

HERBAL MEDICINES USED BY BAPEDI TRADITIONAL HEALERS TO TREAT
REPRODUCTIVE AILMENTS IN THE LIMPOPO PROVINCE, SOUTH AFRICA

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Abstract

The current study focussed on documenting the ethnobotanical knowledge of herbal medicines used by the Bapedi traditional healers to treat reproductive ailments in the Limpopo Province, South Africa. Fifty one healers from 17 municipalities covering Capricorn, Sekhukhune and Waterberg districts of the Limpopo Province were interviewed between January and July 2011. Semi-structured interviews, observations and guided field surveys with the healers were employed. Thirty-six medicinal plant species belonging to 35 genera and 20 families were documented. The most used species were *Zanthoxylum humile* (25.5%), *Catha edulis* (21.6%), *Ozoroa sphaerocarpa* (15.7%), *Hypoxis hemerocallidea* (13.7%), *Hypoxis obtusa* (11.7%), *Gomphocarpus fruticosus* subsp. *fruticosus* and *Gymnosporia senegalensis* (9.8% each). The dominant growth forms among the reported medicinal plants were herbs (39%), followed by shrubs and trees with 33% and 28%, respectively. The preferred plant parts were roots (63.9%), followed by bark (13.9%), whole plant (11.1%), tubers (8.3%), bulbs (5.6%), fruits, leaves, stems and twigs (2.8% each). The majority of the species were used to treat gender specific reproductive ailments; while a minority were used for treating reproductive ailments of both genders. Twenty-two species (61.1%) are supported by reports of similar uses in other countries or have proven biological activity. This study illustrates that Bapedi traditional healers possess remarkable knowledge on medicinal plants used for treating and managing reproductive ailments.

Key words: Bapedi, ethnobotanical study, herbal medicines, reproductive ailments, traditional healers

Introduction

Traditional healers can be found in most societies (Cheikhyoussef et al., 2011). In sub-Saharan Africa, the ratio of traditional healers to the population is approximately 1:500, whilst western-trained medical doctors present a 1:40 000 ratio to the rest of the population (Richter, 2004). Kale (1995) and Setswe (1999) estimated that there were approximately 200 000 traditional healers practising in South Africa in 1995, compared to 25 000 medical doctors. Traditional healers play an important role in their local community's tradition and primary health care system. Approximately 70 - 80% of the South African population still rely on traditional healers for day-to-day health care (UNAIDS, 2006), who prepare traditional remedies from as many as 700 indigenous plant species (Meyer and Afoloyan, 1995).

A large percentage of the population in developing countries uses traditional medicines. The reasons being their close proximity (Muthu et al., 2006), the high cost of western pharmaceuticals and health care, and because traditional medicines are more acceptable from a cultural and spiritual perspective (Cunningham, 1988). According to King and Homsy (1997), traditional healers provide client-centred, personalized health care that is culturally appropriate and tailored to meet the needs and expectations of the client by paying special attention to the social and spiritual concerns of the client. Msiska et al. (1997) noted that rural patients are more dependent on medicinal remedies from traditional healers for the treatment of reproductive ailments for a number of reasons, such as the lack of access to modern medical facilities and hesitancy to relate their illnesses to unfamiliar doctors. Research shows that a wide range of reproductive ailments from across the world are being treated by medicinal plants. These include for example, menstrual disorders, fertility problems, spermaturia and impotency in India (Hegde et al., 2007), cloudy urination in women, leucorrhoea in Bangladesh (Hossan et al, 2010), and womb problems, menstrual pain, and female complaints in Trinidad and Tobago (Lans, 2007). In South Africa, substantial numbers of women seek treatment from traditional health practitioners for a variety of complications and disorders associated with reproductive health (Bereda 2002). These include amongst others, menstrual disorders, abortion, anti-abortifacient, contraception and breast problems (Steenkamp, 2003). In contrast, South African males consult traditional healers mostly for impotence (Rakuambo et al., 2006). For most ethnic groups in South Africa, this rich indigenous knowledge on medicinal species used to manage reproductive ailments is either poorly known or misunderstood. Thus a study was undertaken to document medicinal species used by the Bapedi traditional healers to treat reproductive ailments in the Limpopo Province of South Africa.

Materials and methods

The study area

This study was conducted in 17 local municipalities of the Limpopo Province, covering three districts (Capricorn, Sekhukhune and Waterberg) (Figure 1, Table 1). The majority of people in the study area belong to the Bapedi ethnic group.

Figure 1. Study area: Capricorn, Sekhukhune and Waterberg districts, Limpopo Province, South Africa. A to Q designates the involved municipalities.

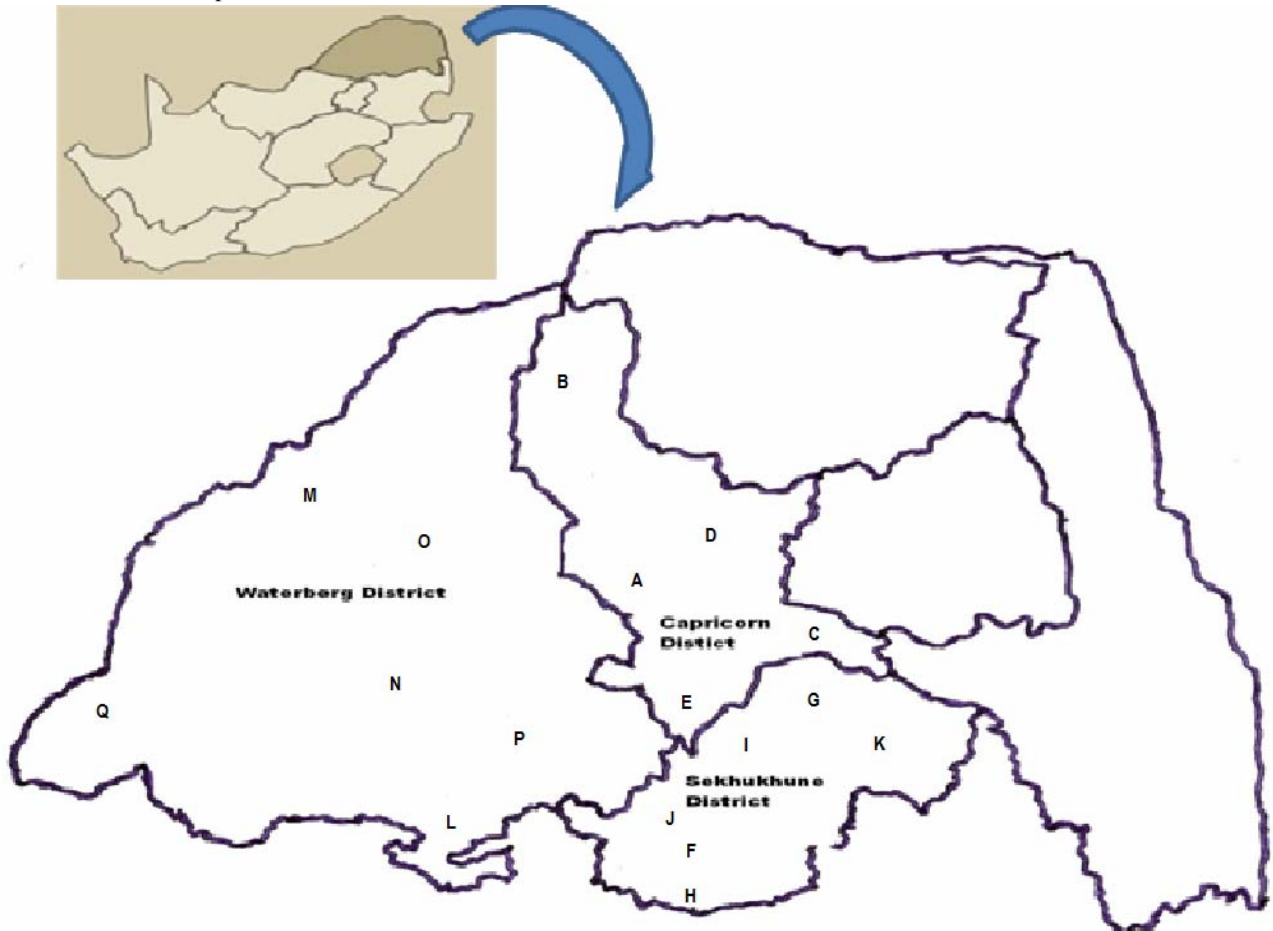


Table 1. Districts and local municipalities included in this study

Capricorn district		Sekhukhune district		Waterberg district	
Aganang	A	Elias Motsoaledi	F	Bela-Bela	L
Blouberg	B	Fetakgomo	G	Lephalale	M
Lepelle-Nkumpi	C	Grobblersdal	H	Modimolle	N
Molemole	D	Makhuduthamaga	I	Mogalakwena	O
Polokwane	E	Marble Hall	J	Mookgophong	P
		Tubatse	K	Thabazimbi	Q

Data collection

A total of 51 Bapedi traditional healers were selected with the assistance of local administrators and elders. Data on medicinal plants used by them to treat reproductive ailments were collected from January 2011 to July 2011. Interviews and open-ended discussions with healers were conducted in Sepedi, the local language. Prior to interviews and any discussions on medicinal plants used to treat reproductive ailments, verbal informed consent was obtained from participating healers. The researchers also adhered to the ethical guidelines of the International Society of Ethnobiology. Information on plant names, plant part(s) used, methods of herbal preparation, administration, dosage and duration of treatments were documented. Based on ethnobotanical information provided by traditional healers, voucher specimens were collected and deposited at the Larry Leach Herbarium (UNIN), University of Limpopo.

Results and discussion

Medicinal plant diversity

Bapedi traditional healers use 36 plant species to manage reproductive health problems (Table 2). These medicinal species are distributed among 35 genera and 20 families. The largest proportion of medicinal species collected belongs to the family Asteraceae (6 species), followed by Fabaceae (4 species); Celastraceae and Euphorbiaceae (3 species each); Anacardiaceae, Apocynaceae, Hyacinthaceae and Hypoxidaceae (2 species each). Other families were represented by a single species each. The dominance of the Asteraceae and Fabaceae, and to a lesser extent the Euphorbiaceae, probably relate to their large numbers of species. Thus it is not surprising that these families have also been recorded in ethnomedicinal inventories of different countries throughout Africa and Asia. For example, Kamatenesi-Mugisha and Oryem-Origa (2005) reported on the dominance of the Euphorbiaceae in the treatment of impotency in western Uganda. The Asteraceae and Euphorbiaceae were documented as dominant families in the treatment of reproductive ailments in Cameroon (Focho et al., 2009) and Ghana (Diame, 2010). Hossan et al. (2010) noted the dominance of the Fabaceae in the treatment of urinary tract infections and sexually transmitted diseases in Bangladesh.

Table 2: Plant species used for the treatment of reproductive ailments in the Limpopo Province. An asterisk (*) indicates that the taxon is known or believed to be exotic to the Limpopo Province

Family, species name	Vernacular name	Habit	Voucher	Part(s) used	Preparation and administration	No. of citations (%)	Reproductive ailments	Other reported uses for reproductive ailments from literature
Amaryllidaceae								
<i>Ammocharis coranica</i> (Ker Gawl.) Herb	Unknown	Herb	SS 76	Root	Boiled for 10 minutes and extract taken orally thrice a day.	2.0	Impotence	None found
Anacardiaceae								
<i>Ozoroa sphaerocarpa</i> R. & A.Fern.	Momoko/Monoko	Tree	SS 30	Bark	Pounded and 5 teaspoons taken orally with soft porridge thrice a day.	15.7	Impotence	None found
<i>Sclerocarya birrea</i> (A.Rich.) Hochst.	Morula	Tree	SS 1	Bark	Boiled for 5-10 minutes and extract taken orally thrice a day.	3.9	Female infertility	Bilharziasis and heavy menstruation (Gelfand et al., 1985); Female infertility (Mabogo, 1990)
Apocynaceae								
<i>Ceropegia purpurascens</i> K.Schum. ssp. <i>purpurascens</i>	Monamela	Herb	SS 39	Root	Boiled for 10-30 minutes and extract taken orally thrice a day.	2.0	Impotence	None found
<i>Gomphocarpus fruticosus</i> (L.) Aiton f. ssp. <i>fruticosus</i>	Mosotsa poo	Shrub	SS 101	Root	Boiled for 5-15 minutes and extract taken orally thrice a day.	9.8	Impotence	Facilitate child-birth (Iwalewa et al., 2007; Watt and Breyer-Brandwyk, 1962)
Asteraceae								
* <i>Artemisia annua</i> L.	Mohlaswapatla	Herb	SS 43	Root	Boiled for 20 minutes and extract taken orally thrice a day.	2.0	Impotence	None found
* <i>Bidens pilosa</i> L.	Mophodisa/Mokolonyane	Herb	SS 214	Root	Boiled for 15 minutes and extract taken orally twice a day.	2.0	Menstrual disorder	Menstrual disorder (Mabogo, 1990); prostate disturbances (Tene et al., 2007); STDs (De Wet et al., 2012)
<i>Brachylaena discolor</i> DC.	Mphahla	Tree	SS 31	Root/bark	Boiled for 5-20 minutes and extract taken orally thrice a day.	3.9	Female infertility	None found
<i>Callilepis laureola</i> DC.	Phelana	Herb	SS 62	Tuber	Boiled for 5 minutes and extract taken orally thrice a day.	2.0	Impotence; low sperm count	Impotence (Seedat and Hitchcock, 1971); Induce fertility in woman (Debetto, 1978)
<i>Geigeria</i>	Makgonatso	Herb	SS 310	Root	Boiled for 20 minutes	3.9	Period pains	None found

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<i>aspera</i> Harv. var. <i>aspera</i>	hle				and extract taken orally thrice a day.				
<i>Kleinia longiflora</i> DC.	Lekgabolo/ Motlalamas wi	Herb	SS 217	Root	Macerated in warm water for 24 hours and decoction administered rectally.	2.0	Menstrual disorder	Fertility (Cheikhyousséf et al., 2011)	
				Twig	Boiled for 5 minutes and extract taken orally thrice a day.				
Caricaceae									
* <i>Carica papaya</i> L.	Mophopho	Tree	SS 70	Root	Pounded and 5 teaspoons taken orally with soft porridge thrice a day.	7.8	Abortion	Abortion (Morton, 1987); impotence (Kamatenesi-Mugisha and Oryem-Origa, 2005)	
				Fruit	Squeezed juice from unripe fruit taken orally thrice a day.		Impotence		
Celastraceae									
<i>Catha edulis</i> (Vahl.) Endl.	Lewané	Shrub	SS 77	Root	Boiled for 5 minutes and extract taken orally thrice a day.	21.6	Impotence	Impotence (Kamatenesi-Mugisha and Oryem-Origa, 2005); infertility in men (Gelfand et al., 1985); urine retention (Mesfin et al., 2009) Herpes (Mabogo, 1990); HIV (Bessong et al., 2005)	
<i>Elaeodendron transvaalense</i> (Burt Davy) R.H.Archer	Monamane	Tree	SS 32	Root/ bark	Combined with <i>Peltophorum africanum</i> bark and boiled for 20-30 minutes and taken orally thrice a day.	3.9	Female infertility		
<i>Gymnosporia senegalensis</i> (Lam.) Loes.	Mophato	Shrub	SS 79	Root/ leaf	Boiled for 5-20 minutes and extract taken orally thrice a day.	9.8	Impotence	None found	
Cyperaceae									
<i>Cyperus papyrus</i> L.	Mohlaka	Herb	SS 97	Whole plant	Boiled for 5 minutes and extract taken orally thrice a day.	2	Menstrual disorder	Facilitate birth (Cheikhyousséf et al., 2011)	
Euphorbiaceae									
* <i>Chamaesyce prostrata</i> (Aiton) Small	Sesese	Herb	SS 213	Whole plant	Boiled for 20 minutes and extract taken orally thrice a day.	2.0	Womb problem	Venereal complaints (Lans, 2007)	
<i>Euphorbia ingens</i> E.Mey. ex Boiss.	Mohlohlogomo	Tree	SS 34	Stem	Squeezed juice applied topically after bathing.	5.8	Breast cancer	Gonorrhoea and stomach-ache during childbirth (Schmelzer, 2008)	
* <i>Jatropha curcas</i> L.	Sehlaré sa banna	Shrub	SS 120	Root	Boiled for 5 minutes and extract taken orally thrice a day.	2.0	Impotence; vaginal candidiasis	Vaginal candidiasis (Diame, 2010)	
Fabaceae									
<i>Elephantorrhiza elephantina</i> (Burch.) Skeels	Mosehlana	Shrub	SS 100	Root	Boiled for 20 minutes and extract taken orally thrice a day.	2.0	Impotence	Aphrodisiac, infertility in women and painful menstruation (Gelfand et al., 1985); syphilis (Gerstner, 1939; Jacot-Guillardmod, 1971)	
<i>Mundulea sericea</i> (Wild.) A.Chev.	Moshisane	Tree	SS 466	Root	Boiled for 10-30 minutes and extract taken orally thrice a day.	2.0	Menstrual disorders	Infertility (Gelfand et al., 1985)	
<i>Peltophorum africanum</i> Sond.	Mosehla	Tree	SS 13	Bark bark	After boiled for 15 minutes, 10 teaspoons of FG and Joko tea added to the extract (2 L bottle). Extract taken orally thrice a day.	7.8	Female infertility; post partum	Infertility in women and venereal diseases (Gelfand et al., 1985); STDs (De Wet et al., 2012; Samie et al., 2005); syphilis	

					Pounded and taken with warm water		Impotence	(Aruoma et al., 2006)	
					Combined with <i>Eleadendron transvaalense</i> root and boiled for 20-30 minutes and taken orally thrice a day.		Female infertility		
* <i>Sesbania punicea</i> (Cav.) Benth.	Mokgabane	Shrub	SS 82	Root	Boiled for 20 minutes and extract taken orally thrice a day.	2.0	Menstrual disorder	STDs (Semenya 2012)	
Geraniaceae									
<i>Pelargonium</i> sp.	Selumi	Shrub	SS 4	Root	Boiled for 5-30 minutes and extract taken orally thrice a day.	7.8	Female infertility	None found	
Heteropyxidaceae									
<i>Heteropyxis transvaalensis</i> Schinz	Malatsana	Shrub	SS 208	Whole plant	Boiled for 7 minutes and extract taken orally thrice a day.	2.0	Menstrual disorder	None found	
Hyacinthaceae									
<i>Drimia elata</i> Jacq.	Sekanama	Herb	SS 18	Bulb	Boiled for 5-10 minutes and extract taken orally thrice a day.	5.8	Female infertility; impotence	None found	
<i>Eucomis pallidiflora</i> Baker. ssp. <i>pole-evansii</i> (N.E.Br.) Reyneke ex J.C. Manning	Mathubadifala	Herb	SS 355	Bulb	Boiled for 5 minutes and extract taken orally thrice a day.	2.0	Impotence	None found	
Hypoxidaceae									
<i>Hypoxis hemerocallidea</i> Fisch., C.A.Mey. & Avé-Lall.	Titikwane/Sesogadi	Herb	SS 115	Tuber	Boiled for 5-10 minutes and extract taken orally thrice a day.	13.7	Impotence	Prostate problems (Buck, 1996); sexual complaints (Bandeira et al., 2001); urinary diseases (Watt and Breyer-Brandwyk, 1962)	
<i>Hypoxis obtusa</i> Burch. ex Ker Gawl.	Monnamaledu/Swikiri poo	Herb	SS 336	Tuber	Boiled for 5 minutes and extract taken orally thrice a day. Pounded and mixed with <i>Eucomis pallidiflora</i> subsp. <i>pole-evansii</i> bulb and administered rectally with warm water.	11.7	Female infertility; Impotence	Aphrodisiac, gonorrhoea and infertility in women (Gelfand et al., 1985); impotence (Moeng, 2010); prostrate hypertrophy (Nel, 1914); urinary diseases (Galeffi et al., 2002; Marini-Bettolo et al., 1985)	
Myrothamnaceae									
<i>Myrothamnus flabellifolius</i> (Sond.) Welw.	Boka/Feyahle/Makgonatso	Shrub	SS 111	Whole plant	Pounded and extract taken orally twice or thrice a day.	5.8	Impotence	Breast complaints (Van Vuuren, 2007); painful uterus (Gelfand et al., 1985); uterus pains (Bussmann et al., 2006)	
Phytolaccaceae									
<i>Phytolacca dodecandra</i> L'Hér.	Mopampara	Shrub	SS 20	Root	Boiled for 20-35 minutes and extract taken orally thrice a day.	2.0	Female infertility; menstrual disorder	Abortions (Schmelzer and Gurib-Fakim, 2008); female infertility (Kloos and McCullough, 1987); sterilise males (Ndamba and Chandiwana, 1986; Treyvaud et al., 2000)	

Polygalaceae

<i>Securidaca longepedunculata</i> Fresen.	Mopesu	Tree	SS 7	Root	Pounded and mixed with <i>Zanthoxylum humile</i> root and 5 teaspoons taken with soft porridge thrice a day.	2.0	Impotence	Gonorrhoea (Jiofack et al., 2009); impotence (Tshisikhawe, 2002); venereal diseases (Bruschi et al., 2011)
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Rosaceae

* <i>Prunus persica</i> (L.) Batsch var. <i>persica</i>	Moperekisi	Tree	SS 84	Root	Pounded and 5-7 teaspoons taken with soft porridge thrice a day.	5.8	Impotence	Menstruation (Teng et al., 2011)
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Rutaceae

<i>Zanthoxylum humile</i> (E.A.Bruce) P.G.	Monokwane	Shrub	SS 19	Root	Pounded and 5-10 teaspoons taken with soft porridge thrice a day.	25.5	Impotence	None found
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Santalaceae

<i>Osyris lanceolata</i> Hochst. & Steud.	Mphera	Shrub	SS 61	Root	Boiled for 10-20 minutes and extract taken orally thrice a day.	7.8	Impotence; menstrual disorder	Impotence (Muthee et al., 2011); menstrual disorders (Arnold and Gulimian, 1984; Mulaudzi et al., 2011); venereal diseases (Mulaudzi et al., 2011)
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Solanaceae

* <i>Capsicum chinese</i> L.	Mopherefer e	Herb	SS 40	Root	Boiled for 15 minutes and extract taken orally thrice a day.	2.0	Period pains	None found
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The most mentioned medicinal species were *Zanthoxylum humile* (25.5%), *Catha edulis* (21.6%), *Ozoroa sphaerocarpa* (15.7%), *Hypoxis hemerocallidea* (13.7%), *Hypoxis obtusa* (11.7% each), as well as *Gomphocarpus fruticosus* subsp. *fruticosus* and *Gymnosporia senegalensis* (9.8% each). All of them are used to treat impotence. Bapedi traditional healers noted that male impotence is a prevalent health problem in the study area, which is in line with research by Kandeel et al. (2001) that showed impotence to be a global problem affecting the majority of men. To manage low sperm counts, Bapedi healers used 11 species that included *Ammocharis coranica*, *Artemisia annua*, *Callilepis laureola*, *Ceropegia purpurascens* subsp. *purpurascens*, *Elephantorrhiza elephantina*, *Eucomis pallidiflora* subsp. *pole-evansii*, *Myrothamnus flabellifolius*, *Ozoroa sphaerocarpa*, *Prunus persica* var. *persica*, *Securidaca longepedunculata* and *Zanthoxylum humile*.

Fifteen species (41.7%) are used by Bapedi traditional healers to treat female reproductive problems. These include: *Bidens pilosa*, *Brachylaena discolor*, *Capsicum chinese*, *Chamaesyce prostrata*, *Cyperus papyrus*, *Elaeodendron transvaalense*, *Euphorbia ingens*, *Geigeria aspera* var. *aspera*, *Heteropyxis transvaalensis*, *Kleinia longiflora*, *Mundulea sericea*, *Pelargonium* spp., *Phytolacca dodecandra*, *Sesbania punicea* and *Sclerocarya birrea*. The utilized species were mainly to treat female infertility. Female fertility is a dominant theme in the culture of black South Africans as it ensures preservation and propagation of the tribe (Veale et al., 1992), while the inability to conceive is regarded as a disgrace, as procreation is expected to follow marriage (Katsoulis, 2000). The above mentioned species were also used to a lesser extent in initiating abortion, and to manage breast cancer, menstrual disorders, period pains, vaginal candidiasis and womb problems. Only 6 medicinal species (16.6%) were used to treat and manage both male and female reproductive problems; *Carica papaya* (impotence and abortion), *Jatropha curcas* (impotence and vaginal candidiasis), *Osyris lanceolata* (impotence and menstrual disorder), *Peltophorum africanum* (impotence and female infertility), as well as *Drimia elata* and *Hypoxis obtusa* (impotence and female infertility).

Literature based proof of Bapedi traditional healers' claims

Twenty two (61.1%) of the 36 species used by Bapedi traditional healers to treat reproductive ailments have been validated either by reports of similar uses elsewhere or through proven biological activity (Table 2). The therapeutic claims of the following plant species are well-supported in the literature: *Bidens pilosa* (De Wet et al., 2012; Mabogo, 1990; Tene et al., 2007), *Callilepis laureola* (Debetto, 1978; Seedat and Hitchcock, 1971), *Carica papaya* (Kamatenesi-Mugisha and Oryem-Origa, 2005; Morton, 1987), *Catha edulis* (Gelfand et al., 1985; Kamatenesi-Mugisha and Oryem-Origa, 2005; Mesfin et al., 2009), *Chamaesyce prostrata* (Lans, 2007), *Cyperus papyrus* (Cheikhyoussef et al., 2011), *Elaeodendron transvaalense* (Mabogo, 1990; Bessong et al., 2005), *Elephantorrhiza elephantina* (Gelfand et al., 1985; Gerstner, 1939; Jacot-Guillardmod, 1971), *Euphorbia ingens* (Schmelzer, 2008), *Gomphocarpus fruticosus* ssp. *fruticosus* (Iwalewa et al., 2007; Watt and Breyer-Brandwyk, 1962), *Hypoxis hemerocallidea* (Bandeira et al., 2001; Buck, 1996; Watt and Breyer-Brandwyk, 1962), *Hypoxis obtusa* (Galeffi et al., 2002; Gelfand et al., 1985; Marini-Bettolo et al., 1985; Moeng and Potgieter, 2011; Nel, 1914), *Jatropha curcas* (Diame, 2010), *Kleinia longiflora* (Cheikhyoussef et al., 2011), *Mundulea*

sericea ssp. *sericea* (Gelfand et al., 1985), *Myrothamnus flabellifolius* (Bussmann et al., 2006; Gelfand et al., 1985; Van Vuuren, 2007), *Osyris lanceolata* (Arnold and Gulimian, 1984; Mulaudzi et al., 2011; Mutheea et al., 2011), *Peltophorum africanum* (Aruoma et al., 2006; De Wet et al., 2012; Gelfand et al., 1985; Samie et al., 2005), *Phytolacca dodecandra* (Kloos and McCullough, 1987; Ndamba and Chandiwana, 1986; Schmelzer and Gurib-Fakim, 2008; Treyvaud et al., 2000), *Prunus persica* var. *persica* (Teng et al., 2011), *Sesbania punicea* (Semenya et al., 2012), *Sclerocarya birrea* (Gelfand et al., 1985; Mabogo, 1990) and *Securidaca longepedunculata* (Bruschi et al., 2011; Jiofack et al., 2009; Tshisikhawe, 2002).

Phytochemical and pharmaceutical studies have been done on some of the medicinal plant species documented in this study, examples include testing the efficacy of *Securidaca longepedunculata* as a potential remedy for sexual dysfunction (Rakuamboa et al., 2006; Sumalatha et al., 2010). Anti-fertility activities of *Phytolacca dodecandra* has been reported by Taniguchi et al. (1978) and Katende et al. (1995). Extract of *Catha edulis* at the dose of 100 mg/kg reduced mounting and intromission latencies, thereby enhancing sexual motivation or arousal in male rats after 15 days of treatment (Abdulwaheb et al., 2007). Adebivi et al. (2002) noted that unripe or semi-ripe *Carica papaya* fruit is unsafe in pregnancy and its consumption usually resulted in abortion. Furthermore, preliminary clinical research in a primate model demonstrated the potential contraceptive and abortifacient capability of *Carica papaya* (Lohiya et al., 2002). This study found that *Carica papaya* seeds have contraceptive effects in adult female langur monkeys, and possibly in adult female humans.

Growth forms, plant parts used and method of herbal application

An analysis of the medicinal species used by the Bapedi traditional healers to treat reproductive ailments, revealed that 28 species (77.8%) are indigenous to the Limpopo Province, while 8 species (22.2%) are exotics. Herbs constituted the largest proportion of growth forms (39%), followed by shrubs and trees with 33% and 28%, respectively. The plant parts mostly used to prepare herbal medicines were roots (63.9%), followed by bark (13.9%), whole plants (11.1%), tubers (8.3%), bulbs (5.6%), fruits, leaves, stems and twigs (2.8% each) (Figure 2). Results obtained in this study compares favourably with findings by Steenkamp (2003) who reported the widespread use of root and bark remedies by South African women for gynaecological complaints. Similar findings were reported by Hedge et al. (2007) who noted the extensive use of root and bark remedies for treating reproductive ailments in India.

Mono therapies based on preparations made from a single species were the most prevalent (91.7%), and only 8.3% of reproductive health remedies were prepared from a combination of two or more species. This is in line with findings of Hegde et al. (2007) and Hossan et al. (2010) who found that traditional healers in India also prefer using a single species for herbal preparations to treat reproductive ailments. The preference for a single-based species extract is unknown at this stage and warrants further investigations. However, we postulate that it could be that the various species for multi therapies (2 or more species) might not always be available or that more effort and finances need to be expended to collect species for multi therapies, making it unattractive. In our study, plant remedies were often utilized in the form of extracts (72.5%) and powder (20%). Plant remedies were also made by maceration or squeezing (5%). This involved the use of *Euphorbia ingens* stem sap or immature fruit of *Carica papaya* and root maceration of *Kleinia longiflora*. The majority (97.3%) of the herbal remedies were administered orally three times a day until reproductive health ailments subsided. Stem sap of *Euphorbia ingens* was applied topically on an incision on breasts made by the traditional healer.

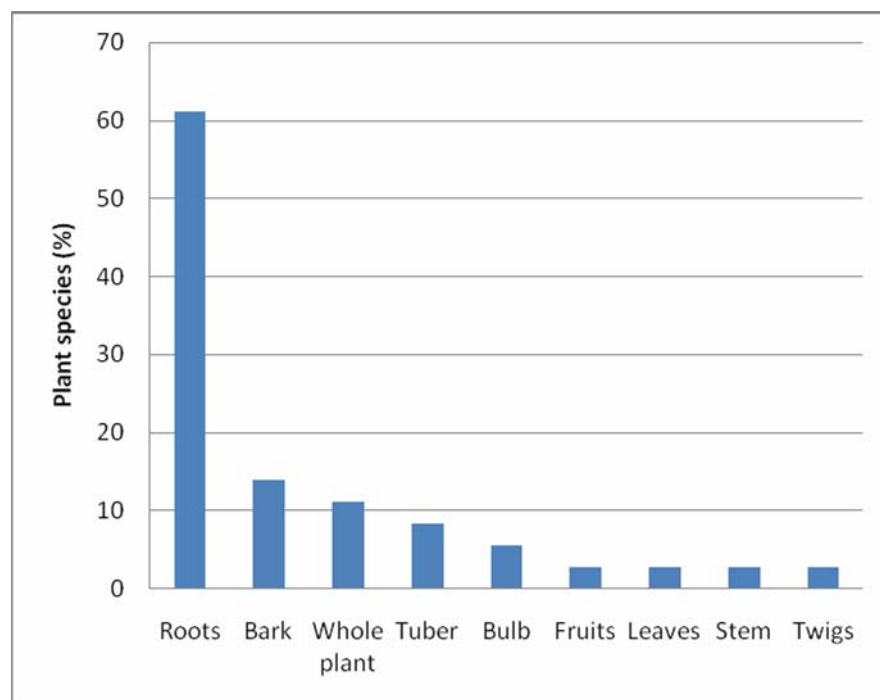


Figure 2. Plant parts used by Bapedi traditional healers to treat reproductive health ailments.

Conclusion

This study shows that Bapedi traditional healers utilised a significant number of medicinal species to treat reproductive ailments. It is thus of paramount importance to verify the phytochemical safety and pharmaceutical efficacy of these herbal remedies. Since roots, bark and even whole plants are used, the risk of plant and species loss is high in the Limpopo Province of South Africa. This loss may inter alia lead to the disappearance of many traditional healers and ultimately cultural identity.

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