who use the Dwarf Sage as a medicinal plant and beneficiaries treated with the Dwarf Sage). This sampling technique is used to locate members of rare respondent referrals (Struwig & Stead, 2001).

Research Instruments

Two interview protocols with open-ended questions (Appendices B and C) were used for the collection of data, one for each group, i.e. IKS practitioners and beneficiaries of the Dwarf Sage plant. The questions in the open-ended interview protocols covered background information, information concerning the Dwarf Sage as a traditional medicinal plant, its use, its importance and the types of diseases that can reportedly be treated and/or cured with the Dwarf Sage plant.

Researchers using open-ended interviews have some room to explore respondents' responses by asking for clarification or additional information. Interviewers also have

the freedom to be more friendly and sociable. The instrument is most useful when one is investigating a topic that is very personal to respondents. Benefits of using this research instrument include the ability to gain rapport and respondents' trust, as well as a deeper understanding of the responses.

In general, open-ended interview questions were used in order to gain a description of the indigenous use of the Dwarf Sage plant. With open-ended interview questions, the researcher has a set of questions on an interview protocol. When using open-ended interview questions, the respondent is made to feel comfortable and at ease. The benefit of using an open-ended interview protocol is that the instrument can be replicated by different researchers. Open-ended interview protocol produces more in-depth, comprehensive information. In addition, the analysis process becomes straightforward as the responses are categorised under the interview questions (Patton, 2002).

The questions that were asked in the interview protocol covered the following topics and concepts:

a. Background information on the IKS practitioners and that of the beneficiaries of the Dwarf Sage plant, i.e. age, sex and area/region of respondents.

b. Knowledge information of the IKS practitioners focused on the description of the plant, the plants' accessibility, about knowledge obtained about the plant, how

they became IKS practitioners. Knowledge information of beneficiaries of the Dwarf Sage focused on how they came to know about the existence of the IKS practitioner, prior knowledge of the plant and why beneficiaries consulted an IKS practitioner instead of a hospital.

c. Importance: Practitioners were asked about the importance of the Dwarf Sage plant, and what it is used for, while beneficiaries of the Dwarf Sage were asked whether they thought the plant was important in their area and why.

d. Usage: Practitioners' protocol covered what part of the plant is used as medication, steps taken when preparing plant for medication, steps followed when administering medication and duration of treatment. Beneficiaries' questions covered the steps followed when preparing medication and those followed when administering the medication.

e. Types of diseases: Practitioners were asked about the types of diseases they treated with the plant, while beneficiaries were asked about the type of diseases they were treated for. In addition they were asked about any other disease they know of, that is treated with the Dwarf Sage plant.

Pilot Study

Before the data collection for the main research took place, the researcher with the assistance of the first IKS practitioner, identified a pilot sample of two IKS practitioners, who in turn each identified one beneficiary. The respondents for the pilot study (IKS practitioners and beneficiaries) reside in the Khomas Region.

After the interview, respondents were asked to assist the researcher in re-phrasing research questions which they thought were unclear or too complex. The researcher also asked respondents to record any additional questions they thought could be asked. The responses were recorded with an MP4 player. When the data was collected, the researcher listened to the responses, and looked for unexpected answers and clusters of responses that suggested misinterpretation of questions. The researcher interviewed respondents in the language they were more comfortable with. All IKS practitioners were interviewed in *Oshiwambo*, while some beneficiaries preferred to be interviewed in English as they felt that they could express themselves better in English. These respondents were not included in the main study. Results of the pilot study showed that some of the items in the interview questions elicited responses anticipated by the researcher. The pilot study contributed to the rephrasing of some of the questions used in the main study.

Validity and Reliability of Findings

In qualitative research, the researcher determines the accuracy or credibility of the findings through various strategies. In this case the study adopted the data triangulation technique using a combination of data sources with the effect that the strengths and weaknesses in each source are compensated when used together validated the findings. The instrument was pilot tested with two practitioners and two beneficiaries of the Dwarf Sage plant. The aim was to improve the validity and reliability of the findings. Hence, both IKS practitioners who use the Dwarf Sage for medicinal purposes and beneficiaries of the Dwarf Sage were interviewed.

Data Collection Procedures

Contact with the first IKS practitioner was made during the third week of June 2009. The IKS practitioner was contacted telephonically. The purpose was to get the practitioner to refer the researcher to respondents who fit the study criteria for the pilot study. The IKS practitioner referred the researcher to a practitioner residing in Khomas Region. The researcher made telephonic contact with the IKS practitioner and made an appointment. On the day of the scheduled appointment, the researcher went to the IKS practitioner's house. The practitioner welcomed the researcher into the house and the researcher explained the purpose of the study. The IKS practitioner agreed to the

interview and after the interview, the practitioner referred the researcher to another IKS practitioner residing in the Khomas region. The IKS practitioner also referred the researcher to a beneficiary residing in the same region. The researcher immediately contacted the next practitioner telephonically to schedule an appointment. The researcher went to the practitioner's house. Upon arrival, the researcher explained the purpose of the study and the practitioner agreed to the interview.

During the second week of August, the researcher contacted the first IKS practitioner again telephonically to inform her of the researcher's visit to collect data. Upon arrival at the first IKS practitioner's homestead, where the researcher was accommodated, the researcher first settled in before explaining the purpose of the intended study. The practitioner wished to know why the researcher wanted to collect and document this knowledge. It was explained to the practitioner that; due to a lack of information transfer in written form, there is a loss of indigenous knowledge of the use of the Dwarf Sage. The researcher further explained that, because the present-day IKS practitioners are aged, the knowledge might become completely lost once they have passed away (died). After the researcher was able to convince the practitioner, who agreed to take part in the study, the researcher explained the content of the informed consent letter to the practitioner. This was done with all the respondents who took part in the study. After every referral, appointments were scheduled with respondents. The researcher would locate the respondents.

The interview sessions were recorded with an MP 4 recorder. A good recorder is essential in interviewing as it captures everything that was said. Using a recorder also helped the interviewer to be more attentive to the respondents.

The researcher asked respondents questions and allowed them to answer each individual question. If the researcher felt that the respondent did not provide a sufficient response, a probing question would follow to elicit sufficient responses to the question. This was done throughout the interview process. The data collection process took place from 20th August to 28th August, 2009. The interviews for IKS practitioners took between 30 minutes to 60 minutes. While that of the beneficiaries was relatively shorter as their interviews took between 30 to 50 minutes respectively. The research respondents were thanked at the end of the data collection period**.**

Data Analysis Procedures

The analysis that was undertaken was conceptual content analysis. Content analysis is defined by Patton (1990) as the process of identifying, coding and categorising the primary patterns (themes) in the data. This meant the analysis of the content of the interview transcripts.

There are two general categories of content analysis: conceptual analysis and relational analysis. This study carried out conceptual content analysis. Conceptual analysis

establishes the existence and frequency of concepts in a text. In conceptual analysis, a concept is chosen for examination and the number of its occurrences within the text recorded to aid meaning.

The first step undertaken by the researcher was to transcribe the data collected through open-ended interviews. The interviews were recorded with an MP 4 recorder for high quality sound. The transcription process involved listening to the respondents' responses and transcribing them verbatim. After all responses were transcribed, they were grouped per question item, i.e. all responses from question one was scripted together. This was done for all questions asked during the open-ended interviews. The researcher read through the transcripts multiple times in order to get a sense of each data set.

As the researcher read through the data set, ideas about the data were written in the left margin of the script. Ideas were drawn from the scripts by answering this question: What are the respondents talking about? After the researcher had written down ideas about individual pieces of data, codes (words describing the meaning of the text) were generated from the data. For codes, the researcher used two or three actual words used by the respondents. The researcher also highlighted phrases that occurred frequently. As a result, these phrases and codes assisted the researcher in generating themes that best described the data. This type of analysis involved making sense of what IKS practitioners and beneficiaries of the Dwarf Sage had said during the interview process.

Ethical Considerations

Ethics in the context of research is referred to as a set of standards that guides researchers on how they should interact with the research respondents. The following ethical considerations were used in the process of collecting data:

1. **Informed consent** (Appendix A): All respondents who took part in this study were provided with information about the study, its purpose and how it would be carried out. The benefit that the knowledge gathered would be documented; so that it is not lost, was also shared with the participants. The respondents, both the IKS practitioners and beneficiaries, were aware that participation was voluntary and signing or thumb printing the informed consent letter confirmed it.

2. **Anonymity**: All respondents were assured that their names would not be mentioned in the study report; therefore their identity was concealed. They were referred to as beneficiary/IKS practitioner 1, 2, 3, etc.

3. **Confidentiality**: Transcripts and recordings were only to be shared with the researcher's supervisors and were securely stored.

Summary

This chapter explained the methodology used in this study; the research design, the population, the sample, the instrument, the procedures used to collect and analyse the data. In the next chapter, the results of the study will be presented.

Chapter 4: Presentation and Discussion of Results

Introduction

The previous chapter focused on the research methodology of the study. This chapter presents and discusses results on the outcomes of the research conducted. The results are discussed as they are presented. The results are presented in a narrative account. The background information is presented first, followed by the narrated results of IKS practitioners, and then followed by those of the beneficiaries of the Dwarf Sage. Respondents' responses for this study are categorised under the interview questions.

Background Information of Respondents

The respondents consist of five IKS practitioners and eight beneficiaries of the Dwarf Sage. Four of the IKS practitioners are females and one male, while the beneficiaries of the Dwarf Sage consist of two females and six males.

In some cultural groups practitioners are mostly females and in others the expertise of female healing experts is appreciated more highly than male healing experts (WHO, 2008).

Table 1. The Age of the IKS Practitioners

Identity No. of IKS practitioner	**Age**
Practitioner 1	87
Practitioner 2	65
Practitioner 3	61
Practitioner 4	49
Practitioner 5	48
Total	**5**

Table 1 show that the IKS practitioners' age range is from 48 to 87 years. The age shows that all practitioners are middle-aged or older. One could conclude that there are no younger IKS practitioners who have learned to use the Dwarf Sage plant as a medicinal plant. It could be that there has been no transfer of indigenous knowledge of the Dwarf Sage as a medicinal plant to the younger generation. Also it could be that these practitioners are the last to hold this knowledge.

Table 2.The Age of the Beneficiaries of the Dwarf Sage

Identity No. Of beneficiaries	**Age Range**
Beneficiaries 1-3	Under 18
Beneficiary 4	19-30
Beneficiary 5	31-40
Beneficiary 6	41-50
Beneficiary 7	51-60
Beneficiary 8	61-70
	Total

Table 2 shows that the beneficiaries' age range is from under 18 to 70 years. From the data, it is clear that any person can be treated with the Dwarf Sage plant, irrespective of their age. The age of beneficiaries is widely spread.

IKS Practitioners per Region

- Three of the IKS practitioners interviewed reside in Onayena Constituency in the Oshikoto Region;

- One practitioner is from Tobias Hainyeko Constituency in the Khomas Region; and
- One practitioner is from Soweto Constituency, also in the Khomas Region.

Beneficiaries of the Dwarf Sage per Region

- Four of the beneficiaries interviewed reside in Onayena Constituency, in the Oshikoto Region;
- One beneficiary resides in Oniipa Constituency, in the Oshikoto Region;
- One beneficiary is from Tobias Hainyeko Constituency, in the Khomas Region;
- One beneficiary is from Khomasdal North Constituency, in the Khomas Region; and
- One beneficiary is from Samora Machel Constituency, in the Khomas Region.

Presentation of Results: IKS Practitioners

Knowledge about the Dwarf Sage plant

How does the Dwarf Sage plant look like?

Data obtained from practitioners reveal that the Dwarf Sage plant is a green shrub with small leaves that grows like water grass. Professionally trained practitioners easily identify the plant. Responses from IKS practitioners are as follows:

Practitioner 1: "It is blue; [and the she corrected herself] it is green. It has buds that turn into *Oonsheno* [flowers]."

Practitioner 2: "The Dwarf Sage is a plant that grows and comes up to this size [demonstrating its height with hands about 10 cm from the ground]. The Dwarf Sage plant is green in colour."

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Practitioner 3: "It is a green plant, green just like this thing [pointing to a container lying next to her which is green in colour]."

Practitioner 4: "The Dwarf Sage plant is short, and has *Oonsheno* [flowers]. When you touch it (the plant), it is hard."

Practitioner 5: "The Dwarf Sage plant is a shrub with small leaves; it grows like *Ongungu* [water grass] but it is not *Ongungu* at all. It has a black stem inside it and the plant itself is green, but it has very small leaves. It is not a big shrub and does not grow tall."

The word that best describes what practitioners are talking about is "plant description". As a result, it emerged as the theme from the narration. Description of plants is mostly taught in the field areas or in some cases, in specially created areas such as home herbal

gardens or village demonstration gardens. In some cases, plant description is also taught at the homes where the plants are used for treating people.

Practitioners could suggest methods for describing seemingly alike plants based on a step-wise test. One should begin by looking at the colour of the leaves. If the colours of two leaves are the same, then look for the shapes of leaves. If the shapes are the same, then crush the leaves, stem bark and then smell. Most plants have a distinctive smell, but, even if one is confused with similar smells, then the final criterion should be to check for the type, shape, size and smell. Similarly, the Dwarf Sage plant has an aromatic smell by which practitioners are able to recognise the plant (Sinclair, 2009).

In what kinds of places does this plant grow in Namibia?

According to the data, IKS practitioners said the Dwarf Sage plant only grows alongside edges of pans. Since these IKS practitioners grew up in the surrounding areas where the Dwarf Sage plant could be found, they are familiar with its habitat. Responses from IKS practitioners:

Practitioner 1: "It grows in areas around pans. [In their vernacular, these pans are known as *Omadhiya*.] The plant does not grow around a dry pan, but around a pan with loose soil [*Ehekevi*]. [Interviewer probes: Is it around pans that carry water throughout the year?] Even if they do not carry

water throughout the year and no animal goes by to eat the plant, the plant itself will be accessible throughout the year. If there is lack of food for animals, goats will eat the plants' leaves off and finish them."

Practitioner 2: "It only grows around pans."

Practitioner 3: "It just grows in pans."

Practitioner 4: "Around edges of pans, but only around certain pans."

Practitioner 5: "The plant grows in clear places that look like pans and contain water. But the plant does not stay in water; it grows around the edges of the pans."

IKS practitioners did not mention any other areas in Namibia where the plant grows except around pans. Practitioner 1 was more specific in mentioning that the plant grows around edges of pans that contain water and loose soil. Practitioner 4 who mentions that the plant only grows around certain pans supports this. According to Koenen (2001) the Dwarf Sage plant is found around the edges of pans. This statement corresponds with the responses of IKS practitioners interviewed. Practitioners managed to describe the actual habitat of the Dwarf Sage plant as opposed to Koenen (2001) who simply mentioned the location.

The theme “habitat” best describes what practitioners are talking about in the above narration. Information about the plant location was also gained during learning about the description of the plant and therefore practitioners consider habitat and description as extended knowledge by practitioners.

The first subset of the knowledge is related to learning about the location of medicinal plants. Knowledge of plant features that are closely linked to the preferred habitat of certain plants is also believed to be useful knowledge. For example, two practitioners mentioned the presence of sandy soil and open places that look like a pan and contain water as indicating a good habitat for the Dwarf Sage plant.

According to Sinclair (2009), many practitioners from Amboli, India, mentioned that the presence of a black spider in certain patches of Amboli Forest indicates a good habitat for medicinal plants. Such interrelationships provide clues to better understanding of the preferred habitats of medicinal plants. The use of landmarks or other symbols that represent either location or status of that particular plant species is another important element of knowledge that forms the habitat knowledge complex.

Is the Dwarf Sage accessible throughout the year?

Data obtained from practitioners indicates that the plant is accessible throughout the year. Responses from IKS practitioners:

Practitioner 1: "Yes, when it has rained. [Interviewer probes: And if it has not rained?] It is also accessible during the dry season."

Practitioner 2: "Yes, like now it is just that there is a lot of water this year. It is just at some places. Like this year, I came across it there, towards Mr. X residence. I did not look at *Oshikali* [name of place] where it is usually found, and there is a lot of water."

Practitioner 3: "Yes, it is accessible throughout the year."

Practitioner 4: "It is accessible when it has rained. When it has rained, it will grow. It does not grow in any pan; it grows in certain pans only."

Practitioner 5: "The plant could be accessible throughout the year. There is a possibility of animals eating it, especially goats. The goats tend to nibble its leaves off."

Data indicates that the plant is accessible throughout the year. Practitioner 5 reveals that there is danger of the plant not being accessible, and goats that tend to nibble the Dwarf Sages' leaves off could cause this. Practitioner 2 mentions that the likelihood of accessibility could also be caused by the magnitude of water available around the pans. It sounds like the plant could end up being submerged under water, which in turn would make it difficult for practitioners to access the plant. Although they mentioned about the plant running the risk of being eaten by goats, none of the IKS practitioners actually confirmed that there was a year in which the plant was not accessible. In Namibia, practitioners in herbal gardens could grow herbal plants. This would make accessibility of the herbal plant for these practitioners much greater.

According to IKS practitioners, the Dwarf Sage plant is accessible regardless of climate conditions. "Accessibility" is the theme that was identified from the narration. IKS practitioners use accessibility to describe the degree to which the Dwarf Sage plant is accessible.

The Northern parts of Namibia can at times become very dry, especially during summer, thus often leaving pans dry. Although this can happen, leaving no trace of water behind, this plant could still be found. It seems that the plant has a characteristic of an evergreen plant; plant having leaves all year round.

Explain how you came to have knowledge of the Dwarf Sage plant.

Data obtained from IKS practitioners indicate that they each obtained knowledge of the plant in similar ways. An experienced IKS practitioner taught practitioner 1 about the Dwarf Sage plant. The respondent recalled how she accompanied the experienced IKS practitioner to the pan and was shown how the plant looks like in order to learn more about this unique and interesting plant. Responses from IKS practitioners:

Practitioner 1: "I was trained just like any other person was trained to become a practitioner. [Interviewer probes: How? Who trained you?] I was trained by the practitioners I found in this country, the *Ndonga* [an O*shiwambo* dialect] practitioners. People from the olden days were the ones who trained me. White people did not carry out our *Oshiwambo* healing practices; fellow black people treated us. [Interviewer probes: How did you come to know that this is the Dwarf Sage plant?] The person who trained me showed it to me. The person said to me, come let me teach you about the Dwarf Sage plant. The person took me to the place where the plant grows and said, this is the Dwarf Sage plant, this one is male and this one is female. I only pick the female plant; I don't treat with the male plant."

Practitioner 2: "I came to have knowledge of the plant through my grandmother, K*uku* X, who used to treat people with it. The first thing was to go with her to the pan and she told me to pick the plant. She would tell me that this is the plant used and if I send you tomorrow to pick it, this is the one you should pick. Don't remove the entire plant."

Practitioner 3: "My grandmother taught me about the plant. She initiated me, because she is the one who used it for treatment. I was cut [*Ondashatwa*]."

Practitioner 4: "I was trained by my grandmother, from my mother's side. She used to treat with the plant. She took me to the pan and said, you are now grown up and have children of your own, and you see this plant treats *Ondhiya*. We are going to pick it and take it home. My grandmother said, you see, you can dry this plant without pounding it first, but if you are going to use it for treatment that time; you take the plant and pound it while still fresh. Then you mix lukewarm water with the pounded leaves. Thereafter you take *Omagadhi goongombe* [unprocessed cow butter] and *olukula*, and then you start applying the mixture onto the patients' wounds. During my grandmother's days, they used to do it with their tongues, because there were not so many diseases. After applying the

medication, you apply unprocessed cow butter mixed with *Olukula* onto the wounds."

Practitioner 5: "I found my mother treating *Ondhiya* wounds with the plant. I grew up with my mother treating *Ondhiya* wounds. I used to be sent to the pan to fetch the plant. She [my mother] is the one who taught me about the plant."

Data obtained from IKS practitioners reveal that they had obtained knowledge of the plant in similar ways. The majority of respondents said that they had learned from their grandmothers, but mother-in-law and other relatives were also cited. It is interesting to note that those who passed on this knowledge are all cited as being female. As per background information, four of the five interviewed IKS practitioners are female. It could be that because younger girls are more likely to stay home and assist their mothers with housework, they are likely to become recipients of the indigenous knowledge of the use of the Dwarf Sage plant. The theme identified here is "knowledge of Dwarf Sage passed from generation to generation".

Many members of the village community may not know medicinal plants; only local practitioners having specialised skills know how to process, apply and treat with it. Knowledge of the Dwarf Sage was therefore passed down from previous generations without much modification.

There are variations in the methods of teaching knowledge of plants, where in this case, it was done through direct observation and informal apprenticeship training. The novice IKS practitioners accompanied the experienced practitioners to the pan and they were shown how the plant looks like and how to pick it. This kind of guided and practical teaching helped, not just in learning how to identify plants, but also in differentiating the medicinal uses of the plants.

Practitioners considered interest in plants one of the most important foundation skills. According to Sinclair (2009), most practitioners mentioned that their being interested in local plants lays a strong foundation for learning other critical skills, enhances the process of transmission and develops a positive attitude towards conservation. An interest in plants developed at a young age in many practitioners, such as while performing family support chores such as housekeeping. Since most of the practitioners had opportunities to see and/or assist their parents or relatives in treating patients, the desire to learn more about the Dwarf Sage plant followed. In general, interest in the plant started building at an early age.

How did you become an IKS practitioner?

All the IKS practitioners went through an initiation rite process, which took place in different forms. For some, initiation involved sharing /fusing blood with their mentors,

while others involved eating a piece of dead tissue from patients' wounds or leaves of the Dwarf sage. "Becoming an IKS practitioner" is therefore the theme identified from the narration.

The family environment of an IKS practitioner was important in the context of acquiring knowledge and experience. Furthermore, the entrance into practice was facilitated through learning from an experienced practitioner to take up the practice. Since the IKS practitioner had an opportunity to see or assist their relatives in treating patients, the desire to learn about the healing trade followed.

The data indicates that all IKS practitioners were raised in families with experienced IKS practitioners, who involved them in the healing process and they were familiar with the profession by the time they started to practise on their own. Responses from IKS practitioners:

Practitioner 1: "I became a practitioner, because I was trained to become a practitioner. [Interviewer probes: How were you trained to become a practitioner?] Those who treated with the Dwarf Sage plant trained me. They trained me until I became skilful and I started treating people and they would heal. For my initiation, I was cut in order to become a practitioner. Now I can smell *Ondhiya* wounds. If you come to me for treatment, I will be able to identify the wounds by the smell. Because I

am a healer who was trained thoroughly, I am able to determine whether the wounds are those of *Ondhiya* or not."

Practitioner 2: "For me to become a practitioner, I was trained by those who used to treat with the Dwarf Sage. I was initiated into the world of IKS practitioners; here as you can see [showing the interviewer a scar just below her wrist on her right hand] these are the scars from the initiation. [Interviewer probes: If you are not initiated, does it mean that the people you treat will not heal?] I don't know, it's a tradition that has been practised since the olden days."

Practitioner 3: "When my grandmother cut herself, she also cut me and we did like this [demonstrating how they exchanged blood by rubbing the cut areas together]. Then she took a hunk of porridge and dipped it into unprocessed cow butter and then placed it [the porridge] on her cut and told me to eat the porridge. In the middle of the hunk of porridge, there were Dwarf Sage leaves. Once it is dipped in unprocessed cow butter, you just swallow it whole, without chewing. After this, when you treat a person, he/she will heal."

Practitioner 4: "I was given *Olusha* [a cut]. My grandmother said to me, today we are going to have a blood fight because all the other grandchildren

resisted going through this initiation. I accepted because I have children, and once she was not around, I would treat my own children when they are infected with *Ondhiya*. When a patient comes for treatment, she would say, this patient is yours to treat. I would then go and collect the plant, boil water, and pound the leaves. I take *Olukula* and unprocessed cow butter then I would start treating my patient. I only did this because of my children, not because I wanted to become a practitioner. The Dwarf Sage plant is not to be touched by someone who came into contact with a man or woman. The one to be treated should also not come into contact with a man or woman [have sexual intercourse] until the wounds have healed. When the patient comes back, the treatment is finalised [*okuthetwamo*]; so that the disease does not infect the patient again."

Practitioner 5: "Since my mother has been a practitioner, she has been using me as her assistant to assist in removing dead tissues from patients' wounds when they come to our house and also to apply the medication onto their wounds. It came to a point where she gave me a piece of dead tissue, which is eaten, so that one can officially become a practitioner. The tissue is from a patient's wounds. The dead tissue is placed in the middle of a hunk of porridge, which is swallowed without chewing."

All IKS practitioners responded that becoming an IKS practitioner started with learning how to treat wounds from experienced practising IKS practitioners. For these respondents, taking up this practice was a process of learning and observing carefully before they were allowed to become IKS practitioners. Finally, the IKS practitioners went through different initiation rite processes.

Becoming an IKS practitioner was not a calling; it simply came about as a matter of interest and willingness to take up the profession. Pertaining to their motivation behind pursuing healing, all five mention that one of their family members was also a practitioner in the same field. Therefore, the conclusion drawn is that their family members were their main source of inspiration for joining the specific healing profession. The respondents went through a process of being trained to become IKS practitioners. The trainees had to accompany the experienced IKS practitioners to the pan where the plant grows. Training began with teaching about the plant. This training also included being taught how the plant looks like, and how to harvest it. Lastly, trainees were taught how to process and administer the Dwarf Sage plant. The respondents started learning through practice.

Traditional knowledge is transmitted from generation to generation. It should be pointed out that from childhood; the child is made aware of the practices and relationship with their family, community and society. The child is taught how to observe certain norms of his/her tribe, which includes traditional medicinal knowledge. Traditional medicinal

knowledge refers to a transfer of skills from old practitioners to young practitioners (Ohmagari & Berkes, 1997). In other words, it is a process of acquisition of skills and values by inexperienced practitioners in order to become experienced practitioners who can independently practise traditional medicinal knowledge. As indicated in previous chapters, weaker transmission of traditional medicinal knowledge means fewer younger community members will become experienced practicing practitioners in future.

Use of the Dwarf Sage Plant

What do you use the plant for?

Data from IKS practitioners reveals that the Dwarf Sage plant is used only for the treatment of wounds known as *Ondhiya*. Responses from IKS practitioners:

Practitioner 1: "I use the plant for *Ondhiya* wounds. It is not used to treat stomach aches, only *Ondhiya* wounds."

Practitioner 2: "It is helped by [practitioner mumbles a few words and does not finish the sentence]. There is a female and a male Dwarf Sage. I always use the female plant, but once I find that the patient's wounds are not healing, I will go and fetch the male plant. I mix the two (male and female) together for medication."

Practitioner 3: "I just use it to treat *Ondhiya* wounds. If you have burn wounds, it will not heal those ones."

Practitioner 4: "I use it for the treatment of wounds and it is also used to locate lost animals."

Practitioner 5: "It only treats *Ondhiya* wounds."

For these IKS practitioners, the Dwarf Sage plant treats wounds, which they call *Ondhiya* in their vernacular language and Shingles in English. They are not aware of any other disease treated with the Dwarf Sage plant. Their training in becoming IKS practitioners was for the specialised job of treating *Ondhiya* wounds only.

Data indicates that the plant is only used to treat wounds known as *Ondhiya* by both IKS practitioners and the beneficiaries of the Dwarf Sage, except for Practitioner 4 who mentions that the plant also serves another purpose. Practitioner 4 reveals that the plant is also used to locate lost animals. Most of the IKS practitioners learned the use of medicinal plants from their ancestors. Before the modern system of health care was introduced, medicinal plants were the only means for people to get rid of illnesses. Empirical evidence that was told by the previous generation was the only reason for using a specific plant as a remedy for a specific symptom of illness. As a result, the theme "treatment of *Ondhiya* wounds" emerged.

Which part of the plant is used for medicinal purposes?

All the IKS practitioners revealed that they only use the plant's branches for medicinal purposes. They remove only the branches from the plant, and leave the roots and stem in the ground to allow new growth of branches and leaves. Responses from IKS practitioners:

Practitioner 1: "I just use the leaves. I pick the branches and then I remove the leaves from the branches. I then pound the leaves and use them to treat the wounds."

Practitioner 2: "Like the male Dwarf Sage [mumbling softly]. I just fetch the plant and bring it, and then I pound it while it is still fresh; especially if the patient is waiting to be treated. If there is no patient, I allow the plant to dry so that I prepare it only when there is a patient to be treated. I remove the branches from the plant and pound them together with the leaves."

Practitioner 3: "I just remove the leaves."

Practitioner 4: "If I find that it is dry while at the pan, I have to dig it out and use the fresh part of the plant. If it is still green, I just remove the branches from the plant and use the leaves."

Practitioner 5: "The leaves, only the leaves are used and not the roots. I just remove the branches and from the branches the leaves; the rest of the plant stays in the ground."

The data shows that the interviewed practitioners only harvest the plants' branches and leaves. Practitioner 2 use the entire branch of the plant, unlike practitioners 1, 3, 4 and 5 who only use the leaves and discard the branches. Most practitioners mentioned that the roots and stems should not be removed from the ground, in order to allow new growth of leaves and to ensure accessibility of the plant throughout the year.

"Harvesting of the plant" is the theme identified from the narration. The harvesting of plants, meaning removal of plants or their parts for medicinal purposes, was considered as most important by practitioners to ensure long-term accessibility of the plant. Practitioners consider learning the correct methods of harvesting an essential part of local conservation efforts.

Namibian IKS practitioners harvest the plant only for its leaves and/or branches, whereas practitioners from other countries could be harvesting the entire plant (Sinclair,

2009). The plant is harvested during any day of the week throughout the year, depending on the need for its use.

According to Sinclair (2009), many plant-derived medicinal practitioners from Baripada, India, for instance, believe that Saturday night is an auspicious time for harvesting. Saturday night harvesting and Sunday treatments are the common practices among the local practitioners in Baripada.

Explain the steps you take when preparing the Dwarf Sage plant as medication.

IKS practitioners follow similar steps when preparing the plant for medication. According to the data, three of the IKS practitioners prepare the plant's leaves whilst they are still fresh, while two said that they dry the leaves and/or branches, pound them and use the dried powdered form. Responses from IKS practitioners:

Practitioner 1: "I remove the leaves and then I pound the leaves in *Oshini* [pounding-hole]. I first clean the pounding hole thoroughly. After the pounding, I then use the pounded leaves on a patient."

Practitioner 2: "When I pick the leaves from the plant, I pound them and then store. If the leaves are still fresh, I prepare them after I have spread them

out to dry. Then I pound them until they become a very fine powder and I store them in a glass bottle. If someone comes along for treatment, I treat him and thereafter I give him some powdered medication for self-application."

Practitioner 3: "I let the plant dry a bit and then I pound the leaves. If I see that there are visible sticks, I sift the pounded powder to remove the sticks. I use the dried powdered leaves, because where I usually find the plant, the goats tend to eat it up and it becomes scarce."

Practitioner 4: "I fetch the plants' branches from the pan. I then pound the leaves in *Oshini* [pounding hole]. My grandmother had a special pounding hole for that purpose. But the pounding hole meant for pounding *Mahangu* can also be used to pound the leaves. From there, if there is a patient needing urgent treatment, I don't have to dry the leaves, I just mix them [pounded leaves] with lukewarm water and then start applying them onto the patient. If the wounds are on the patient's back, the patient should lie on his stomach on a mat [*Okayala*]. After I finish applying the medication onto the patient, I then apply unprocessed cow butter and *Olukula* onto the wound after treatment. If the patient lives nearby, he can go home, and if not, I stay with the patient in my house until healing has taken place. It does not take long, because the days do not exceed seven."

Practitioner 5: "Before treating a patient, the patient comes to me and tells me that he is suffering from *Ondhiya* wounds. When a patient comes for treatment today and I am not prepared, I schedule an appointment for the patient to come back the next day. I tell the patient to bring along *Oontanga* oil [pumpkin seed oil] if he has. If the patient does not have *Oontanga* oil, then I will provide. The next day I then go to the pan to pick the branches from the Dwarf Sage plant or I would send one of the children to do it. I bring the branches to the house and start removing the leaves from the branches into something properly cleaned. After I have removed the leaves and placed them in a clean container, I place them in *Oshini* and pound them there, or if I have a clean steel container, I will use it to crush the leaves till fine."

Practitioners follow various steps when processing the plant for medication. They would go to the pan where the plant grows, and harvest the branches from the plant and leave the stem in the ground. They take the branches home, and remove the leaves from the branches. They clean the pounding hole thoroughly and place the leaves /branches into the pounding hole and start pounding the leaves until they become fine.

Practitioners 2 and 3 said that they would go to a pan and harvest the branches from the plant in bulk. They take their harvest home and spread the branches out in the sun to dry.

After the branches have dried, Practitioner 2 pounds the leaves with its branches, while Practitioner 3 only pounds the leaves until they turn into a dry powder. These powdered forms of medication are stored for later use. These are the only steps they follow when processing the plant.

However, Practitioner 4 follows additional steps when processing the plant for medication. The plant's leaves are pounded until they become powder. She removes the finely crushed leaves from the pounding hole and places them in a bowl. She puts a pot with water on the fire to allow the water to warm up. Thereafter the practitioner mixes the finely crushed leaves with a little lukewarm water.

The data also reveals that two of the IKS practitioners [Practitioners 1 and 5] interviewed harvest the branches from the plant; later on they remove the leaves from the branches and pound the leaves till fine. These two IKS practitioners use the finely pounded leaves while still fresh. They use the pounded leaves pure, without mixing them with any substances.

To these practitioners, processing is an important skill. Preparation is relatively simple. The useful plant parts are processed in a variety of forms. The most common processed forms reported by practitioners are crushed leaves and dried powders. Processing is an important skill which indirectly helps in conservation because proper processing of plant

parts consumes a smaller quantity of the plants and helps to ensure the whole plant is not uprooted. As a result, the theme "processing of the plant" emerged from the narration.

There are varieties of methods of herbal preparation, depending on the herb, the part used and whether it is intended to be used internally (swallowed) or externally. Many herbs can be used both internally and externally, but the Dwarf Sage is only for external use. For the Dwarf Sage, the majority of the IKS practitioners use one part of the plant, i.e. the leaves.

IKS practitioners in other countries use a combination of various plants in a variety of forms to make complex products. According to Shukla (2009), practitioners from Aboli, India, mix and crush the dried bark of pala, babasurangi and tamalpatra in equal proportions. A small quantity of water is then added to make a round ball, which is heated through the smoke of gugle tree bark. The final product is used to treat a variety of wounds.

Explain the steps you follow when administering/applying the medication to a patient.

All five IKS practitioners said that they first oil the patients' wounds in order to moisten the dead tissues around the wounds. The most common oil used for this purpose is

Omagadhi goongombe [unprocessed cow butter] followed by *Omagadhi goontanga* [pumpkin seed oil]. Responses from IKS practitioners:

Practitioner 1: "I oil the patient's wounds and wait until the tissues become moist. Thereafter I remove the dead tissues from the wounds. I then paste the leaves onto the patient's wounds and bandage them onto the wounds. After a few minutes, I remove the bandage and then take away the used leaves from the wounds. I bury the used leaves because the disease is infectious and might be passed onto other people who come into contact with the leaves."

Practitioner 2: "I start by taking unprocessed cow butter and oil the patient's wounds. Then I apply Dwarf Sage leaves onto the wounds. After I have applied the leaves onto the wounds, I then give the patient the powdered form of the medication so that he can apply it on himself at home. I tell the patient to come back after a few days so that I can examine how the wounds look like."

Practitioner 3: "First of all when the patient comes, I smell the wounds to determine whether they are *Ondhiya* wounds. Then I oil the wounds and remove the dead tissues with a stick. Thereafter, I

sprinkle the powdered medication onto the wounds. After application, I tell the patient to go home and to return the following day. When the patient returns the following day, I examine the wounds and they would normally be dry."

Practitioner 4: "After I have prepared the medicine, pounded and mixed it with unprocessed cow butter, the treatment process begins. In the olden days, people were not treated using hands. So what I would do is to put the medication in a traditional bowl [*Okaluwo*] and mix it with unprocessed cow butter. Then I apply the medication on with my tongue. But nowadays, with so many diseases, I have no other option but to use my hands. I have to clean the wounds first if there are dead tissues. If I know that I am going to be treating someone, I should make sure that I was not sexually involved with anyone the day before."

Practitioner 5: "After preparing the plant, I start treating my patient. I oil the patient's wounds, wait until the dead tissues become moist and then remove the tissues. I paste the leaves onto the wounds and then I bandage the wounds. After bandaging the patient's wounds, the bandage has to stay on for a few minutes before removing the

> bandage. When the bandage is removed, upon inspection, the wounds will show signs of dryness."

The data shows that during the treatment process, the IKS practitioner oils the patient's dead tissues around the wounds. The patient is left alone for a few minutes, to allow the oil to penetrate the dead tissues for moistening. During this time, the practitioner is busy preparing the medication. The practitioner returns and starts removing the dead tissues from the patient's wounds. Thereafter, the practitioner starts applying the freshly pounded leaves or sprinkles the powdered form of the leaves onto the patient's wounds. In order to prevent the finely pounded leaves from falling off, the practitioner bandages the wounds.

For Practitioners 1 and 5, application does not end with bandaging of the wounds. After bandaging the wounds, the patient remains with the IKS practitioner for a few more minutes. Thereafter, the practitioner removes the bandages from their patient's wounds, including the leaves. Practitioner 1 then buries the leaves to avoid the spread of the disease to other people. Practitioner 5 removes the bandage to examine the wounds.

Practitioner 4 mentioned that in the olden days, she used her tongue to apply medication onto the patient's wounds. This practice increased the possibility of the IKS practitioner being exposed to HIV and AIDS infection. Most practitioners still run the risk of contracting HIV and AIDS because they use their bare hands to remove dead tissues and

to apply medication onto the wounds. It is evident that practitioners do not have adequate and in some cases correct information on HIV and AIDS. To protect themselves and their patients, practitioners need the right information on HIV and AIDS.

Data from practitioners shows that they always tell their patients to come back after a day or two for a follow-up visit. During the follow-up visit, the patient's wounds are examined further and final application steps are carried out. For some, the follow-up visit is merely a formality to examine how the wounds have healed.

In a nutshell, the sequence of application involves removal of dead tissues, and application of the crushed /pounded leaves (either mixed with other substances or pure). Therefore, the application of medicine is one of the steps learned after one has acquired good knowledge of the plant, its habitat (where it grows) and preparation. "Application of herbal medicine" best describes what IKS practitioners were talking about in the narration and it was identified as the theme.

In general, as far as the process of application of traditional medicines is concerned, a variety of techniques are employed. Mixtures may be taken by mouth, e.g. drunk, sucked or licked from fingertips. In other cases medicines are inhaled; the patient is covered with a large thick blanket, and crouches over a pot of boiling water. Some practitioners prefer using the powdered ingredients directly to the fire, and the patient inhales the fumes rising from the burning embers (Sinclair, 2009).

Learning about both preparation and application skills requires active involvement and initial guidance by experienced practitioners. As indicated by all IKS practitioners, follow-up is very important. Follow-up with the patient is considered very demanding in terms of time, especially for the patient. It is demanding, seeing that the patient is compelled to see the practitioner, and this constraint becomes severe if the patient is from outside the village.

How often do you need to administer the Dwarf Sage plant to the patient before healing takes place?

Data indicates that Practitioners 1 and 5 only needs to administer the medication to the patient once. Practitioner 2 indicates that she administers medication twice; Practitioner 3 indicates three days, while Practitioner 4 said at least six days. Responses from IKS practitioners:

Practitioner 1: "I just administer the medication the day the patient comes for treatment at my residence. I then give the patient branches of the plant and I show him what to do when preparing and applying it onto the wounds. I do not administer twice to the patient, just once with my hands. I can also tell the patient to go to the pan after showing him how the plant looks like and how to pick it."

Practitioner 2: *Ondhiya* does not last long [it does not take time to heal] especially when it is treated with the female Dwarf Sage plant. When I administer it today and tomorrow, the following day, the wounds would have clotted already."

Practitioner 3: "It only takes three days, and the fourth day, the wounds would be healed."

Practitioner 4: "Not more than a week."

Practitioner 5: "I just administer the medication to the patient during the visit. Then I give the patient some of the medication to go and administer it to himself. I give him fresh leaves of the plant."

Practitioners 1 and 5 said that when a patient comes for treatment, they administer the medication to the patient only that day. When they ask the patient to come back for a follow-up visit, no further treatment needs to be carried out by the practitioner. During the follow-up visit, the patient is given the medication for self-application or told where to find the plant and how to process it for medication.

Data also indicates that duration of treatment ranges from only one day to at least six days. This depends on the practitioner's way of treatment. Some claim that once is enough to treat and heal the patient's wounds, while others estimate the duration of treatment not to exceed seven days. "Duration of treatment" emerged as a theme and varies according to practitioner.

What is the Dwarf Sage plant's value/importance?

Data reveals that the importance of the Dwarf Sage lies in its ability to treat wounds that cannot be treated with modern hospital medication. Responses from IKS practitioners:

Practitioner 1: "It is important because it is used to treat wounds and they heal."

Practitioner 2: "Even if one constantly goes to the hospital and has *Ondhiya*, you will just find the patients' wounds scaling. The plant treats the wounds completely."

Practitioner 3: "Its importance lies in its ability to treat *Ondhiya* wounds."

Practitioner 4: "The Dwarf Sage plant was used by our fathers when they were out looking for lost animals. When you place the leaf of the Dwarf Sage

plant onto the footprint of a lost cow, donkey or horse, you will be able to find that animal quickly."

Practitioner 5: "It is important because there is a disease which is not known by others, the modern doctors, but according to the *Oshiwambo* tradition, it is used by the black people and it is used to treat the *Ondhiya* disease."

All IKS practitioners said that the Dwarf Sage plant has one major importance. Just like other medicinal plants, the Dwarf Sage is important because it has the ability to treat and heal wounds that are reportedly known as *Ondhiya* in the *Oshiwambo* vernacular language. The English term for the disease is Shingles.

All respondents said that the plant treats a disease, which cannot be treated with hospital medication. It is clear that the Dwarf Sage is a traditional medicinal plant; IKS practitioners discovered its healing properties. Hence the theme "importance of the Dwarf Sage" emerged from this narration.

The use of medicinal plants plays an important role in the lives of rural people, particularly in remote parts of Namibia, which are poorly served with health facilities. Medicinal plants are very useful in healing various diseases and the advantage of these medicinal plants is being 100% natural. Nowadays people are being bombarded with

thousands of harmful products; thus the level of awareness is very high and that is why the use of medicinal plants can represent the best solution.

Type(s) of disease(s) treated with the Dwarf Sage plant

What other type of disease do you treat with the Dwarf Sage plant?

All five practitioners said that the one and only disease they have come to know that is treated with the Dwarf Sage plant is the wound, known as *Ondhiya*. Responses from IKS practitioners:

Practitioner 1: "I only use the Dwarf Sage plant to treat *Ondhiya* wounds."

Practitioner 2: "There are no other diseases treated with the *Ondhiya* plant, only *Ondhiya* wounds that are always watery."

Practitioner 3: "I only use the plant to treat *Ondhiya* wounds."

Practitioner 4: "If it does, then I don't know them (other diseases). I am only aware of the skin disease known as *Ondhiya*.

Practitioner 5: "I only know of *Ondhiya.*

Data reveals that the only disease known by IKS practitioners and beneficiaries treated with the Dwarf Sage plant is known as *Ondhiya* in the *Oshiwambo* vernacular and Shingles in English.

A typical Shingles' wound appears on any part of the body, such as buttocks, neck, face or scalp. Shingles is common in younger children and sometimes in adults.

Although most people suffer only one attack, repeated attacks of the wounds occasionally occur, usually at the same site as the first eruption (Stoppler, 2009).

Even after the wounds disappear, some patients continue to have pain at the site of the wounds. With advancing age, there is an increased likelihood of the patient being left with an irritating sensation or severe pain at the site of the wounds.

The wounds, typically confined to one side of the body, initially appear as a series of raised red spots. These spots turn into blisters filled with clear fluid, which gradually becomes cloudy. The blisters eventually turn into wounds. The wound may bleed and become very itchy and painful (Stoppler, 2009).

In Namibia, modern doctors might not be aware that there is a cure for Shingles, although there is other treatments that may help a person get well sooner and prevent other problems. In the Northern parts of Namibia, Shingles (*Ondhiya*) is treated with the Dwarf Sage plant.

Presentation of Results: Beneficiaries of the Dwarf Sage

Knowledge information

How did you come to know about the IKS practitioner?

Beneficiaries' data indicate that they each came to have knowledge of the IKS practitioner in different ways. Beneficiaries' responses:

Beneficiary 1: "The practitioner is my grandmother."

Beneficiary 2: "She is my grandmother."

Beneficiary 3: "It was in 1996, when I noticed funny things in my head. They were not dandruff, but in *Oshiwambo*, they are known as *Ondhiya*. So we went to the hospital, there was no help until my grandmother from my father's side advised that we should go see one of her neighbours, maybe she would be able to help."

Beneficiary 4: "My mother took me to the IKS practitioner, because she heard that in Onayena there is a lady who treats people with the plant."

Beneficiary 5: "I had wounds known as *Ondhiya* and then the IKS practitioner treated me. I went there with my mother."

Beneficiary 6: "I have known her ever since I was growing up. She has been doing that sort of work already."

Beneficiary 7: "I heard that she treated a lot of people and they have healed."

Beneficiary 8: "I was given information about her by a person who was also treated by the same practitioner."

Beneficiaries 1 and 2 said that the IKS practitioner is a member of their family. They have known her since they were little boys and have always been aware of the fact that she is an IKS practitioner.

Beneficiary 3 said that she came to have knowledge of the IKS practitioner through her grandmother. Her grandmother advised the beneficiary's parents to consult her neighbour after numerous attempts with hospital visits to get their daughter's wounds treated and healed. The beneficiary's grandmother was confident that her neighbour might be able to help in healing her granddaughter's wounds.

Beneficiaries 4 and 5 came to have knowledge of the IKS practitioner through their mothers, since they did not have knowledge of the IKS practitioner. When these two beneficiaries were infected with the *Ondhiya* disease, their mothers took them for treatment to the IKS practitioner.

Beneficiary 6 said that he has had knowledge of the IKS practitioner since he was a young boy. Having grown up in the same area as the practitioner, he came to have knowledge of the practitioner's work.

Beneficiaries 7 and 8 did not have prior knowledge of the IKS practitioner. When they were infected with *Ondhiya* wounds, this was the time they came to learn about the IKS practitioner. People who were treated by the practitioner and healed their wounds referred them both to the IKS practitioner. "Knowledge of the IKS practitioner" is the theme identified from the narration.

Did you go to the IKS practitioner because you knew about the Dwarf Sage plant?

According to the data, two of the beneficiaries disclose that they had prior knowledge of the plant. Six of the beneficiaries did not have any prior knowledge of the plant. Beneficiaries' responses:

Beneficiary 1: "I did not consult the practitioner myself. She noticed that I had *Ondhiya* wounds and therefore treated me. I also knew about the plant used."

Beneficiary 2: "I live with the practitioner; as a result she just treated me."

Beneficiary 3: "I think we just went there because people thought she would be able to help. At the time, I was around 12 years old, so I did not really know. It was just the granny who advised us to go there, so my parents and I went there. I did not really know about anything. It was just anywhere we could get help."

Beneficiary 4: "My mother knew that there was a plant which treats. But when she tried to treat me with it herself, I did not heal, because she did not have extensive knowledge of the plant."

Beneficiary 5: "My mother knew about the plant used, I did not know about it."

Beneficiary 6: "No, I just went because I heard that she does that sort of work."

Beneficiary 7: "No, I did not know about it, the practitioner told me about the plant. She told me herself of the plant which she used for treatment."

Beneficiary 8: "I did not know about the plant. I went there because the person who gave me information was treated with the plant and healed."

Beneficiaries' 1 and 2 reveal that they are related to the IKS practitioner. Therefore they had prior knowledge of the plant used by the IKS practitioner. They did not have to go to the practitioner for treatment, but they live with the practitioner.

When Beneficiary 3 was infected with *Ondhiya* wounds, she and her parents tried everything possible to get them treated. They were advised by the beneficiary's grandmother to consult her neighbour, but they had no knowledge of the plant used for medication.

Beneficiaries' 4 and 5 share similar experiences. Their mothers took them both for treatment to the IKS practitioner. They said that their mothers knew about the plant used. However, the beneficiaries' themselves did not have any prior knowledge of the plant used.

Beneficiaries' 6, 7 and 8 also did not know about the plant used. Beneficiaries' 6 and 7 only found out about the plant used during their treatment, while Beneficiary 8 heard from others treated by the same IKS practitioner about the plant used for treatment.

Practitioners and mostly immediate family only know "Plant knowledge" as the identified theme. Others in the surrounding area only come to have knowledge of the plant after a close relative or friend is treated with the plant.

Use of the Dwarf Sage plant

Why did you go to the IKS practitioner instead of a hospital?

According to the data, all 8 beneficiaries said that they first went to a clinic/hospital for treatment. After numerous attempts to get their wounds healed with modern medication, these efforts proved futile. According to Beneficiaries' 4 and 5, when they went to the hospital and the nurses looked at their wounds, they were immediately referred to an IKS practitioner for treatment. Beneficiaries' responses:

Beneficiary 1: "I was at the hospital, but they could not heal my wounds."

Beneficiary 2: "I went to the hospital, and they treated me, but my wounds would not heal."

Beneficiary 3: "There was no help. The wounds just would not heal."

Beneficiary 4: "I went to the hospital; they told me that they will not be able to treat my wounds. The nurses told me to go and find someone who would

be able to treat them. [Interviewer probes: Which clinic did you go to?] I went to the *Onankali* clinic."

Beneficiary 5: "I went, but the people at the clinic referred me to a practitioner who treats *Ondhiya* wounds with the Dwarf Sage plant."

Beneficiary 6: "I went to the clinic first before going to the practitioner, but they could not treat my wounds and the pain from the wounds persisted."

Beneficiary 7: "I was at the clinic, but they don't treat *Ondhiya* wounds. They tried, but then the wounds just did not heal."

Beneficiary 8: "I went to the hospital but there was no help, meaning that the wounds refused to heal. That is when I went to the practitioner and my wounds healed."

Beneficiaries of the Dwarf Sage all reveal that they consulted a clinic/hospital before consulting a practitioner. Beneficiaries would go to the clinic/hospital, get an ointment for their wounds and apply it for the prescribed duration of time as indicated. Unfortunately, the wounds just would not heal. Some beneficiaries were directly referred to an IKS practitioner for treatment.

"Treatment preference" as a theme for the above narration was not a matter of choice; it was a matter of consulting the correct institution or person who specialises in the treatment of certain diseases.

Explain the steps taken when the plant was prepared as your medication.

Data reveals that the processing of the plant as medication was similar in most cases. Beneficiaries' responses:

Beneficiary 1: "She came with the plant, pounded the plant and applied it onto my wounds and they healed."

Beneficiary 2: "She went to collect the plant and removed the leaves from the branches. Thereafter she pounded the leaves in *Oshini*.

Beneficiary 3: "What would normally happen when I go there, the woman would pound some green kind of leaves in *Oshini* until they become powder. Then from there she takes them to a small hut, which is maybe the clinic. She takes unprocessed cow butter, which she mixes together with the medicine."

Beneficiary 4: "The plant was collected from the pan, while it was still fresh. The leaves were removed and put in a bowl and then put in *Oshini* where the practitioner pounded them."

Beneficiary 5: "First, she went and picked the plant's branches, removed the leaves from the branches and then pounded them in *Oshini*.

Beneficiary 6: "Can I still remember? [Sighed the beneficiary] She put the plant in oil and mixed them together. But she crushed the plant first."

Beneficiary 7: "I went to fetch the plant myself, looking for it in the area where I was told I could find it. Then I took it to the practitioner. She removed the small leaves from the branches and threw the branches away. After removal of the leaves, she gave them to one girl to pound them, until fine. The finely pounded leaves are used for the wounds."

Beneficiary 8: "The practitioner pounded the plant in *Oshini* so that it could be used as medication."

Beneficiary 1 said that the practitioner came with the plant and the next thing he realised was that the plant was pounded in a pounding hole before it was applied onto his wounds, while Beneficiary 2 recalled that the practitioner went to collect the plant.

When she returned, he saw how she removed the leaves of the plant from its branches and then the practitioner pounded the leaves in a pounding hole.

Beneficiary 3 said that the practitioner pounded the leaves in the pounding hole. She removed the finely pounded leaves from the pounding hole and mixed them with oil and then applied the mixture to the wounds.

Explain the steps taken when the Dwarf Sage plant was administered to you.

Data indicates that application of medication onto beneficiaries was almost similar for all. Once the medication has been prepared, the practitioner applies unprocessed cow butter or pumpkin seed oil onto the patient's wounds. Thereafter the practitioner removes the dead tissues around the wounds. After removal of the dead tissues, the practitioner applies the finely pounded leaves onto the wounds. Beneficiaries' responses:

Beneficiary 1: "She applied pumpkin seed oil to my wounds and then removed the tissues from the wounds. After that, she applied the medication onto my wounds."

Beneficiary 2: "She oiled my wounds with pumpkin seed oil and removed the dead tissues and thereafter she applied the plant's medication."

Beneficiary 3: "In most cases, we would go there and then she prayed. After praying she would wash my head with lukewarm water or cold water, because the wounds were in my head. It depends, but it was just normal water. Then after that, she would spit saliva, after spitting, she would take the medication or the ointment, and apply it onto my head. She would smooth the medication nicely onto my wounds with her tongue."

Beneficiary 4: "My head was shaved with a razor and the practitioner removed all the dead tissues. Before that the practitioner oiled my head. When all the dead tissues were removed, she applied the medication onto my wounds."

Beneficiary 5: "She removed the dead tissues from my wounds and applied the medication."

Beneficiary 6: "She just administered the medication. My wounds did not have any dead tissues around them."

Beneficiary 7: "She removed the dead tissues and the wounds remain uncovered. She applied the medication onto the wounds as if she was pasting [*ta andeke*]. The practitioner then bandaged the wounds so that the watery

substance from the leaves could penetrate the wounds, and also to prevent the medication from falling off."

Beneficiary 8: "When the medication is applied, you are required not to become sexually involved until healing has taken place."

Beneficiary 3 recalled how the practitioner first said a short prayer before treating her wounds. Once she had said her prayer, she then cleaned the beneficiary's wounds with water. After the wounds had been thoroughly cleaned, application of the finely pounded leaves began. The medication was applied with hands first, after which the practitioner used her tongue to smooth the medication onto her wounds.

Beneficiary 7 recalled how the practitioner removed the dead tissues from his wounds. Then the wounds remained uncovered. She applied the medication as if she was pasting and then bandaged the wounds to allow the liquid from the finely pounded leaves to penetrate the wounds and also to prevent the pounded leaves from falling off the wounds.

Do you think that this plant is important in your area?

According to the data, all 8 beneficiaries asserted that the plant was important in their area. Some beneficiaries' responses:

Beneficiary 4: "The plant is important in our area, because it can heal wounds that cannot be treated at hospitals."

Beneficiary 5: "It is important because it heals people, treating *Ondhiya*.

Beneficiary 8: "The plant is important, and it needs to be protected or preserved."

Data from beneficiaries' reveal that they think the Dwarf Sage plant to be important because of its ability to heal *Ondhiya* wounds.

Why is it important?

Beneficiaries' responses:

Beneficiary 1: "It is important because of its healing capability."

Beneficiary 2: "It treats *Ondhiya*.

Beneficiary 3: "I really think it is important because it helped me. I got this twice; in all cases it has helped me. So I do not know if it was just pure

belief or if it was the plant used. But I believe it is the plant, therefore to me it is very important."

Beneficiary 4: "It is important because it is not found in hospitals and it treats *Ondhiya* wounds."

Beneficiary 5: "Its importance is in its healing power."

Beneficiary 6: "It is important because it treats and heals "Ondhiya".

Beneficiary 7: "It is important because it is not even eaten by animals, and it is always green. It is important because it heals; I don't know what else it treats. It is used by those who treat *Ondhiya*, because one is initiated into becoming a practitioner with it."

Beneficiary 8: "It is important because the disease is treated by this plant and the disease is appearing again and again in our area."

Beneficiary 1 said that the plant's importance is given to its healing capability. Beneficiary 2 was more specific in reporting that the plant is important because it treats *Ondhiya* wounds. To Beneficiary 3, the plant is important because her wounds were able to heal.

Medicinal plants are considered important in any society, because of their ability to treat various diseases.

Type(s) of disease(s) treated with the Dwarf Sage plant

What type of disease were you treated for?

All beneficiaries were asked to identify the type of diseases they were treated for with the Dwarf Sage plant. Data indicates that all beneficiaries reported that they were treated for wounds, which are known as *Ondhiya.* Some beneficiaries' responses:

Beneficiary 1: "I was treated for *Ondhiya*."

Beneficiary 2: "*Ondhiya*."

Beneficiary 3: "All I know is a disease called *Ondhiya*."

Beneficiary 4: "Only had wounds known as *Ondhiya*."

Beneficiary 5: "I was treated for wounds known as *Ondhiya*."

These types of wounds are not treated by hospital medication, and even if one continues to consult the hospital, they simply will not heal. The only ointment used to heal these wounds, comes from a plant known as the Dwarf Sage, but in their vernacular language it is known as the *Ondhiya* plant. The leaves from this plant are pounded until they are fine and then applied onto the patients' wounds.

What other diseases do you know that are treated with this Dwarf Sage plant?

Beneficiaries said that they do not know of any other types of diseases treated with the Dwarf Sage plant. Some beneficiaries' responses:

Beneficiary 1: "I don't know any other diseases treated with the Dwarf Sage plant."

Beneficiary 2: "I don't know any other, only *Ondhiya*."

Beneficiary 3: "I don't know any, but all I know is *Ondhiya* happens to appear at any other part of your body. That's all I know. I don't know of any other diseases, but it could occur on your scalp, under arm or any part of your body."

Beneficiary 4: "No, the Dwarf Sage only treats wounds known as *Ondhiya*."

The responses from beneficiaries showed that the only known disease treated with the Dwarf Sage plant is called *Ondhiya.* One can conclude that the indigenous people have not yet discovered what other diseases could be treated with the Dwarf Sage.

Summary

This chapter looked at the presentation and discussion of results obtained from IKS practitioners and beneficiaries of the Dwarf Sage. The next chapter looks at the summary, conclusion and recommendations of the study.

Chapter 5: Summary, Conclusions and Recommendations

Introduction

This chapter presents a summary of the results, conclusions and recommendations emanating from the results and discussion of this study.

Summary

The aim of this study was to document indigenous knowledge of the use of the Dwarf Sage plant in Namibia. Due to non-recording by IKS practitioners, it was necessary to carry out this study, in order to lessen the possibility of loss of indigenous skills and knowledge associated with the traditional administration of the Dwarf Sage plant.

The following objectives were addressed in this study:

1. To conduct a systematic recording of the body of indigenous knowledge on the Dwarf Sage as a medicinal plant.
2. To record and document the use of the Dwarf Sage.
3. To document the types of diseases treated with the Dwarf Sage.

A total number of five (5) IKS practitioners and eight (8) beneficiaries of the Dwarf Sage were participants in the research. Two open-ended interview protocols were used

to collect data from the IKS practitioners and beneficiaries of the Dwarf Sage plant respectively. The open-ended interview protocols were accompanied by a letter requesting informed consent, which was to be signed by the research respondents (Appendix A).

The study employed a purposive snowball sampling procedure, and the data were collected in two regions, namely: Oshikoto and Khomas Regions. The results of the study revealed the following:

a) IKS practitioners described the Dwarf Sage plant as a green shrub that does not grow more than 10cm tall from the ground. The plant has very small leaves and it grows like water grass.

b) IKS practitioners reported that the Dwarf Sage plant grows around pans that contain loose soil and are always moist. Pans do not have to carry water throughout the year for the Dwarf Sage to grow. Even if they dry up, but they are moist and contain loose soil, the plant would still grow there.

c) The Dwarf Sage plant is accessible throughout the year. Whether it has rained or not during the course of the year, the plant would be accessible. In cases when all other vegetation has dried up, goats tend to nibble on the Dwarf Sage plant, as it remains green throughout the year. As a result, accessibility of the plant at certain pans becomes short-lived.

d) IKS practitioners use the Dwarf Sage plant to treat wounds, known as *Ondhiya* in the *Oshiwambo* vernacular language and known as Shingles in the English language. According to the IKS practitioners, this plant is treating no other kinds/types of wounds.

e) IKS practitioners use either the plant's branches with leaves or leaves only for medicinal use. They do not uproot the plant from the ground.

f) The Dwarf Sage plant is vital to both IKS practitioners and beneficiaries because of its healing ability of wounds that respondents said couldn't be treated by hospital medication. Respondents indicated that some nurses in hospitals also have knowledge of the Dwarf Sage plant and recommend it to patients.

g) IKS practitioners gained their knowledge of the plant through observation and training by experienced IKS practitioners. Training took place in areas where the plants grow. Trainers ranged from grandparents, mothers and mother-in-laws to other relatives. Training to become a practitioner involved learning about the Dwarf Sage plant; how it looks like, where it grows and how to prepare and apply it onto a patient's wounds. Some practitioners were initiated with a cut and/or fusing blood with their mentors, while others were initiated by eating a piece of dead tissue from a patients' wounds or Dwarf Sage leaves placed in the middle of a hunk of porridge.

h) IKS practitioners follow various steps when preparing the plant for medication. These steps are almost similar for all IKS practitioners. Step 1 involved going to a pan where the plant is found and picking the branches from the plant. Step 2 involved taking the plant home and removing the leaves from the branches. Step 3 involved pounding the leaves in a pounding hole (*Oshini*) or crushing the leaves in a steel container till fine. Data also revealed that one IKS practitioner pounded the entire branch instead of only pounding the leaves. After pounding the leaves, practitioners add a little lukewarm water/pumpkin seed oil/unprocessed cow butter and mix the two.

i) IKS practitioners use different methods when applying the medication onto the patient's wounds. Practitioners firstly oiled the patient's wounds in order to moisten the dead tissues. Secondly, they removed the dead tissues from their patient's wounds. Thirdly, application of the finely pounded leaves was done. Whereas other practitioners bandage the wounds and kept the bandage on for only a few minutes before examining the wounds, some practitioners after application of medication asked their patients to go home and to return the following day for a follow-up visit. Medication for self-application was also given to patients in some cases.

j) IKS practitioners reported that duration of treatment varies, but does not exceed 7 days. If it does, alternative methods are used for treatment.

k) Beneficiaries reported that they had obtained knowledge of IKS practitioners from different people. Some cited having come to obtain knowledge from their mothers, grandmothers and other beneficiaries treated before them.

l) Beneficiaries reported that they all visited a hospital/clinic for the treatment of their wounds. Some were treated with hospital ointments, after which they later consulted an IKS practitioner after their wounds did not heal, while others were simply referred to an IKS practitioner by hospital staff members without being treated.

m) According to the data, some beneficiaries went to an IKS practitioner for treatment because they knew about the plant used, while others reported that they did not have prior knowledge of the plant used by the IKS practitioner for treatment. In addition, beneficiaries also reported that their mothers and grandmothers knew about the plant prior to their treatment.

n) The steps followed when the plant was prepared for their medication and those followed when the medication was applied were similar.

o) All beneficiaries were treated for wounds known as *Ondhiya*.

Conclusions

In chapter one of this study, the main aim of this study was stated as documenting of indigenous knowledge of the use of the Dwarf Sage plant in Namibia. The aim of conducting this study is derived from the problem that indigenous knowledge is being lost due to the lack of information transfer from generation to generation. Today's young generation have a tendency to migrate to cities in search of what is believed to be lucrative jobs and better living standards.

This loss is also increased by a lack of documentation of the IKS practitioners about the Dwarf Sage. The younger generation also have a tendency to migrate to cities in search of what is believed to be lucrative jobs.

This study shows knowledge and usage of the Dwarf Sage for treatment of Shingle wounds. The IKS practitioners use the leaves and /or branches of the Dwarf Sage plant, which in some cases were mixed with unprocessed cow butter or pumpkin seed oil and /or lukewarm water.

The results of the present study provide evidence that the Dwarf Sage continues to play an important role in the healthcare system among rural communities. As stated in chapter 2 by other researchers, about 80-90% of African populations depend on traditional medicine for their primary health care.

Generally, participants of this study have a strong belief in the effectiveness and success of the Dwarf Sage as a medicinal plant. Thus one can conclude that traditional medicine is of contemporary relevance and it can help rural communities to achieve self-reliance in their primary health care needs.

Recommendations

In the modern age, it is important to document traditional medicinal knowledge before the knowledge becomes extinct.

The research on documenting indigenous knowledge of the Dwarf Sage identified one gap in knowledge:

- The medicinal importance of the Dwarf Sage plant is not yet well documented and might be lost.

The following is recommended to address the gap:

a) To preserve traditional knowledge of the use of the Dwarf Sage plant through documentation.

From the findings of the research study, the researcher pointed out a number of recommendations:

i. Further work should be conducted to explore the potential of other medicinal plants of the different constituencies of the Region to preserve this knowledge.

ii. Carry out systematic recording and validation of the Dwarf Sage as a medicinal plant.

iii. Conduct pharmacological screening to confirm the traditional application of this plant. However, during the screening, it is important to notice ethno formulations and mimic the practices used by the practitioners in the Region.

iv. Further investigation should be done pertaining to the side effects, for better treatment.

v. Further investigation should be done to determine exactly which of the elements found in the Dwarf Sage plant are key players in wound healing.

vi. IKS practitioners should keep records of their patients. Register them in a book, indicating their names, contact details, date they were attended to and type of ailment they were treated for.

vii. Practitioners living in the same area should organise themselves to share best practices continuously with one another on the use of the Dwarf Sage.

viii. Practitioners should document all indigenous knowledge known to them about other medicinal plants they use for medication.

ix. Nurses, who have knowledge of diseases treated with the Dwarf Sage, should create awareness about it, by informing other nurses who might not know about the disease and how it is treated.

x. Future studies must collect more detail on the use of indigenous knowledge in the utilisation of plant resources.

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Appendix A

REQUEST FOR INFORMED CONSENT

Documenting the Indigenous Knowledge on the use of the Dwarf Sage in Namibia

August 2009

Dear Participant

You are invited to participate in a research project aimed at recording the body of indigenous knowledge on the Dwarf Sage as a medicinal plant in terms of administration (usage) and indications for treatment.

Your participation in this research project is voluntary and confidential. Should you declare yourself willing to participate in an individual interview, confidentiality will be guaranteed.

As a research participant you will be expected to provide information on the Dwarf Sage, particularly its use and information on the type of illnesses that could be treated with this plant. Because it is not always feasible to take notes during an interview, the interview will be recorded, allowing the researcher to transcribe the conversation at a more convenient time.

The results from this study will be used to improve health care within communities through education, to preserve our heritage of indigenous knowledge on the Dwarf Sage as a healing plant, and to supplement the module *Health Education*, offered by the Department of Lifelong Learning and Community Education, University of Namibia.

If you are willing to participate in this study, please **sign** or **thumb print** this letter as a declaration of your consent, i.e. that you participate in this project willingly. Under no circumstances will the identity of interview participants be made known to third parties not involved in this research project.

Participant's signature (or thumb print) ..... : Date:

Researcher's signature..... : Date:

Yours Sincerely

Ms Victoria Nakapipi Amakali

M.Ed student

Dept: Lifelong Learning & Community Education

Faculty of Education

University of Namibia

Appendix B

Interview Protocol: Indigenous Knowledge Systems Practitioners

Documenting the Indigenous Knowledge on the use of the Dwarf Sage plant in Namibia

1. <u>Background information</u>

Age: _____

Sex: _____

Area /Region:_____

2. <u>Knowledge information</u>

2.1 How does the Dwarf Sage plant look like?

O**shimeno e-diva diva oshatya ngiini?**

2.2 In what kind of places does this plant grows in Namibia?

Hokolola kutya oshimeno ohashi mene pomahala geni moNamibia?

2.3 Is it accessible throughout the year? If the answer is no, ask why is it not accessible throughout the year?

Ohashi monika muule womumvo aguhe?

2.4. What do you use the plant for?

Oshimeno ohoshi longitha shike?

2.5. Which part of the plant is used for medicinal purposes?

Oshitopolwa shini shoshimeno hashi longithwa ongomuti?

2.6 What is the plants value/importance?

Oshimeno oshi na esimano lyashike?

2.7. Explain how you come to have knowledge about the Dwarf Sage?

Yelitha nkene sha enda opo u kale u na ontseyo yoshimeno shino?

2.8. Explain how you became an IKS practitioner?

Yelitha nkene sha enda opo u kale ho pangitha oshimeno shika?

2.9. Explain the steps you take when preparing the plant for medication before administering it to a patient

Hokolola oonkatu ho landula sho to longekidha oshimeno ongomuti?

2.9.1. Explain the steps you follow when administering /applying the medication to a patient.

Hokolola oonkatu ho landula sho to gwayeke omuti komuvu?

2.10. How often do you need to administer it to the patient before healing takes place?

Omuvu oha gwayekwa iikando ingapi opo a aluke?

2.12. What type of diseases do you treat with the Dwarf Sage?

Oshimeno shino ohashi aludha omikithi dhini?

3. <u>Referrals (snowball procedure)</u>

3.1 Do you remember how many people you have treated with this plant?

Oto dhimbulukwa kutya aantu yangapi wa aludha noshimeno shino?

3.2 Do you know their names and where they live?

Ou shii omadhina gawo ,naampoka taya vulu oku adhika?

3.3 Do you know of any other person who uses this plant for medicinal purposes in your area or other areas?

Ou shi po nando omuntu gumwe ishewe ha longitha oshimeno shino ongomuti gokwualudha pomudhingoloko gweni nenge palwe?

3.4. Where can I find them?

Otandi vulu oku ya adha peni?

Thank you for your contribution.

END of Interview Schedule

Appendix C

Interview Protocol: Beneficiaries of the Dwarf Sage as medicinal plant

Documenting the Indigenous Knowledge on the use of the Dwarf Sage plant in Namibia

1. <u>Background information</u>

Age: _____

Sex: _____

Area/ Region:_____

2. <u>Knowledge information</u>

2.1 How did you come to know about the Indigenous Knowledge Systems practitioner?

Owa ende ngiini opo u kale u shi omuntu ngu ha panga noshimeno shika?

2.2 Did you go to the IKS Practitioner because you know about the plant used?

Konganga owa yi ko shaashi u na uunongo woshimeno shono hailongitha?

2.3 Why did you go to the IKS practitioner instead of a hospital?

Omolwashike wa yile konganga peha lyokuya shipangelo?

2.4. Explain the steps taken when the plant was being prepared for your medication?

Hokolola oonkatu dha landulwa nkene oshimeno sha longekidhwa ongomuti gwoye?

2.5. Explain the steps taken when the plant was being administered to you?

Hokolola oonkatu dha landulwa sho wa gwayekwa omuti?

2.6. Do you think that this plant is important in your area?

Sho wa tala ,oshimeno shino oshi na ongushu momudhingoloko gweni?

2.7. Why is it important?

Ongushu yasho oyini?

2.8. What type of disease were you treated for?

Owa pangwa omukithi gwashike noshimeno shono?

2.9. What other diseases do you know that are treated with this plant?

Omikithi dhilwe dhini po ushi hadhi aludhwa koshimeno shino?

Thank you for your contribution.

END of Interview Schedule