Willingness of African traditional healers to collaborate with researchers to further develop their traditional medicines in Kwazulu-Natal Province of South Africa

Nireshnee Ramchundar[1] and Manimbulu Nlooto[2]

Abstract

South Africa has been subjected to the influence of decades of colonialism resulting in the marginalization of traditional healing practices. African traditional medicines are still believed to be effective against a range of diseases and conditions. The World Health Organization encourages active collaboration between academic researchers and traditional healers-a relationship which remains fragile. The aim of this study was to determine the willingness of traditional healers to collaborate with researchers to further develop their traditional medicines.

A mixed quantitative and qualitative approach was used in this study. Face-to-face interviews were carried out among 180 eligible traditional healers using researcher administered semi-structured questionnaires, with close-ended and open-ended questions, in urban and rural areas of KZN province between August and November 2015.

The majority of traditional healers (132 out of 166 or 79.5%) in this study expressed strong willingness to co-operate with researchers. They recommended the following medicines, namely, Gunnera perpansa or Ughobo (6 out of 166 or 3.6%), Warburgia salutaris or Isibhaha (3 out of 166 or 1.8%), Hypoxis hemerocallidea or Ilabatheka (3 out of 166 or 1.8%) and Drimia delagoensis or Umahlanganisa (2 out of 166 or 1.2%) for further research. Nine percent of traditional healers (15out of 166) raised concerns about the availability of medicinal plants and animal species, and the non-transmission of traditional knowledge from one generation to another.

In conclusion, traditional healers in this study express a strong willingness to collaborate with researchers and suggest some plants for further scientific evaluation. Concerns were raised by traditional healers about the disappearance of traditional knowledge and the shrinking of plant and animal species used as traditional medicines. Further studies on chemical composition and biological activities of the above-mentioned plant species perceived as most effective by traditional healers are recommended.

Keywords: African, traditional medicine, healers, health practitioner, collaboration, South Africa

[1] University of KwaZulu-Natal, South Africa.

[2] University of KwaZulu-Natal, South Africa. Email: Nlooto@ukzn.ac.za

Introduction

South Africa has been subjected to the influence of decades of colonialism resulting in the marginalization of traditional healing practices. African traditional medicines are still believed to be effective against a range of diseases and conditions. The World Health Organization encourages active collaboration between academic researchers and traditional healers-a relationship which remains fragile. Decades of colonialism, cultural imperialism and the power of multi-national pharmaceutical industries have marginalized traditional healers , traditional medicines (TMs) and their value to communities; it is vitally important that human rights principles and a human rights framework are strictly applied to all aspects of traditional healing (Richter, 2003). The cultural landscape and practices of traditional healers and their patients have been disrupted by colonial powers and structures which have played an overpowering role in changing and disrupting the distinction between diviners and herbalists (Jolles, F. and Jolles, S., 2000). Despite the negative effects of colonialism on traditional medicines, Traditional healers are perceived to be very popular and highly respected amongst African communities (Hlabano, 2013). With the modernization of the African continent, traditional healers are undergoing a strange process of mutation (Steinglass, 2002).

In 1977, the World Health Organization (WHO) formally recognised the importance of collaboration between traditional healers and biomedically trained health care workers (WHO, 2000). The WHO has organised a number of expert consultations and conferences, and has issued guidelines on traditional medicines, traditional healers and collaboration between biomedicines and traditional medicines. Traditional medicines use biological resources and knowledge of traditional groups, it is often linked to biodiversity conservation and indigenous peoples' rights over their knowledge and resources" (Timmermans, 2003). The NEPAD Brief (2001) confirms that African leaders have committed themselves to incorporate the potential of traditional medicines in the processes and strategies of strengthening their health systems. Collins (2001) stated that African traditional knowledge is the key to indigenous plant use; with knowledge that has been accumulated through trial and error over thousands of years. This knowledge is disappearing at an ever-increasing rate as skilled herbalists and traditional healers die.

There have been studies conducted around the world which are focused on collaboration between biomedical health practitioners (BHPs) and traditional healers. A study in Vanuatu in the Pacific Islands concluded that almost all the traditional healers who participated indicated a willingness to collaborate with the national TB programme (Vinney et al., 2014). In Tanzania, consultative meetings held with traditional healers showed them to be willing to collaborate with researchers from the Institute of Traditional Medicine and medical doctors in the management of Human Immunodeficiency Virus / Acquired Immune Deficiency Syndrome (HIV/AIDS) (Kayombo et al., 2007). Gqaleni et al, (2011) concluded that the development and empowerment of traditional healers in the fight against HIV/AIDS can play a meaningful role in health care service delivery in South Africa (SA), and is of national strategic importance. The authors further indicate that alliances

between traditional and allopathic health care workers will benefit communities significantly. In Mozambique a study demonstrated that formal collaboration with traditional healers to improve patient care was successful through their incorporation into a formal government system (Audet et al., 2013). The role of traditional healers as supervisors of existing tuberculosis (TB) treatment regimens was assessed in Hlabisa in Kwa-Zulu Natal (KZN), where researchers found that traditional healers make an effective contribution to the directly-observed therapy TB programme performance (Colvin et al., 2003).

The South African Traditional Health Practitioners Act No. 22 of 2007 stresses the importance of traditional healers to cooperate with other health workers in the formal health sector; this act emphasises the importance for traditional medicines to be investigated for efficacy, safety and quality with a view to incorporating their use in the mainstream health care system. Before the passing of this act, there were various pieces of legislation (such as the Witchcraft Suppression Act of 1957 and its Amendment Act of 1970) which explicitly prohibited the diviners from practicing their trade – as early as 1891 in colonial Natal. With the additional encroachment of 'Western' health care systems in SA on the practice and livelihood of traditional healers , the roles of the diviner and herbalist have become increasingly blurred (Jolles, F. and Jolles, S., 2000).

The attitudes of traditional healers towards BHPs of Western medicine may be fragile and full of mistrust. In a study conducted in Umkhanyakude District of KZN, traditional healers experienced mistrust and disrespect by BHPs who demonstrated ignorance on TM (Hlabano, 2013). Building from this previous work, this study was undertaken to determine the willingness of traditional healers to collaborate with researchers to further develop their traditional medicines. This information may contribute significantly to strengthen the mainstream health care systems by re-building the already fragile relationship between researchers and traditional healers.

Methods

Study design and study area

A mixed quantitative and qualitative study was carried out among 180 eligible traditional healers through face-to-face interviews, using researcher administered semi-structured questionnaires with open-ended and close-ended questions, in urban and rural areas from all 11 districts in KZN (as indicated in the map below), between August and November 2015.

Figure 1: Map of the sites visited in the province of KZN (Source www.municipalities.co.za)

Study population, sample size assumption

This study consisted of traditional healers who practiced around the province of KZN. According to Richter (2003), the estimated population of traditional healers in SA was 25000. The sample size was estimated by using the formula: n = P (1-P) (Z-α/2/E), where P = expected prevalence of traditional healers reporting traditional medicines perceived as most effective, (Z - α/2) = a constant code representing 95 % of confidence [1.96], E = margin of error [+/ - 0.05] (Glenn, 1992). An assumption was made to detect at least 10 % (P = 10%) using the above formula. A minimum sample size of n=138 was required; however, to account for drop-outs and incomplete questionnaires, this number was increased by at least 20% to yield a maximum sample size of 166 participants. A total number of 180 questionnaires were distributed to eligible traditional healers.

Inclusion and exclusion criteria

Inclusion criteria

The study enrolled traditional healers aged 18 and above, irrespective of gender, which included diviners (iZangoma / Amagqirha), traditional herbalists (iZinyanga / Amaxhwele), faith healers (Abaprofeti / Abathandazeli), street traders and retail salespeople who supplied traditional medicines.

Exclusion criteria

Traditional healers who use potions for lost love, good or bad luck, money problems or for manipulation of "feelings" were excluded from this study.

Recruitment and selection of study participants

An attempt was made to obtain contact details of traditional healers through the THO training site in

Newcastle, KZN. Locations of places of practice of traditional healers were identified by asking local residents where traditional healers regularly practice. Once traditional practices were identified, the TH was selected based on their willingness to participate in the study. Markets, taxi ranks and bus stations harbour many traditional practices, as well as traditional medicine (muti) shops. Some traditional healers also referred us to others who practice in the same area.

Data collection technique and research instruments

Researcher administered in-depth, face-to-face interviews were carried out to ensure credibility and reliability of the data collected. Semi-structured questionnaires with open-ended and closed ended questions were administered by the researcher and a team of trained data collectors to 180 eligible traditional healers. A trained Zulu translator helped to administer the questionnaires to those study participants who chose to respond in isiZulu.

The questionnaire was pilot-tested prior to data collection. The feedback from the pilot test was used to improve the questionnaire to a level of understanding of traditional healers . This was done to avoid the use of complicated or technical language in the questionnaire. Questionnaires helped to obtain the following information: (i) the traditional healer's socio-demographic information, (ii) traditional practices, e.g. the category of TH, registration with any organization and how long they are practicing, (iii) the TMs perceived as most effective treatments, and (iv) their willingness to participate in further research activities to develop any of their traditional medicine therapies. This paper reports the findings on TMs perceived as most effective by traditional healers.

Statistical analysis

Data collected was checked for duplication of information, entered into an Excel spreadsheet and analysed using the Statistical Package for the Social Sciences (SPSS), Version 23. The traditional medicines perceived to be most effective were categorized **as frequencies in tables** according to the scope of traditional healing reflected in the South African traditional healers' primary health care handbook by Felhaber and Mayeng (1999), under the following categories:- conditions of the respiratory system, conditions of the gastro-intestinal system, conditions of the cardio-vascular system, conditions of the central nervous system, conditions of the skin and hair, conditions of the blood, conditions of the urogenital system, conditions of the eyes, conditions of the musculo-skeletal system and other conditions.

Ethics statement

This study received ethical approval from the Biomedical Research and Ethics Committee of the University of KwaZulu-Natal under reference number BE 172out of 15. Permission to conduct the study among traditional healers was obtained from the KZN Department of Public Health, and

contacts were made with traditional healer's associations in SA. Participation was voluntary; a study information sheet was given or explained to participants. Those who consented to participate were asked to give signed consent before proceeding with interviews. Questionnaires were coded to ensure full anonymity of respondents and sites. It was crucial to the study that the translator was well trained, fluent in the isiZulu language and familiar with traditions and culture of the people. It was important to build a rapport with the interviewees, since much of their knowledge and information may have been acquired from one generation to the other and/or by years of practice. They were free to withdraw at any time if they did not deem our questions appropriate.

Results

Response rate

One hundred and sixty-eight participants out of 180 eligible participants completed the questionnaires in full, yielding a response rate of 93.3%.

Socio-demographic characteristics of study participants

The majority of the respondents were females (87 out of 166 or 52.4%), aged between 31-50 years old (65 out of 166 or 38.7% ranging from 18-70 years old) and spoke Isizulu as a first language (147 out of 166 or 87.5 %). They practiced mainly as herbalists or nyangas (88 out of 166 or 52.4%). The majority of the respondents completed secondary school education (40out of 166 or 23.8%), have been practicing as traditional healers for 1-10 years (79 out of 166 or 47%) and were not registered with any organization for traditional practice (139 out of 166 or 83.7%). Most of the traditional healers in this study practiced around the Ladysmith area in Uthukela District (28 out of 166 or 16.7%). Table 1 presents the different socio-demographic characteristics of study participants.

Table 1: Socio-demographic characteristics of study participants (n=166)

Characteristic	Variable	Sample Size (n=166)	Percentage
Gender	Male	79	47.6
	Female	87	52.4
Age	18 – 30	34	20.2
	31 – 40	40	23.8
	41 – 50	27	16.1
	51 – 60	19	11.3
	61 – 70	44	26.1
Level of education	No education	27	16.1
	Some primary education	15	8.9
	Completed primary education	35	20.8
	Some secondary education	38	22.6
	Completed secondary education (Grade 12)	40	23.8
	Tertiary education	4	2.4
Mother tongue	English	8	4.8
	Afrikaans	2	1.2
	isiZulu	147	87.5
	isiXhosa	3	3.6
	Sesotho	1	0.6
	Siswati	3	1.8
	Other	4	2.4
Type of traditional healer	Herbalists (Inyanga)	88	52.4

	Diviner (Sangoma)	36	21.4
	Street trader	28	16.7
	Faith healers (Abaprofeti)	3	1.8
	Sangoma and inyanga	2	1.2
	Sangoma and abaprofeti	1	0.6
	Sangoma, inyanga and abaprofeti	1	0.6
	Retail Salesperson	4	2.4
Years in practice	1 – 10 years	79	47.0
	11 – 20 years	39	23.2
	21 – 30 years	24	14.3
	31 – 40 years	6	3.6
	41 – 50 years	7	4.2
Registered with an organisation	Yes	21	12.7
	No	139	83.7
	Missing information	6	3.6
Area of practice	Newcastle	19	11.3
	Durban	27	16.1
	KwaDukuza	10	6.0
	iXopo	13	7.7
	Port Shepstone	18	10.7
	Pietermaritzburg	25	14.9
	Mkuze	2	1.2
	Dundee	8	4.8
	Ladysmith	28	16.7

Willingness to co-operate with researchers

Figure 2 presents the willingness of traditional healers to co-operate with research teams. A scale of 1-5 was applied to measure the willingness to collaborate, 1 being "Not at all', 2 being "Not very willing", 3 being "Unsure", 4 being "Willing" and 5 being "Very willing". The majority of traditional healers (132 out of 166 or 79.5%) were very willing to collaborate with research teams.

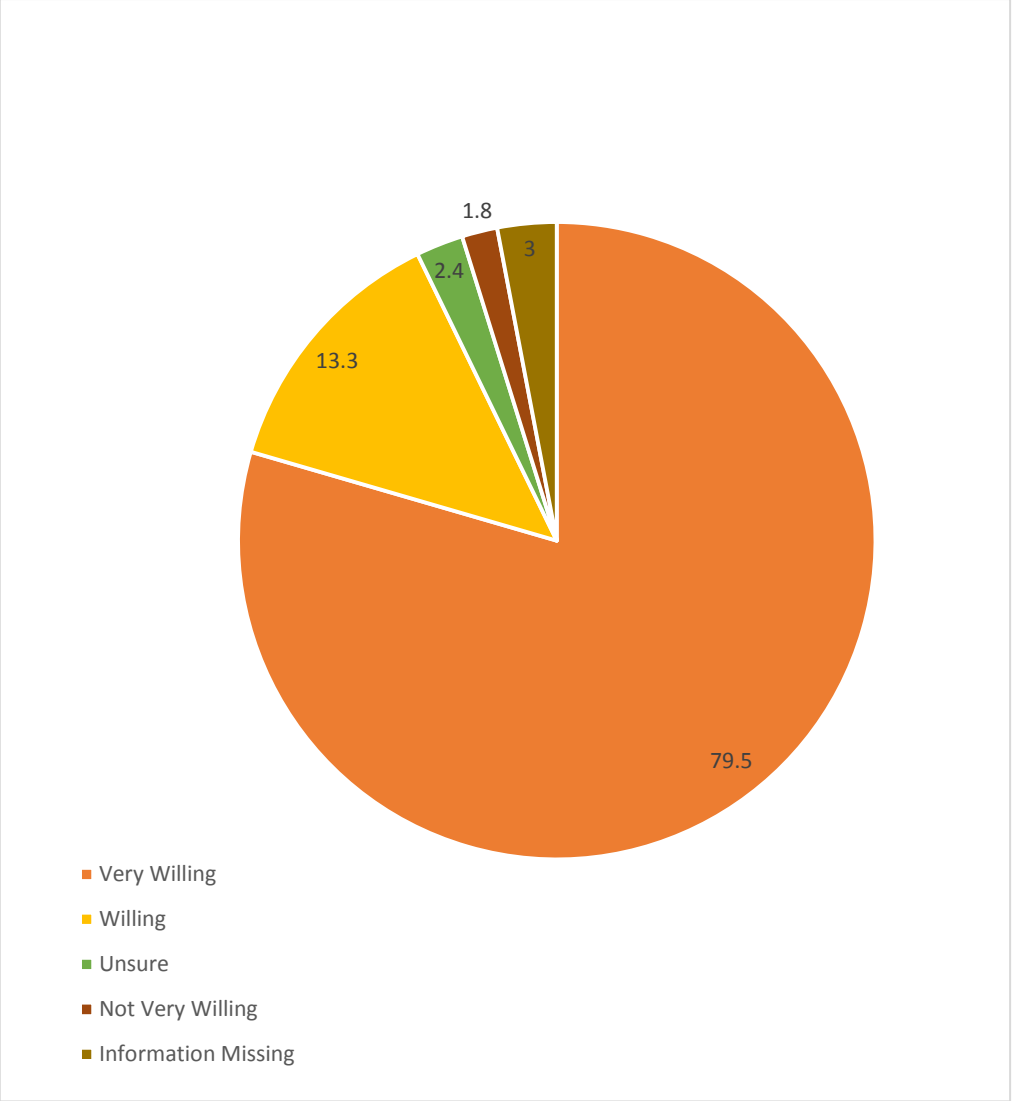

Figure 2: Willingness of traditional healers to collaborate with research teams to further develop their traditional medicines

Medicines strongly recommended by traditional healers to be researched further by scientists

Table 2 presents traditional medicines strongly recommended by traditional healers to be researched further by scientists. *Gunnera perpansa* or Ughobo (6 out of 166 or 3.6%), *Warburgia salutaris* or Isibhaha (3 out of 166 or 1.8%), *Hypoxis hemerocallidea* or Ilabatheka (3 out of 166 or 1.8%) and *Drimia delagoensis* or Umahlanganisa (2 out of 166 or 1.2%) were found to be strongly recommended for further research.

Table 2: traditional medicines strongly recommended by traditional healers to be researched further by scientists

Name of TM	Category of TH	Frequency of TH (n=166), percent (%)	Indication of TM	Information on how to use the TM
Ughobo (River Pumpkin) *Gunnera perpansa*	Sangoma Street trader	2 (1.2)	Miscarriage	Boil roots in water. Strain and drink 1 cup twice daily for 1 week
		2 (1.2)	Womb cleansing	Boil roots in water. Strain and drink 1 cup twice daily for 2 weeks Also for rectal use
		1 (0.6)	Kidneys	Grind the fleshy root and boil in water. Strain and drink a quarter glass 3 times a day
		1 (0.6)	Reproductive system	Grind the fleshy root and boil in water. Strain and drink a quarter glass 3 times a day
Isibhaha (Pepper-bark tree) *Warburgia salutaris*	Inyanga	3 (1.8)	Cough	Boil stems in water. Strain and drink 15ml 3 times a day until symptoms improve (for up to 3 days)
Ilabatheka (African Potato) *Hypoxis hemerocallidea*	Sangoma Inyanga Street trader	3 (1.8)	Blood/Body cleansing	Boil in water and drink a quarter cup once daily for 1 week. Alternate dosage: drink 1 cup twice a day until symptoms improve
Umahlanganisa (Bluebell) *Drimia delagoenesis*	Sangoma Abaprofeti	2 (1.2)	Ulcers Haemorrhoids	Boil the bulbs in water. Strain and drink a quarter cup 2 times a day for 5 days
Godide *Jatropha zeyheri*	Abaprofeti	1 (0.6)	Ulcers	Boil roots in water. Strain and drink 1 cup 2 times a day until better. Also for rectal use
Mululuka *Barringtonia racemos*	Inyanga	1 (0.6)	Cleaning bile	Boil 1 fruit (like a small coconut) in water and sift through a cloth. As you drink the liquid, the bile comes out
Insukumbili (Two-day cure) *Senecio serrathoides*	Inyanga	1 (0.6)	Rash or boils	Boil leaves in water. Strain and drink a quarter cup 2 times a day until symptoms are relieved. Also for rectal use
Mnduze *Crinium delagoensis*	Inyanga	1 (0.6)	Blood/Body cleansing	Boil the bulbs in water and mix with other medicines. For rectal administration
Isihalahala	Inyanga	1 (0.6)	Diabetes	Boil leaves and stems in water. Strain and drink 5ml 2 times a day
Amafutha (Animal fats)	Inyanga	1 (0.6)	Wound healing	Mix amafutha (oil from rock python) with Insukumbili (a leafy herb) and grind into a fine powder. Wash the wound with water and paste this mixture onto the wound. Healing occurs within a week

Legend: TH = Traditional Healer; TM = Traditional Medicine; Sangoma = Diviner; Inyanga = Herbalist; Abaprofeti = Faith Healer

Concerns of traditional healers

Some traditional healers (15 out of 166 or 9%) were extremely concerned about availability of plants and animal species traditionally used as medicine. To express this concern, TH 121 said, "Many traditional plants are gathered from bush and forests every year. By the next year there are not enough for us to use as medicine". As a result, they cannot harvest their traditional medicines as they once did. Diviners (sangomas) and herbalists (inyangas) are no longer allowed to keep certain animal species, as laws and bylaws prevent this. In addition, TH135 said, "we are not allowed to keep our animals like our grandfathers used to keep for traditional medicines". Clearly there is strain on the species collected for traditional medicines.

The lack of availability of traditional medicines has jeopardized the transfer of valuable knowledge from one generation to another. TH 125, whose father is an esteemed herbalist (inyanga) in northern KZN, stated, "I am worried that the (traditional) knowledge is not being passed down to enough younger people these days". TH125 also shared another concern with the research team by stating, "I am the only son in my family, and should be the inyanga of my village in future. However, I have to leave my village to look for a job in the city where I now work as a security guard".

Discussion

Willingness to co-operate with researchers

This study found that the majority of traditional healers (132 out of 166 or 79.5%) were very willing to collaborate with researchers to have their traditional medicines developed. This is in agreement with a study conducted in North-Eastern Namibia where traditional healers were willing to collaborate with researchers from the University of Namibia in order to subject their medicines to scientific validation (Chinsembu, 2009). Campbell-Hall et al. (2010) discussed the establishment of fora to facilitate the negotiation of respectful collaborative relationships between traditional healing and Western medicine are required at a district level to promote an equitable collaboration in the interests of improved patient care. However, the relationship between traditional healers and biomedical personnel is still fragile. This is confirmed by van Rooyen et al., (2015), who reported that traditional healers and biomedical personnel continue to experience negative attitudes towards each other. Equally, Nemutandani et al. (2016) concluded that allopathic health practitioners do not appear ready to work with traditional healers , citing challenges of quality of health care, differences regarding concepts of sciences and source of knowledge; and lack of policy on collaboration. Overall, there is a need to consolidate and scale-up existing collaborations and training to offer sharing of experiences between traditional healers and biomedical personnel or researchers, using existing WHO/AFRO (African Regional Office) protocols and guidelines (Mbwambo et al., 2007).

Medicines strongly recommended by traditional healers to be researched further by scientists

This study found that *Gunnera perpansa* or Ughobo (6 out of 166 or 3.6%), *Warburgia salutaris* or Isibhaha (3 out of 166 or 1.8%), *Hypoxis hemerocallidea* or Ilabatheka (3 out of 166 or 1.8%) and *Drimia delagoensis* or Umahlanganisa (2 out of 166 or 1.2%) were found to be strongly recommended for further research.

Muleya (2014) evaluated the anti-microbial, anti-inflammatory and anti-oxidative properties of *Artemisia afra, Gunnera perpensa* (Ugobho) and *Eucomis autumnalis* and reported that *G. perpensa* (Ugobho) was the most active against *Pseudomonas aeruginosa* and *Candida albicans*. This validates the use of *G. perpensa* for the documented indications of womb cleansing and for miscarriage in this study.

Traditional healers also believed that *Warburgia salutaris* (Isibaha or the Pepper-bark tree) should be researched further as a remedy for cough. Evidence exists where Van Wyk et al. (1997) stated that *W. salutaris* was used for serious cough resulting in purulent sputum. *W. salutaris* is one of most valuable medicinal plant species in Southern Africa with its bark, leaves and roots widely used as TM, inherently linked to local TM systems of the Changana, Shona, Siswati, Sotho, Tsonga, Venda and Zulu cultural groups (Maroyi, 2013). Forty-three ethnomedicinal uses were recorded for *W. salutaris* in Southern Africa, referring to a variety of preparations used for topical and internal administration to treat various conditions (Maroyi, 2013). Additionally, *W. salutaris* was noted for its analgesic effect. This is supported by Adebayo et al, (2005) who tested 25 extracts of traditional medicines used traditionally to treat pain. *W. salutaris* was found to have reasonable anti-inflammatory activity.

Hypoxis hemerocallidea was perceived as the most effective TM for body and blood cleansing by study participants. A number of medicinal properties have been assigned to *H. hemerocallidea*; Nair et al, (2007) reported the antioxidant activity of *H. hemerocallidea*. The results indicate that the hypoxoside component in *H. hemerocallidea* could have value as an antioxidant prodrug. Additionally, Owira and Ojewole (2009) that from available folkloric, anecdotal and laboratory evidence, *H. hemerocallidea* extracts contain some chemical compounds with anti-inflammatory, anti-diabetic, anti-neoplastic, anti-infective and anti-oxidant activities.

In this study, *Drimia delagoensis* (synonym *Urginea delagoensis* or Umahlanganisa or the Bluebell), a protected species found in the Isimangaliso Wetland Park in Northern KZN, is believed to be an effective remedy for ulcers and haemorrhoids. Dahlberg and Trygger, (2009) documented D. delagoensis as an important indigenous medicine frequently used by villagers in KZN, while De Wet et al., (2013) found that *D. delagoensis* has been used as an ingredient in decoctions for sores and

shingles.

Concerns of traditional healers

This study found that traditional healers voiced concerns for our shrinking habitat and loss of medicinal plants. This is in agreement with Kayombo et al. (2007) who found that issues of depletion of medicinal plants through biopiracy, fires and poor harvesting methods, particularly for rare and endangered species were raised by traditional healers in Tanzania. Research has shown that the massive demand for bark, roots, and whole plants from wild populations is causing a critical decline in population numbers of some species, and may lead to numerous extinctions; at greatest risk are popular, slow growing species that have a limited distribution (WHO, 2004).

Kala (2010) found that in the recent century, the close relationship between ethnobotany and economic development has raised global concerns towards shrinking populations of medicinal and aromatic plants or traditional medicines; with the globalization and advent of commercial interest, the ethnobotanical knowledge on useful traditional medicines is being transformed into commercial gains, whereas the traditional practices and methods developed by local people for sustainable harvesting and conservation of plant species are generally overlooked (Kala, 2010). In KZN, Coopoosamy et al (2012) found that *Warburgia salutaris*, among other species, is endangered.

Limitations of the study

Although the sample size selected may seem small, it was representative of the population of traditional healers according to the formula used. A response rate of 93.3% was achieved with this study. A limitation could be that the study was confined to KwaZulu-Natal and cannot be generalized to the entire population of traditional healers in South Africa.

Conclusions

Traditional healers in this study express a strong willingness to collaborate with researchers. A few traditional medicines (*Gunnera perpansa* or Ughobo, *Warburgia salutaris* or Isibhaha, *Hypoxis hemerocallidea* or Ilabatheka and *Drimia delagoensis* or Umahlanganisa) were strongly recommended by traditional healers to be subjected to further scientific evaluation. Concerns were raised by traditional healers about the disappearance of traditional knowledge and the shrinking of plant and animal species used as traditional medicines. Further studies on chemical composition and biological activities of the above-mentioned plant species are recommended.

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Contribution of authors

NR and MN conceptualised the project. NR collected data and drafted the paper. MN revised the paper for intellectual content and approved the final version for publication.

Abbreviations

TH: traditional healer; THs: traditional healers; TM: traditional medicine; TMs: traditional medicines; BHPs: Biomedical Health Practitioners; WHO: World Health Organization; NEPAD: The New partnership for Africa's development; KZN: KwaZulu-Natal; SA: South Africa. HIV / AIDS: Human Immunodeficiency Virus / Acquired Immune Deficiency Syndrome.

Conflicts of interests

The authors declare to have no competing interests. NR received a bursary and stipend from the College of Health Sciences, University of Kwa-Zulu Natal.

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