

Research Article

Assessment of Indigenous Knowledge on Using of Traditional Medicinal Plants to Cure Human Diseases in South Omo Zone Baka Dawla Ari District, Kure and Bitsmal South Ethiopia

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Abstract

This ethnobotanical study aims to investigate and document the indigenous knowledge on using traditional medicinal plants to cure human diseases in southern Ethiopia, south Omo zone Baka dawla Ari district at Kure and Bitsmal community. In this study, 77 plant species that belong to 68 genera and 35 plant families were identified by 110 local community members and 10 traditional healers of the study area to treat 32 human diseases. According to the analyzed result of the study three families (Lamiaceae, Solanaceae, and Fabaceae) are equally leading families each with nine species (11.69%) followed by Euphorbiaceae with five species (6.5%) and Asteraceae with four species (5.2%) in the study area. The result of this study also shows that most of the traditional medicines were taken in the mouth (oral) at 61.5% followed by topical (26.4%) and inhalation form (12.1%). The findings of this study show that most traditional plants were collected from the forest (45.5%) followed by the backyard (26%) and herbs are the most popular (59%) followed by shrubs (27%) plant habits. According to the result of this study, leaves are the dominant traditional medicinal plant parts used (55%) followed by roots (11.2%). preference ranking of medicinal plants in the study shows *Solanum incanum* ranked first indicating that it was the most effective in curing stomach pain followed by *Verbena officinalis* and the highest informant consensus factor value (0.57) was recorded by Malaria, Evil eye, snake bite, sudden disease categories.

Introduction

Medicinal plants can be defined as plants that possess therapeutic properties or exert a beneficial pharmacological effect on the human or animal body [1]. While, traditional medicine is defined as an indigenous drug that is used to endure fitness by avoiding, diagnosing, and treating physical and psychological illnesses, and differs in its theories, beliefs, and knowledge from the modern [2]. Indigenous people have developed their locality-specific knowledge of plant use, management, and conservation [3]. (Medicinal plants have long been utilized in traditional medicine and worldwide ethno-medicine [4]. Traditional medicine has been used for many years with great contributions made by practitioners to human health, mostly as primary health care providers at the community level. In addition to its importance in health care, medicinal plants have enormous potential contributions to economic growth. The indigenous peoples of different areas have established their specific knowledge of plant resource

uses, management, and conservation. As a result, indigenous medicine has become an essential part of many cultures in the world [5].

In Africa, traditional medicinal plants have been the basis of treatment of various diseases as well as other forms of treatment from varied cultures of the world. About 80% of the world's population still depends solely on traditional or herbal medicine for the treatment of diseases, mostly in Africa and other developing nations [6]. Based on traditional medicine traditional healers, in Africa have detailed knowledge [7], which is moved orally from one generation to the next through professional healers, knowledgeable elders, and local people [8].

In Ethiopia, the mainstream of the people who live in the rural and the poor communities in urban areas rely mostly on traditional medicines to fulfill their main fitness needs [9]. Medicinal plants played an essential role in the treatment of

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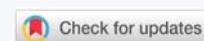
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Keywords: Indigenous knowledge; Local community; Traditional healers; Traditional medicinal plants; Omo Zone Baka Dawla Ari





numerous afflictions in Ethiopia [10]. Plant remedies are still the most important and sometimes the only source of healing for nearly 80% of humans and more than 90% of the livestock population. Estimated floras of 6500 to 7000 species of higher plants are medically important and out of these medicinal plants, 12% are endemic to Ethiopia [11]. Traditional knowledge of medicinal plants in Ethiopia is not compiled [12]. The traditional knowledge in Ethiopia is passed orally from one generation to the next and precious information can be lost because of the lack of transmission of this traditional medicinal plant knowledge [5]. As a result, the need to perform ethnobotanical research and to document the medicinal plants and the associated indigenous knowledge must be an urgent task [13]. Therefore, this study was stimulated to document the local community knowledge of the Baka Dawla Ari District kure-Bitsmal area on traditional medicinal plants.

Materials and methods

Description of the study site

Baka Dawla Ari Woreda is located in the South Omo Zone of the southern region of Ethiopia. It is one of the newly formed woredas in the zone. It surrounds but does not include Jinka town, the capital of the South Omo Zone. The capital of the woreda is Arkisha Kaysa.

Administratively, the woreda is divided into eleven (11) rural and one (1) urban kebeles. All the Woreda sector offices use population data from the Woreda finance office. According to this data, the total population of the woreda is 82,997 (78,900 rural and 4,097 urban). The annual population growth rate of the woreda is 2.9%. There are 16,599 households in the woreda, with an average household size of 5 people.

Study site selection

A reconnaissance survey of the study was conducted on selected kebeles of Baka Dawla Ari woreda with the endorsement of the woreda stakeholders. So, the study was carried out on Kure and Bitsmal communities.

Participants selections

With the help of stakeholders of the woreda for this study 110 local people and 10 well-known traditional healers of four age groups (36-45, 46-55, 56-65, 66 and above) 30 participants from each age group entirely 120 adult participants were selected and interviewed as key informants.

Ethnobotanical data collection

Both quantitative and qualitative ethnobotanical data were collected founded on descriptive field survey design and it emphasized names of medicinal plants, habitats habits, plant parts used, disease cured, and ways of preparation.

Specimen of plant collection and identification

The specimens cited for their medicinal use were collected

from home gardens and natural vegetation then coded, pressed, and dried for identification. During the field walks all of the information about the plant was listed and identification was done by using various volumes of the Flora of Ethiopia and Eritrea [14], and with the help of experts from the Ethiopian Biodiversity Institute.

Data analysis

The collected ethnobotanical data was passed into an Excel spreadsheet in 2007 and shown by using descriptive statistical approaches like frequency, percentage, graphs, and tables. Preference ranking was calculated by following [15] to assess the degree of efficiency of certain curative plants against the most predominant illnesses in the study site. Priority position of issues is apparent as pressures to medicinal plants built on their level of critical properties (values 1-5 were given: 1 is the least destructive threat, and 5 is the most destructive threat). The Informant consensus factor (ICF) was designed for each group to classify the agreements of the informers on the stated cures for the cluster of diseases. The ICF was intended as follows [16].

$$ICF = \frac{Nur - Nt}{Nur - 1}$$

Were, ICF: Informant Consensus Factor; Nur: Number of use citations in each category; Nt: Number of species used.

Results and discussions

Habitats of medicinal plants

In this study, 77 plant species that belong to 68 genera and 35 plant families were used by the local community of the study area to treat 32 human diseases (Table 1). The top three families (Lamiaceae, Solanaceae, and Fabaceae) are equally leading families each with nine species (11.69%) followed by Euphorbiaceae with five species (6.5%) and Asteraceae with four species (5.2%) in the study area. The finding of this result was agreed with the result of [17] in which Fabaceae and Lamiaceae were the dominant medicinal plant families collected. Also as illustrated in Table 1, most of the traditional medicines were taken in the mouth(oral) at 61.5% followed by topical (26,4%) and inhalation forms (12.1%).

Medicinal plants habitats, habits and used parts

Medicinal plant habitats: According to the result of this study shown in Table 2, medicinal plants collected from the forest were ranked first (45.5%) followed by backyard (26%) in the study area. This result indicates that wild plants are a major source of traditional medicinal plants. Also, the findings of this study agreed with the findings reported by [18].

Medicinal plant habits: The results of this study show Figure 1 that in the study area, most of the traditional medicinal plants were herbs (59%) followed by shrubs (27%), and trees (14%). These findings are similar to the findings reported by



Table 1: Lists of medicinal plants used for the treatment of human disease, scientific name, family name, local name, habitat, used part, plant habits, diseases cured, and ways of preparation.

Scientific name	Family	local name	Habitat	Part used	Habits	Diseases cured	Ways of preparation
<i>Ximenia caffra</i> Sond	<i>Olacaceae</i>	mukale	F	Bark Seed oil	T	Painful wounds hair damaged	The dried and crushed powder on put on wounds Crushes the seeds put its oil on hair
<i>Oldenlandia lancifolia</i> (Schumach.) DC	<i>Rubiaceae</i>	Afi deshe	Gl	Root	H	Evil eye	Grind the root then mix it with water, filter, and drink a teacup
<i>Vernonia amygdalina</i> Del	<i>Asteraceae</i>	Gara;	F	Leaves	T	Malaria Ascariases	The buds of the fresh leaves grind and mix with water then filter and drink one tea cup for the adult
<i>Leucas martinicensis</i> (Jacq.) R. Br	<i>Lamiaceae</i>	Azi deshe	Gl	Leaves	H	Swelling	Squeeze the leaves and put its sap on the swollen area
<i>Verbena officinalis</i> L.	<i>Verbenaceae</i>	Suche	F	Leaves	H	Stomach ache	But its leaves in a cup of boiled water then drink
<i>Eleusine coracana</i> (L.)	<i>Poaceae</i>	Berega	By	Seed	H	malaria headache	Preparing in the form of porage then eating
<i>Solanum incanum</i> L.	<i>Solanaceae</i>	Kotse Garenti	Gl	Root	S	Ascariasisstomach ache	Chop the root, mix it with water, filter and drink a cup of it
<i>Discopodium penninetyium</i> Hochst	<i>Solanaceae</i>	Ara Deshe	F	Leaves	T	Liver disease	Chop the leaves and inhale during pain
<i>Biophytum umbraculum</i> Welw.	<i>Oxalidaceae</i>	Bere Keno	Gl	Leaves	H	Evil eye	Squeezed leaves juice with a cup of water then drink
<i>Terminalia brownii</i> Fresen.	<i>Combretaceae</i>	Gali	F	Bark	T	Typhoid	Grind the bark then mix it with water, filter, and drink a teacup
<i>Ocimum lamiifolium</i> Hochst.	<i>Lamiaceae</i>	Dama Kessie	F	Leaves	S	Headache Miche Common cold Eye pain	Squeeze and inhale Boil the leaves then drink with coffee/ tea/ alone Squeeze and touch the eye surrounding
<i>Phytolacca dodecandra</i> L Her.	<i>Phytolaccaceae</i>	Tulsi	F	Root	S	Gonorrhea	fresh one spoon of grid root mix with a glass of milk and drink for 5 days after food(once a day)
<i>Plumbago zeylanica</i> L.	<i>Plumbaginaceae</i>	Gunidashe	F	Root	H	Toothache	Chewing the root at the infected teeth side
<i>Pentas lanceolata</i> (Forssk.) Defl.	<i>Rubiaceae</i>	gaina deshe	F	Root	H	Diarrhea, Evil eye, Toothache, Stomach ache,	Grind the root then mix it with water, filter and drink a teacup
<i>Commelina africana</i> L.	<i>Commelinaceae</i>	Yewef Enkur	Gl	Leaves stem	H	Skin disease, chirt, quaqucha	Rubbing, cutting grinding, liquid form
<i>Piliostigma thonningii</i> (Schumach.)	<i>Fabaceae</i>	Dawurake	F	Root Bark	T	Liver cases	Grind the root bark then mix it with water, filter, and drink a teacup
<i>Kosteletzkya adoensis</i> (Hochst. ex A. Rich.)	<i>Malvaceae</i>	Civil deshe	F	Leaves	H	Diarrhea, (children)	A half cup of Squeezed leaves sap used
<i>Withania somnifera</i> (L.)	<i>Solanaceae</i>	Gizawa	Rs	Root Leaves	S	Losses of sleep at night For children headache Abdominal pain	Smoking root Squeezed leaves juice with half a glass of water
<i>Rumex nepalensis</i> Spreng.	<i>Polygonaceae</i>	Tultte	Rs	Root	H	Abdominal pain	The fresh root grind mixed with water then filter and drink
<i>Centella Asiatica</i> (L.)	<i>Apiaceae</i>	Ountinkam	Gl	Leaves Stem	H	Gastritis, Headache Evil eye Swelling	Chop the plants and mix them with water then filter half the water a glass of filtrate used for adult Drop the sap of leaves on swelled area of the body
<i>Moringa stenopetala</i> (Bak. f.)	<i>Moringaceae</i>	Kellengi	By	Leaves Stem bark	T	Blood pressure Diabetes malaria cataract	Cooking the leaves used as sup grind the bark, mix it with water then drink The squeezed bark droplets put on the infected eye;
<i>Embelia schimperi</i> Vatke	<i>Myrsinaceae</i>	Enkoko	F	seed	S	Tapeworm	The dried seed grind and mix with a glass of water then drink
<i>Catha edulis</i> (Vahl)	<i>Celastraceae</i>	Chat	By	Leaves	S	Gastritis, gonorrhea, toothache, evil eye	Eating, boiling, chewing, spitting, mixed with water
<i>Senna</i> <i>petersiana</i> (Bolle)	<i>Fabaceae</i>	Ara Deshe	F	Leaves	S	Liver disease	Chop the leaves and Inhale
<i>Dobera glabra</i> (Forssk.)	<i>Salvadoraceae</i>	Mitch medihanit	F	Leaves	S	Mitch	Leaf boiled with water and inhaled
<i>Phyllanthus ovalifolius</i> Forssk.	<i>Euphorbiaceae</i>	Ite deshe	F	Leaves	S	Swelling	Chop the leaves and squeeze on the swelled area
<i>Solanum aculeastrum</i> Dunal in DC.	<i>Solanaceae</i>	raki	Rs	Root	S	To detach the retained placenta	Root chopped, mixed with cold water and drenched orally



<i>Hypericum peplidifolium</i> A. Rich.	<i>Guttiferae</i>	Afi deshe	F	Leaves	H	Evil eye	Chop the leaves, mix with water then drink a cup of filtrate
<i>Rhamnus Prinoides</i> L'Herit.	<i>Rhamnaceae</i>	Kulmi	By	Leaves	S	Tonsillitis Hair fungus	Chewing the leaves and swallow the juices The powder of leaves mixed with butter put on affected areas of the head
<i>Solanum incanum</i> L.	<i>Solanaceae</i>	Garint	Rs	Root	S	Pizootic lymphangitis (tushita)	Root chopped and mixed with cold water and drenched by nose
<i>Geranium arabicum</i> Forssk.	<i>Geraniaceae</i>	Gaina deshe	F	Leaves	H	Stomach bloating Swelling	Chopping the leaves drink the squeezed juices Chop the leaves and squeeze on the swelled area
<i>Leonotis ocymifolia</i> (Burml. f.)	<i>Lamiaceae</i>	Azi dish	By	Flower	H	Teeth pain	Chewing flower part in pain site of the teeth
<i>Sorghum bicolor</i>	<i>Poaceae</i>	Alafe	By	Seed	H	For serious diarrhea mixed with blood,	In the form of phorage as normal Food
<i>Satureja paradoxa</i> (Vatke) Engl.	<i>Lamiaceae</i>	Zene gaime Deshe	F	Leaves	H	Stomach ache	Squeezed half tea cup juices of the leaves drink in the morning
<i>Solanum dasyphyllum</i> Schumach.	<i>Solanaceae</i>	Garenti	Gl	Root	H	Amoebiasis, Stomach ache, Evil eye	chopped root, mixed with water then filter and drink a half cup
<i>Musa acuminata</i> Colla	<i>Musaceae</i>	Musi	By	Fruit Leaves	H	For serious diarrhea mixed with blood Wound healing	Cooking fruits and eating with cabbage Cut the leaf and drop the sap on the wound
<i>Ajuga integrifolia</i> Buch-Ham.	<i>Lamiaceae</i>	Harsi deshe	By	Leaves	H	Diarrhea Diabetes Abdominal pain Sudden disease	Chop the leaves and mix them with one glass of water then filter and drink in the morning before food
<i>Phytolacca dodecandra</i>	<i>Phytolaccaceae</i>	Andod	F	Leaves	S	Gonorrhoea Ascariasis	Chopping the leaves squeeze then drink
<i>Claoxylophis andapensis</i>	<i>Euphorbiaceae</i>	Dorba	F	Leaves Bark	S	Snakebite/poison	Bark and leaf chopped, soaked in water and drenched
<i>Manihot esculenta</i> Crantz	<i>Euphorbiaceae</i>	Hakasine	By	Tubers Leaves	S	For blood pressure Detoxification of swallowed poison	Eating boiled tuber Grind the leaf and drink the juice
<i>Monopsis stellarioides</i> (Presl) Urb.	<i>Lobeliaceae</i>	Afi Deshe	F	Leaves	H	Evil eye Snakebite	The leaves root grind mixed with water then filtered and drink
<i>Oxalis radicata</i> A. Rich.	<i>Oxalidaceae</i>	Kinsa kins	Gl	Leaves Flower Leaves	H	Toothache Bleeding stop	Chewing by infected teeth side Squeeze the leaf on the bleeding place of body
<i>Desmodium spp</i>	<i>Fabaceae</i>	Yeayen medehanit	Gl	Leaves	H	Eye illness	Leaf apex chopped, soaked in water, applied to the sick eye
<i>Eragrostis tef</i> (Zucc.)	<i>Poaceae</i>	Zemi-gachi	By	Seed	H	Anemic	Eating in the form of phorage and bread
<i>Allium sativum</i> (L.)	<i>Alliaceae</i>	Tsami shinkurt	By	Bulb Leaves	H	Coldness Common cold Stomach ache	One patch grind and mix with two spoons of honey eat early the morning before food until feels normal
<i>Plumbago auriculata</i> Lam.	<i>Plumbaginaceae</i>	Guni deshe	F	Root bark	S	Toothache	Chewing the root bark in pain tooth jaw
<i>Artemisia absinthium</i> L.	<i>Asteraceae</i>	Duno	By	Leaves	H	Coldness Stomach ache Evil eye, Headache	Three buds grind and boiled with local coffee(leaves of coffee) then drink Inhale the crushed fresh leaves
<i>Cynoglossum coeruleum</i> Hochst.	<i>Boraginaceae</i>	Achenti	Gl	Root	H	Stomach ache	The fresh root grind mixed with water then filter and drink
<i>lepidium sativum</i> L.	<i>Brassicaceae</i>	feto	By	Seed	H	Coldness Common cold	drink one spoon of seeds with a cup of coffee/tea in the morning
<i>Hagenia abyssinica</i> (Bruce)	<i>Rosaceae</i>	Kosso	F	Flower	T	Tapeworm	The tree spoons of dried flower powder mixed with water than drink
<i>Zingiber officinale</i> Roscoe	<i>Zingiberaceae</i>	zengebel	By	Rhizome	H	Abdominal pain	The fresh rhizome grind then one teaspoon with a little salt put in a cup of water then drink
<i>Indigofera spicata</i> Forssk.	<i>Fabaceae</i>	Wesfat deshe	Gl	Leaves Stem Root	H	Ascariasis Diarrhea,	The fresh roots, leaves and stem grind all together then mix with water. filter and drink
<i>Phyllanthus rotundifolius</i> Willd.	<i>Euphorbiaceae</i>	Afi Deshe	F	Leaves	H	Evil eye	Chop and with water, filter then Drink
<i>Ruta chalepensis</i> L.	<i>Rutaceae</i>	Tselto	By	Leaves	H	Abdominal pain common cold	The fresh three buds can be squeezed and mixed with one teacup of water drink
<i>Acmella caulirhiza</i> Del.	<i>Asteraceae</i>	Yemdr Berberie	Gl	flower	H	Toothache, Tonsillitis	Chewing Drop the chewed topical



<i>Ocimum americanum L.</i>	Lamiaceae	G	By	Leaves	H	Loss of appetite	Grind with red paper and mix with food then eat
<i>Croton macrostachyus Del.</i>	Euphorbiaceae	Beta	F	Leaves	T	Wound Gonorrhoea Sudden disease	droplets of sap from a bud on wounded area two times per day /morning and night/ drinking a cup of juice from leaves
<i>Plectranthus glandulosus Hook. f.</i>	Lamiaceae	Karika	F	Leaves	H	Evil eye	Leaf soaked in hot water and Drink as tea
<i>Cucurbita moschata (Duchesne)</i>	Cucurbitaceae	Bota	By	seed	H	Tapeworm	Eating the seeds
<i>Nicotiana tabacum L.</i>	Solanaceae	g number	By	Leaves	H	Eye pain	The dried leaves are ground and mixed with half a cup of water filter the liquid and put
<i>Sida rhombifolia L.</i>	Malvaceae	Chuksha	Rs	Root Leaves	S	Abdominal pain Swelling	The root grid mixed with one cup of water drink The ground leaves pun on the swelled area then tight it,
<i>Sida schimperiana Hochst.</i>	Malvaceae	G	Rs	Leaves	S	Abdominal pain	The leaf grid mix with one cup water drink
<i>Carissa spinarum L.</i>	Apocynaceae	Almi	F	Leaves Root Root	T	Tonsillitis Snake protection Stomach Ache Evil eye	The fresh leaves ground mixed with water then filter and drink a half of teacup Smoke Inhale the chopped fresh roots
<i>Orthosiphon aristatus (Blume)</i>	Lamiaceae	Zititu	F	leaves	H	Abdomen ache	Leaf chopped, soaked in water and a glass full of filtrated drunken
<i>Datura metel L.</i>	Solanaceae	Guni deshe	Rs	Leaves Root	H	Snakebite	Both the leaves and roots were chopped together and half of the chopped part can be taken by mouth and the other half put on the bitten area.
<i>Conyza gouanii (L.) Willd</i>	Asteraceae	Azi deshe	F	Leaves	H	Swelling	Topical The leaves grind put on the swelled area,
<i>Calpurnia aurea (Ait.) Benth.</i>	Fabaceae	Keynaka	F	Root	S	Diarrhea	The root grind mixed with water then drink
<i>Zornia apiculata Milne-Redh.</i>	Fabaceae	Medhanit	Gl	Root	H	Abdomen aches and vomiting in children	Fresh root chopped and mixed with cold water and drenched
<i>Citrus aurantiifolia (Christm.)</i>	Rutaceae	Iomi	By	Fruit	T	To treat food poison	Drink the juices by mixing Sugar.
<i>Zornia glochidiata Reichb. ex DC</i>	Fabaceae	Halimi	Gl	Leaves	H	Malaria	The leaf grid mixed with one cup water then drink
<i>Capsicum annum L.</i>	Solanaceae	qekria	By	Fruit	S	Malaria	Cut its fruit and mix it with tomato than eat three times per day
<i>Zornia pratensis Milne-Redh</i>	Fabaceae	Seringo demo	Gl	Leaves	H	Gastritis	The fresh leaves are chopped and mix with water then drink a tea cup per day
<i>Agrocharis melanantha</i>	Apiaceae	Afi Deshe	F	Leaves	H	Evil eye	The leaves ground mixed with water then filter and drink
<i>Garcinia livingstonei T. Anders.</i>	Guttiferae	Chedi	F	Fruit	T	Oral trash	put the ripened crushed fruit on the site of oral trash
<i>Cuscuta Campestris Yuncker</i>	Cuscutaceae	Kwakuch deshe	F	Leaves Stem	H	Skin disease	Dropping the squeezed juice on affected skin
<i>Milletia ferruginea (Hochst.)</i>	Fabaceae	Birbira	F	Seed	T	wound	Crush the seeds and put the powder on wound
<i>Clerodendrum myricoides (Hochst.)</i>	Lamiaceae	Dumfeken	F	Leaves Root	S	Vomiting Evil eye	Squeezed leaves juice with half a glass of water then drink Inhale sequined root

NB: (Habitats) F: Forest; By: Backyard; Gl: Grassland; Rs: Roadside; F: Forest; (Habits) T: Tree; H: Herb; S: Shrub

Table 2: Traditional medicinal plants' habitat.

no	Plant habitat	Frequency	percentage	rank
1	Grassland (G1)	15	19.5%	3
2	Forest (F)	35	45.5%	1
3	Backyard (By)	20	26%	2
4	Roadside (Rs)	7	9%	4

[19] that indicate herbs were the most frequently used plant categories.

Medicinal plants used parts: According to the result displayed in Figure 2, leaves are the dominant medicinal plant part used and it scored 49 (55.%) of the medicinal plants followed by roots (11.2%) in the study site. The findings of this study agreed with the findings of several studies [20-24] in those leaves that scored the highest percentage used medicinal plant parts.

Preference ranking of medicinal plants

Preference ranking of medicinal plants for effective treatments of stomach pain is shown in Table 3, eight medicinal plants were mentioned for active treatments of stomach pain by ten key informants. According to the conducted report stomach pain was a popular disease that was cured by traditional medicinal plants. As a result of a comparison report of key informants *Solanum incanum* ranked first indicating that it was the most effective in curing stomach pain followed by *Verbena officinalis*.

The informant consensus factor

The Informant consensus factor results as shown in Table 4, ranges from 0.39 - 0.57 per disease category. The ICF provides a range of zero to one where a high-value performance is good for a high rate of informant consensus. Malaria, Evil eye, snakebite, and sudden disses categories have the highest informant consensus factor values (0.57). This result indicates

Table 3: Preference ranking of traditional medicinal plants for treating stomach pain.

Respondents (R ₁ -R ₁₀)												
Medicinal plants	R ₁	R ₂	R ₃	R ₄	R ₅	R ₆	R ₇	R ₈	R ₉	R ₁₀	Total	Rank
<i>Verbena officinalis</i>	4	5	3	5	3	2	5	4	4	3	38	2 nd
<i>Solanum incanum</i>	5	4	4	3	5	4	4	5	4	4	42	1 st
<i>Pentas lanceolats</i>	2	1	3	3	1	2	5	3	2	1	23	7 th
<i>Satureja paradoxa</i>	1	2	3	2	1	2	3	1	2	2	19	8 th
<i>Solanum dasyphyllum</i>	2	3	4	1	4	3	3	2	4	2	28	5 th
<i>Allium sativum</i>	3	4	5	3	3	5	2	3	5	4	37	3 rd
<i>Artemisia absinthium</i>	2	3	2	4	4	3	4	4	3	5	34	4 th
<i>Carissa spinarum</i>	3	3	1	3	2	4	2	4	1	3	26	6 th

Table 4: Informant consensus factor values.

Group of disease	Number of species	use citation	ICF
Tape worm, Ascariasis, .Diarrhea, Abdominal pain, Amoebiasis, Typhoid	24	39	0.39
Gonorrhea, Tonsillitis, Swelling, skin disease, wounds,	17	37	0.56
Blood pressure Diabetes Liver disease, Anemia	7	14	0.54
Eye pain, headache, tooth pain, stomachache, miche	26	54	0.53
Malaria, Evil eye, snake bit, sudden disses	19	43	0.57

that those medicinal plant species used to treat these disease categories help with specific health problems and need to be very careful extra pharm logical studies.

Conclusion and recommendation

According to the findings of this study most of the traditional medicinal plants were collected from the forest/wild/source. Therefore, forests are the best source of traditional medicinal plants so the forest (Mago National Park buffer zone) found near the study area reaches these traditional medicinal plants and the Baka Dawla Ari district especially the Kure and Bitsmal sites is very rich in traditional medicinal plants and also the community has long-lasting experience on using traditional medicinal plants for their healthcare so, the author highly recommends that working additional investigation can be very important to the local community as well as for our countries in the field of community health center.

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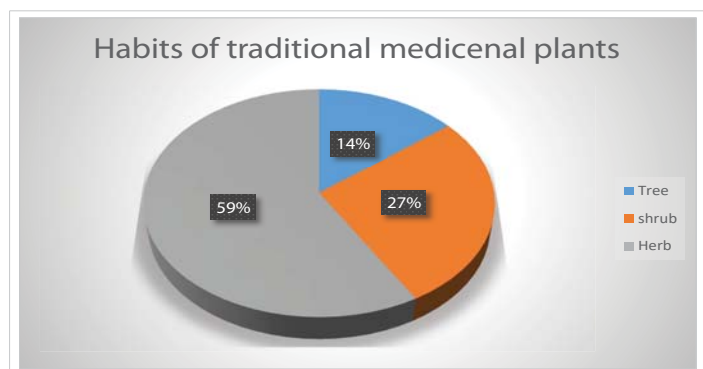


Figure 1: Habits of Traditional Medicinal Plants.

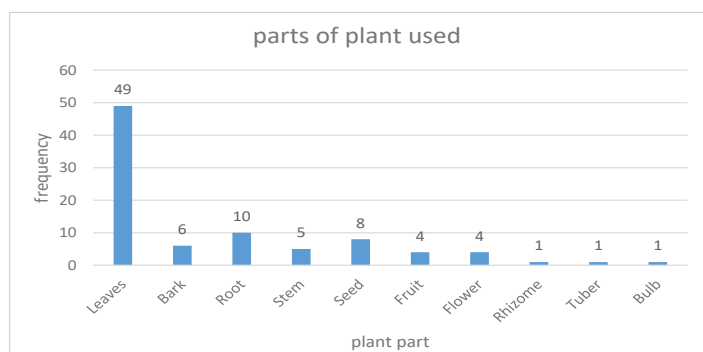


Figure 2: Traditional medicinal plants are used.



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