

3.2 Methods of Data Collection

3.2.1 Simple size and sampling techniques

Sampling techniques and sample size was determining by using the formula developed by (Kotcher R 1995). $N = Z^2 PQN / E^2 (N-1) + Z^2 pq$.

n=sample size

Z=stand sample of 95% confidence interval(1.96)

P=error 5%=0.05 or population proportion

q=1-p=1-0.5=0.95

E=marginal error =0.05

N=total no of household in kebele (576)

Sample size 65 house hold

The house hold will be selected purposefully based on the presence of medicinal plants in the area.

3.2.2. Data Sources

The traditional medicinal plant data were obtained from primary and secondary sources. The primary data were obtained by collecting of fresh specimens data in the study area, the secondary sources were obtained by referring to previous studies in the country and literature review.

3.2.3. Data collection

Field work was conducted in June and September 2020 and ethno botanical data collection was made for 20 days during the same month, 2020. Semi structured interviews and guided field work with the informants were carried out to obtain ethno botanical data. Interviews were based

on a check list of questions prepared beforehand in English and translated to the local language, Oromifa.

In the Kebele, interviews were made with identified key and all other informants in his/her home garden. The information collected included local name of the traditional medicinal plant, diseases treated, parts used, condition of plant used, method of preparation, route of administration, and the ingredients added. Guided field walks were made with two key informants to the surrounding forest and agricultural areas.

3.3.3. .Data collection instrument and techniques

After identifying the study participants, verbal consents were obtained by explaining the participants about the aim of the study. Then, face to face interviews were made using pre-tested structured questionnaires which had both open and closed questions to assess traditional medicinal utilization and associated factors in selected areas of the Kebele.

3.4. Data Analysis

The collect ethno botanical data are enter into Excel Microsoft 2007 and summarize using descriptive statistical methods such as frequency and percentage.

4. RESULTS

4.1.Habit and use category of medicinal plants

For identification purpose the leaf sample of 25 medicinal plants were collected and among these 15(60%) species are used for the treatment of human diseases while 8(32 %) species are used for livestock treatment. The rest two (8%) species are used to treat both human and livestock diseases. The traditional practitioners collected (16%) of the medicinal plants from home gardens and (84%) from the natural habitat.From 25 plant species 13 species were herbs followed by 4 species shrubs, 1 root and other seven species were trees. The finding of these habits agrees with investigations of Etana Tolasa (2007) and Endalew Amenu (2007) in such a way that the diversity of herbs as the dominant growth form was reported.

4.2.Socio demographic and knowledge characteristics of respondents

In the present study, a total of 65 respondents were studied. Among the participants, 4.6% were females and the remaining were males. The age of participants ranged from 20 to >60.

Table: 1 Socio demographic characteristics of participants

Characteristic	Number of respondents	Percent
Education of respondent		
Illiterate	12	18.5
Read it	18	27.7
Primary school	25	38.5
Secondary school	8	12.3
Higher education	2	3.1

4.3.Medicinal plant parts used, diseases treated and rout of administration

There are numerous routes of administration of traditional medicinal plants prepared products by the local community. The routes of administration were oral. As described in Table 2, the local people utilize 25 medicinal plant species to treat 15 human ailments. Most of these plants (21 species, 84%) were collected from wild habitats indicating the existence of pressure on wild plants. Local people depend on both dry and fresh remedies. In this case, plant part(s) used for medicinal preparation indicated that Leaf 17 (68%) is the plant part widely used followed by root 4 (16%), while the rest include 3(12%) fruit and 1 (4%) flower form.

The majority (84%) of remedy preparations did not have additive substances while the remaining had different additive substances like honey, sugar and hair of female old sheep for the treatment of single ailment. These additive substances have double function that is, to improve flavor and reduce adverse effects such as vomiting and diarrhea, and enhance the efficacy and healing conditions.

Traditional practitioners often use any dry clean containers to preserve traditional medicines. Some (16%) of them are dried medicines on roofs and walls, while majority (84%) use plastic bags, and other containers.

The knowledge and practices of traditional medication are kept with them for the sake of secrecy. Services are obtained only from family. Majority (79%) traditional healers transfer their indigenous knowledge to their selected family verbally, some (21%) through showing the medicinal plant in the field and the remaining (8%) through demonstration including remedy preparation methods.

Most (84%) of the traditional healers were found to have poor knowledge on the dosage and antidote while prescribing remedies to their patients. Majority (84%) of traditional healers indicated the absence of any adverse effects of traditional medicines after administrations. But some (1%) of the preparations were reported to have some adverse effects like vomiting and hyperthermia on patients. Majority (61.5%) administer the medicine regardless of age and sex for the patients. Some (38.5%) indicated dose differences among different age groups.

Table 2: Medicinal plant species, condition of plant use, diseases treated and rout of administration.

no	scientific name	Diseases treated	Condition of plant use	Route of administration
1	Hagenia abyssinica	Oral	Flower	Intestinal worm
2	Solanecio nandensis	Oral	Leaf	Skin disease
3	Aloe spp.	Oral	Leaf	dry skin, rashes(painful)
4	Vernonia amygdalina	Oral	Leaf	stop bleeding ,for animals skin diseases
5	Artemisia absinthium	Oral	Leaf	head ache

6	<i>Lippia stachydiformis</i>	Oral	Leaf	Cough
7	<i>Dovyalis abyssinica</i>	Oral	Fruit	Intestinal worm
8	Garlic	Oral	Root	Influenza
9	<i>Opuntia ficusindica</i>	Oral	Fruit	stomach ache
10	<i>Foeniculum vulgare</i>	Oral	Leafs	diuretic,digestive
11	<i>Artemisia afra</i>	Oral	Leafs	head ache
12	<i>Hypericum revolutum</i>	Oral	Leaf	Influenza
13	<i>Olea europaea</i>	Oral	Leafs	head ache
14	<i>Solanum incanum</i>	Oral	Root	abdominal pain
15	<i>Ruta chalepensis</i>	Oral	Leaf	tooth ache
16	<i>Withania somnifera</i>	Oral	Roots	abdominal pain,insomnia
17	<i>Zingiber officinale</i>	Oral	Roots	Tonsils
18	<i>Calpurina aurea</i>	Oral	Leaf	tooth ache
19	<i>Eucalyptus globules</i>	Oral	Leaf	fever,colds,bronchitis
20	<i>Ocimum gratissimum</i>	Oral	Leaf	head ache
21	<i>Croton macrostachyus</i>	Oral	Leaf	Wound
22	<i>Euphorbia dumalis</i>	Oral	Fruits	Intestinal worm
23	<i>Leonotis nepetifolia</i>	Oral	Leafs	head ache,fever and influenza
24	<i>Weyna gift</i>	Oral	Leafs	Eye /For Animals
25	<i>Thymus schimperi</i>	Oral	Leafs	head ache,cough and flavor tea

Table 3. Methods of traditional medicinal plant preparation

Methods of preparation	Total preparation	Percentage
Crushing	15	60
Squeezing	4	16
Chewing	3	12
Cooking	1	4

Pounding	2	8
Total	25	

There are various methods of traditional medicinal plant preparation in the area. The preparations vary based on the type of disease treated and the actual site of the ailment.

The most popular method of preparation was in the form of crushing, which accounts for 60%, followed by squeezing (16%), together, the remaining proportion is accounted for methods like pounding, chewing and cooking the combination of each method (Table 3).

The informants have various skills associated with remedy preparation. They tend to apply mixing of different plants. The result showed that the majority of remedies were prepared from single plant species and few are prepared from different plant species, which is a combination of medicinal plants, was used to treat a disease. The result is consistent with the findings of Debela Hunde (2001) and Etana Tolasa (2007) in which a single plant preparation were reported to be high.

4.4.Common type of home remedies used by traditional medicine users

Among commonly used homemade remedies of TM, Nech shinkurt (*Allium sativum*) (80.3%) was highly favored by the households followed by Dama kese (*Ocimum lamiifolium*) (50%). The least favored home remedy was Tenadam (*Ruta chalepensis*) which was only 39.5% (Table 4).

Table 4: Home grown remedies used by households in Shifari'o Kebele

S. N	Scientific name	Family name	Method of utilization	Frequenc y	Percentage
1	Ruta chalepensis	Rutaceae	Fresh cut dip into drinks	1-2	39.5
2	Allium sativum	Alliaceae	Crush and cook with foods	1-3	80.3
3	Ocimum lamiifolium	Lamiaceae	Crush, pulverize and inhale	1	50

4	Zingiber officinale	Zingiberaceae	Crush, powder and add to foods or drinks	1-2	21.1
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5.DISCUSSION

The society in the study area used many medicinal plants to treat different human and livestock diseases. In the study area traditional medicine is used by traditional healers to solve the health problem of human and livestock. Traditional healers are using local medicinal plants to maintain human and livestock health. In the study area most medicinal plants (80 %) were collected from farm land, grazing land, up land forest, compared to (20 %) from home garden. The community may not so interest to grow all the medicinal plants in the home garden and ex-situ. This may be due to most medicinal plant is available in the wild area.

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The routes of administration in the study area were oral and dermal. This is concurrent with the finding of Dawit and Ahadu (1993), main route of application used is oral. Moreover, this is in agreement with the result of various ethno botanical researchers elsewhere in Ethiopia (Ermias Lulekal, 2005; Fisseha, 2007) and indicates oral as the predominant route of application.

The local people utilize 25 medicinal plant species to treat 15 human ailments. Most of these plants 21 species (84%) were collected from wild habitats indicating the existence of pressure on

wild plants. Local people depend on both dry and fresh remedies. In this case, plant part(s) used for medicinal preparation indicated that Leaf 17 (68%) is the plant part widely used followed by root 4 (16%), while the rest include 3(12%) fruit and 1 (4%) flower form. These findings are in agreement with the findings of Fisseha (2007), Kebu et al. (2004) and Gidey (2010) indicated that the use of fresh medicinal plants is more threatened than dry forms. However, healers argue that fresh materials are effective in treatment as the contents are not lost before use compared to the dried forms.

The knowledge and practices of traditional medication are kept with them for the sake of secrecy. Services are obtained only from family. The indigenous knowledge transfer is poor which may causes erosion of the practice and knowledge.

In the study area deforestation, over grazing and expansion of agriculture including cultivating eucalyptus tree as cash plant affect the survival of medicinal plants. In the study area the conservation status of medicinal plant is limited, there is to need to aware the society for the proper attention to conserve the biodiversity including medicinal plants .for the welfare of future generation in a sustainable manner.

6.CONCLUSION AND RECOMMENDATION

6.1 CONCLUSION

This study showed the wide use of medicinal plants in Shifari'o Kebele in meeting the primary healthcare needs. The study area Goba woreda Shifari'o Kebele has diverse medicinal plants that are used to treat various human and livestock diseases by the local communities. The wild plant habitats are the main sources of medicinal plants compared to home gardens. Currently medicinal plants availability is at risk due to different human activities such as agricultural expansion and cultivating eucalyptus tree for the source of income are the most visible threats in the study area. The indigenous knowledge of people has to be passed over to the next generation

Most of the reported medicinal plants were wild and some of them were reported to be rare. This implies the need for conservation efforts to be taken in order to safeguard these valuable

resources. Remedy preparations mostly from leaves, roots and barks were found to be used to treat a variety of human and animal ailments.

Medicinal plants such as *Croton macrostachyus* , *Hagenia abyssinica* (against tape worm) and *Ocimum lamiifolium* (against pneumonia cure disease) were the most preferred and highest fidelity level, an indication of their high healing potential. To conserve the biodiversity of the area and preserve the medicinal plants there is a need to create awareness and develop in – situ and ex-situ conservation of medicinal plants. In particular rare species should be given conservation priority. There is loss of plants as a result of agricultural encroachment, firewood, charcoal, timber, construction material are contributing factors for the loss of plant species in general and medicinal plants in particular.

The present study generally recognizes a rich heritage of indigenous medicinal plants in the study area and the transfer of indigenous knowledge is declining from generation to generation as a result of oral transmission. Therefore, this study recommends the argent need to incorporate need to incorporate this knowledge into formal education before complete lost.

6.2. RECOMMENDATIONS

Based on the research results, the following recommendations are forwarded:

- Local community of the study area should be involved in conservation and management of plant resources and their indigenous knowledge in their locality
- Local people harvest plants for business or for household use with little awareness of its threat, awareness should be raised either, by development agents or agricultural workers through which sustainable harvesting is practiced
- Since some of the traditional healers might have given much attention to the indigenous knowledge transfer while others have little concern regarding the value of indigenous knowledge, some governmental and nongovernmental organization should participate in awareness rising for healers to minimize the loss of indigenous knowledge

- The knowledge of traditional medicine practitioners must be encouraged and protected. This could be the way through which such people could exercise their skill broadly
- There is a need of coordination of traditional healers of the area together by certification or by organizing them at Woreda level that popularize their indigenous knowledge on medicinal plants
- Establishing Traditional Healers Association, by providing land for cultivating medicinal plants, funds and assisting their activities with professional guidance helps to conserve the fast eroding medicinal plants of the area

REFERENCE

- Abebe D.,2001.Biodiversity conservation of medicinal plants: problem and prospects. In conservation and sustainable use of medicinal plants in Ethiopia proceeding of National Workshop on Biodiversity conservation and Sustainable Use of Medicinal Plants in Ethiopia.
- Abebe D.,Ayehu A.,1993. Medicinal plants and Enigmatic Health practices of Northern Ethiopia .B.S.P.E. Addis Ababa ,Ethiopia
- Amhara Region, Ethiopia.Journal of Ethnobiology and Ethnomedicine ,10:21 Martin G.J.,1995 .
- Back to the future lessons from ethnoveterinary research ,development extension for studying and applying knowledge. J.Agric .Food Human Values Society ,22(2):52-80.Mengistu A.K.,2004
- An ethnobotanical study of medicinal plants used by the Zay people in Ethiopia. Skriftseries,3:81-99.Giday M.,Asfaw z.
- Plant Diversity in Western Ethiopia: Ecology , Ethnobotany and Conservation .PhD Dissertation, Faculty of Mathematics and Natural Sciences ,University of Oslo, Norway. Balemie K., Kelbessa E., Asfaw Z.,2004
- Ethiopia traditional veterinary practices and their possible contribution to animal production and management.Rev.Sci.Technol,13:417-424.Pankhurst R.,2001.

Flora of Ethiopia and Eritrea Vol.5. The national herbarium Addis Ababa, Ethiopia and Uppsala, Sweden

Debela Hunde (2001). Use and Management of Traditional Medicinal Plants by Indigenous People of Bosat Wereda, Wolenchiti area: An ethnobotanical Approach. M.Sc. Thesis, Addis Ababa, Ethiopia.

Fisseha M (2007). An ethno botanical study of medicinal plants in Wonago Woreda, SNNPR, Ethiopia. MSc Thesis, Addis Abeba University, Ethiopia.

Endalew Amenu (2007). Use and Management of Medicinal Plants by indigenous People of Ejaji Area (Chelya Wereda) West Shewa, Ethiopia: An Ethno botanical Approach. M.Sc. Thesis. Addis Ababa, Ethiopia.

Etana Tolasa (2007). Use and Conservation of Traditional Medicinal Plants by Indigenous People in Gimbi Wereda, Western Wellega. M.Sc. Thesis. Addis Ababa, Ethiopia.

Bussa and Gameda (2018). Assessment of Traditional Medicine Utilization in Harar Town, Eastern Ethiopia. Haramaya Institute of Technology

Kibebew Fassil (2001). Utilization and Conservation of Medicinal plants in Ethiopia. In proceeding of the workshop on Development Utilization of Herbal Remedies in Ethiopia; Ethiopian Health and nutrition Institute. Addis Ababa. 46-52.

Gebeyehu, Getaneh, Asfaw, Zemed, Enyew, Abiyu (2013). Ethno Botanical study of traditional medicinal plants and their conservation status in Mecha wereda West Gojam zone. 138.

Hunde Debela, Asfaw Zemed and Kelbessa Ensermu (2004). Use and Management of ethno veterinary medicinal plants used by indigenous people in “Boset”. Welenchiti area. Ethio.J. Biol. Sci.3 (2); 113-132.

Bekele, Endashaw (2007). Study on actual situation of medicinal plants in Ethiopia prepared for JAICAF (Japan Association for International Collaboration of Agriculture and Forestry. Pp. 73.

Mahmoud T, Gairola S. Traditional knowledge and use of medicinal plants in the Eastern Desert of Egypt: a case study from Wadi El-Gemal National Park. *Journal of Medicinal Plants Studies*. 2013;1(6):10–17.

Haile Y, Dilnesaw Y. Traditional medicinal plant knowledge and use by local healers in Sekru district, Jimma zone, south western Ethiopia. *J Ethnobiol Ethnomed*. 2007; 3:24.

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