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Ethnobotanical survey on local community to treat the human diseases in Shivamogga district

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Abstract

Traditional medicinal knowledge, rooted in centuries of human interaction with nature, continues to play a vital role in primary healthcare among rural and indigenous communities across India. This ethnobotanical survey was conducted in Sagara and Shikaripur taluks of Shivamogga district, Karnataka, to document and analyze the traditional medicinal knowledge held by local communities. The region, recognized for its rich biodiversity and cultural heritage, presented a exceptional location to explore the use of medicinal plants for treating human diseases. Twelve male informants, including local healers and elderly individuals with hereditary knowledge, were carefully chosen through purposive sampling. Semi-structured interviews were carried out to collect information on plant species, its local names, parts used for traditional medicinal practices. Totally 48 plant species belonging to 30 families and 46 genera were documented. A wide range of human ailments were documented as being treated with the documented plant species, such as skin infections, digestive, respiratory and neurological disorders. Ethno botanical indices were applied to evaluate their medicinal and traditional cultural relevance. Among all the species, *Aegle marmelos* was cited by all informants with FC and RFC values of 100% and 1.00 respectively indicating its consistent use and potent traditional importance with the UV of 1.33 and CI of 0.70. Next to that, *Coleus amboinicus* was also mentioned frequently, with a high FL of 85% and CI of 0.85, indicating broad consensus among all the informants. Leaves were the most commonly used plant part, making up about 35% of the reported uses, followed by roots, bark, and seeds. As for growth habits, trees were dominant (37%), while shrubs and herbs were also well represented. This research emphasizes the importance of integrating ethnobotanical knowledge into conservation strategies and scientific exploration to ensure sustainable utilization and intergenerational transmission of valuable traditional practices.

Keywords: Ethnobotany, indigenous knowledge, medicinal plants, shivamogga, traditional medicine

Introduction

Traditional medicine, as defined by the World Health Organization, is the sum total of the knowledge, skills, and practices based on the theories, beliefs, and experiences indigenous to different cultures, whether explicable or not, used in the maintenance of health as well as in the prevention, diagnosis, improvement, or treatment of physical and mental illness [1]. Medicinal herbs have constituted the basis of alternative medicine and lead to be the main pathway for conceptualizing new drugs [2]. The increased interest and use of plant-based traditional medicines and herbal remedies, however, requires the knowledge of users regarding these medicines' health, safety and quality. The majority of medicinal plant materials are harvested from wild stocks, where intrinsic and extrinsic factors result in varied production of phytochemical constituents [3].

Using natural products, which is part of various traditional medical systems to prevent and/or treat diseases, dates back thousands of years in different parts of the world [4]. India, with its rich cultural and floristic diversity, has proven to be a valuable repository of traditional knowledge on the direct uses of plants and associated ritualistic practices. Since ancient times, Indian medicinal plants have served as a promising source for the treatment of various diseases, with ethno botanicals, natural products, and their derivatives demonstrating significant therapeutic potential.

Studies show that collectively, plants produce more than 100,000 secondary metabolites that can be differentiated based on their composition, biosynthetic pathway or chemical structure [5]. Medicinal plants are the remarkable natural resources of various phytochemicals like flavonoids, tannins, terpenoids, polyphenols, steroids, alkaloids, glycosides, chlorophyll, carotenoids, proteins, minerals, vitamins, and other essential nutrients which have strong antioxidants properties and biological activities [6]. Traditional healing systems like Ayurveda, Unani, Traditional Chinese Medicine, homeopathy, and naturopathy have long relied on plant-derived remedies as their basis. However, during the colonial period, many of these indigenous practices were marginalized, labeled as unscientific, and in some cases, actively suppressed or even prohibited. However, with the advent of chemical analysis in the 19th century, scientists began isolating and modifying plant-derived compounds for use in allopathic medicine, eventually leading to the synthetic production of these bioactive molecules.

Despite rapid advancements in modern medicine, a significant portion of rural and indigenous communities continues to rely on traditional plant-based remedies for their primary healthcare needs. This reliance is often rooted in generations of empirical knowledge and close association with the local flora. Ethnobotanical surveys play a crucial role in documenting this indigenous knowledge before it disappears due to cultural erosion, habitat loss, and lack of recognition. With this background, the present study aims to explore and document the ethnobotanical knowledge of local communities in Shivamogga district, Karnataka,

concentrating on traditionally used medicinal plants for treating various human diseases. The findings of this survey are expected to contribute to the conservation of traditional knowledge, support conservation efforts and potentially guide future pharmacological research.

Materials and Methods

The present study was conducted in Sagara and Shikaripur taluks of Shivamogga district, Karnataka, India (Figure 1). These taluks are known for their rich biodiversity, dense forests and traditional medicine practices. Sagara taluk spans an area of approximately 1935 sq. km and lies between 14° 02' to 14° 37' N latitudes and 74° 19' to 75° 18' E longitudes, while Shikaripur covers about 1975 sq. km, located between 14° 10' to 14° 45' N latitudes and 75° 05' to 75° 35' E longitudes. The region experiences a tropical monsoon climate, receiving an average annual rainfall of 1500 mm to 3500 mm, with temperatures ranging from 10°C in winter to 35°C in summer. The present study focused on documenting ethno medicinal knowledge through semi-structured interviews with 12 informants of local communities from the selected two taluks. The 12 informants are selected based on their depth in traditional knowledge and experience in using medicinal plants, which included herbal practitioners, farmers, and elderly community fellows with an innate knowledge through many generations. The primary occupations of the local population include agriculture, and livestock rearing. Rivers and reservoirs in the region facilitate irrigation, sustaining agricultural and allied activities. The ethno botanical survey highlighted the deep-rooted indigenous knowledge in the region, emphasizing the importance of conservation and documentation of traditional plant-based remedies for future research and sustainable utilization.

1. Sampling informants

In this study, a total of 12 informants were selected through purposive sampling from the Sagara and Shikaripur taluks of Shivamogga district, Karnataka, India. All the informants were male, and they were chosen for their extensive traditional knowledge of medicinal plant usage and their connection to family traditions of healing. The informants' ages ranged from 40 to 70 years, with four informants in the age group of 40-50 years and two informants between 60 and 70 years. These age groups were selected to ensure the inclusion of both middle-aged and elderly individuals, who are likely to have a wealth of knowledge about medicinal plants passed down through generations. In terms of educational background, all the informants were illiterate, and none had formal education beyond the basic level. This aligns with the objective of capturing traditional knowledge that is typically not documented in formal educational systems. The informants were identified through their distinction as local herbal practitioners and community elders, known for their expertise in using plants for various human ailments. Through semi-structured interviews, this study aimed to document the local names, habit, habitat, parts used and the traditional medicinal uses of the plants.

2. Data Collection and Analysis

Ethno medicinal data were collected from 12 informants through semi structured interviews in selected taluks, Shikaripur and Sagara. The informants provided details regarding the medicinal uses of different plant species. The data collected were analyzed using several ethnobotanical indices to assess the significance and credibility of reported uses. To compare the uses and cultural importance of different plant species, standard quantitative ethnobotanical techniques were applied. The local importance of each species was measured by the use-value (UV) [7]. The technique measures how many uses for a given species an informant knows relative to the average knowledge among all informants interviewed. A high use-value indicates a relatively important species.

$$UV = \frac{\Sigma \text{ Number of uses mentioned by each informant for a given species}}{\text{Total number of informants}}$$

The relative frequency of citation (RFC) for each use, is the ratio of the frequency of citation by informants to the total number of the informants in study. [7]

$$RFC = \frac{\text{Frequency of citation}}{\text{Total number of informants interviewed}}$$

Frequency of citation is the number of informants mentioning the particular use of that species. The high agreement for a particular use indicates its genuineness for that cultural group. [7]

$$FC = \frac{\text{Number of informants mentioning the species}}{\text{Total number of informants}}$$

The medicinal plant uses were classified into categories following the standard developed by Heinrich *et al*., 1998 [8]. To test homogeneity of knowledge on the use of plants in the illness categories between the populations, we used the informant consensus factor (ICF). [8]

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

Where Nur refers to the number of use reports for a particular use category and Nt refers to the numberof taxa used for a particular use category by all informants. We used fidelity level (FL) [9] to determine the most preferred species used in treatment of particular ailment as many plant species may be used in the same use category:

$$FL\% = \left(\frac{Np}{N}\right) X100$$

Where Np is the number of use-reports cited for a given species for a particular ailment and N is the number of informants that used the plants as a medicine to treat any given disease.

Cultural Importance Index (CI): This index evaluates the overall importance of a species in local traditional knowledge, considering the number of uses per species and the number of informants citing those uses.

$$CI = \sum Ui/N$$

Where, Ui refers to Number of different use categories reported for species i; N refers to Total number of informants interviewed.

Use Diversity Index (UD): Indicates the number of different ailments a species is used for.

$$UD = -\sum (Ui/Ut \times \ln Ui/Ut)$$

Where, Ui refers to number of citations for a specific use category of a plant; Ut refers to Total number of uses reported for that plant; ln refers to Natural logarithm.

Results

1. Medicinal plants and their uses reported by informants

A total of 12 informants from the selected study areas possessed traditional knowledge regarding the medicinal use of plants, with a family history of practicing traditional healing. All informants were male, ranging in age from 45 to 80 years. A total of 48 medicinal plant species were reported that are distributed across 30 families and 46 genera were used by the local people in traditional health care system to cure at least 44 different diseases/ailments (Table 1).

Plant families such as Fabaceae, Apocynaceae, and Rutaceae were represented by the highest numbers of species (six, four and three species) and six families, Acanthaceae, Arecaceae, Euphorbiaceae, Lamiaceae, Moraceae, Poaceae were represented by two species each (Figure 2). Ethno-medicinal plant species namely *Aegle marmelos, Asparagus racemosus* and *Chloroxylon swietenia* are categorized as near threatened (Nt), endangered (En), vulnerable (V) in the study area (Table 1).

Of the total species 48, 37% were tree, 26% shrub, 24% herb, climber 13% (Figure 3). The different parts of these plants are used as a medicine. The use of aboveground plant parts (81%) is higher than the below ground plant parts (19%). Of the above ground plant parts leaf is used in the majority of the cases (35%) followed by root (19%), bark (18%), fruit (11%), seed (9%), stem (6%), latex (1%) and flower (1%) (Figure 4).

2. Ethnobotanical Indices and Consensus Analysis

A total of 48 ethnomedicinal plant species were documented based on the survey conducted among six informants and evaluated using various ethnobotanical indices including Frequency of Citation (FC), Relative Frequency of Citation (RFC), Use Value (UV), Fidelity Level (FL), Cultural Importance Index (CI), and Use Diversity Index (UD) (Table 2).

Among them, *Aegle marmelos* (L.) belonging to Rutaceae family was the most cited medicinal plant in the present study, with a Frequency of Citation (FC) of 100% and a Relative Frequency of Citation (RFC) of 1.00**,** indicating that all informants recognized and reported its medicinal value. It exhibited a Use Value (UV) of 1.33, suggesting its multipurpose use, and a Fidelity Level (FL%) of 70%, highlighting a high degree of agreement among informants regarding its primary uses. The Cultural importance Index (CI) was 0.70**,** indicating its significant cultural and therapeutic relevance. This species was mentioned by the informants in treating ailments such as piles, vomiting, dysentery, cough, cold and jaundice though the Use Diversity Index (UD) was recorded as 0**,** highlighting its efficiency in treating gastrointestinal and respiratory disorders. This species also exhibits high citation values indicating its diverse medicinal applications in traditional medicine practices. Followed by this, *Coleus amboinicus* was cited by 66.67% of informants, resulting in a Relative Frequency of Citation (RFC) of 0.67, Use Value (UV) of 1.00, high Fidelity Level (FL%) of 85%**,** reflecting moderate awareness and specific applications within the community. With a Cultural Importance Index (CI) of 0.85 and a Use Diversity (UD) of 1.09, the plant gains considerable ethno medicinal relevance. It was primarily used in the treatment of fever, cough, cold and headache, which indicates its use in treating respiratory infections and febrile conditions. *Ficus benghalensis* L., was reported by 50% of informants resulting in a Relative Frequency of Citation (RFC) of 0.50, Use Value (UV) of 0.83 indicating that informants cited at least for one use. Also, Fidelity Level (FL%) was at 85%, Cultural Importance Index (CI) was 0.85 indicating its importance in traditional healing practices. However, Use Diversity (UD) was found to be 0, since it was mentioned only in the treatment of burn blisters.

50% of the interviewed informants mentioned *Annona squamosa*, *Asparagus racemosus* and *Asystasia gangetica* with a FC value of 50% and RFC of 0.50, and consistent UV of 0.50 indicating that each species was referenced at least once per informant. However, these species varied in their FL%, with 60% (*A. squamosa*), 75% (*A. gangetica*), 80% (*A. racemosus*) respectively reflecting different degrees of informant consensus on particular medicinal uses. Similarly, their Cultural Importance Index (CI) values also differed, being 0.6, 0.8, and 0.75 respectively, suggesting variable cultural recognition and significance. The Use Diversity (UD) values also indicated differences in the breadth of use: *Annona squamosa* had a broader application (UD = 1.09), while both *Asparagus racemosus* and *Asystasia gangetica* had narrower but still notable use profiles (UD = 0.69 each). In terms of therapeutic application, *Annona squamosa* indicated its relevance in managing gastrointestinal and febrile conditions. *Asparagus racemosus* was highlighted for its multifaceted use in metabolic and hormonal health. *Asystasia gangetica* indicated its importance in treating respiratory conditions.

Abrus precatorius, *Aloe barbadensis, Azadirachta indica*, *Celosia argentea*, *Justicia adhatoda*, *Pongamia pinnata*, *Pterocarpus marsupium*, *Rauvolfia serpentina*, *Syzygium cumini*, and *Terminalia elliptica* were each reported by 33.33% of the informants, corresponding to FC of 33.33% and RFC of 0.33. All species exhibited UV of 0.33, except *Rauvolfia serpentina* (UV = 0.50) and *Celosia argentea* (UV = 0.16), reflecting differences in how frequently their uses were mentioned per informant. *Abrus precatorius* showed a FL% of 60%, a CI of 0.6, and UD of 0.69, indicating moderate informant agreement and cultural relevance. Both *Azadirachta indica* and *Rauvolfia serpentina* shared FL%, CI, and UD values of 70%, 0.7, and 0.69 respectively, suggesting consistent recognition and use. *Celosia argentea*, *Justicia adhatoda*, *Pongamia pinnata*, and *Terminalia elliptica* each had an FL% of 75%, CI of 0.75, and UD of 0.69, reflecting a relatively high consensus and multipurpose applications. *Pterocarpus marsupium* stood out with the highest FL% of 85% and CI of 0.85, although it had a Use Diversity of 0, indicating it was cited exclusively for a single medicinal use. *Syzygium cumini* was also culturally important, showing FL% of 80%, CI of 0.8, and a UD of 0.69, underlining its role in traditional therapeutic practices.

Species like *Acacia concinna*, *Acalypha indica*, *Barringtonia asiatica*, and *Cocos nucifera* showed high FL values (≥85%) with low UD, suggesting they are highly preferred for specific ailments, such as hair fall or menstrual problems. Plants such as *Asparagus racemosus*, *Azadirachta indica*, *Asystasia gangetica*, *Justicia adhatoda*, and

Pongamia pinnata had moderate to high CI and UD values, indicating broader acceptance and multiple reported uses in local healing traditions.

A large number of species—including *Gmelina arborea*, *Chloroxylon swietenia*, *Diospyros montana*, *Holarrhena pubescens*, *Leucas aspera*, *Mirabilis jalapa*, *Nerium oleander*, and *Zanthoxylum asiaticum*—showed uniform but lower values for RFC and UV (around 0.17 and 0.16 respectively) and a UD of zero, suggesting they are recognized but are limited to a narrow therapeutic scope. Others like *Rauvolfia serpentina* and *Syzygium cumini* had moderate CI and UD values, showing their recognized roles in treating neurological and respiratory issues.

Overall, high cultural salience was attributed to plants with multipurpose uses and wider community acknowledgment, while high FL values reflected strong consensus on specific treatments. The combined use of quantitative indices helped differentiate species with broad traditional utility from those with highly specialized, culturally embedded uses.

3. Discussion

The present study revealed a high diversity in the use of medicinal plants by traditional practitioners and knowledgeable members of the local communities in Shikaripur and Sagara taluks of Shivamogga district, Karnataka, for treating a wide range of ailments. All 12 informants in the study were male, which mirrors the traditional gender roles commonly observed in rural areas of Karnataka. In many such communities, knowledge of medicinal plants and their importance in healing practices is historically passed down through male lineage, especially within the families known for their role as traditional healers. Cultural standards and societal structures limit women's public expression or transmission of ethno botanical knowledge, especially to outsiders, which could explain their absence in the present documentation. [10, 11]

In the present study, the dominant species were found to belongs to the plant families Fabaceae**,** Apocynaceae**,** and Rutaceae. Equally, an ethnobotanical survey conducted [12] in the Nhema communal area of Zimbabwe also reported Fabaceae as the most dominant family which also aligns with the study [13] in the Lwamondo area of Limpopo Province, South Africa. This habitual dominance of Fabaceae family across different regions of the world highlights its capability in widespread distribution**,** rich species diversity and its important role in traditional medicinal practices, which contributes to its bioactive compounds present in its members. Contrastingly, Euphorbiaceae**,** Asteraceae and Rutaceae were found as most used plant families for treating skin diseases in Keffi, Nigeria which indicates its variations in local flora and traditional knowledge of different regions [14].

In our survey, the habit of most medicinal plants were trees followed by shrubs and trees which is in contrast with the studies in the Nhema communal area of Zimbabwe and in the Gubalafto district of northern Ethiopia where the dominant forms were herbs followed by shrubs and trees reflecting variations in local vegetation, ecological differences which influences plant availability in the respective regions [15].

Our findings showed that leaves were the most frequently used plant parts in traditional medicine followed by roots, bark, and seeds which aligns with [16] others report where they showed the most frequently used plant parts were leaves followed by roots and seeds. The conjoint ness in these observations indicate the use of leaves in herbal preparations that can be recognized to their ease of collection, renewable nature and typically high concentrations of bioactive compounds, which make them a preferred choice in traditional healing practices. These findings also hold similarity in a survey conducted [17] in Abeokuta South Local Government Area of Ogun State, Nigeria.

The present study revealed a variety of ethno medicinal plants used by the local communities of Shivamogga district, with many species supporting with and some differing from traditional uses reported in different regions of the world. These resemblances and variances can be credited to ecological availability, cultural beliefs, disease prevalence, traditional knowledge transmission, and observable efficiency of remedies. In our investigation, *Aloe vera* was used to treat constipation, menstrual issues, wounds, burns, and skin ailments which supported by [14] who also reported its application for skin-related conditions that could be attributed to its wide availability, noticeable healing properties and for containing unique bioactive potentials. Similarly, *Azadirachta indica* was used locally for treating malaria and skin diseases, which holds similarity with its use for smallpox, chickenpox and syphilis [14] as reported by indicating its broad-spectrum antimicrobial reputation.

In the present study, many plant species demonstrated regional variation in use. *Abrus precatorius* was found to be used for treating leprosy and paralysis whereas *A. cantoniensis* was used to treat liver ailments and rheumatism [18]. Similarly, *Acacia concinna* used traditionally for hair fall in India whereas in Ethiopia, it was used for treating amebiasis and fire wounds [19]. Such divergences highlight the adaptive nature of ethnobotanical knowledge, where the same or related species are utilized to meet local health priorities shaped by environmental, socio-economic, and cultural contexts.

Several genera showed species-level variations in their usage. In our study, *Annona squamosa* was mentioned to be used to treat stomach ache, dysentery and fever, whereas *A. muricata* was reported for managing high blood pressure [20]. *Cymbopogon citratus* was used in our study used for treating respiratory and skin disorders, whereas others documented its use for fever, diarrhea, and ringworm [14, 20]. Likewise, *Momordica charantia* was used for diabetes, whereas, *M. cochinchinensis* was cited for its inflammatory conditions of unknown origin [18].

Some medicinal plants served culturally specific roles. For example, *Withania somnifera* was used to ward off the "evil eye" in our region—a belief echoed in Ethiopian studies [15, 19]. Similarly, *Mimosa pudica* was used for period cramps in our study and for insomnia, kidney stones, and diabetes in others [18, 20] reflecting how a plant's pharmacological versatility allows it to be adapted for multiple ailments depending on regional needs.

In several cases, closely related species were employed for differing ailments. *Tinospora cordifolia*, used in our study for white discharge, contrasts with *Tinospora sagittata* and *Tinospora sinensis*, which were used for gastroenteritis, pharyngitis, and rheumatism. *Rauvolfia serpentina* was traditionally used for snakebite and neurological issues locally, while *Rauvolfia verticillata* was noted for pain relief and hypertension in China [18].

These patterns emphasize the dual reality of ethno botanical knowledge: on one hand, shared understanding of certain plant properties across cultures due to similar ecological pressures and empirical observations, and on the other, unique, locally adapted uses reflecting region-specific medicinal needs and cultural interpretations. Such variations warrant further pharmacological and phytochemical studies to validate and bridge traditional uses with scientific knowledge.

Conclusion

The ethnomedicinal knowledge documented in the present study from Shikaripur and Sagara taluks of Shivamogga district highlights both the continuity and diversity of traditional plant-based healing practices. The convergence of certain uses, such as those of *Aloe vera* and *Azadirachta indica*, across geographically distant cultures, underscores the reliability of empirical knowledge grounded in generations of observation and practice. Meanwhile, the observed divergences—whether at the species or genus level—reflect the adaptive and dynamic nature of ethnomedicinal traditions shaped by local ecological resources, cultural interpretations, and healthcare needs. The presence of both culturally specific and universally applied plant uses points to a rich interplay between tradition and environment. These findings not only validate the relevance of traditional medicine in primary healthcare but also call for in-depth phytochemical and pharmacological investigations to scientifically assess the efficacy and safety of these remedies. Such integrative approaches can contribute significantly to drug discovery and the sustainable conservation of ethnobotanical heritage.

Table 1: Plants used in the traditional healthcare medicine of Shivamogga district of Karnataka, India

Sl. No.	Botanical name	Family	Local name	Habit/ Habitat/ Ecological status	Part used	Ailments/Diseases
1.	*Abrus precatorius* L.	Fabaceae	Gulaganji	Climber/wild	Roots, seeds	Leprosy, paralysis
2.	*Acacia concinna* (Willd). DC	Fabaceae	Shigekai	Tree/ wild	Fruits, leaves, bark	Hair fall
3.	*Acalypha indica* L.	Euphorbiaceae	Kuppe, Kuppi	Herb/wild	Leaves, Young bark	As expectorant for babies.
4.	*Aegle marmelos* (L.) Correa	Rutaceae	Bilvapatre	Tree/wild/ Nt	Roots, leaves	Piles, vomiting, dysentery, cough, cold and jaundice.
5.	*Aloe barbadensis* Mill.	Asphodelaceae	Lolesara	Succulent herb/wild/home garden	Leaves	Constipation, Menstrual problems, wounds, burns, skin ailments
6.	*Annona squamosa* L.	Annonaceae	Sitaperale	Shrub/wild	Leaves, seeds	Stomach ache, dysentery and fever.
7.	*Asparagus racemosus* Willd.	Liliaceae	Shatavari, Shatamuli	Shrub/wild/homegarden / En	Root, seed	Diuretic, diabetes, as prolactin
8.	*Asystasia gangetica* L.	Acanthaceae	Medde soppu, Lavana valli	Herb/wild	Leaves, flower	Chest complaints, Swelling and rheumatism
9.	*Azadirachta indica* A. Juss.	Meliaceae	Bevina Mara	Tree/ wild	Bark, Leaves, Root	Malaria, skin diseases
10.	*Barringtonia asiatica* (L.) Kurtz	Lecythidaceae	Samudra mapala	Tree/wild	Roots	White discharge
11.	*Butea monosperma* (Lam.) Kuntze	Fabaceae	Muttugadamara	Tree/wild	Seed	Fungal infection
12.	*Celosia argentea* L.	Amaranthaceae	Anne soppu	Herb/wild/homegarden	Leaves, Bark	Jaundice and anemia
13.	*Chloroxylon swietenia* (Roxb.) DC.	Rutaceae	Masivala	Tree/wild/V	Leaves, stem	Fungal infection
14.	*Cocos nucifera* L.	Aracaceae	Tengu	Tree/cultivated	Tender coconut fruit	Menstrual problems
15.	*Coleus amboinicus* Lour.	Lamiaceae	Dodda Patre	Herb/wild/homegarden	Leaves	Fever, cough, cold and headache
16.	*Connarus wightii* Hook. f.	Connaraceae	Giligicchi	Cilmber/wild	Root	Nerve swelling
17.	*Cyclea peltata* Hook. f. & Thoms	Menispermaceae	Haade balli	Climber/wild/homegarden	Leaves	Dysentery
18.	*Cymbopogon citratus* (DC.) stapf	Poaceae	Lemon grass	Herb/wild/home garden	Leaves, stem	Respiratory disorder and skin diseases
19.	*Dillenia pentagyna* Roxb.	Dilleinaceae	Kadukanigau	Tree/wild	Leaves, fruit	Scorpion bite, and anti-aging property
20.	*Diospyros Montana* Roxb.	Ebenaceae	Balagane	Tree/wild	Leaves, Bark	Jaundice
21.	*Ehretia acuminata R.* Br	Boraginaceae	Kodsa	Tree/wild	Bark	Snake bite
22.	*Elephantopus scaber* L.	Asteraceae	Nelaganigilu	Herb/home garden	Roots	Head ache
23.	*Epipremnum aureum*	Araceae	Money plant	Climber/home garden	Leaves	Dysentery

	Liden & Andre G.S. Bunting					
24.	*Ficus religiosa* L.	Moraceae	Arali Mara or Bodi Mara	Tree/wild	Stem, bark	Wound wash, skin lesions, mouth infection.
25.	*Ficus benghalensis* L.	Moraceae	Attimara	Tree/wild	Latex	Burn blister.
26.	*Garcinia gummi –gutta* L.	Guttiferae	Uppage, Kattchapuli	Tree/wild	Fruit	Weight loss
27.	*Gmelina arborea* Roxb. ex Sm	Verbenaceae	Shivani	Tree/wild	Bark	Bone fracture
28.	*Helicteres isora* L.	Sterculiaceae	Balamuri	Shrub/wild	Leaf	Throat infection
29.	*Holarrhena antidysenterica* L.	Apocynaceae	Koodsaloo	Shrub/wild	Bark	Stomach ache
30.	*Holarrhena pubescens* Wall. ex G. Don	Apocynaceae	Kodasiga	Shrub/wild	Root	Skin infection
31.	*Jasminum arborescens* Rbox.	Oleaceae	Kaadu mallige	Shrub/home garden	Leaves	Applied to wound
32.	*Jatropha curcas* L.	Euphorbiaceae	Naatikalli	Shrub/wild	Bark, leaves	Dysentery
33.	*Justica adhatoda* L.	Acanthaceae	Adusoge	Shrub/wild	Leaves	Diarrhea, dysentery.
34.	*Leucas aspera* (Willd) Link	Laminaceae	Thumbe gida	Herb/wild	Leaves	Stomach worm.
35.	*Mimosa pudica* L.	Fabaceae	Muttidare muni	Herb/wild	Root	Period cramps
36.	*Mirabilis jalapa* L.	Nyctaginaceae	Madhyana mallige	Herb/wild/home garden	Tuberous root	Cough
37.	*Momordica charantia* L.	Cucurbitaceae	Hagalakayi	Climber/cultivate/home garden	Leaves	Diabetes
38.	*Moringa oleifera* Lam.	Moringaceae	Nugge	Tree/cultivated	Leaves, fruit	Cure herpes
39.	*Nerium oleander* L.	Apocynaceae	Kaagalu	Shrub/wild/home garden	Root, bark, Leaves	Piles
40.	*Pongamia pinnata* (L.) Pierre	Fabaceae	Honge mara	Tree/wild	Seeds, leaves	Cough, fever
41.	*Pterocarpus marsupium* Roxb.	Fabaceae	Honne	Tree/wild	Heart wood	Hypoglycemia and weight loss.
42.	*Rauvolfia serpentina* (L.) Benth. ex Kurz	Apocynaceae	Sarpaganda	Shrub/wild	Roots	Snake bite, neurological problems,
43.	*Syzygium cumini* (L.) Skeels	Myrtaceae	Nerale	Tree/wild	Fruit, seed	Asthma, improves blood circulation.
44.	*Terminalia elliptica Willd.*	Combertaceae	Karematti	Tree/wild	Bark, fruit	Diarrhea, dandruff
45.	*Tinospora cordifolia* (Willd.) Miers	Menispermaceae	Amruthaballi	Climber/home garden	Leaves	White discharge
46.	*Triticum aestivum* L.	Poaceae	Godi	Herb/cultivated	Tender stem	General weakness
47.	*Withania somnifera* (L.) Dunal	Solanaceae	Ashwagandha	Shrub/wild	Root	Diabetes, evil eye
48.	*Zanthoxylum asiaticum* (L.) Appelhans, Groppo & J. Wen	Rutaceae	Kadu nimbe	Shrub/wild	Leaves	Dog bite

Nt-Near threatened; En- Endangered; V-Vulnerable

Table 2: Quantitative Ethnobotanical Indices of Medicinal Plants Used by Local Communities

Sl. No.	Botanical name	FC	RFC	UV	FL (%)	CI	UD
1.	*Abrus precatorius* L.	33.33%	0.33	0.33	60	0.6	0.69
2.	*Acacia concinna* (Willd). DC	16.67%	0.17	0.16	90	0.9	0
3.	*Acalypha indica* L.	16.67%	0.17	0.16	85	0.85	0
4.	*Aegle marmelos* (L.) Correa	100%	1.00	1.33	70	0.7	0
5.	*Aloe barbadensis* Mill.	33.33%	0.33	0.33	65	0.65	0.69
6.	*Annona squamosa* L.	50%	0.50	0.50	60	0.6	1.09
7.	*Asparagus racemosus* Willd.	50%	0.50	0.50	80	0.8	0.69
8.	*Asystasia gangetica* L.	50%	0.50	0.50	75	0.75	0.69
9.	*Azadirachta indica* A. Juss.	33.33%	0.33	0.33	70	0.7	0.69
10.	*Barringtonia asiatica* (L.) Kurtz	16.67%	0.17	0.16	90	0.9	0
11.	*Butea monosperma* (Lam.) Kuntze	16.67%	0.17	0.16	85	0.85	0
12.	*Celosia argentea* L.	33.33%	0.33	0.16	75	0.75	0.69
13.	*Chloroxylon swietenia* (Roxb.) DC.	16.67%	0.17	0.16	85	0.85	0
14.	*Cocos nucifera* L.	16.67%	0.17	0.16	90	0.9	0
15.	*Coleus amboinicus* Lour.	66.67%	0.67	1.00	85	0.85	1.09
16.	*Connarus wightii* Hook. f.	16.67%	0.17	0.16	80	0.8	0
17.	*Cyclea peltate* Hook. f. & Thoms	16.67%	0.17	0.16	85	0.85	0
18.	*Cymbopogon citratus* (DC.) stapf	16.67%	0.17	0.16	90	0.9	0
19.	*Dillenia pentagyna* Roxb.	16.67%	0.17	0.33	70	0.7	0.69

20.	*Diospyros Montana* Roxb.	16.67%	0.17	0.16	85	0.85	0
21.	*Ehretia acuminata R.* Br	16.67%	0.17	0.16	80	0.8	0
22.	*Elephantopus scaber* L.	116.67%	0.17	0.16	90	0.9	0
23.	*Epipremnum aureum* Liden & Andre G.S. Bunting	16.67%	0.17	0.16	85	0.85	0
24.	*Ficus religiosa* L.	16.67%	0.17	0.16	75	0.75	0.69
25.	*Ficus benghalensis* L.	50%	0.50	0.83	85	0.85	0
26.	*Garcinia gummi –gutta* L.	16.67%	0.17	0.16	90	0.9	0
27.	*Gmelina arborea* Roxb. ex Sm	16.67%	0.17	0.16	85	0.85	0
28.	*Helicteres isora* L.	16.67%	0.17	0.16	80	0.8	0
29.	*Holarrhena antidysenterica* L.	16.67%	0.17	0.16	80	0.8	0
30.	*Holarrhena pubescens* Wall. ex G. Don	16.67%	0.17	0.16	85	0.85	0
31.	*Jasminum arborescens* Rbox.	16.67%	0.17	0.16	90	0.9	0
32.	*Jatropha curcas* L.	16.67%	0.17	0.16	85	0.85	0
33.	*Justica adhatoda* L.	33.33%	0.33	0.33	75	0.75	0.69
34.	*Leucas aspera* (Willd) Link	16.67%	0.17	0.16	85	0.85	0
35.	*Mimosa pudica* L.	16.67%	0.17	0.16	90	0.9	0
36.	*Mirabilis jalapa* L.	16.67%	0.17	0.16	85	0.85	0
37.	*Moringa oleifera* Lam.	16.67%	0.17	0.16	80	0.8	0
38.	*Momordica charantia* L.	16.67%	0.17	0.16	90	0.9	0
39.	*Nerium oleander* L.	16.67%	0.17	0.16	80	0.8	0
40.	*Pongamia pinnata* (L.) Pierre	33.33%	0.33	0.33	75	0.75	0.69
41.	*Pterocarpus marsupium* Roxb.	33.33%	0.33	0.33	85	0.85	0
42.	*Rauvolfia serpentina* (L.) Benth. ex Kurz	33.33%	0.33	0.5	70	0.7	0.69
43.	*Syzygium cumini* (L.) Skeels	33.33%	0.33	0.33	80	0.8	0.69
44.	*Tinospora cordifolia* (Willd.) Miers	16.67%	0.17	0.33	85	0.85	0
45.	*Terminalia elliptica Willd.*	33.33%	0.33	0.33	75	0.75	0.69
46.	*Triticum aestivum* L.	16.67%	0.17	0.16	85	0.85	0
47.	*Withania somnifera* (L.) Dunal	16.67%	0.17	0.16	90	0.9	0
48.	*Zanthoxylum asiaticum* (L.) Appelhans, Groppo & J. Wen	16.67%	0.17	0.16	80	0.8	0

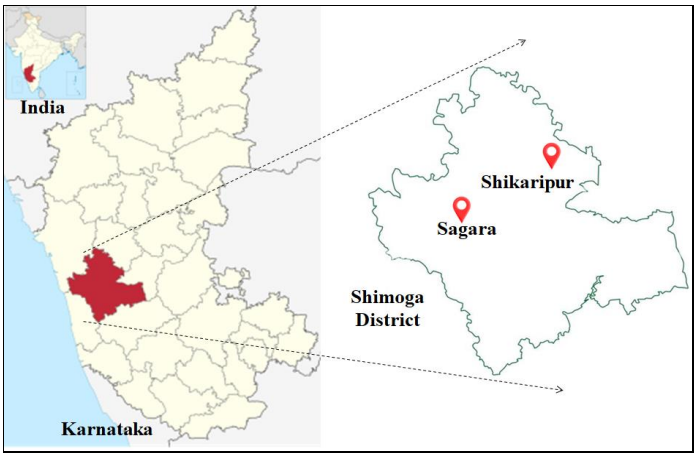

Fig 1: Map of Shivamogga district showing location of selected study area, Sagar and Shikaripur

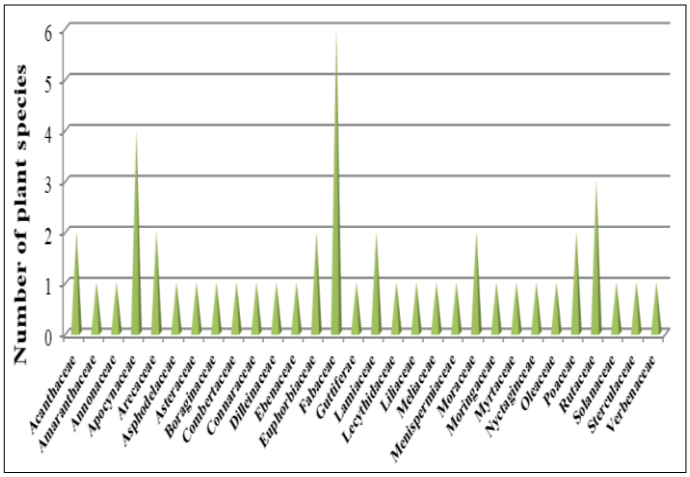

Fig 2: Family wise distribution of plant species surveyed in the present ethno botanical studies

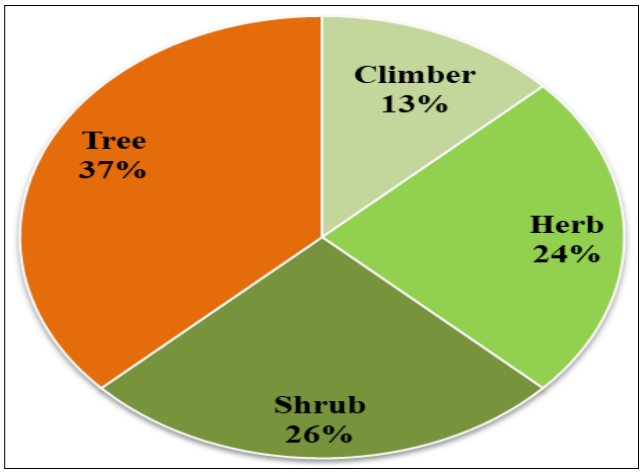

Fig 3: Growth habits of the reported medicinal plant species

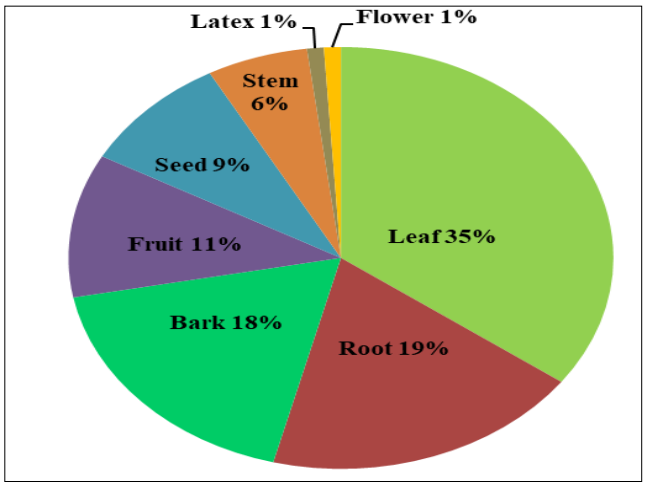

Fig 4: Morphological plant parts used in the preparation of traditional medicines

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