Advanced Journal of Interdisciplinary Studies
Volume 10, Issue 1, 2026 | Pages 2945–2962
Journal homepage: www.ajids.dmu.edu.et

Research Article

Assessment of Knowledge, Attitudes and Practices Regarding Traditional Medicines in Dale and Shebedino Districts, Sidama Regional State, Ethiopia

Lemlem Alemu[1], Firew Kebede[1], Zufan Bedewi[1], Beyene Dobo[1]

[1]College of natural and computational sciences, Department of Biology, Hawassa University, P.O. Box: 05, Hawassa, Ethiopia;

ARTICLE INFO

Received: 27 March 2026
Revised: 10 June 2026
Accepted: 25 August 2026
Available online: 15 September 2026

KEYWORDS

Traditional medicine,
Medicinal plants,
Ethnobotany,
Knowledge,
Attitude,
Practice,
Sidama, Ethiopia.

ABSTRACT

Traditional medicine remains an important component of primary healthcare in Ethiopia, where medicinal plants are widely used to treat human and livestock diseases. This study assessed the diversity of medicinal plants and the knowledge, attitudes, and practices (KAP) related to traditional medicine among communities in selected kebeles of Dale and Shebedino districts, Sidama Regional State, Ethiopia. A community-based descriptive cross-sectional study was conducted from January 20 to February 10, 2025, involving 398 participants selected through systematic random sampling. Data were collected using structured questionnaires and ethnobotanical surveys and analyzed using SPSS version 21. A total of 34 medicinal plant species belonging to 23 families were documented, with Lamiaceae and Asteraceae being the dominant families. Trees were the predominant growth form, while leaves and roots were the most frequently used plant parts. The documented plants were used to treat various human and livestock ailments, including malaria, diarrhea, gastrointestinal disorders, wounds, respiratory infections, skin diseases, and parasitic infections. Almost all respondents (99.5%) had heard of traditional medicine, 81.2% demonstrated good knowledge, and 53.5% had a positive attitude. Complementary and alternative medicine had been used by 95.7% of participants within the previous two years. Most respondents supported the use of traditional medicine (96.0%), believed it could treat diseases not managed by modern medicine (94.7%), and intended to continue using it (98.2%). Traditional medicine was preferred over modern medicine by 77.6%, and 80.2% had consulted traditional medicine practitioners. These findings highlight the rich indigenous medicinal knowledge and widespread acceptance of traditional medicine. Preserving indigenous knowledge, validating medicinal plants scientifically, and strengthening collaboration between traditional and modern healthcare systems are recommended.

1. Introduction

Global health systems continue to rely heavily on traditional medicine (TM), particularly in developing countries where access to modern healthcare remains limited. According to the World Health Organization (WHO), approximately 40–90% of the world's population relies on traditional medicine to meet their primary healthcare needs because of its accessibility, affordability, and cultural acceptance. Traditional medicine has also played a significant role in modern drug discovery, with nearly one-third to one-half of pharmaceutical drugs originally derived from medicinal plants. Well-known examples include digitalis, morphine, quinine, and other plant-derived alkaloids (Tuasha et al., 2018; Wassie et al., 2015; Belachew et al., 2017). Indigenous knowledge has been

Corresponding author: *lemlema@hu.edu.et / lemlem1234alem@gmail.com* *(Alemu L.)*

DOI: http://doi.org/10.20372/ajids.2026.2945

invaluable in identifying medicinal plants, and many pharmaceutical compounds continue reflect their traditional therapeutic uses (Endashew, 2017).

In Africa, traditional medicine remains an integral component of healthcare systems. It is estimated that nearly 80% of the African population depends on traditional medicine for primary healthcare because it is readily available, affordable, and deeply embedded in cultural traditions (Kendi, 2024). Traditional healers provide treatment for both physical and spiritual illnesses while preserving indigenous knowledge. However, the integration of traditional medicine into formal healthcare systems is constrained by inadequate regulation, limited scientific validation, and concerns regarding safety and quality. To address these challenges, organizations such as the World Health Organization (WHO) and the African Medicines Agency are promoting evidence-based research and harmonized regulatory frameworks (Terefe, 2026).

Ethiopia is among the countries where traditional herbal medicine (THM) continues to play a crucial role in healthcare delivery. Its widespread use is attributed to affordability, accessibility, rich biodiversity, and strong cultural beliefs, particularly in rural communities where modern healthcare services are limited. Even in urban areas, many people continue to use herbal medicines because of their lower cost and trust in indigenous knowledge passed down through generations (Abebe, 2014). Consistent with WHO estimates indicating that approximately 80% of people in developing countries depend on traditional medicine for primary healthcare (WHO, 2013), Ethiopia continues to rely substantially on traditional herbal medicine. Understanding the population's knowledge, attitudes, and practices (KAP) regarding traditional herbal medicine is therefore essential for promoting its safe use, supporting evidence-based integration into the national healthcare system, and preserving valuable indigenous knowledge.

Among Ethiopia's many ethnic groups, the Sidama people of southern Ethiopia possess a rich tradition of herbal medicine that has been transmitted orally and through apprenticeship for generations. Despite the expansion of modern healthcare services, traditional herbal medicine remains an important component of Sidama culture and healthcare practices. Investigating the knowledge, attitudes, and practices of the Sidama community toward traditional herbal medicine is therefore important for documenting indigenous knowledge and informing policies aimed at ensuring the safe and effective use of these remedies

However, as a result of modernization, urbanization, and the loss of indigenous knowledge, questions are emerging about how to preserve and exploit this cultural asset appropriately. To ensure the safe, effective, and long-term use of traditional herbal treatment, an assessment of the Sidama people's current KAP is necessary. Examining the KAP on traditional herbal medicine in the Sidama community, identifying the factors that influence its use, and investigating any knowledge and practice gaps that could harm cultural heritage or health are the goals of this study. Despite the increased availability and accessibility of modern healthcare services in Ethiopia, the population continues to rely heavily on traditional medicine (TM) for healthcare needs (Wassie *et al.*, 2015; Endashew, 2017), TM utilization in the Sidama Regional state remains insufficient and not well studied. Specifically, community-level insights from the Dale and Shebedino districts have not been thoroughly investigated. Therefore, this study aims to evaluate the current knowledge, attitudes, and practices of traditional herbal medicine among residents in the two districts, establishing baseline data to support safe integration and the preservation of indigenous knowledge.

2. Methods and Materials

2.1. Description of the Study area

This study was conducted from January 20, 2025, to February 10, 2025, in selected kebeles of Dale and Shebedino districts in the Sidama Regional State, Ethiopia. The selected kebeles in Dale district were Soyama, Chume, Gane, Moto, Wayicho, and Shoye, while those in Shebedino District were Fura, Sadeka, Dilla-Gumbe, Teramersa, Howoleso, and Diramo-Aferara. The study area is located approximately 275 km south of Addis Ababa, the capital city of Ethiopia.

]Sidama Regional State is characterized by diverse agroecological zones, including lowland, with considerable altitudinal variation ranging from lowland areas to highland regions such as the Garamba mountain range, which rises above 3,250 m above sea level. The total population of the selected kebeles in Dale and Shebedino districts was 92,415.

In Dale District, the average annual temperature ranges from 12.6°C to 20°C depending on elevation, while the average annual rainfall ranges between 1,200 and 1,600 mm. The district is geographically located at approximately 6°45′N latitude and 38°20′E longitude.

In Shebedino District, the average annual temperature ranges from 13.4°C in the highlands to 23.75°C in the midland and lowland areas. The average annual rainfall ranges from 1,013 mm to over 1,331 mm. The district is located at approximately 6°50′N latitude and 38°30′E longitude. Geographic location of the study area, highlighting the twelve selected kebeles with in the Dale and Shebedino districts of the Sidama Regional State, Ethiopia (Figure 1).

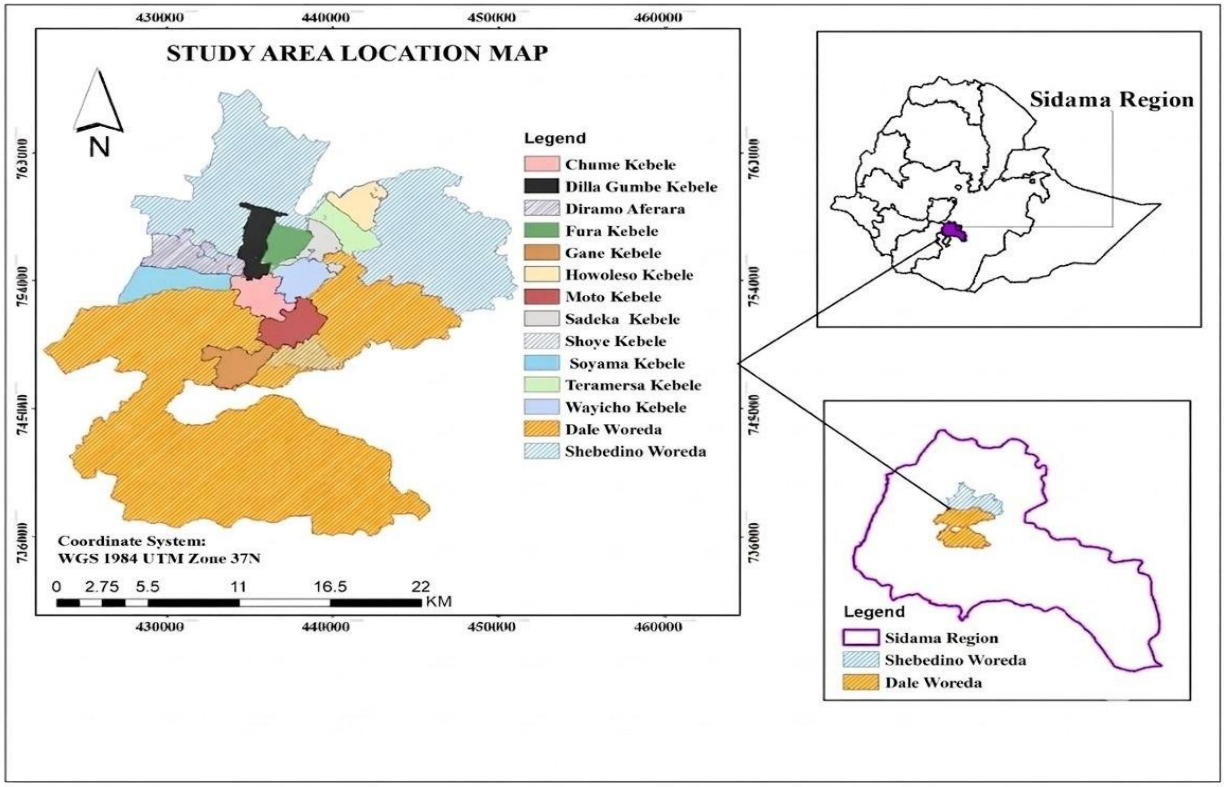

Figure 1. Map of the study area **(**Source: Extracted from Ethio-geospatial Shape File and Regional Plan Development Bureaus**)**

2.2. Study design

A community descriptive cross-sectional study was conducted in the Dale and Shebedino districts to assess households' knowledge, attitudes, and practices about the use of traditional medicine for the treatment of illnesses.

2.3. Population

A. Source population

The source population were all households of the residence of the selected district selected kebeles of Dale and Shebedino districts) of Sidama regional state.

B. The study population

The study population was all male and females who are the residents of the selected kebeles of Dale and Shebedino districts, and who lived for at least six months and who are above the 18th years of age and more.

2.3. Sample Size Determination and Sampling Technique

A. Sample size determination

The sample size for this study was determined using Yamane's (1967) formula for a finite population, assuming a 95% confidence level and a precision level (margin of error) of 5% (e = 0.05).

The formula is expressed as: $\boldsymbol{n = \frac{N}{1+N\,(e2)}}$

Where:

n = required sample size

N = total target population size (92,415)

e = allowable margin of error (0.05)

Applying the total population of the 12 selected kebeles (N = 92,415):

$$\boldsymbol{n = \frac{9{,}245}{1+92{,}415(0.05)2}} \approx 378$$

By adding a 5% non-response rate (~19 participants) to account for potential missing data or refusals, the final calculated sample size was determined to be 398 participants.

B. Proportional Allocation

To ensure representative sampling across the highly variable populations of the two woredas (Dale: N = 48,427; Shebedino: N = 43,988), the total sample size of 398 was proportionally allocated to each kebele using the following formula:

$$\text{ni}=\frac{\text{nNi}}{\text{N}}$$

Where ***ni*** is the sample size allocated to a specific kebele, ***Ni*** is the total population of that kebele, ***N*** is the total population across all sites (92,415), and ***n*** is the total sample size (398). The proportional distribution of the sample across the twelve kebeles is detailed in Table 1.

Table 1. Proportional Allocation of Sample Size Across Selected Kebeles.

District	Selected Kebele	Population (*Ni*)	Allocated Sample Size (*ni*)
Dale	Chume	8,717	37
	Gane	8240	35
	Moto	8374	36
	Soyama	6337	27
	Shoye	8443	36
	Wayicho	8316	37
Shebedino	Diramo-Aferara	6879	30
	Fura	7790	34
	Howoleso	6487	28
	Sadeka	7429	32
	Dilla-Gumbe	7861	34
	Teramersa	7542	32
Total	12 Kebeles	92,415	398

C. Sampling Technique

A multi-stage sampling technique was employed to select the study participants. First, the two districts (Dale and Shebedino) and the subsequent twelve kebeles were purposively selected based on their regional representation and traditional herbal medicine utilization. Second, systematic random sampling was used to select the households. The sampling interval (K) was calculated by dividing the total population by the sample size (K = N/n = 92,415 / 398 ≈232). Therefore, every 232nd household was selected for an interview.

Finally, within each selected household, a face-to-face interview was conducted with one randomly selected adult family member (aged > 18 years) who was available at the time of the visit to assess their traditional herbal medicine knowledge, attitudes, and practices.

2.4. Data Collection Procedure

Data was collected by using structured interviewer administered questionnaire adopted from standardized questionnaires used by international organizations, national studies such as Demographic and Health survey and

published articles in peer-reviewed journals. Data was collected by trained data collectors using face-to face interview.

2.4.1. Data Quality Control

Organizers made sure data collectors understood the purpose of the study before they began collecting data in order to maintain excellent data quality. They walked them through the process in detail. The questionnaire, originally in English, was translated into Sidamu afoo during the data collection phase**.**

2.4.2. Inclusion and Exclusion Criteria

A. Inclusion Criteria

All households of the selected kebeles of Dale and Shebedino districts of Sidama regional state.

B. Exclusion criteria

The exclusion criteria includes respondents age $\leq$ 18, People who haven't lived in the community for at least six months, and anyone who didn't want to take part during data collection.

2.4.3. Study Variables

A. Dependent variable**s**

Knowledge, attitude, and practice/utilization.

B. Independent variables

Age, sex, education, occupation, marital status, and religion.

2.4.4. Voucher Specimen Collection and Identification

Voucher specimens were collected from representative plant individuals during the field survey using standard herbarium collection methods. Each specimen was given a unique collection number, and relevant field information, including the date and place of collection, habitat description, and collector's name, was carefully recorded. The specimens were then pressed, dried, and properly prepared following standard herbarium preservation procedures. The collected voucher specimens were identified and authenticated at the Addis Ababa University National Herbarium by comparing them with verified herbarium materials and consulting relevant taxonomic references. After identification, all specimens were deposited at the Addis Ababa University National Herbarium for long-term storage and future reference.

2.4.5. Ethical Clearance

Hawassa University's Ethical Committee has granted ethical permission for this project, bearing the Ethical Approval Number **CNCS-REC 036/2024**. The interview took place between January 20, 2025, and February 10, 2025. All study participants gave their informed consent in accordance with ethical standards. Participants who were illiterate underwent a spoken informed consent procedure in front of a witness, and their thumbprints were taken as a proof of their agreement. The Health Research Ethics Committee of Hawassa University College of natural and computational science has accepted the process for getting informed consent.

2.4.6. Data Management and Analysis

The principal investigator checked the data for completeness and consistency, then entered everything into SPSS version 21.0. After cleaning and analyzing, the results showed simple frequencies and percentages in tables just to lay out the basics. Regarding dangerous traditional medicines (TMs), their adverse effects, and the importance of TM education, each participant provided a yes-or-no response. We awarded one point for each right response. We added up their scores, then calculated the mean score. If someone scored at or above the mean, we counted them as having good knowledge. If their score was below the mean, they had poor knowledge. We also looked at attitudes using yes-or-no questions about training history, whether they'd recommend these methods to others, their views on effectiveness, willingness to learn TCM, and preferred training options.

2.4.7. Data Quality Assurance

Before collecting actual data, we tried out the questionnaire on households in a neighboring region outside our study area. Each day, we went back and checked everything for completeness.

3. RESULT

3.1. Socio Demographic Characteristics of Respondents Study Area

A total of 398 respondents were interviewed. Among these (39.2%) were female and (60.8%) were males. The age of respondents 19-28(92), 29-38(131), 39-48(110), 49-58 (50) and >59(15). Most of respondents were male and married. Most of the respondents were farmer (25.4%), Business person (24%) government (17.8%). One hundred fifty-nine of respondent were educational level of elementary (26.1%) higher education, (25.1%) secondary and (8.8%) non-educated. Regarding the religion, (50.8%) of the study participants were follower of protestant Christianity followed by Orthodox Christianity (25.9%), Muslim (21.6%) **(**Table 2).

Table 2. Socio-demographic distribution of respondents.

No	Variable	Attributes	Number	Percent (%)
1	Gender	Male	242	60.8
		Female	156	39.2
		Total	398	100.0
2	Age groups	19 up to28 yrs	92	23.1
		29 up to38 yrs	131	32.9
		39 up to 48 yrs	110	27.6
		49 up to 58 yrs	50	12.6
		>59 years	15	3.8
		Total	398	100.0
3	Marital status	Single	91	22.9
		Married	290	72.9
		Divorced	12	3.0
		Widowed/er	5	1.3
		Total	398	100.0
4	Occupation	Housewife	70	17.6
		Farmer	101	25.4
		Gov't	71	17.8
		Busines person	98	24.6
		Student	58	14.6
		Total	398	100.0
5	Educational level	Non-educated	35	8.8
		Primary school	159	39.9
		Secondary School	100	25.1
		Higher education	104	26.1
		Total	398	100.0
6	Religion	Orthodox	103	25.9
		Protestant	202	50.8
		Muslim	86	21.6
		Others	7	1.8
		Total	398	100.0

3.2. Medicinal Plants and their Growth forms, Parts used and Diseases Treated by the Application of Medicinal Plants.

Based on the overall survey conducted in Dale and Shebedino districts of the Sidama Regional State, various medicinal plant species were documented along with their plant parts used, habitats, and the types of diseases treated, as presented in **Table 3**. A total of 34 medicinal plant species belonging to 23 families were identified and used by the local communities for the treatment of different human ailments.

3.2.1. Diversity of Medicinal Plants in the Study Area

The study area has a varied collection of medicinal plants, with 34 species listed. These species are spread over 23 plant groups, providing a diverse botanical resource for traditional medicine

The most common family is Lamiaceae, which includes four species (*Ocimum gratissimum*, Ajuga interifolia, Pychnostachus abyssinicus, *Salvia nilotica*, and *Premna schimperi*). Asteraceae, with three species (*Vernonia amygdalina, Vernonia auriculifera*, and *Vernonia filigera*), comes in close second. Other well-represented families are Solanaceae, Euphorbiaceae, and Rutaceae, each with two species.

Medicinal plants grow in various forms.The most prevalent habit is trees (T), with 11 species (e.g., *Moringa stenopetala, Croton zambesicus).*There are 8 species of shrubs (S), followed by 5 species of herbs (H) and 3 species of climbers (Cl).

3.2.2. Plant Parts and Condition of Preparation of Medicinal Plants in the Study Area

Medicinal plants in the research area are prepared utilizing various plant parts and processing circumstances, indicating the availability of specific raw plant materials and the presence of varied preparation traditions. The table 3 displays the utilization of plant parts such as leaves, seeds, bark, and occasionally complete plants/unknown or mixed parts (as indicated by the table entries' structure).

In terms of preparation conditions, the table shows that remedies can be created with: **Boiling**: (e.g., remedies involving boiling and drinking), **Chewing** (e.g., common cold, stomach ache, headache), **Rubbing / heating / squeezing**: used particularly for skin, wound, or painful conditions, and sometimes for topical or internal relief , and Drying and powdering and Infusion / soaking / grinding.

3.2.3. Modes of Remedy Preparation and Route of Administration in the Study Area

The healthcare medicines in the study area are provided by a variety of means, and the preparation procedures are appropriate for each mode of administration. According to the table 3, the main modes and routes are: Oral intake (drinking or eating), Mouth-based remedy (chewing/spitting),Topical application (rubbing, heating, pitting, and direct application) and Inhalation/External exposure (smelling and fumigation).

3.2.4. Major Human and Livestock Ailments in the Study Area

The reported medicinal plants are used to treat a variety of human and cattle illnesses, with several species serving multiple functions.

A. Common human ailments

Commonly treated conditions include stomach ache (e.g., Datura stramonium, Balanites aegyptiaca, Rumex abyssinicus), diarrhea (e.g., *Stereospermum kunthianum, Carissa spinarum, Portulaca oleracea)*, and dysentery. Malaria treatment is a key focus, including *Datura stramonium, Vernonia filigera*, and *Echinops kebericho*. Infectious conditions may include common colds (e.g., *Ensete ventricosum*, *Eucalyptus globulus*, *Ruta chalepensis*), toothaches (e.g., *Plumbago zeylanica*, *Erythrina bruce*i), and coughs. Plants can treat parasites such as Ascaris (*Ruta chalepensis, Melia azedarach, Stephania abyssinica)* and *tapeworm (Cucurbita pepo*). Topically treated skin and soft tissue issues include wounds (e.g. *Vernonia auriculifera*, *Solanum nigrum*, *Euphorbia tirucalli*), fungal infections, and general skin disease.

B. **Livestock ailments**

The Table 3 clearly shows that some plants are suitable for treating both humans (H) and cattle (L). The following conditions are especially mentioned for livestock: Internal parasites (such as *Erythrina brucei*). Ectoparasites (such as *Erythrina brucei*).

Table 3. List of most used medicinal plants by the communities in Dale and Shebedino districts of selected kebeles in 2025.

No	Scientific name	Family Name	Vernacular name	Voutu re No	A habit	Plant part used	Methods of preparation	Used to treat	Ailments
1	*Ensete ventricosum* (Welw.) Cheesman	Musaceae	Enset (Amh), Wesse (Sd	BNO 75	S	L,R, Bu	Boiling, chewing	H, L	Common cold, weight gain, kufign, and placenta delay
2	*Plumbago zeylanica* L	Plumbaginaceae.	Amira(Am)		S	R,L	Boiling, chewing	H, L	Injuries, fractured bones, toothache, gonorrhea
3	Solanaceae	*Datura stramonium* L.	Banje (Sd)	ET020	He	Fr,L, St	Boiling, rubbing, grinding, and liquid form	H, L	Malaria, toothache, stomach discomfort, and "dingetegna"
4	*Stereospermum kunthianum* Cham	Bignoniaceae	Arziniya		T	B	Dried powder mix with H_2O	H, L	Coughs, head ach, wounds, diarrhea, convulsions, fever, liver problems,
5	*Vernonia amygdalina* D	Asteraceae	Madisisa Girawa (Am)		T	L,R	Leaves are squeezed to obtain juice.	H	Hypertension, Liver disorder, Anticancer, stomachache
6	*Euphorbia tirucalli* L	Euphorbiaceae	Kinchib (Am) Ananoto (Sd)		T	L,B	its fluid,	H	Wound heal, Bigur yashilal, therapy for cancer or tumors
7	*Vernonia auriculifera* Hiern	Asteraceae	Rejicho (km)	ET013	T	L	Direct application of crushed fresh leaves to cuts or skin diseases	H	Wound

8	*Solanum nigrum* L	Solanaceae	Embay(Am) Borbodicho (Sd)		T	L,S,R	Direct application of crushed fresh leaves to cuts or skin diseases	H	Wounds and tumor/cancerous sores. and sore throats, kurtimat
9	*Croton zambesicus* Müll.Arg	Euphorbiaceae	Bisana		T	L,B	Squeezing it water	H	wound heal, addressing mental disorders
10	*Moringa stenopetala* (Bakerf.) Cufodontis	Moringaceae	Shifara(Am)		T	LR	Dirk as tea, its leaf	H	Leazurit, as cabbage, edibles shorba and Hypertension, Used for asthma relief
11	*Eucalyptus globulus* Labill	Myrtaceae	Bahrzaf(Am)	ETO23	T	L,S, Fl	Rubbing, smelling, Squeezing	H	common cold, stomach ache, Headache Mich.
12	*Ruta chapensis* L.	Rutaceae	Tena Adame		T	L	Chewing seed, its leaves adding by tea and coffee	H	common cold, stomach ache, Ascaris
13	*Ocimum gratissimum* L.	Lamiceae	Damakase(Am) Anganbisha(sd)	ETO15	S	L,R	Grinding, smelling & Eating	H	Mich, headache, malaria and fungus that are found our leg finger, Fibril illness
14	*Phytolacca dodecandra* L'Hér	Phytolaccaceae	Endode(Am)		S	R, L	Smelling & Eating	H	Abortion, used for curing wound
15	*Ajuga interifolia* Buch-Han	Lamiceae	Anamuro(sd)	BN031	Cl	L	Grinding, Drinking	H	Stomach ache, to treat ascariasis (worms).
16	*Pychnostachus abyssinicus* fresen	Lamiceaen	Tonitona		T	L	Eating and Smelling	H, L	Head ach, fungus, and an ant repellent
17	*Carissa spinarum* L.	Apocynaceae.	Gora(Sd), Agam(Am	BN046	Cl	R	Boiling	H	Diarrhea, Headache, agent for wound healing
18	*Balanites aegyptiaca*(L.) Delile	Balanitaceae	Godicho (Sd)	ET043	T	F,R	Chewing, liquid form and grinding	H, L	Stomachache, diarrhea

19	*Ehretia cymose* Thonn.	Boraginaceae	Gidincho (Sd)	ET021	S	L, B	Grinding, heating, squeezing, spitting, and chewing	H, L	Cancer, toothache, wound, fever, and pain,
20	*Boscia angustifolia* A. Rich	Capparidiaceae	Shisha (Sd)	BN101	S	L ,B	Heating	H, L	Swelling, butter sweetener, headaches, stiffness, kidney pain;
21	*Gymnosporia senegalensis* (Lam.) Loes.	Celastraceae	Chucho (Sd) Firkuta(Am)	ET032	S	L	Chewing, spitting	L	Malaria, TB, and diarrhea, Swelling
22	*Vernonia filigera* Oliv. & Hie rn	Asteraceae	Rejicho (Sd)	ET012	S	L	Grinding	H, L	Leg pain and dermal issues, sleeping sickness
23	*Clausena anisata* (Willd.) Benth	Rutaceae	Limich(Am)		S	L, St, B, R	Boiling water		Stomach ache, headache, fever, ant malaria,
24	*Salvia nilotica* Juss. ex Jacq.	Lamiaceae	Kotjebesa (Sd)	BN070	L	H, R, B	Chewing, spitting and grinding,	H, L	Mitch, skin disease, toothache, stomach ache, Head ache
25	*Ziziphus spina- christi* (L.) Desf	Rhamnaceae	Giba(Am)		T	L Se	Drinking with water	H	Essential food supply in times of famine.
26	*Premna schimperi* Engl	Lamiaceae	Udo (Sd)	BN063	S	L, R, St	chewing, rubbing, Boiling, Grinding,	H, L	Fever, common cold Toothache, coughing, stomachache
27	*Rumex abyssinicus* Jacq.	Polygonaceae	Shoshone (Sd), Meq meqo (Amh)	BN073	He	R, St	Consuming , crushing and combining with boiling water	H	Stomachache, kintarot
28	Meliaceae *Melia azedarach* L	Meliaceae	Mimi (Sd)		T	L, St	Grinding, rubbing, liquid form, boiling	H , L	Dingategna, Ascaris
29	*Cucurbita pepo* L	Cucurbitaceae	Duba(Am)		CL		Dried powder mix with H_2O	H, L	Tapeworm, ache of different type
30	*Stephania abyssinica* (Dillon & A. Rich.) Walp	Menispermaceae	Yedimat Duba (Am)		T	R	Boiling its leaves and seed	H L	Ascaris, abortion ache of different type

31	*Portulaca oleracea* L	Portulacaceae	Yemidir kintish(Am)		He	L,Se, St	Leaves are crushed after being boiled in water, soaking, or gently boiled.	H, L	stomach discomfort, dysentery, and diarrhea, reduced amounts of blood sugar
32	*Erythrina brucei* Schweinf	Fabaceae	Korch		T	L,B,R	Soaking, crushing, and decoction	H,L	Fever from Malaria An upset stomach Diarrhea Toothache (bark chewing), Internal parasites Ectoparasites and wounds
33	*Echinops kebericho* Mesfin	Asteraceae	Kebericho(Am)		He	L,R	Decoction, fumigation, powder	H	Fever, Malaria, Headache Stomach ache, Evil eye / spiritual ailments (fumigation)
34	*Foeniculum vulgare* L	Apiaceae	Ensilal(Am)		He	L,St,Se,R	decoction or infusion	H,L	Stomach ache, Diarrhea, Menstrual pain, Eye infections

Key: Vernacular name: Amh = Amharic, Sd = Sidamigna; Used to treat: H = human, L = livestock, HL = human and livestock; S = Shrub, T = tree, Cl = climber, He = herb; un = unknown; plant parts used: L=Leaves, F= Flower, St=Stem, Se=Seed, B=Bark, R = root,

3.3. Knowledge of Respondents on Traditional Medicine (*KRTM)* in the Study Area

Three hundred ninety-six (99.5%) of the respondents said they had heard about TM. Of the respondent heard about TM, 82.7%, 16.3 and 1%, knew, bone settler, about herbal medicine and traditional birth attendance respectively. After seeing TM practitioners, (65.8) of the respondents dealt with the patient who went to a contemporary healthcare facility. Of those, (56.8%) are due to no improvement, while (12.1%) and (31.2%) are due to pharmacological side effects and peer pressure, respectively. Roots were cited by 172 respondents (43.2%) as the primary ingredient utilized in herbal products, followed by stem (35.2%), leaves (20.9%), and seed (3.8%). Three hundred (75.4%) respondent used for fever, followed by diabetes (12.6%), infection (9.5%) and malaria (2.5 %). Three hundred ninety-five (99.2%) of the respondents answered that the health education about risk and benefits of TM were important. Most of respondent have Good knowledge (81.2%) and (18.8%) of respondent have poor knowledge (Table 4).

Table 4. KRTM in the Study Area.

No	Variable	Attributes	Number	Percent
1	Have you ever heard of Traditional Medicine?	Yes	396	99.5
		No	2	.5
		Total	398	100.0
2	Which traditional medicine do you know?	The herbal medicine	65	16.3
		The bone setter	329	82.7
		Traditional birth attendance	4	1.0
		All	0	0
		The others	0	0
		Total	398	100.0
3	Is there anyone you know who visited TM practitioners and then went to a modern healthcare facility?	Yes	262	65.8
		No	136	34.2
		Total	398	100.0
4	Why did he or she do it?	No improvement	226	56.8
		Peer of influence	48	12.1
		Due to side effects	124	31.2
		The others	0	0
		Total	398	100.0
5	Which components made up the majority of herbal products?	The Leaves	83	20.9
		The Roots	172	43.2
		The stem	140	35.2
		The seed	3	.8
		The flowers	0	0
		The others	0	0
		Total	398	100.0
6	Why do you use herbal medicine benefits of TM is important	To Fever	300	75.4
		To Malaria	10	2.5
		To Hypertension	0	0
		To Diabetes	50	12.6
		To Infection	38	9.5
		To Constipation	0	0
		To Others	0	0
		Total	398	100.0
7	Health education regarding the advantages and risks of TM is crucial.	Yes	395	99.2
		No	3	.8
		Total	398	100.0
8	Participants' overall knowledge	Good	323	81.2
		Poor	75	18.8
		Total	398	100.0

3.4. Attitude of respondents on Traditional Medicine (ARTM) in the Study Area

Among respondents (96.0%) have recommended the use of TM in the community and (4.0%) were not recommended the use of TM in the community. One hundred ninety-nine (50%) of respondent were believe that

breaking secrecy of TM may lead to loss of its effectiveness and 199 (50%) were not believed. Three hundred seventy-seven (94.7%) of respondent were believed that TM can cure some disease that cannot be treated by MM and (5.3%) did not. One hundred sixty-five (41.5%) of respondent think that if TM are formulated in a modern dosage form it were good enough to treat disease with an appropriate dose and root and (58.5%) think that no. Among the respondents (28.4%) agreed, (39.4%) strongly agreed and (32.2%) neutral. Of the responders, (88.4%) encouraged people to practice traditional medicine, while (11.6%) did not. Seven respondents (1.8%) did not utilize traditional medicine, while respondents (98.2%) intended to use it in the future. Out of the respondents (46.5%) had poor attitude while (53.5%) had good attitude towards traditional medicine (Table 5).

Table 5. ARTM in 2025.

No	Variable	Attributes	Number	Percent
1	Do you think TM should be used in the community?	Yes	382	96.0
		No	16	4.0
		Total	398	100.0
2	Do you think that violating TM's secret could make it less effective?	Yes	199	50.0
		No	199	50.0
		Total	398	100.0
3	Do you think that some diseases that MM cannot heal can be cured by TM?	Yes	377	94.7
		No	21	5.3
		Total	398	100.0
4	Do you believe that TM will be sufficient to treat illness with the right dose and root if it is developed in a contemporary dosage form?	Yes	165	41.5
		No	233	58.5
		Total	398	100.0
5	Do you support the community's use of TM?	Strongly Agree	157	39.4
		Agree	113	28.4
		Neutral	128	32.2
		Disagree	0	0
		Strongly Disagree	0	0
		Total	398	100.0
6	Do you recommend TM to others?	Yes	352	88.4
		No	46	11.6
		Total	398	100.0
7	Do you have plans to use TM in the future?	Yes	391	98.2
		No	7	1.8
		Total	398	100.0
8	Overall research participant attitude	Good	213	53.5
		Poor	185	46.5

3.5. Practice of Traditional Medicine by the respondents (*PRTM)* in the Study Area

Three hundred eighty-one (95.7%) of the respondents have used Complementary and alternative medicine in the past 2 years traditional medicine in their life time and the rest 17(4.3%) did not use traditional medicine. Fifty six (46.7%) of respondents who have used by combine complementary, alternative medicine and modern medicine in their life time and 64(53.3%) did not combine. Three hundred twenty seven (82.2%), of respondent were give mostly complementary and alternative medicine given for Elderly and 71(17.8%) for adults. Two hundred ninety two (73.4%) of respondent were give information to their patients about role of herbal remedies in health and 106 (26.6%) did not give information to their patient. Three hundred seventy four (94%) of respondent were prescribe herbal remedies for their family and 24(6%) did not prescribed. Three hundred nine (77.6%) of participants prefer traditional medicine, 89(22.4%) of them prefer modern medicines. Two hundred fifty eighty (64.8%), of respondent

have taken common routs of administration by Oral and 140(35.2%) by dermal. Three hundred nineteen (80.2%) of participants visited TM practitioners and 79(19.8%) did not visited TM practitioners (Table 6).

Table 6. PRTM.

No	Variable	Attributes	Number	Percent
1	In the last two years, have you used complementary and alternative medicine?	Yes	381	95.7
		No	17	4.3
		Total	398	100.0
2	The majority of complementary and alternative medicine is administered for	Elderly	327	82.2
		Adults	71	17.8
		Children	0	0
		Pregnant women	0	0
		Total	398	100.0
3	Throughout their lives, do you integrate complementary and alternative treatment with standard care?	Yes	203	51.0
		No	195	49.0
		Total	398	100.0
4	Do you educate your patients about the health benefits of herbal remedies?	Yes	292	73.4
		No	106	26.6
		Total	398	100.0
5	Do you give your family herbal remedies?	Yes	374	94.0
		No	24	6.0
		Total	398	100.0
6	Which one is your favorite?	The traditional	309	77.6
		The modern	89	22.4
		Total	398	100.0
7	Typical administrative routes	Via Oral	258	64.8
		Dermal	140	35.2
		Buccal	0	0
		anal	0	0
		Total	398	100.0
8	Have you ever gone to see TM practitioners	Yes	319	80.2
		No	79	19.8

4. Discussion

This study assessed the community's knowledge, attitudes, and practices regarding traditional medicine (TM) in Dale and Shebedino districts of Sidama Regional State. The findings showed that males constituted the majority of respondents (60.8%), while the largest age group was 29–38 years (32.9%). The predominance of male respondents is expected because interviews were primarily conducted with household heads, who are commonly men in the study area. Similarly, the high proportion of married participants (72.9%) reflects the household-based sampling approach. These findings are consistent with a study conducted in Burka Jato, where males predominated (60.8%), most respondents were aged 30–39 years (31.56%), and over half were married (56%) (Gari *et al*., 2015). However, the age distribution differs from findings in Hawassa Zuria District, where respondents were predominantly older (40–49 years) and younger adults (18–28 years) (Alemu & Mekonnen, 2020).

Regarding educational status, 39.9% of respondents had primary education, 26.1% had higher education, 25.1% had secondary education, and only 8.8% had no formal education. This educational profile differs from a study in northern Ethiopia, where tertiary education was more common (46.9%) and only 2.8% of respondents had primary education (Gutu and Melkie, 2001). Such variations may reflect differences in educational opportunities and socio-economic conditions between the study areas.

The ethnobotanical survey documented 34 medicinal plant species belonging to 23 families, demonstrating the rich traditional medicinal knowledge preserved in the study area. Lamiaceae was the dominant family, followed by Asteraceae, while trees were the most common growth form. Similar dominance of these plant families has been reported in several Ethiopian ethnobotanical studies because of their abundance and diverse medicinal properties.

Leaves, roots, and stems were the most frequently used plant parts in remedy preparation, with roots accounting for the largest proportion (43.2%), followed by stems (35.2%) and leaves (20.9%). This contrasts with an ethnobotanical study by Yineger and Yewhalaw (2007), where leaves (64.52%) were the most commonly used plant part, followed by roots (19.35%). The greater reliance on roots in the present study may reflect local therapeutic preferences and indigenous knowledge regarding the perceived effectiveness of underground plant parts.

The medicinal plants identified were used to treat a wide range of human and livestock ailments. Gastrointestinal disorders, malaria, fever, common cold, wounds, skin diseases, toothache, parasitic infections, and respiratory illnesses were among the most frequently treated conditions. Several plant species were also used for veterinary purposes, highlighting the important role of traditional medicine in both human and animal healthcare, particularly in rural communities where access to modern health services may be limited.

Most respondents (81.2%) demonstrated good knowledge of traditional medicine, a finding comparable with the 80.1% reported among communities in Debre Tabor Town (Aragawa *et al*., 2020). Likewise, the finding agrees with the report from Shopa Bultum, Southeast Ethiopia, where 69.53% of respondents were knowledgeable about traditional medicine (Misha *et al*., 2014). The relatively high level of knowledge observed in this study may be attributed to the rural setting, the abundance of medicinal plants, and the continued dependence on indigenous healthcare practices. Differences among studies may result from variations in educational status, age, cultural background, and religious beliefs.

Approximately two-thirds (65.8%) of respondents reported knowing individuals who sought modern healthcare after first consulting traditional medicine practitioners. The primary reason for seeking modern care was the absence of clinical improvement (56.8%), followed by perceived side effects (31.2%). Comparable findings were reported from Shirka District, where 85.7% of respondents also sought modern healthcare after traditional treatment (Getachew *et al*., 2001). These findings suggest that many community members consider traditional and modern medicine complementary rather than mutually exclusive.

Almost all respondents (99.2%) acknowledged the importance of health education regarding the benefits and risks of traditional medicine. This indicates strong community interest in obtaining reliable information to promote the safe and effective use of herbal medicines and supports the need for integrating public health education into traditional medicine programs. Similar observations were reported from Merawi Town, Northwest Ethiopia (Wassie *et al*., 2015).

The community generally exhibited a favorable attitude toward traditional medicine. Most respondents (96.0%) supported its continued use, 94.7% believed that traditional medicine could treat certain diseases that modern medicine cannot, and 88.4% recommended its use to others. These findings are considerably higher than those reported in Jara Town, Bale Zone, where only 33.1% recommended traditional medicine (Mohammed et al., 2016). The stronger positive attitude observed in the present study may reflect greater cultural acceptance and long-standing reliance on indigenous healing practices.

Half of the respondents (50%) believed that revealing the secrets of traditional medicine could reduce its effectiveness, a proportion higher than the 35.76% reported in Shopa Bultum (Misha *et al*., 2014). This perception may be influenced by cultural beliefs surrounding secrecy, healer-patient relationships, and the traditional transmission of indigenous knowledge.

Only 41.5% of respondents believed that traditional medicine could adequately treat diseases if standardized into modern dosage forms. This proportion is substantially lower than the 83.3% reported in Debre Tabor Town (Aragawa *et al*., 2020), suggesting that although participants value traditional medicine, many still question its effectiveness after pharmaceutical standardization.

Overall, 53.5% of respondents demonstrated a positive attitude toward traditional medicine, while 46.5% had a negative attitude. This finding differs from that reported in Jara Town, where only 39.85% of respondents had a positive attitude and 60.15% expressed negative views (Mohammed et al., 2016), indicating greater community acceptance of traditional medicine in the present study.

Traditional medicine practice was widespread, with 95.7% of respondents reporting its use during the previous two years. Herbal medicine and bone setting were the most recognized forms of traditional medicine. Similar utilization was reported among South Sudanese communities, where 96.7% had practiced traditional medicine within the previous two years (Majok and Hasen, 2020). Furthermore, 77.6% of respondents preferred traditional medicine over modern medicine, while oral administration (64.8%) was the predominant route, followed by dermal application (35.2%). These findings are consistent with previous Ethiopian studies reporting oral and dermal administration as the principal routes of herbal remedy application (Regassa, 2013; Bekele *et al*., 2012; and Kefalew *et al*., 2015).

Finally, the findings demonstrate that traditional medicine remains an integral component of primary healthcare in the study area. The high levels of knowledge, widespread utilization, and generally positive attitudes toward traditional medicine underscore its continued cultural and therapeutic importance. Nevertheless, the concurrent use of traditional and modern healthcare highlights the need for evidence-based integration, improved public education, and scientific evaluation of medicinal plants to ensure their safety, efficacy, and appropriate use.

5. Conclusions

In the Communities in specific kebeles of Dale and Shebedino districts of Sidama, the people have good knowledge, attitudes, and practices of traditional medicine. Significant differences in knowledge were shown by age, sex, educational attainment, and marital status; significant differences in attitude were shown by educational attainment; and significant differences in the use of traditional medicine were shown by age, educational attainment, and marital status. Although traditional medicine is widely used in the community, we haven't encountered any traditional healers collaborating with the nation's healthcare system. For certain conditions, the community thinks that a small number of medicinal plants are more effective than modern medicine. Some of the respondents in this study area would rather keep their expertise a secret.

6. Limitations

When evaluating the results, it is important to take into account the many limitations of this study. First, it is more difficult to determine causal correlations between factors like knowledge, attitude, and traditional medicine practice when a cross-sectional approach is used. Second, because the study used self-reported data, responses may have been overestimated or underestimated due to recall and social desirability bias.

Furthermore, the study was limited to certain kebeles in the woredas of Dale and Shebedino, which may restrict the applicability of the results to other areas with distinct sociocultural and healthcare contexts. Due to the cultural secrecy surrounding indigenous knowledge, some respondents could have been unwilling to provide complete details on traditional medicinal procedures. Additionally, the study mostly employed descriptive ‘analysis, which might not adequately capture underlying correlations or variables impacting the use of traditional medicine. Data gathering may have also been impacted by logistical limitations like time, money, and accessibility to remote locations.

7. Future Research Directions

Future research should employ mixed-method or longitudinal studies to explore trends in conventional medicine's knowledge, attitudes, and practices. Expanding studies to diverse geographic and demographic groups can enhance generalize ability. Incorporating qualitative methods, such as interviews with traditional healers, will deepen insights into indigenous knowledge systems. Additionally, pharmacological and toxicological research is necessary for the safety of therapeutic herbs. Investigating the integration of traditional and contemporary healthcare systems, including training and policy frameworks, is also recommended. Finally, studies should assess how health legislation and awareness campaigns can improve the safe use of traditional medicine in Ethiopia.

Acknowledgments

Above all, we would like to acknowledge Hawassa University for, provision of ethical approval, and supporting in many activities from the start of the project until its completion. Second, we would like to express our gratitude to the administration officials of Dale and Shebedino Woreda for their unwavering support and permission during data gathering. Thirdly, we would like to express our gratitude to the study participants from certain kebeles in Dale and Shebedino Woreda for their willingness to participate, for sharing information, and for giving their time to collect data. Lastly, we would like to express our sincere gratitude to the data collectors for their unwavering efforts in both data collection and quality assurance.

Disclosure statement

The authors have disclosed no conflicts of interest, the study is not registered, and no funding was received.

Data availability statement

The datasets generated and analyzed during the current study are available with the corresponding author upon request.

References

Abebe, D. (2014). Traditional medicine in Ethiopia: Perspectives and prospects. *Ethiopian Journal of Health Development, 18*(2), 29–34.

Aragaw, T. J., Afework, D. T. & Getahun, K. A. (2020). Assessment of Knowledge, Attitude, and Utilization of Traditional Medicine among the Communities of Debre Tabor Town, Amhara Regional State, North Central Ethiopia: A Cross-Sectional Study. *Evidence-Based Complementary and Alternative Medicine, 2020*(1), 6565131.

Bekele, D., Asfaw, Z., Petros, B. & Tekie, H. (2012). Ethnobotanical study of plants used for protection against insect bite and for the treatment of livestock health problems in rural areas of Akaki District, Eastern Shewa, Ethiopia. *Topclass Journal of Herbal Medicine*, *1*(2), 12-24.

Belachew, N., Tadesse, T., & Gube, A.A. (2017).Knowledge, attitude, and practice of complementary and alternative medicine among residents of Wayu town, Western Ethiopia. *Journal of evidence-based complementary & alternative medicine*, *22*(4), 929-935.

Endashaw, B. (2017). *Study on actual situation of medicinal plants in Ethiopia. Prepared for JAICAF (Japan Association for International Collaboration of Agric and Forestry).*

Gari, A., Yarlagadda, R., & Wolde-Mariam, M. (2015). Knowledge, attitude, practice, and management of traditional medicine among people of Burka JatoKebele, West Ethiopia. *Journal of Pharmacy and Bioallied Sciences*, *7*(2), 136-144.

Getachew, A., Dawit, A., & Kelbesa, U. (2001). A survey of medicinal traditional plants in Shirka district, Arsi Zone, Ethiopia.Ethiop. *Pharm. J*, *19*, 30-47.

Gutu D, Melkie E, knowledge, attitude and practice involved in harmful health behavior in Dembia district, northwest Ethiopia, may 2001.

Kassaye, K. D., Amberbir, A., Getachew, B., & Mussema, Y. (2006). A historical overview of traditional medicine practices and policy in Ethiopia. *The Ethiopian Journal of Health Development*, *20*(2).

Kefalew, A., Asfaw, Z., & Kelbessa, E. (2015). Ethnobotany of medicinal plants in Ada'a District, East Shewa Zone of Oromia regional state, Ethiopia. *Journal of ethnobiology and ethnomedicine*, *11*(1), 25.

Kendi, N. N. (2024). Impact of traditional medicine integration with modern healthcare in Africa. *Newport International Journal of Scientific and Experimental Sciences*, *5*(3), 18-21.

Majok, F., &Hasen, G. Knowledge, Attitude and Practice assessment of south Sudanese Refugees in Ethiopia towards Traditional Medicine: *A Cross-Sectional Study. Indo American Journal of Pharmaceutical Research.2020:10(05),617-625.*

Misha, G., Yarlagadda, R., and Wolde-Mariam, M.(2014). Knowledge, Attitude, Practice and Management of Traditional Medicine among People of ShopaBultum, Southeast Ethiopia.*Research Journal of Pharmaceutical, Biological and Chemical Sciences*,5*(*5),152-170.

Mohammed, A. Y., Kasso, M., & Demeke, A. (2016). Knowledge, attitude and practice of community on traditional medicine in Jara Town, Bale Zone South East Ethiopia. *Sci J Public Health*, *4*(3), 241.

Regassa, R. (2013). Assessment of indigenous knowledge of medicinal plant practice and mode of service delivery in Hawassa city, southern Ethiopia. *Journal of medicinal plants research*, *7*(9), 517-535.

Tesfaye, S., Raju, N. J., & Debella, A. (2009).Ethnobotanical survey of medicinal plants used by traditional healers in south Ethiopia.*Journal of Ethnopharmacology*, 123(2), 161–167.

Terefe, E. M. (2026). African traditional medicine: historical legacy, colonial disruption, and pathways for integration into modern healthcare. *Frontiers in Pharmacology*, *17*, 1842857.

Tuasha, N., Petros, B., & Asfaw, Z. (2018). Medicinal plants used by traditional healers to treat malignancies and other human ailments in Dalle District, Sidama Zone, Ethiopia.*Journal of ethnobiology and ethnomedicine, 14*(1), 1-21.

Wassie, S. M., Aragie, L. L., Taye, B. W., & Mekonnen, L. B. (2015). Knowledge, attitude, and utilization of traditional medicine among the communities of merawi town, northwest Ethiopia: a cross-sectional study. *Evidence-based Complementary and Alternative Medicine*, *2015*(1), 138073.

WHO. (2013). *WHO traditional medicine strategy: 2014–2023*. World Health Organization.https://www.who.int/publications/i/item/9789241506096.

Yamane, T. (1967). *Statistics: An Introductory Analysis*, 2nd Ed., New York:

Yineger, H., & Yewhalaw, D. (2007). Traditional medicinal plant knowledge and use by local healers in Sekoru District, Jimma Zone, Southwestern Ethiopia. *Journal of ethnobiology and ethnomedicine*, *3*(1), 24.