RESEARCH ARTICLE

ETHNO BOTANICAL STUDY OF MEDICINAL PLANTS AND ASSOCIATED INDIGENOUS KNOWLEDGE IN HURUMU DISTRICT, ILLU ABBA BORA ZONE, OROMIA REGIONAL STATE, SOUTHWESTERN ETHIOPIA

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ABSTRACT

Indigenous knowledge refers to the accumulation of knowledge, rule, standards, skills, and mental sets, which are possessed by local people in a particular area. Indigenous knowledge develops by indigenous people in the processes of their interaction with their environment and the science ethinomedicine developed gradually having its origin in the indigenous medicinal practices. This research was initiated to document indigenous knowledge associated with traditional medicinal plants; specifically to identify the plant parts used for medicinal purposes and investigate plant species that are used as medicines for the treatment of human livestock health problems. Traditional healers in the study area was interviewed to gather information on the knowledge and use of medicinal plants used as a remedy for human and livestock diseases. Majority of informants' age ranged between 40 to 75 ages, a total of 87 traditional medicinal plant species distributed in 73 genera and 46 botanical families were collected and documented, 43 (49.4%) were herbs, Lamiaceae was the most dominant medicinal plant family reported (with 11 species), Among the total traditional medicinal plants, 56 species (64.4%) were used against human diseases, The majority of plant species reported in the study area (80.7%) were harvested from the wild, Most of the traditional practitioners of the study area reported that the highest and the most commonly cited source of healing was from family, which accounts (65.79%), leaves were the dominant plant part used to prepare remedies (54.77%), followed by roots (10.64%), The result in the conditions of plant part used indicated that 73.56% were used in fresh form, Traditional healers reported to process remedies mainly through crushing (32.2%), Locally available and widely used medicinal plants would need to be identified and a list compiled as well as propagated to alleviate the risk of extinction due to accelerated urbanization, recurring drought and deforestation.

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INTRODUCTION

Since ancient time, plant and animal resources play vital role to fulfill different human needs. Examples include edible nuts, mushrooms, fruits, herbs, spices, gums, fodder and fibers used for construction of shelter and housing, clothing or utensils, and plant or animal products for medicinal, cosmetic or cultural uses. Even today, hundreds of millions of people, mostly in developing countries, derive a significant part of their subsistence needs and income from gathered plant and animal products (Iqbal, 1993; Walter, 2001). According to the WHO (2001) report, traditional healers such as herbalists, midwives and spiritual healers constitute the main source of assistance with health problems for at least 80% of rural

population in developing countries. Ethiopia is believed to be home for about 6,500 species of higher plants with approximately 12% endemic, hence making it one of the six plant biodiversity-rich countries of Africa (UNEP, 1995). In Ethiopia, about 80% of human population and 90% of livestock rely on traditional medicine. The distribution of knowledge and services of medicinal plants are hierarchically obtained from the family, neighborhood, and village or beyond. Moreover, the indigenous knowledge associated with the conservation and use of medicinal plants is also disappearing at an alarming rate. Nowadays the issue of medicinal plant conservation in Ethiopia calls for aggressive studies and documentation before the accelerated ecological and cultural transformation distorts the physical entities and the associated knowledge base (Endashaw, 2007). In Oromia regional state, especially southwest Ethiopia, where the researchers were focused, medicinal plants have been used as

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traditional medicine to treat different human ailments by the local people since time immemorial. Medicinal plant species are approaching to extinct because of deforestation, destruction of forest and firing activities by human beings due to agricultural expansion. The transmission of indigenous knowledge of local people is not effective as in the past because skills are fragile, undocumented, and expansion of urbanization and globalization etc. Therefore this study was focuses on gathering and documenting the use and management of traditional medicinal plants and the associated ethno medicinal knowledge of traditional healers in Hurumu Woreda. This is believed to add up to the country's database of medicinal plants and in documenting indigenous knowledge of the people.

MATERIALS AND METHODS

Study Area Description

The study was conducted in and around Hurumu district, Ilu Aba Bora zone, Oromia regional state, southwestern Ethiopia which is about 582 km from Addis Ababa and 18km east of Mettu town. According to the reports of the 2007 national census, the total populations of the Woreda were 42, 667 of which 21, 309 were men and 21, 358 were women where 4,519 or 10.59% of its population were urban dwellers. The woreda is geographically coordinated longitudinally 8^0 20' 0" North and latitude of 35^0 41' 0" of East. The study was carried out at five *kebele's* of Hurumu woreda namely: Geba, Wangegne, Yobi dola, Goljo and Haro *kebele's*.

Physical Characteristics

The soil type in the area is described as red or brownish ferrisols derived from volcanic parent material. The prevalence of high rainfall has masked other soil forming-factors and hence, very similar soils have developed on a variety of parent materials. The major soil groups in the area include nitosols, acrisols, vertisols, and cambisols (Tafesse, 1996). The altitude of the District ranges between 1140 and 2562 m. a.s.l and the landform frequently changes from flat surfaces on the top of plateaus to very steep slopes and valley bottoms within short distances (Tadesse, 2003). The study area has hot and humid climatic condition. The mean annual temperature is about 22.5^0c that ranges between 16^0c mean minimum annual temperature and 29^0c mean maximum temperature (HWARDO, 2010). The rainfall pattern is unimodal, with low rainfall in January and February, gradually increasing to the peak period between May and October (Tadesse, 2003; Fite, 2008). The rainfall pattern varies annually from 1,191mm to 1,960 mm showing variations from year to year.

Sampling Technique and Procedures

First of all a preliminary survey was conducted to have an overview of the distribution of the forest resources in the study area and to select the study sites in the *woreda*. From forest adjacent *kebeles*, five rural *kebeles* was selected purposely and great emphasis was given to the one with rich sample of traditional local healer in all villages of the sampled kebeles. Furthermore, at least five key informants were selected from
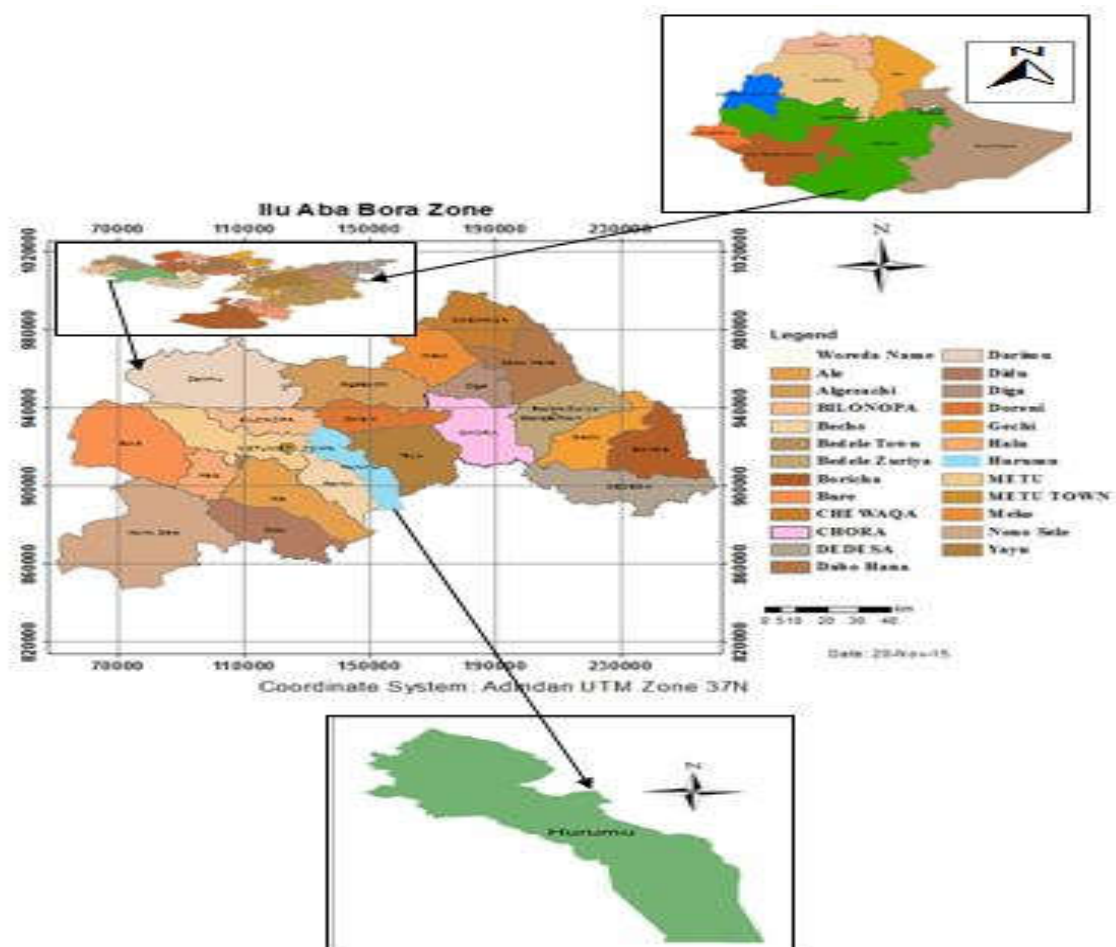

Figure 1. Map of the Study Area

each village and interviewed in depth. Additionally, major stakeholders such as village leaders, kebeles administrators, Agricultural Extension Workers, Woreda Culture and Tourism, Natural Resource Conservation experts were interviewed.

Data collection

The ethnobotanical data were collected from February 2016 to September 2016. Accordingly, semi-structured interviewees, observation, group discussion, and guided field walks with informants were employed to obtain indigenous knowledge of the local community on the use of medicinal plants, parts used as medicine, and conservation strategies of the locality. Interviews and discussions were based on, a checklist of topics or questions prepared before hand in English, and translated to Afan Oromo. A local name of plants was studied by repeated inquiries at different times with different informants to check the accuracy of information obtained and information was recorded. Discussions were conducted with informants and residents in seeking to understand the traditional medicinal practice of the people and its management, and to know how knowledge is maintained and transferred in family or community through generations. Collected plant specimens were taken to the National Herbarium of Addis Ababa University, College of Science for identification process through the preserved specimens, Flora books and experts determination mechanism in combination with each other and the sample gathered was remain preserved to enrich the National Herbarium.

Data Analysis

Descriptive statistical software such as Microsoft Excel and SPSS version 16.0 was employed to analyze and summarize the data on medicinal plants, associated knowledge, management methods, use and conservation. The most useful information gathered on local plants of medicinal value, its method of application, preparation, route of application, disease treated, dosage, and part used was analyzed through descriptive statistical analysis. In addition**,** categories of plant use-reports and relative frequency of tree species was tabulated and analyzed statistically.

RESULTS

Socio-demographic characteristics of respondents

The ages of informants interviewed were in the age class of 20 to 75, but the majority of informants' age ranged between 40 to 75 ages. In the present study, out of 50 informants, 94(78%) males and 26 (22%) female were involved in traditional medicinal plant practitioners of which, out of 76 key informants, 56 (75%) were male and 20 (25%) were female practitioners. The majority of the healers were not educated (80%) but only 20% have education below grade 12. Indigenous knowledge and diversity of medicinal plants. The indigenous people of Hurumu Woreda have a rich knowledge on the use of medicinal and herbal plants. This was evidenced with the result of a total of 56 human and Animal or livestock diseases which were reported to be treated using 87 medicinal and herbal plant species. The highest number of plant species was reported to treat wound followed with abdominal parasites, Rabies virus, Headache, Hepatitis and snake bite. The lowest number of medicinal plants was reported to treat

eye disease, fungal infections, body inflammation, loss of appetite, tonsils, vomiting, worm, body inflammation, teeth-ache, diarrhea, gonorrhea, abdominal pain and spider poison. The highest fidelity level was recorded in the use of *A. sativum, P. americana, A. ochroleuca, M. stenopetala* and *C. aurea* by traditional healers to treat malaria, wound, hypertension and malaria, respectively. A total of 87 traditional medicinal plant species distributed in 73 genera and 46 botanical families were collected and documented across the study areas, of which 12 (13.8%) were trees, 31 (35.6%) were shrubs, 43 (49.4%) were herbs and 1 (1.2%) were climbers (Figure 2) Lamiaceae was the most dominant medicinal plant family reported (with 11 species), followed by Asteraceae (with 10 species), Rubiaceae, and Solanaceae (each 6 species), Acanthaceae, Apiaceae and Fabaceae (5 species each), Euphorbiaceae, Polygonaceae, Ranunculaceae and Verbenaceae (3 species each) Passifloraceae (2 species), whereas most of the families (25) were represented by single species (Table 1).
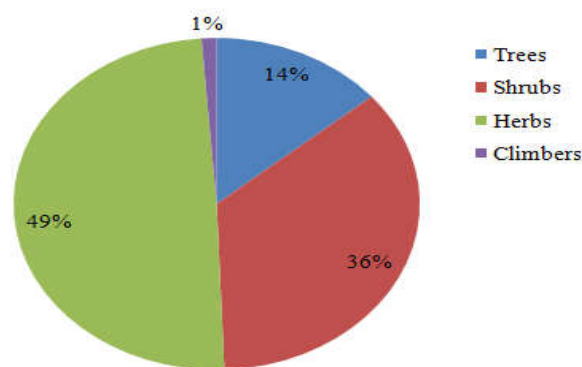

Figure 2. Percentage of medicinal plant habitat

Among the total traditional medicinal plants, 56 species (64.4%) were used against human diseases, 19 species (21.8%) were used to treat health problems of both Humans and livestock and 12 (13.8%) species were used to treat livestock diseases (Appendix I). The majority of plant species reported in the study area (80.7%) were harvested from the wild, 13.3% were collected from home gardens and 6% were harvested both from the wild and home garden. Traditional practitioners reported that 26.0 % of plants were very common, 46. % was less abundant, 18.7% were very rare and 9.3% were endangered. Among 87 plant species used to treat human and livestock diseases, 15 (17.24%) species were used to treat wound, 8 (9.19%) species were used to treat Evil spirit disease, 6 (6.89%) species were used to treat Stomach-ache, abdominal pain, Rabies virus, Headache and Snake bite were treated by 5 (5.74% each) species each, 4 (4.95%) species were used to treat Hepatitis, 3 (3.44% each) species were used to treat fungal infections, vomiting, worm, body inflammation, teeth-ache, and eye disease, 2(2.29% each) species were used to treat diarrhea, Gonorrhea, swelling of body part, 1(1.15% each) species each were used to tonsil, external parasites, mouth throat, Influenza, urine retention, loss of appetite, nose bleeding, blood urination, Hypertension, kidney failure, gastritis, coughing, and ear infection.

Source of healing knowledge

Most of the traditional practitioners of the study area reported that the highest and the most commonly cited source of healing

was from family, which accounts (65.79%), followed by religious institutions (13.16%), reading books (10.52%), gift from God (5.26%), from their friends with payment (3.94%) and from friends without payment (1.32%) (Figure 3). The maximum years of experience of traditional healers of the study area range from 10 to 45years.

Mode of medicinal plants preparation, administration, dosage and application

The result in the conditions of plant part used indicated that 73.56% were used in fresh form, 18.39% in dried form and 8.04% both fresh and dry (Figure 5). As majority of the plants

Table 1. Percentage of Diversity of medicinal plant families, their species and genera

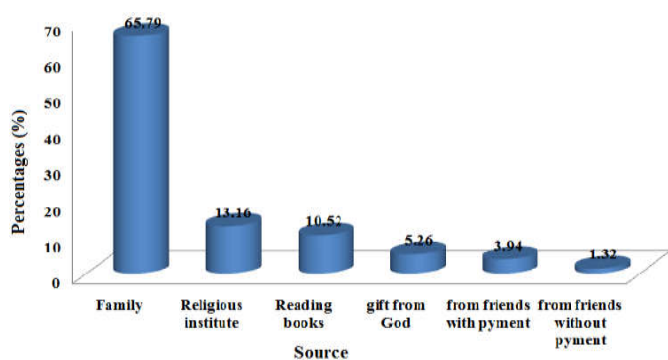| Family	No of Species	Percentages	No of Genera	Percentages
Lamiaceae	11	12.64	8	10.95
Asteraceae	10	11.49	9	12.32
Solanaceae	6	6.89	5	6.84
Rubiaceae	6	6.89	5	6.84
Fabaceae	5	5.74	3	4.1
Acanthaceae	5	5.74	4	5.47
Apiaceae	5	5.74	4	5.47
Euphorbiaceae	3	3.44	2	2.73
Polygonaceae	3	3.44	2	2.73
Ranunculaceae	3	3.44	2	2.73
Verbenaceae	3	3.44	2	2.73
Passifloraceae	2	2.29	1	1.36
Malvaceae	1	1.14	1	1.36
Cucurbitaceae	1	1.14	1	1.36
Convolvulaceae	1	1.14	1	1.36
Geraniaceae	1	1.14	1	1.36
Menispermaceae	1	1.14	1	1.36
Urticaceae	1	1.14	1	1.36
Caryophyllaceae	1	1.14	1	1.36
Colchicaceae	1	1.14	1	1.36
Araliaceae	1	1.14	1	1.36
Boraginaceae	1	1.14	1	1.36
Crassulaceae	1	1.14	1	1.36
Urticaceae	1	1.14	1	1.36
Amaranthaceae	1	1.14	1	1.36
Paeoniaceae	1	1.14	1	1.36
Myrsinacea	1	1.14	1	1.36
Budeljiaceae	1	1.14	1	1.36
Polypodiaceae	1	1.14	1	1.36
Aloaceae	1	1.14	1	1.36
Moringiaceae	1	1.14	1	1.36
Rutaceae	1	1.14	1	1.36
Apocynaceae	1	1.14	1	1.36
Asparagaceae	1	1.14	1	1.36
Rosaceae	1	1.14	1	1.36
Menispermaceae	1	1.14	1	1.36

Figure 3. Source of healing wisdom of traditional practitioners

Medicinal plant parts used to treat human and animal diseases

Traditional medicinal plant practitioners of the study area reported that leaves were the dominant plant part used to prepare remedies (54.77%), followed by roots (10.64%), leaf and roots (6.59%), stem (5.64%), seed (4.59%), stem, leafs and root (5.1%), bark, shoot tip (5.6%), latex (4.4%) and flowers (2.87%) (Figure 4).

can be used in fresh forms, the chance of using the medicinal plants under different seasons of the year is maximized. During group discussion sessions, most informants reported that they preserved the plant material that they could not find in the dry or rainy season by various ways like pounding and saving the powder or hanging the intact plant material in the kitchen. Traditional healers reported to process remedies mainly through pounding (32.2%), Crushing (17.24%), powdering (9.19%), grinding (9.19%), heating (6.89%), chewing (4.59%), applying latex (3.45%) chopping and squeezing (2.29% each), smoking, thumping, swallowing and others (1.15%) (Table 2).
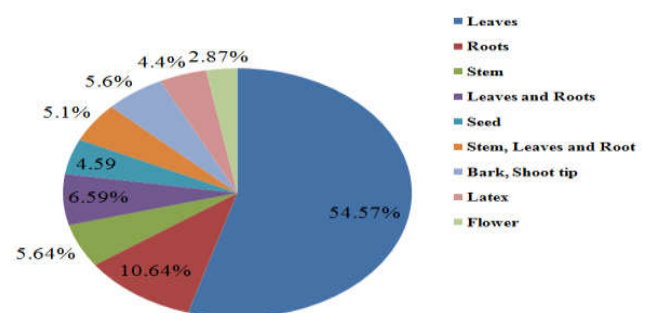

Figure 4. Proportion of Plant parts used to prepare remedies for Human and Animal disease
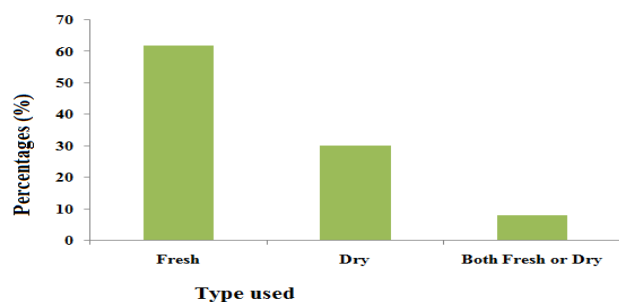
Figure 5. Types of Plants used to treat Human or Animals diseases

Table 2. Mode of preparation of medicinal plants

Methods of preparation	Frequency	Percentage (%)
Pounding	28	35
Crushing	15	18.75
Powdering	8	10
Grinding	8	10
Heating	6	7.5
Chewing	4	5
Applying latex	3	3.75
Chopping	2	2.5
Squeezing	2	2.5
Smoking	1	1.25
Thumping	1	1.25
Seed swallowed	1	1.25
Burning and inhaling	1	1.25

The administration of remedial preparations was mainly through oral (45.97%), dermal (31.03%), nasal (16.09%), nasal or oral (4.59%) and Anal (2.32%) (Figure 6). Traditional medicinal plant practitioners of the study area used different measurement unit and duration to determine the dosage of medicine. Local units for instance, half cup, and full cup, finger length for bark, root and stem were employed. Numbers of different parts of plants such as leaves, seeds, and fruits, shoot tip was also used to estimate and fix the amount of dosage. For example, 10 leafs of *Sida rhombifolia* were used for the treatment of rabies virus, Pounded roots or leaves of *Rumex nervosus* drinking one cup of tea before breakfast Cure Stomach-ache (ciniinnaa). The full dose determination varied from healer to healer, and the dose given depends on age, physical strength and heath conditions. For example, half cup was used for children and full cup was used for adult.
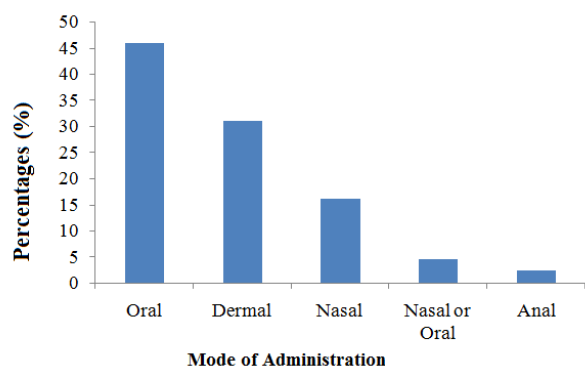

Figure 6. Percentage of Mode of Administration

Healers' consensus on treating different human aliments

In the study area, 87 human and Animal were treated by traditional healers using various indigenous medicinal plants.

High degree of informants consensus (ICF = 79) was observed among traditional healers in treating wound. This disease was treated by *Vernonia auriculifera Hiern, Pycnostachys abyssinica Fresen., Discopodium penninervium (Hochst), Ranunculus multifidus Forssk., Plecranthus sp., Crotalaria incana L., Crotalaria incana L., Kalanchoe marmorata Bak., Rubia cordifolia, Aloe pirottae, Galinsoga quadriradiata, Thevetia peruviana, Hygrphila auriculata, Asparagus flagellaris, Polysphaeria parvifolia Hiern.* Traditional healers agreed more in the treatment of evil spirit (ICF = 0.93), it is treated by *Echinops kebericho, Bocconia glaucifolia, Verbena officinalis L., Kalanchoe marmorata Bak., Plecranthus sp., Guizotia scabra (Vis.) Chiov., Salvia nilotica Jacq., Momordica foetida Schumach.* Rabies (ICF = 0.80), Head ache (ICF = 0.68), Snake bite, (ICF = 0.71), Abdominal pain (ICF =0.89). The species with the highest level of fidelity (FL = 79.5%) is in treatment of skin wound (Table 3). The highest fidelity level was recorded on the use of *Hagenia abyssinica* (Bruce) J. F. Gmelin, *Moringia stenopetata, Momordica foetida Schumach. Atropa bellandonna, ocimum lamiifolium Hochst,ox Benth, Torilis arvensis* (Hudson) Link, *Acmella caulirhaza, Plecranthus* sp., *Thalictrum rhynchocarpum* Dill. and A. Rich.

Table 3. Informant Consensus factor and Fidelity level index on Medicinal Plants to Treat Human and Animal Diseases

Human disease	ICF	Species	Fidelity Level (FL %)
Wound	0.79	Vernonia auriculifera Hiern,	79.5
		Pycnostachys abyssinica Fresen.	54
		Discopodium penninervium Hochst.	90
		Ranunculus multifidus Forssk.	70.8
		Plecranthus sp.	46
		Crotalaria incana L.	67.7
		Crotalaria incana L.	55
		Oenanthe palustris (Chiov.) Norman	61.4
		Kalanchoe marmorata Bak.	54
		Rubia cordifolia	66.9
		Aloe pirottae	73
		Galinsoga quadriradiata	43.9
		Thevetia peruviana	60.2
		Hygrphila auriculata	59
		Asparagus flagellaris	48
		Polysphaeria parvifolia Hiern	78.5
Evil spirit	0.93	Echinops kebericho mesfin	93
		Bocconia glaucifolia	68.3
		Verbena officinalis L.	73.2
		Hypoestes forskaolii (vahl) R.Br.	64
		Plecranthus sp.	59.5
		Guizotia scabra (Vis.) Chiov.	83
		Salvia nilotica Jacq.	59.4
		Momordica foetida Schumach.	46
Abdominal pain	0.89	Rumex abyssinicus Jacq.	89
		Pentas lanceolata (Forssk.) Defiers	70.3
		Pentas lanceolata (Forssk.) Defiers	49
		Cyathula uncinuslata	65
Snake bite	0.71	Pouzolzia parasitica (Forssk.) Schweinf	59.8
		Passiflora sp.	66
		Atropa bellandonna	71.4
Head ache	0.68	Torilis arvensis (Hudson) Link	54.3
		Leucas martinicensis (Jacq.) R. Br.	68.4
		Urtica dioice	63.6
Rabies	0.8	Cissampelos sp.	59.7
		Oenanthe palustris (Chiov.) Norman	80.6
		Ricinus communis L.	52
		Solanum melanogena	73.8
		Sida rhombifolia L.	61.5

Marketed medicinal plants

The majority of traditional medicinal plants were not on sale in the local markets of Hurumu Town, but only a few were

reported to be sold, for instance, *Taverniera abyssinica* A. Rich, *Echinops kebericho* Mesfin, *Foeniculum vulgare* Miller, *M. stenopetala* (Bak.) Cuf. *Rosmarinus officinalis* L. *Hagenia abyssinica* (Bruce) J. F. Gmelin. and *R. chalpensis* L, *Eucalyptus globulus* Labill. were all available for sale as medicinal plants. Others such as *A. sativum* L., *Malva verticillata* L., and *Trigonella foenumgraecums* L. were sold as spices, *Cucurbita pepo* L., *C. papaya* L. *Lens esculenta* Medik., *T. dicocoon* Schrank, *Persea americana* Mill. and *Psidium guajava* L. were sold as food and *C. edulis* (Vahl) Forssk. exEndl Was sold as stimulants in the local markets.

Mode of service delivery and interaction with modern health medication

Among 76 informants, 47.36% reported that there is no fixed payment for the services they gave but if paid the payment rate depends on the type of ailments treated and the healing condition of the patients. 39.47% of the healers have fixed payment rate for the service they gave, for instance, 150 birr for snake bite, 250 birr for Jaundice, 150 birr for the treatment of Hemorrhoids and 100 birr for wound. 13.16% have given free charge services. Ten (10) practitioners were fulltime traditional medicinal practitioners and used this means for income generation, 30 were as half time practitioners and some serve the community when they asked by patients not used as income generation. The majority of traditional healers (80%) reported that they do not have any interaction with modern medication due to the lack of interest, modernization and lack of awareness about traditional medicinal plants. Only five (5%) of traditional practioners reported that they had assistants in their work from governmental office.

DISCUSSION

The result of the present study showed that among fifty six (56) diseases reported in the study area, 18 aliments (32.14%) were treated using single medicinal plant species and 38 diseases (67.85%) were treated using double and above species. This result is in line with Miruth (1999) and Bayafers (2000) in which combined plant species were reported to have high proportion in herbal preparation and in contrasts with Dawit (1986), Debela (2001) and Etana (2007) in which single plant species preparation were reported to be high. The predominant dosage reported to be used by healers from the study area was found to be the pounding type preparations, followed by crushing, grinding, powdering, heating, chewing applying the latex, smoking, swallowing seed, squeezing, chopping and thumping respectively. This disagrees with the report of Etana (2007) and Yinger *et al.* (2008) which crushing was the dominant preparation mode. Squeezing and chewing was the second mode of preparation reported. Consistent with other studies (Gedif and Hahn, 2003; Yinger *et al.,* 2008; Gidey *et al*., 2011; Mohammed and Berhanu, 2011), leaves were the most commonly used plant parts for herbal medicine preparations. This mode of traditional medicinal plant practice is important for conservation of medicinal plants because harvesting leaves does not have great pressure to the survival of individual plants as compared to the whole plant collections. Healers of the study area also reported that leaves of plants were the most commonly used parts of plants followed by root and stems. Harvesting roots and stems may have great impact for those endangered and rare plant species. The present study is also in agreement with the result of various ethnobotonical researchers elsewhere in Ethiopia (Ermias, 2005; Fisseha,

2007). Oral route of application were the highest and the most commonly used route of application followed by dermal. Similar to the studies elsewhere (Yinger *et al.,* 2008; Mohammed and Berhanu, 2011), only a few traditional practitioners in the study area kept records of the diseases treated and the plants used for the diseases treatment of various Human and Animal diseases. In the Hurumu Woreda, only a few of the herbalists had garden for cultivation of medicinal plants. The majority of healers reported that even though they have interest to cultivate medicinal plants in their home garden, they do not have the place to cultivate it. Traditional medicinal plants harvested in the study area by traditional healers were mostly from the wild (86.20%) and only 13.79% were collected from home garden. 74.6% medicinal plants were collected from the wild by Tesfaye *et al.* (2009) and 85.71% were also collected by Yinger *et al.* (2007). Indigenous people of the study area reported that medicinal plants were highly treated by modernization (27.3%), urbanization (21.4%), climate change (25.2%), deforestation (25.1%), and firewood (6%). Yinger *et al.,* (2007) reported that medicinal plants of Bale National Park were threatened by deforestation (25%), agricultural expansion (26.5%), climate change (23.1%), overharvesting (7.20%), and fire (5.93%) and over grazing (4.66%). In line with similar studies elsewhere in Ethiopia (Etana, 2007; Yineger *et al.,* 2007; Tesfaye *et al.,* 2009), Fabaceae is the highest number of species used for medicinal purposes which accounts for 5 species (6.02%), followed by Lamiaceae, Asteraceae, Rutaceae, Cucurbitaceae and Solanaceae [4 species each (4.82%)]. On the other hand, Endalew, (2007), Yineger *et al.* (2008) and Mohammed and Berhanu, (2011) reported that Asteraceae has the largest proportion of medicinal plants used in Ejaji area (Chelya wereda), West Shoa, Bale Mountains National Park, South Eastern Ethiopia and Tehuledere district, South Wollo, Ethiopia, respectively. A traditional healer of the study area uses coffee, butter, honey, lemon, tea, cheese, milk and oil as additives to increase the medicinal value of the remedies. Most of the traditional healers in the study area used water for homogenization of medicinal plants preparations like practitioners in other parts of the country (Abebe and Ayehu, 1993; Berhanu, 2002; Tesfaye *et al*., 2006). The medicinal plant species recorded in the present study area are reported to be used in treating different human and livestock ailments in other parts of Ethiopia and Africa. Among the total 83 ethnomedical and ethnovetrinary plant species documented in the present study, 16 species are reported in Yinger *et al.* (2008); 26 species in 13 species in Gidey (2010); 34 species in Fisseha *et al.* (2009); and 15 species in Gidey (2011). *A. sativum* L. and *C. papaya* L. are the most commonly used medicinal plants to treat malaria in the study area and in other parts of Ethiopia (Endalew, 2007; Fisseha, 2009; Gidey, 2010; Mohammed and Berhanu, 2011). *O. lamiifolium* Hochst.ex Benth is documented to treat febrile illness (Michi) in many parts of Ethiopia (Haile and Delenasaw, 2007; Teklehaymanot and Giday, 2007; Yinger et al., 2008; Gidey, 2010) and in this study. *W. somnifera* Dun and *D. stramonium* L. are also documented in Haile and Delenasaw (2007); Yinger *et al.* (2008) to treat evil eye and toothache ailments, respectively. Herbs were the highest and the most commonly used growth forms of plant species as a source of remedies preparation which accounts 42.2%, followed by trees (30.1%), shrubs (22.9%) and climbers (4.8%). This finding agrees with studies elsewhere in Ethiopia. For instance, Tesfaye *et al.* (2009) reported that 56.6% of medicinal plant species of Konta people were obtained from herbs. Tesfaye and Sebsebe (2009) and

Yinger *et al.* (2008) also reported that 62.9% of medicinal plant sources of Kafficho people and 54.46% of Bale National Park were, respectively obtained from herbs. Most of the traditional medicinal plants prepared were in the form of fresh materials (61.96%) followed by dry material (30.06%) and both fresh and dry (7.98%). This is in line with (Gidey, 2010) in which 75.86% of traditional medicinal plant preparations were used in fresh form.

Conclusion

Hurumu Woreda is a home for elders who have Indigenous knowledge, culture, custom, traditional beliefs. This shows that there is a rich indigenous knowledge of medicinal plant use however; the indigenous knowledge of medicinal plants was not well documented. There was no written document of traditional medicinal plants. They transfer from elders to the son only by mouth because of this, knowledge and transmission is endangered. The young generation is not well aware about traditional knowledge and does not accept this knowledge due to the influence of modernization.

Recommendation

Medicinal plants were highly affected by modernization, urbanization, overgrazing, climate change, deforestation and firewood. The study indicated that indigenous knowledge of herbal medicine for treatment of various Human and Animal disease among urban dwellers, particularly low income groups, is a major part of their life and culture. Incorporating indigenous knowledge of using traditional medicinal plants in the school curriculum, and organizing clubs of traditional medicinal plants in the school is also important. Organizing traditional practitioners in association and using their valuable knowledge, along with modern medications, giving short and long term continuous training on resource use value, management and conservation, recognitions and intellectual property rights and certifying them, is of paramount importance to minimize the loss of indigenous medicinal plant practices.

REFERENCES

Bayafers T. 2000. A Floristic Analysis and Ethno botanical Study of the Semi- Wet land of Cheffa Area, South Wello, Ethiopia. M.Sc. Thesis, Addis Ababa University

Dawit Abebe 1986. Traditional medicine in Ethiopia: The Attempts being made to promote it for effective and better Utilization. SINET: Ethiop. J.Sci. (Supp.): 62-69.

Debela H. 2001. Use and Management of Traditional Medicinal Plants by Indigenous People of Boosat Woreda, Wolenchiti Area: An Ethnobotanical Approach. M.Sc. Thesis, Addis Ababa University p

Ermias L. 2005. Ethnobotanical Study of Medicinal Plants and Floristic Composition of Mana Angatu Moist Montane Forest, Bale, Ethiopia M.Sc. Thesis. Addis Ababa University.

Etana T. 2007. Use and conservation of traditional medicinal plants by indigenous people in Gimbi Woreda, Western Wellega, Ethiopia, M.Sc thesis, AAU, Ethiopia.

Fisseha M. 2007. An ethnobotanical study of medicinal plants in Wonago oreda, *SNNPR*, Ethiopia.Msc thesis Addis Ababa University, Ethiopia.

Fite Getaneh, 2008. Remote Sensing and GIS assisted Participatory Biosphere Reserve Zoning for Wild Coffee Conservation: Case of Yayu Forest. MSc Thesis, Addis Ababa University.

Gedif T. and Hahn H 2003. *The use of medicinal plants in self-care in rural central Ethiopia*, *J. Ethnopharmacol.,* 87: 155-161.

Gidey Y., Mekonen T., Mezgebe K. 2011. Survey of medicinal plants used to treat human ailments in Hawzen district, Northern Ethiopia. *Int. J. Biodiv. Conserv*., 3:709-714.

Haile, Y. and Delenasaw, 2005. A study of Ethnobotany of Medicinal plants and Floristic Composition of the Dry Afromontane Forest at Bale Mountains National Park. M.Sc. Thesis. Addis Ababa, Ethiopia.

Iqbal, M. 1993. International trade in non-wood forest products. An overview. –FAO, Rome. ITDG and IIRR (1996). Ethnoveterinary medicine in Kenya: Field manual of traditional animal healthcare practices. Intermediate Technology Development Group and International Institute of Rural Reconstruction. Nairobi, Kenya. 254pp.

Mirutse G. 1999. An Ethnobotanical study of Medicinal Plants Used by Zay People in Ethiopia.MSc thesis, Uppsala, Sweden.

Mohammed A. and Berhanu, A. 2011. Ethno botanical survey of traditional medicinal plants in Tehuledere district, South Wollo, Ethiopia. *J. Med. Plants Res*., 5:6233-6242.

Tadesse Woldemariam, 2003. Floristic Composition and Environmental Factors Characterizing Coffee Forests in Southwest Ethiopia. PhD Desertation. Bonn, Germany.

Tafesse Asres, 1996. Agroecological zones of southwest Ethiopia. Matreialien Zur Ostafrica Forschung.

Tesfaye A. and Sebsebe D. 2009. Ethnobotonical study of medicinal plants in kafficho people, southwestern Ethiopia. In: proceedings of the 16 International conference of Ethiopian studies, (Svein Ege, Harald Aspen, Birhanu Tefera and Shiferaw Bekele, eds), Trondheim.

Tesfaye H., Sebsebe D. and Zemede A. 2009. An ethnobotanical study of medicinal plants used by local people in the lowlands of Konta Special Woreda, southern nations, nationalities and peoples regional state, Ethiopia. *J. Ethnobiol. Ethnomed.,* 5:26.

Tesfaye, A. and Zemede, A. 1999. Report on Ethnobotanical Study Nations, of Nationalities and People in Gambella and Benishangul Gumuz Reginal States. Progres Report to Research and Publication Office, Addis Ababa University, Addis Ababa.

UNEP 1995. Global biodiversity assessment. United Nations Environment Program.

Walter, S. 2001. Non-wood forest products in Africa. A regional and national overview. Les produits forestiers non ligneux en Afrique. Un aperçu régional et national., FAO Forestry Department (Working Paper/Document de Travail FOPW/01/1), Rome.

World Health Organization (WHO) 2001. Legal Status of Traditional Medicine and Complementary/ Alternative Medicine: A Worldwide Review. WHO, Geneva.

Yineger H, Yewhalaw D. and Teketay D. 2008. Ethnomedicinal plant knowledge and practice of the Oromo ethnic group in southwestern Ethiopia. *J. Ethnobiol. Ethnomed*., 4:11-21.

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