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ETHNOBOTANICAL STUDY OF MEDICINAL PLANTS USED BY PEOPLE TO TREAT SKIN DISEASES IN WOREDA TAHITAY ADIYABO AND MEREBLEKE, TIGRAY, ETHIOPIA.

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ABSTRACT

An ethnobotanical study of medicinal plants used to treat skin ailments was conducted in Woreda Tahtay Adiyabo and Merebleke, Tigray, Northern Ethiopia between December 2013 and June 2014 to document the use, conservation and management of medicinal plants. To collect accurate information, 100 informants (80 men and 20 women, aged from 25-70) were selected purposively. Ethno botanical data were collected through semi structured interview and field observation and analyzed using descriptive statistical methods and informant consensus factor. A total of 40 medicinal plants distributed across 27 families and 39 genera, which the informants confirmed that they are used to treat 12 human skin ailments. Woody plants comprised the largest number accounting for 26 species (65%). Leaves were the most frequently required plant parts (58 %) followed by seeds (12%). Remedies were mostly prepared from fresh plant materials, mostly from single plant species and crushing (48%) was the common method of preparation to make the remedy. The highest informant consensus was documented for *Xanthium strumarium* and *Ziziphus spina-christi* by 50(50%) informants to both for their medicinal value in treating *Tinia capitis* and *Tinia corporis* respectively. Drought and agricultural expansion are the major threats to medicinal plants. The local people of the two Woredas have used traditional botanical knowledge to treat skin ailments but the availability of plants is rare. Consequently, the traditional healers and the local people should be aware on how to use plants for various purposes and the traditional healers should grow some plants in their home gardens.

KEY WORDS: Ethno botany, Indigenous knowledge, Medicinal plants and Skin ailments.

INTRODUCTION

The term Ethno botany was first used by Harshberger in 1895¹⁴. He defined it as a study of plants used by primitive and aboriginal people. Ethnobotanical research is basic for conservation and community development activities¹⁷. About 80% of the world population residing in the vast rural areas of the developing and under developed countries relies mainly on medicinal plants since it is the only affordable and accessible source of primary health care especially in the absence of access to modern medical facilities^{30 31}. Although 80% of the developing world's population is believed to depend on traditional system of medication, about half of the population in

industrialized countries uses contemporary alternative medicine²⁰.

Nowadays, the use of traditional medicine from plants is still contributing to the health care of both developing and developed countries. It is gaining popularity due to several advantages such as high cost of commercially made drugs, fewer side effects, cultural preference, relatively less expensive and acceptance due to long history of use¹⁵. Herbal medicines provide rational means for the treatment of many diseases that are obstinate and incurable in other systems of medicine. A traditional medicine account for around 40% of all health care delivered and is used to treat roughly 200 million patients annually¹⁵. There are about

some 20,000 species (spp.) of higher plants used medicinally throughout the world¹¹.

Medicinal plants have been used as a source of medicine in Ethiopia from time immemorial to prevent or treat different human and animal ailments³³. There are about 887 medicinal plants that are currently being used by the Ethiopian people²³. They are distributed across 114 families. This number is pushed to 1000 medicinal plant species by the data base of the National Herbarium of Ethiopia (Addis Ababa).

Skin diseases have a high prevalence throughout the world. In developing countries, infectious diseases are more common, whereas in developed countries inflammatory disorders are more common²⁶. Skin disease is among the most frequent causes of morbidity in Ethiopia, showing high prevalence in the general population and being the sixth most frequent cause of outpatient visits nationwide to health facilities². Despite the extent of the problem, dermatology service delivery in our country has remained poor. Some of the reasons are poverty, lack of trained staff and lack of knowledge. Skin diseases are among the leading causes of hospital visits in Ethiopia³⁴.

Even though the prevalence of the disease is high in the country and world, the disease has been treated by both modern and traditional medicine. Some wild plants and their parts are frequently used to treat skin diseases. The use of plants is as old as the mankind. Natural treatment is cheap and claimed to be safe. It is also suitable raw material for production of new synthetic agents²². Many hundreds of medicinal plant species worldwide are used in the traditional medicine as treatment for skin diseases caused by bacteria and fungi⁶. However, in Ethiopia the medicinal plants and associated indigenous knowledge on the use and conservation of these medicinal plants have not been documented and conserved properly like in other countries of Africa such as Nigeria and South Africa. On the other hand, a number of plant species are vanishing throughout the country³². These informed that, now (it) is the time to document and conserve these golden resources.

Moreover, when we read literature regarding the ethno botany of medicinal plants used by people to treat skin ailments in Tigray and Ethiopia, we have found that no survey has far been conducted even though there are several ethno botanical studies of medicinal plants used to treat human and animal ailments. In addition, it is a leading research to enrich specific ethno botanical data regarding the use and management of medicinal plants for treating skin diseases. Therefore, this study was conducted to document the indigenous knowledge

of the local people and medicinal plants used to treat skin diseases in Woreda TahtayAdiyabo and Merebleke.

MATERIALS AND METHODS:

Description of the study area

Tahtay Adiyabo is located at 1200 km north of the capital Addis Ababa, in the central Zone of Tigray Regional State, Northern Ethiopia. Tahtay Adiyabo is bordered on the south by the Asigede Tsimbela, on the southwest by the Tekezé River which separates Tahtay Adiyabo from the Mi'rabawi Zone, on the north by Eritrea, and on the east by La'ilay Adiyabo; part of the northern border with Eritrea is delineated by the Mereb River. Based on the 2007 national census conducted by the Central Statistical Agency of Ethiopia (CSA), this Woreda has a total population of 90,144, of whom 45,834 are men and 44,310 women; 6,377 or 7.07% are urban inhabitants⁹.

A sample enumeration performed by the CSA in 2001 interviewed 17,471 farmers in this Woreda, who held an average of 1.23 hectares of land. Of the 21,514 hectares of private land surveyed in Tahtay Adiyabo, 85.25% was under cultivation, 1.66% pasture, 11.53% fallow, and 1.56% was devoted to other uses; the amount in woodland is missing³.

Mereb Lehe is located at 1035 km north of the capital Addis Ababa, in the Western zone of Tigray Regional State, Northern Ethiopia, it is bordered on the south by La'ilay Maychew, on the southwest by Tahtay Maychew, on the west by the Semien Mi'rabawi (North Western) Zone, on the north by the Mereb River (which separates it from Eritrea), on the east by Enticho, and on the southeast by Adwa..

Based on the 2007 national census conducted by the Central Statistical Agency of Ethiopia (CSA), this woreda has a total population of 107,218, of whom 53,425 are men and 53,793 women; 7,911 or 7.38% are urban inhabitants.

A sample enumeration performed by the CSA in 2001 interviewed 18,660 farmers in this Woreda, who held an average of 0.85 hectares of land. Of the 15,776 hectares of private land surveyed, 85.92% was in cultivation, 1.19% pasture, 10.02% fallow, 0.08% woodland, and 2.78% was devoted to other uses.

Selection of study kebeles and informants

Ethno botanical data were collected between January and March 2014 from ten kebeles that were purposively selected based on the degree of accessibility to roads, markets and health posts, varying altitudinal zones, availability of traditional medicinal plants and availability of traditional healers with the help of elders and local authorities of the Woreda.

For the study, 100 knowledgeable informants and healers (ten from each sampled kebele) were selected using purposive sampling method¹⁷, of which 80 were males and 20 were females. The informants selected from each sampled kebele were the most knowledgeable individuals as suggested by respective kebele elders, knowledgeable persons, agricultural workers, and health extension workers following Martin¹⁷. The ages of the informants ranged between 25 and 70 years. Two key informant groups (one group containing ten individuals) were respectively involved in two different ranking exercises (one preference ranking exercises and one paired comparisons). The key informants were selected from the already interviewed informants with help of health extension workers and local administrators.

Methods of Ethno botanical Data Collection

Ethno botanical data were collected through semi structured interviews and observations by following Cotton⁸ and Martin¹⁷. Interviews and discussion issues were prepared in English and then translated in the local language of the people (Tigrigna). Group discussion, field observation, and market survey were also employed to gather information regarding local names of plants used, part(s) used, habit, preparation methods, diseases treated, marketability of medicinal plants, threats and conservation status. Specimens of medicinal plants were collected, pressed, dried and identified and voucher was kept at Aksum university Botany laboratory. During the collection of specimens, essential information about the plants such as growth form, habitat, and other related ethno botanical data were described and recorded.

Preference ranking

Preference ranking was made following Martin¹⁷ for five medicinal plants for treating the most frequently encountered skin disease in the study area and for which they have several alternative plants as readily. 10 preferentially selected informants will be made to participate in this exercise. The informants were given the plants and asked to arrange the five medicinal plants based on their personal preference of efficacy. The medicinal

plant believed to be the most effective got the highest value, and the one with the least effectiveness got the lowest value. Based on the total score of each species the rank was determined, and this helped to indicate the most effective medicinal plants used by the community to treat the common skin disease.

Paired comparison

Paired comparisons were employed for evaluating the degree of preferences or levels of importance of certain selected plants as described by Martin¹⁷. Paired comparisons on the six most effective plants in treating skin diseases mentioned by most of the informants were selected and a list of pairs of these six selected medicinal plants with all possible combinations were made and sequence of the pairs and the order within each pair was randomized using random number table and flipping coins. Ten informants were purposively selected from the knowledgeable informants and allowed to show their responses independently for pairs of traditional medicinal plants noted for treating the disease and their responses were recorded and total scored was summarized and rank was given on the total score.

Methods of Data Analysis

Ethno botanical information on plant species, families, parts used, plant habit, and method of remedy preparation that were collected using different ethno botanical methods, along with the data in the form of scores were organized, entered and analyzed in Microsoft Excel. Ethno botanical data were analyzed by descriptive statistical methods. The data generated from preference ranking and paired comparisons were presented in the form of ranks where ranks were determined based on the total scores under each attribute.. Frequency and relative frequency of plant species were calculated for the vegetation data¹⁷. Moreover, informant consensus factor was generated as follows.

Informant consensus factor (ICF)

Informant consensus factor was calculated for each category to identify the agreements of the informants on the reported cures for the group of ailments. The ICF was calculated as: the total number of cited cases of the ailment (n_a) minus the total number of different remedies for that ailment (n_{ra}), divided by the total number of cited cases of the ailment (n_a) minus one⁵. Or in short,

$$ICF = (n_a - n_{ra}) / (n_a - 1)$$

RESULTS AND DISCUSSION:**Medicinal plants and their families**

In the present study 40 species of medicinal plants belonging to 22 families and 39 genera were collected, identified and documented. For each species the botanical name, family name, local

name, plant part used, habit, preparation of remedy and usage were recorded.

The dominant plant families used by the local people were Fabaceae with 9 species followed by Solanaceae (4 species) and Cucurbitaceae (3 species) (**Table 1**)

Table 1: Frequency of top six plant families used as medicine for skin diseases

| No | Family | No of genera | % of genera | No of species | % of species |
|----|---------------|--------------|-------------|---------------|--------------|
| 1 | Fabaceae | 8 | 20.5 | 9 | 22.5 |
| 2 | Solanaceae | 4 | 10.3 | 4 | 10.0 |
| 3 | Cucurbitaceae | 3 | 7.7 | 3 | 7.5 |
| 4 | Asteraceae | 2 | 5.1 | 2 | 5.0 |
| 5 | Rhamnaceae | 2 | 5.1 | 2 | 5.0 |
| 6 | Rutaceae | 2 | 5.1 | 2 | 5.0 |

Habit and Source of Medicinal Plants

Out of the 40 medicinal plants, 13 (32.5%) were herbs, 13(32.5%) were trees, 13 (32.5%) were shrubs and one (2.5%) was a climber. The majority of the medicinal plants used in the study area were collected from wild (60%) and the rest were collected from cultivated areas.

Plant Parts Used in Remedy Preparation and Method of preparation

Different parts of medicinal plants were used as medicine by the local people and traditional health healers. Among the different plant parts, the leaves (58%) were the most frequently used for the treatment of diseases followed by seeds (12%), fruit and latex (8%). There are various methods of preparation and application for different types of ailments and they have various preparation forms like Crushing (48%), powdering (24%), exudates (18%) and boiling (4). Crushing (48%) constituted the highest type of preparation form, followed by powder and exudates (**Table 2**).

Table 2: Plant parts and methods of Preparation

| Plant parts | Number | Percentage | Methods | Number | Percentage(%) |
|-------------|--------|------------|-------------|--------|---------------|
| Leaves | 29 | 58 | Crushing | 24 | 48 |
| Stem/ stem | 2 | 4 | Powder | 12 | 24 |
| Root/root | 3 | 6 | Boiling | 2 | 4 |
| Seeds | 6 | 12 | Exudates | 9 | 18 |
| Fruit | 4 | 8 | Unprocessed | 3 | 6 |
| Twigs | 2 | 4 | Total | 50 | 100 |
| Latex | 4 | 8 | | | |
| Total | 50 | 100 | | | |

Importance of ailments treated

In this study, wound (12.6%) was the most important disease treated based on the number of

citations for medicinal uses, followed by *Tinia capitis* (12.1) and Ring worm (13.3) (**Table 3**).

Table 3: Ethno botanical survey of plants used for skin diseases

| Health Problems | Local Name of the Ailment | No of Plant spp. | No of Informant cited |
|-----------------|---------------------------|------------------|-----------------------|
| Boils | Mugli enchiwa | 3 | 68 |
| Fire burn | Hawi bila'e | 2 | 15 |
| Hang nill | Tiento | 7 | 57 |
| Herpes zoster | Almaz Balechira | 4 | 19 |
| Pimples | Fetsega | 1 | 10 |
| Ringworm | Tifsas | 7 | 82 |
| Eczema | Hafew | 5 | 78 |
| Swelling | Hibtet/ Megerem | 3 | 29 |
| Tinia corporis | Barle | 1 | 50 |
| Tinia capitis | Quasha | 5 | 90 |
| Wart | Kintarot | 2 | 8 |
| Wound | Kusli | 9 | 85 |
| Total | | 50 | 673 |

Note that: in this table the number of plants is greater than the total number of collected plants because one plant can be used to treat more than one ailment

Preference ranking of medicinal plants

Preference ranking of five medicinal plants that were reported to be effective to treat Hang nill

indicated that *Solanum incanum* ranked first and hence it is the most effective traditional medicinal plant to treat hang nill. *Cucumis ficifolius* and *Citrus limon* are the 2nd and 3rd respectively (Table 4).

Table 4: Preference ranking of five selected medicinal plants used for treating Hang nill

| Plant species | Score of respondents | | | | | | | | | | Total | Rank |
|------------------------------------|----------------------|----|----|----|----|----|----|----|----|----|-------|------|
| | R1 | R2 | R3 | R4 | R5 | R6 | R7 | R8 | R9 | 10 | | |
| <i>Citrus limon</i> (L.) Burm. f | 3 | 2 | 5 | 2 | 3 | 3 | 2 | 1 | 4 | 2 | 27 | 3 |
| <i>Cucumis ficifolius</i> A. Rich. | 5 | 4 | 3 | 3 | 4 | 4 | 4 | 5 | 3 | 3 | 38 | 2 |
| <i>Rhamnus prinoides</i> L Her. | 2 | 3 | 2 | 5 | 1 | 2 | 1 | 2 | 1 | 4 | 23 | 4 |
| <i>Senna singueana</i> (Del.) Lock | 1 | 1 | 1 | 1 | 2 | 1 | 5 | 3 | 2 | 1 | 17 | 5 |
| <i>Solanum incanum</i> L. | 4 | 5 | 4 | 4 | 5 | 5 | 3 | 4 | 5 | 5 | 44 | 1 |

Paired (pair wise) ranking of six medicinal plants

In the study area, 9 medicinal plant species are used to treat wound. Of these, 6 medicinal plants with the highest informant consensus were selected and

compared to distinguish their ranks to determine the best traditional medicinal plants against wound according to the informants. Ten informants were selected to give the value based on the efficacy of the medicinal plants to wound and the result revealed that *Argemone mexicana* ranks first followed by *Azadirachta indica*, and *Aloe spp.* (Table 5).

Table 5: Paired (pair wise) ranking of six medicinal plants used to treat wound

| Plant species | Score of respondents | | | | | | | | | | Total | Rank |
|------------------------------|----------------------|----|----|----|----|----|----|----|----|-----|-------|------|
| | R1 | R2 | R3 | R4 | R5 | R6 | R7 | R8 | R9 | R10 | | |
| Aloe spp | 4 | 3 | 4 | 3 | 3 | 5 | 3 | 2 | 3 | 4 | 34 | 3 |
| Azadirachta indica A. Juss | 3 | 4 | 4 | 5 | 3 | 3 | 5 | 2 | 5 | 4 | 38 | 2 |
| Argemone mexicana L. | 5 | 5 | 2 | 3 | 5 | 3 | 4 | 5 | 4 | 3 | 39 | 1 |
| Calpurnia aurea (Ait.) Benth | 2 | 0 | 1 | 2 | 2 | 2 | 3 | 3 | 1 | 2 | 18 | 4 |
| Lepidium sativum L. | 0 | 0 | 2 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 8 | 6 |
| Vernonia amygdalina | 1 | 3 | 2 | 1 | 1 | 1 | 0 | 2 | 1 | 1 | 13 | 5 |

Informant Consensus Factor (ICF)

ICF results indicated that certain diseases such as Boil, Tinea capitis, Eczema, and Hang nill are

effectively treated by certain medicinal plants in the study area. Diseases that are effectively treated by certain medicinal plant species have a high informant consensus factor value (Table 6).

Table 6: Informant consensus factor by categories of diseases

| Category | No of Species | % of species | No of informant cited | % of Informants cited | ICF |
|---------------|---------------|--------------|-----------------------|-----------------------|------|
| Boils | 3 | 6 | 68 | 10.1 | 0.97 |
| Eczema | 5 | 10 | 78 | 11.6 | 0.94 |
| Herpes zoster | 4 | 8 | 19 | 2.82 | 0.83 |
| Hang nill | 7 | 14 | 57 | 8.4 | 0.93 |
| Ring worm | 7 | 14 | 82 | 12.2 | 0.92 |
| Tinea scaplis | 5 | 10 | 90 | 13.3 | 0.95 |
| Wound | 9 | 18 | 85 | 12.3 | 0.9 |

Factors Threatening Medicinal Plants in the Study Area

Ten informants were asked to rank eight threats that affect the traditional medicinal plant species. Each informant was asked to give 6 to the threat with most risk effect and 1 to the least. According

to the priority ranking of factors perceived by the informants as local threat to medicinal plants and its associated knowledge, drought was the threat that is ranked first, followed by Agricultural expansion, charcoal and fuel wood (Table 7).

Table 2: Factors affecting medicinal plants in the study area

| Threats | R1 | R2 | R3 | R4 | R5 | R6 | R7 | R8 | R9 | R10 | Total | Rank |
|----------------------------------|----|----|----|----|----|----|----|----|----|-----|-------|------|
| Agricultural expansion | 6 | 5 | 3 | 5 | 6 | 4 | 5 | 4 | 6 | 5 | 49 | 2 |
| Build and Agricultural materials | 4 | 4 | 4 | 3 | 2 | 2 | 3 | 1 | 3 | 4 | 30 | 4 |
| Charcoal and Fuel wood | 1 | 3 | 5 | 2 | 4 | 5 | 4 | 5 | 4 | 2 | 35 | 3 |
| Drought | 5 | 6 | 6 | 6 | 5 | 6 | 6 | 6 | 5 | 6 | 57 | 1 |
| Grazing | 3 | 2 | 1 | 1 | 3 | 3 | 1 | 3 | 1 | 3 | 21 | 5 |
| Soil erosion | 2 | 1 | 2 | 4 | 1 | 1 | 2 | 2 | 2 | 1 | 18 | 6 |

Contribution of the above plants in Ethiopia and other areas

Some of plants have used to treat different skin ailments in Ethiopia and abroad countries such as South Africa, Nigeria and India.

Table 8. The Use of These Plants to Treat Skin Ailments in Other Areas of Ethiopia and Outside Ethiopia.

| Plant species | Ailment | Area, source |
|------------------------------------|---------------------------|--|
| <i>Aloe vera</i> (L.) Burm. f. | wound, | South Africa ²¹ |
| <i>Argimon maxicana</i> Linn., | Ring worm | India ⁷ |
| <i>Azadirachta indica</i> A. Juss. | Skin disease and dandruff | India ^{16, 32} |
| <i>Calotropis procera</i> Br., | Infected skin area | India ⁷ |
| <i>Carica papaya</i> | Ring worm | India ⁷ |
| <i>Datura stramonium</i> | <i>Tinia capitis</i> | Tigray (Alamata), Ethiopia ¹² |
| <i>Datura stramonium</i> | Wound | Tigray (Enderta), Ethiopia ¹³ , |
| <i>Ricinus communis</i> L. | Dermatitis | Nigeria ⁴ |
| <i>Calpurina aurea</i> | <i>Tinia capitis</i> | Ethiopia ²⁵ |
| <i>Vicia faba</i> | Skin boils | Tigray (Alamata), Ethiopia ¹³ , |
| <i>Vernonia amygdalina</i> Del. | Skin wound | Zay people (Ethiopia) ¹⁸ |
| <i>Ziziphus spina christi</i> | <i>Tinia capitis</i> | Tigray (Alamata) ¹² , Tigray (Alaje) ²⁴ Ethiopia |
| <i>Ziziphus spina christi</i> | Dandruff | Tigray (Enderta), Ethiopia ¹³ |

Discussion

The local people have used traditional medicine prepared from some plants to treat human skin ailments. Other ethnobotanical studies conducted in other Weredas of the country ^{1, 13, 18, 19, 24} also indicated that the local people have used medicinal plants to treat human and animal ailments. Moreover, the result of this study aligned with the information given by Dawit Abebe ¹⁰, 80 % of the Ethiopian population is dependent on traditional medicine. The reason for why the local people have used medicinal plants to treat different human skin ailments might be associated with relative ease of finding of medicinal plants, long time interaction with them, believe and preference to modern medicine.

Most remedies have been prepared from plants that belong to Fabaceae and solanaceae. These families are among the most dominant families in Ethiopia. But unlike study conducted by Miruste Gidey ¹⁹, Asteraceae is represented by few species. This might be related to less diversity of plants belonging to Asteraceae as a result of different environmental condition. The use of herbaceous plants to prepare remedies is almost similar with use of trees and shrubs. The result of this study did not match with

the studies conducted by Mirytse Gidey ¹⁸, Tilahun Teklehatmanot ²⁸ and Tigist Woundumu *et al.* ²⁷ who presented herbs are the most common sources for remedy preparation. The difference in the result of this study and the studies conducted by others might be raised from shortage of abundance of these plants as the result of the presence of high temperature in the study area.

Most of the remedies are prepared from the leaf part of the plant. The common use of leaf to prepare remedies might be linked due to presence of more amounts of remedies from this small part, needs of less effort to harvest this part and make remedies of this part. The common use of leaves to prepare remedies was also reported in studies conducted by Mirutse Gidey ¹⁹ and Abrha Teklay ¹. The majority of the traditional medicinal plants were collected from the wild. The use of wild plants to treat ailments is also common in another area ¹. The frequent use of wild plants in the preparation of remedies might be due to shortage of medicinal plants in the home gardens, hiding of the medicinal plants from other users, interest of the traditional healers to make the remedies confidentially and preference of wild plants to cultivated plants.

Crushing is the most regularly used method of preparation. Preparation of remedies by crushing is

also common in other areas^{1, 24}. Other studies conducted by Mirutse Gidey^{18, 19} revealed that the majority of remedies are prepared from juice. The commonly use of crushing to make the remedies may be due to ease of application of the remedies prepared by crushing.

The highest proportion of medicinal plants is used to treat wound and hang nill. The use of more proportion of medicinal plants to treat wound and hang nill might be related to the high prevalence of the disease in the study area. There are a lot of factors threatening the medicinal plants in the study area. Among them drought is the first harsh factor that affects plant. The highly destructive effect of drought on the medicinal plants was also reported in studies conducted by Abrha Teklay¹ and Gidey Yirga¹². The existence of drought as the major threat to medicinal plants may be attributed to the effect of climate change.

RESEARCH HIGHLIGHTS

There are some medicinal plants which can treat severe, mild and simple skin ailments within a short period of time. Human skin ailments such as Herpes zoster, tinea capitis and tinea corporis needed some time to be treated with modern medicine. But these diseases are easily treated using traditional medicinal plants in a short period of time. The local people have their own indigenous knowledge to prepare remedies for the treatment of the skin ailments.

LIMITATIONS

- Lack of medicinal plants data base
- Shortage of related research
- Shortage of book of medicinal plants
- Shortage of research on chemical analysis of medicinal plants in Ethiopia

RECOMMENDATIONS

- ❖ The local people of the two Woredas have used traditional botanical knowledge to treat skin ailments but the availability of plants is rare. Consequently, the traditional healers and the local people should be aware on how to use plants for various purposes and the traditional healers should grow some plants in their home gardens
- ❖ There are some medicinal plants used to treat skin ailments. But the chemical constituents of these plants are not well known. Therefore, research on chemical analysis of these plants should be conducted.

CONCLUSION

The local people of the two Weredas have traditional botanical knowledge of medicinal plants to treat human skin ailments. There are 40 medicinal plants grown in the study areas but some traditional healers have brought medicinal plants from other areas. Wound is the most important disease treated by several medicinal plants. Majority of the medicinal plants are collected from the wild and most remedies are being prepared from the woody plants such as tree and shrub. The dominant plant part used to make different types of remedies prepared by crushing, which is the method of preparation that stood first, is leaf. Even though there are some medicinal plants in the study area, they are highly affected by anthropogenic and natural induced factors such as drought and agricultural expansion. The local people of the two Weredas have used traditional botanical knowledge to treat skin ailments but the availability of plants is rare. Consequently, the traditional healers and the local people should be aware on how to use plants for various purposes and the traditional healers should grow some plants in their home gardens.

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