

Full Length Research Paper

An ethnobotanical study of medicinal plants used by traditional healers in Durban, South Africa

R. M. Coopoosamy* and K. K. Naidoo

Department of Nature Conservation, Faculty of Natural Science, Mangosuthu University of Technology, P.O. Box 12363, Jacobs, 4026, Durban, South Africa.

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Medicinal plants have been used extensively for the treatment of infectious diseases by majority of the world's population. Many of the rural communities in KwaZulu-Natal have no access to western medical healthcare and rely on traditional medicine for their curative properties. It has been noted that approximately 20% of plants found in the world have some pharmacological properties. An ethnobotanical survey of medicinal plants used for various treatments including stomach ailments, skin diseases, blood purifiers, rashes, burns and other infections used in KwaZulu- Natal, South Africa was conducted through the use of structured questionnaires. Respondents included traditional healers, herbalists and herb sellers. The information collected revealed that 25 plant species belonging to various families were currently exploited for their curative properties. The most frequently used parts are the leaves followed by root, rhizome or bulb. Stems, flowers and fruits were seldom used. The survey indicated that traditional healers administered their medications via extracts that were obtained by boiling, either as a tea or concoction. Furthermore, this survey indicates the predominant species used by traditional healers against various ailments.

Key words: South Africa traditional market, herbal medicine, traditional healers.

INTRODUCTION

The use of traditional medicines for various ailments dates back over 2000 years and is a source of remedies for rural communities throughout the world (Ernst, 2005). It is estimated that about 80% of the rural communities utilize traditional medicines for their day to day needs (Ernst, 2005). Scientific validation of the use of these medicinal plants has become the centre of debate and approximately 20% of all plants found in the world have undergone screening for biological activities (Coopoosamy and Naidoo, 2010; Fabricant and Farnsworth, 2001; Kishnaraju et al., 2005; Suffredini et al., 2004).

Traditional healers sometimes obtain their material from traders all over southern Africa (Van Wyk et al., 1997). Research has indicated that over 3 million people in South Africa consult with traditional healers for primary health care purposes (Van Wyk and Gericke, 2000).

Some of these plants have been tested for antimicrobial properties and has since been validated (Coopoosamy, 2011). Due to the high demand of natural products, scientists are investigating various plant species for potential cures. This includes an initial ethnobotanical study to ascertain the most frequently utilized plant species and to further validate their use scientifically (Igoli et al., 2005). Due to extensive utilization of some medicinal plants, the population in the wild is becoming depleted to the point of extinction (Coopoosamy, 2011). It is believed that traditional healers now have to travel extended distances to obtain the relevant plant material for treatments. However, due to some plant species being limiting, substitutes are being utilized.

A study conducted on ethnobotanical surveys in Southern Africa has led to the discovery of many drugs that are currently used in treatment of various ailments (Coopoosamy and Magwa 2006, Coopoosamy and Naidoo, 2010, 2011; Masika and Afolayan, 2003; Erasto et al., 2005; Koduru et al., 2007; Van Wyk et al., 1997).

These validations have indicated the need to re-examine the ethnobotanical surveys as some of the plants being

*Corresponding author. E-mail: rogercooposamy@gmail.com.
Tel: +27 82 200 3342. Fax: +27 31 907 7665.



Figure 1. Map of the Kwazulu-Natal province showing the study areas (Black arrows).

used are close to extinction.

METHODOLOGY

Study area

The traditional markets were GPS'ed (-29.963 latitude and 30.884 longitude) for Umlazi market and (-29.979 latitude and 30.889 longitude) for Durban market (Figure 1).

Informed consent

Prior to the study, signed consent forms from each interviewee were obtained. These individuals constituted traditional healers, patients as well as other traders (herbalists).

Sampling and interview of healers

Due to the low education level or lack of understanding of the English language of most individuals, the structured questionnaires were discussed on an individual basis and explained by an interpreter. The results were then transcribed by the interpreter as many could not write. A total of 80 individuals were interviewed, comprising 40 traditional healers/herbalists and 40 candidate patients. As there are predominantly two markets in the greater Durban region, the interviewees were divided equally between these two markets.

Identification of plants

Many of the traditional healers/herbalists provided the local names of the plants being used. Scientific names were validated on our

return to the laboratory. Where possible, voucher specimens were obtained and stored at the Medicinal Research Laboratory at Mangosuthu University of Technology.

RESULTS

The total number of respondents to the questionnaires was 80, of which 28.75% were between the ages of 25 and 35 years practicing between 7 and 15 years, 47.50% were between 35 and 45 years practicing between 15 and 24 years and 23.75% were 45 years and older practicing between 19 and 34 years.

DISCUSSION

The results obtained from the survey (Tables 1 to 4) indicate that 22 families are sought for medicinal curative properties in KwaZulu-Natal. A total of 25 species are currently being sold at the local markets. Some of these species are on the endangered list and traditional healers or collectors need to be educated on how to sustain any available wild populations (examples: *Siphonochilus aethiopicus*, *Warburgia salutaris* and *Haworthia limifolia*). Education may include sustainable harvesting from the wild, propagation at home gardens and possible reimplementation of some wild populations with protected areas. All traditional healers have indicated that the plant species were obtained in various provinces of Southern Africa, but most alluded to obtaining the plants from

Table 1. Age groups and number of years of practice of respondents.

Age category (years)	Number of respondents	Percentage of total respondents (%)	Number of years of practice (years)
25-35	23	28.75	7-15
35-45	38	47.50	15-24
45 above	19	23.75	19-34

Table 2. Medicinal herbs being sold at local markets (Umlazi and Durban).

Family	Scientific name	Zulu name	Common name	Treatment
Asphodelaceae	<i>Haworthia limifolia</i>	Umathithibala	File leaf Haworthia	Blood purifiers and cures against coughs, skin rashes, sun burns, burns, etc.
Asphodelaceae	<i>Bulbine frutescens</i>	Ibhucu / intelezi	Snake flower	Treatment for acne, burns, blisters, cold sores (even on penis and vagina), cracked lips, cracked fingers, nails and heels, insect bites, itchy places, fever blisters, mouth ulcers, sunburn, rashes and ringworm,
Aloaceae	<i>Aloe ferox</i>	iNhlaba	Bitter aloe	Sores, wounds, acne, burns, blisters, cold sores, cracked lips, insect bites, itchy places, fever blisters, mouth ulcers, sunburn, rashes, blood purifiers, immune boosters, against secondary infections of HIV, constipation, applied on nipples for females who breast fed.
Asteraceae	<i>Artemisia afra</i>	Mhlonyane	Wild wormwood /African wormwood	Infusion: coughs, colds, fever, loss of appetite, colic, headache, earache, intestinal worms.
Fabaceae	<i>Schotia brachypetala</i>	iHlunze umGxamu	Weeping boer Bean	Bark extract for heartburn, pimples and diarrhea.
Verbenaceae	<i>Lippia javanica</i>	umSwazi	Fever tea/ lemon bush	Infusion: coughs, colds, bronchial, skin disorders, such as heat rash and other rashes, as well as scratches, stings and bites.
Aloaceae	<i>Gasteria croucheri</i>	Impundu	Natal Gasteria	Spiritual belief of lightning not to strike the house.
Aloaceae	<i>Aloe aristata</i>	Umathithibala	Long awned aloe	blood purifiers and cures, skin rashes, sun burns, burns and wounds.

KwaZulu-Natal and Limpopo provinces.

Based on the survey, there seem to be four predominant treatments sought by patients, wound healing, sexual enhancers and sexual diseases, blood purifiers and oral and digestive tract diseases. Wound healing included sunburns, rashes, sores, etc. In the sexual health category, the main concern was libido functioning, prolonged erections and ejaculations, whereas the sexual diseases ranged from penial and vaginal sores, STDs and HIV. Blood purifiers included immune boosters and oral diseases included mouth ulcers whilst digestive tract

diseases include diarrhea.

Different methods of herbal preparation (Figure 2 to 5) were also mentioned during the interview process. Boiling plant material to form a concoction or decoction were the most commonly used method of preparation. Grinding plant material into fine powder and making a paste was often used in the treatment of skin infection or superficial burns or superficial sexual infection. Heating the crushed products of leaves, before application, was sometimes used for pains and aches. Oral infusions are used in the case for improved sexual prowess. Application of the

Table 3. Medicinal trees sold at local markets (Umlazi and Durban).

Family	Scientific name	Zulu name	Common name	Treatment
Myrtaceae	<i>Psidium guajava</i>	Gwabisi	Guava	Leaves crushed and applied to wound.
Anacardiaceae	<i>Harpephyllum caffrum</i>	umGwenye	Wild plum	Extracts used for acne and eczema.
Fabaceae	<i>Schotia brachypetala</i>	iHlunze umGxamu	Weeping boer-bean	Bark extract for heartburn, pimples and diarrhea.
Rutaceae	<i>Vepris lanceolata</i>	UmOzane	White ironwood	Root powder for influenza, colic and fruit for gonorrhoea.
Ulmaceae	<i>Trema orientalis</i>	umSekeseke, umBhangabhanga, umBengebenge	Pigeon wood	Infusion: coughs, sores, wounds, toothache, venereal diseases.
Icacinaceae	<i>Apodytes dimidata</i>	umDakane	White pear	Infusion: enema for intestinal parasites.
Pittosporaceae	<i>Pittosporum viridifolium</i>	Umfusamvu	Cheesewood	The bark is said to possess medicinal properties, among other things for the treatment of stomach disorders.
Laureaceae	<i>Ocotea bullata</i>	umNukani	Black stinkwood	The bark: for headache, urinary diseases and as an emetic for emotional and nervous disorders. The bark can also be drunk as tea or applied as steam to treat pimples. It is also thought to improve sexual stamina in males (prolonged erection).
Canellaceae	<i>Warburgia salutaris</i>	Isibhaha	Pepper bark	Widely used for common colds, snuff used to clear the sinuses, orally to cure spots in the lungs. Both stems and root bark for malaria. Powdered and mixed with water, they are believed to cure sores in the mouth.
Rosaceae	<i>Prunus africana</i>	Inyazangoma, Elimnyama	Iron wood/ African plum	Bark for treatment of chest pains. Bark extracts used for the treatment of benign prostate hypertrophy.

Table 4. Medicinal bulbs being sold at local markets (Umlazi and Durban).

Family	Scientific name	Zulu name	Common name	Treatment
Zingiberaceae	<i>Siphonochilus aethiopicus</i>	Indungulo, isiphephetho	Wild ginger	Rhizomes and roots are chewed fresh to treat asthma, hysteria, colds, coughs and flu.
Asparagaceae	<i>Eucomis autumnalis</i>	Umatunga, Umakhandakantsele, ukhokho	Pineapple flower	Used to treat respiratory and urinary problems, flatulence and colic. Used as an enema, it serves to relieve biliousness or improve sexual prowess (prolonged erection). Also drunk to clean the blood assist in HIV/AIDS patients.

Table 4. Contd.

Liliaceae	<i>Scilla natalensis</i>	Inguduza	Wild aquill	Medicine for female infertility and male impotency. Also used in the treatment of skin conditions, ash from the burnt plant has been used on open sores.
Hypoxidaceae	<i>Hypoxis</i>	Inkomfe, ilabatheka	African potato	Corms of <i>Hypoxis</i> are being used to alleviate many immune related ailments such as the common cold, flu, arthritis, tumours, cancer and HIV/AIDS.
Stangeriaceae	<i>Stangeria eriopus</i>	Imfingo	Natal cycad	Root used as a purgative and to treat headaches.
Amaryllidaceae	<i>Boophane disticha</i>	Incwadi	Poison bulb, sore-eye flower	Traditional healers use it to treat pain and wounds. Outer covering of the bulb is applied to boils and abscesses. Fresh leaves are used to stop bleeding of wounds.
Hyacinthaceae	<i>Bowiea volubilis</i>	Ugibisisila, Iguleni	Climbing onion	Treat various skin diseases, sore eyes, bladder problems, barrenness, to facilitate delivery, and to procure abortions.



Figure 2. Natural method of drying fresh material for sale at traditional herbal markets.



Figure 3. Products being sold at local traditional herbal markets.



Figure 4. Traditional herbs crushed and stored for future sale or administration to potential patients.



Figure 5. Decoctions extracted from traditional medicinal plants for use in treatment of superficial sores and wounds.

herbal remedies varied from drinking the boiled plant

material for oral and blood infections, application of extracts directly on infected areas of skin and superficial infections and application of pastes in infected areas for superficial sexual infections.

This study has unveiled the vital role that medicinal plants play in the primary healthcare of the people of Durban, KwaZulu-Natal. Based on the findings, it is expected that the results of this study will lead to phytochemical and pharmacological investigations of the plants showing reasonable antimicrobial activity.

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