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Full Length Research Paper

Ethnobotanical survey of plants used for the treatment of constipation within Nkonkobe Municipality of South Africa

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Constipation is the commonest gastrointestinal complaint in most developed and poor countries including South Africa. An ethnobotanical survey of plants used by herbalists, traditional healers and rural dwellers for the treatment of constipation was conducted in the Nkonkobe Municipality, Eastern Cape Province of South Africa. The study revealed 10 plant species belonging to eight families, namely; *Asphodelaceae*, *Apiaceae*, *Asteraceae*, *Amaryllidaceae*, *Sapindaceae*, *Dioscoreaceae*, *Polygonaceae* and *Longaniaceae*. Out of these, the member of *Asphodelaceae*, *Apiaceae*, *Asteraceae* and *Amaryllidaceae* were the most commonly used. The use of decoction of leaves and roots are the most preferred methods of herbal preparation. In all cases, the treatment involved oral administration of the extracts 2 to 3 times per day, for a short period of time, but usually not more than two weeks, or as soon as the condition disappears. *Aloe ferox*, *Boophane disticha*, *Alepidea amatymbica* and *Artemisia afra* were repeatedly mentioned by the traditional healers as the most widely used for the treatment of constipation in the study area. There was a general belief in the efficacy of the extracts either prepared as infusion, decoction or poultice.

Key words: Medicinal plants, herbalist, traditional healer, constipation.

INTRODUCTION

Constipation is a condition in which an individual experiences uncomfortable or infrequent bowel movements. Generally, a person is considered to be constipated when bowel movements result in the passage of small amounts of hard and dry stool, usually fewer than three times a week (Longstreth et al., 2006). It is the most common gastrointestinal complaint all over the world resulting in over two million reported cases annually (Luscombe, 1999). In South Africa, 29% of the population consisting of both black and white, suffer from constipation (Meiring and Joubert, 1985). Some of the most common causes of constipation include side effects of medication, lack of exercise, lack of liquids and fiber in the diet, irritable bowel syndrome, problems with intestinal functions and changes in habits or life style such as travelling, pregnancy and old age (Meiring and Joubert, 1985).

The use of over-the-counter laxatives such as senna, correctol, exlax, senokot and gaviscon is very common as a means of treating constipation. Statistics has shown that 43% of whites and 76.6% of blacks indulge in the use of laxatives, out of which 14.3 and 21.5% respectively use more than one laxatives at a time for the treatment of constipation (Meiring and Joubert, 1985). These orthodox laxatives are, however, very expensive and beyond the reach of people in the low social economic income group and those living in the rural areas. Hence, majority of the affected persons in South Africa rely on medicinal plants for the treatment of constipation (Van Wyk et al., 1997).

The use of herbal preparations in the treatment of various ailments is a common practice in South Africa. This is partly due to the fact that synthetic drugs always show adverse reactions and other undesirable side effects (Erasto et al., 2005). Apart from being fast acting, cheap and readily available, the users of medicinal plants for the treatment of constipation also get the feeling of having some control in their choice of medication (Joshi

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and Kaul, 2001).

South Africa has remarkable biodiversity and rich cultural traditions of plant use. These plants are regarded as precious and highly valued (Van Wyk et al., 1997). According to Kim (2005), 80% of the people in developing countries such as South Africa, use herbal medicines for their health care including the treatment of constipation. For example, some plant extracts are known to have anti-spasmodic effects, delay gastrointestinal transit, suppress gut motility, stimulate water absorption and reduce electrolyte secretion (Palombo, 2006). The need for ethnobotanical research to document important medicinal plants cannot be over emphasized (Grace et al., 2008). Most of the information is scattered in literatures, hence the need to identify them within the community in order to avoid loss of knowledge of these plants which has remained poorly recorded (Van Wyk et al., 2008). There is need to identify indigenous medicinal plants with laxative properties, document information on them as well as the ingredients that bring relief and possible toxic implications of these plants. In this paper, we present an inventory of plants used for the treatment of constipation in Nkonkobe Municipality of South Africa as well as the parts of the plants used and the various methods of preparation and administration.

MATERIALS AND METHODS

The study area

Nkonkobe Municipality, Eastern Cape of South Africa is located within 32° 47' 0" South, 26° 50' 0" East. The area is bounded by the sea in the east and drier Karroo in the west (Erasto et al., 2005). The altitude is approximately 1300 m above sea level and the vegetation is veld type 7 (Masika and Afolayan, 2003). The major ethnic group in the area is Xhosa speaking, with farming as their main occupation. The low socio-economic standing of the predominantly rural Eastern Cape population suggests that the great majority of the people in this area use herbal medications either alone or in combination with orthodox medicines for the treatment of several diseases.

Collection of information

The method of Jovel et al. (1996) was adopted for this work. Information for this study was collected between May and July 2009 using well structured questionnaire, interviews and general conversation with the herbalists and rural dwellers. Thirty people comprising 10 each of herbalists, traditional healers and elderly rural dwellers from the study area were consulted. General questions on the local names of the plants, the parts used, methods of preparation, mode of administration, dosage, preservation method, other medicinal values of the plants and the perceived efficacy of the remedies on constipation were asked either directly or collected through the response to the questionnaires. The plants used for the treatment of constipation were obtained directly from the healers and herbalists, while others were collected during walk through the forest accompanied by the traditional healers, herbalists or rural dwellers. The plants were initially identified by their vernacular names and later validated at the University of Fort Hare herbarium. Voucher specimens were also prepared and deposited

in the Griffin herbarium of the Department of Botany, University of Fort Hare.

Intellectual property agreement statement

All the herbalists and traditional healers who contributed information to this project during the ethnobotanical survey were adequately financially rewarded with further verbal agreement that this research shall not be for commercial purposes, but to serve as enlightenment to the community and the entire Eastern Cape Province on the plants used for the treatment of constipation in the area.

RESULTS AND DISCUSSION

The study was carried out within the Nkonkobe Municipality in Amatole District of the Eastern Cape. The study revealed 10 plant species belonging to 8 families namely; Asphodelaceae, Apiaceae, Asteraceae, Amaryllidaceae, Sapindaceae, Dioscoreaceae, Polygonaceae and Longaniaceae that are frequently used for the treatment of constipation by the herbalist, traditional healers and the people of the area (Table 1). Out of these, the members of Asphodelaceae were the most commonly used plants.

Four plants were frequently mentioned and highly recommended by both the traditional healers and rural dwellers. These are *Aloe ferox*, *Boophone disticha*, *Artemisia afra* and *Alepidea amatymbica*. Four of the plants; namely *Hippobromus pauciflorus*, *Rumex crispus* and *Strychnos henningsii* have not been previously reported in the study area as remedies for the treatment of the condition.

The leaves were reported to be the most used part of the plants, constituting 60% of the herbal preparations. This was followed by the root (30%), rhizome (10%), bark (10%) and the bulb (10%). The commonest method of herbal preparation was decoction (Table 1). The decoction is usually administered two to three times per day for a short period usually not more than two weeks, or as soon as the condition disappears.

Information from literature also revealed that these plants are used for the treatment of other diseases of both human and livestock. For instance, *A. ferox* has been reported to be effective in the treatment of tooth abscesses (Githens, 1949), sexually transmitted infections (Kambizi et al., 2007), wound healing (Grierson and Afolayan, 1999), arthritis and rheumatism (Hocking, 1997; Van Wyk et al., 1997), conjunctivitis and eye ailment (Crouch et al., 2006) and as insect repellent (Watt and Breyer-Brandwijk, 1962). *A. afra* has been reported to be used for the treatment of diabetes (Erasto et al., 2005), as a tonic and anthelmintics (Smith, 1966; as well as for the treatment of fever, loss of appetite, colic, headache, earache, malaria and worms (Watt and Breyer-Brandwijk, 1962; Van Wyk et al., 1997). The scales of *Boophone* bulb are used to treat livestock disease (Masika and Afolayan, 2003), as a dressing to circumcision wound, boil, sores, and septic wounds (Grierson and Afolayan, 1999),

Table 1. Medicinal plants used for the treatment of constipation in within Nkonkobe Municipality of South Africa.

Scientific name	Family	Herbarium Voucher	Vernacular name(s)	Other therapeutic applications	Part used	Plant state	Preparation	Mode of use
<i>Aloe ferox</i> Mill	Asphodelaceae	WinMed09/01	Ikhala, aalwyn	Head ache and stomach ache	Leaves	Fresh and dried	Decoction	Orally
<i>Aloe tenuior</i> Haw	Asphodelaceae	WinMed09/02	Intelezi	Headache	Leaves	Fresh and dried	Decoction	Orally
<i>Aloe arborescence</i> Mill	Asphodelaceae	WinMed09/03	Unomaweni	Stomach ache	Leaves	Fresh and dried	Decoction	Orally
<i>Alepidea amatymbica</i> Eckl	Apiaceae	WinMed09/04	Iqwili	Head ache, cough and wound	Rhizome and roots	Fresh or cooked	Decoction	Chewed and sucked
<i>Artemisia afra</i> Jacq	Asteraceae	WinMed09/05	Umhlonyane	Stomachache and ear ache	Leave and stem	Fresh and dry	Decoction	Orally
<i>Boophone disticha</i> (L.f) Herb	Amaryllidaceae	WinMed09/06	Inswadi, gifbol	Pain and wound	Root and bulb	Fresh	Infusion	Orally
<i>Hippobromus pauciflorus</i> Radlk	Sapindaceae	WinMed09/07	Ulathile	Eye treatment and Head ache	root	Fresh	Decoction	Orally
<i>Dioscorea sylvatica</i> Eckl	Dioscoreaceae	WinMed09/08	Uskolpati	Wounds and sore	leaves	Fresh	Infusion	Orally
<i>Rumex crispus</i> L	Polygonaceae	WinMed09/09	Ubuhulunga	Stomach ache and treating wounds	leaves	Fresh	Decoction	Orally
<i>Strychnos henningsii</i> Gilg	Longaniaceae	WinMed09/10	Umnonono	Diarrhea	Bark	Dry	Decoction	Orally

constipation in ruminants (Dold and Cocks 2001), mental illness (Stafford et al., 2008), depression (Pedersen et al., 2008), while *A. amatymbica* is used for the treatment of respiratory tract infections, asthma, sore throat, gastrointestinal complaints, fever, rheumatism, bleeding wounds and headache (Weimarck, 1949; De Castro and Van Wyk, 1994), antimicrobial activity (Afolayan and Lewu, 2009).

Conclusion

This study has revealed that medicinal plant continue to play a vital role in the primary health

care of the people of the Nkonkobe Municipality of South Africa. During the survey, it was observed that more than half of the people questioned use medicinal plants regularly to treat many ailments, including constipation. *A. ferox* was the most frequently mentioned plant that is used for the treatment of constipation in the study area. Hence, work is in progress on the characterization and pharmacological validation of the use of *A. ferox* for the treatment of constipation.

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