



RESEARCH PAPER

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Documentation of Ethnobotanical Knowledge among the people of Bodinayakanur, Theni District, Tamil Nadu, India

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Abstract

An ethnobotanical plant survey was conducted to explore the medicinal plant knowledge and their use in the study area. The exploration of the ethnomedicinal survey includes 62 plant species belonging to 54 genera of 38 families practiced by the traditional healers/ vaidayars of Bodinayakanur, Theni district, Tamil Nadu. The traditional knowledge of people having reliable ethnomedicinal expertise in the drug's formulation using available plants and its dosage practiced were documented. The suitable data were collected through questionnaires as well as informal personal interviews during the field trips in the study area. These data were documented from Jan 2022 to Dec 2022. The collected medicinal plants were used to cure skin ailments, jaundice, diabetes, headache, stomachache, wounds, and kidney ailments. The curative plants used by the people are systematized sequentially, by their plant name, family name, nearby name(s), part(s) utilized, method of treatment, and their relating illness were documented. Collected results are described with quantitative analysis using use value and informant consensus factor. *Andrographis paniculata* (Burn. f.) wall was reported with a UV of 0.98 and Kidney stone ailment has highest ICF value of 0.96. The conservation of ethnomedicinal practices as well as the plants are needed in order to cope with the predominant illness. This has made us to revert the people's life back to the natural way of healing practice for the health enrichment in the future.

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Introduction

Folk medicine gained importance over the last few decades in global concern (WHO, 2000). It is believed to be a combination of knowledge, skill and practices based on the concepts, interpretations and practices native to once place. Folk medicinal knowledge varies accordingly to country, region and inclined by factors like culture, attitude, history and philosophy. Medicinal plants related to many ethno- linguistic groups have created much interest in general public to the scientist, and then develop the most interesting field of ethnobotany. These ethnic groups not only share the plant uses in various aspects but also contains unique knowledge about plants. The lifestyle of the people is closely related to the local available plants.

(<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7936095/> accessed on 28.01.2022). There are numerous indigenous healers and traditional healthcare practitioners around the globe, developed the storehouse of knowledge about the medicinal plant usage and sharing it to the common people and service to communities. The documentation of native plant folk medicinal knowledge pave way to the number of useful drugs (Cox, 2000 and Gilani, 2005).

The source of information about the folk medicinal plant species, which can be deal with proper domestication and management (Njoroge *et al.*, 2004 and Mahmood *et al.*, 2013). In modern era, 25% of herbal drug sources are plant based and natural products (WHO, 2002). Many researchers gained their interest in ethnomedicine and new drug discovery (Hayta *et al.*, 2014). Most of the population of developing countries depends on this folk medicine for their health care services and cost-effective and safe to use (WHO, 2002). Therefore, traditional knowledge of these medicinal plants is the indigenous heritage of global platform (Purohit and Vyas, 2004). Many research works revealed the vulnerable and threatened medicinal plant species worldwide (Koti M and Kotresha K *et al.*, 2021). Documentation of information on folk herbal medicine is a vital aspect of conservation approach.

Quantitative markers including ICF, FL, and JI were used during the Rhodopes Mountain ethnobotanical study. 114 plant species were discovered through analysis of data from 92 informants, mostly for neurological, respiratory, digestive, and cardiovascular problems. (4) Indian folklorists utilize diverse *Opuntia* species for numerous medicinal purposes, thoroughly documented with details like names, uses, and administration methods. This study covers 85 applications across 16 states, potentially aiding reverse pharmacology research. (8).

The present study designed to document the medicinal flora used for various ailments, method of preparation, plant part(s) curative properties and to find out the UV and ICF by using Quantitative analysis.

Materials and methods

Study area

Bodinayakanur, a town which lies on the North- East and situated at the foothill of Western ghats in Theni district, Tamil Nadu [Fig. 1]. It is part of Agro climatic zone and hilly area. The main business is agriculture. It is known for the large-scale trading of banana, corn, maize, paddy and sugarcane. The geographical location ranges between 10.0106° N, 77.3497°E' and at the height of 353 m above the sea level.

The climate of the Bodinayakanur is semi- arid and comprises of red, black and alluvial soil.

The average temperature is 25° C – 30° C. The rainfall is around 972 mm per year. Many medicinal plants are also grown and naturally occur here. But due to the urbanization, there is a reduction of green cover, this leads to loss of many herbal medicines naturally grown in that area.

Studied local people

An ethnobotanical survey was conducted in the study area from July 2021 to Dec 2021. Based on standard protocols the data is collected from local people, traditional healers, traders and local vendors, traders from their usage of medicinal plants. As per the 2011

census, the local population of Bodinayakanur is 75,675 persons (male 37,498 and female 38,177) of which 5.6% were Muslims (<https://www.census2011.co.in/data/town/803760-bodinayakanur-tamil-nadu.html> accessed on 27-01-2022).

Collection of ethnobotanical information

The aim of the survey was explained to local people and elderly people of the area who helped us to

discover the traditional knowledge of local available plants.

The investigation was carried out by open ended interviews and questionnaire comprising details about the ethnomedicine used by informants such as vernacular name of the plant, parts used, mode of preparation, application and medicinal property and uses. Additional details of the informant age, gender and qualification were documented.



Fig. 1. Study area – Bodinayakanur.

Plant identification and herbarium preparation

Plants specimens are collected three in numbers in its flowering/ fruiting stage from its natural habitat. Plant specimens are dried, pressed, stitched, preserved, poisoned and mounted on the Herbarium sheets. Identified and verified matched informants with voucher plant specimens are deposited in the S.T. Hindu College, Nagercoil for future reference. All the plants are identification and nomenclature of the listed plants were based on the 'The Flora of Tamil Nadu Carnatic' (Matthew, 1983) and 'Flora of Presidency of Madras (Gamble, 1935).

Data analysis

Use value (UV)

Use value (UV) is a quantitative measure of a plant of its comparative importance to the informant's precisely (Phillips *et al.*, 1994).

$$UVs = \sum U/n$$

Here 'UVs implies the use value of a plant species, 'U' stands for the number of use reports said by the informants for the plant species and 'n' stands for the total number of informants interviewed. Usually, UV value signifies the regular use of medicinal plants by the informants. Plant species has more therapeutic values show high UV value.

Informant consensus factor (ICF)

Informant consensus factor (ICF) determine the consistency of information for a certain plant to treat a specific ailment (Giday *et al.*, 2009). The value of ICF varies from 0.00 to 1.00. Some of the plant species are used more for a particular illness by the informants leads to the high value of ICF while a low ICF value express the less use of plant species for an illness or informant disagrees the plant species use

for given illness.

$$ICF = (N_{ur} - N_t) / (N_{ur} - 1)$$

Where 'N_{ur}' denotes the number of use reports for a particular illness, and 'N_t' denotes the number of plant species used for the illness. To derive the ICF value, numerous diseases are pooled into extensive illness category on the basis of illness.

Results and discussion

Demographic profile of informants

After the interview of 48 informants, ethnomedicinal data revealed, 44% were local people (those who have less knowledge about herbal medicine), 23% were

vaidhiyars (have folk information and practice herbal medicines), 27% were local plant collectors (collect herbal plants) and 6% were traders (local plant collectors) (Table -1). Age of most of the informants was recorded as 20 years – 70 years old. Vaidhiyars/ Traditional healers select a specific time to collect plant species, followed by preparation method, mode of administration and dosage based on illness and its severity. Among them a few educated vaidhiyars often keep a record for the plant material used, preparation and dosage. Most traditional healer's orally records the details of folk medicine to their family members or to their helpers, which is commonly followed in many places across the world (Giday *et al.*, 2009, Teklehaymanot, 2009 and Islam *et al.*, 2014).

Table 1. Demographic report of informants in the study area.

Factor	Categories	No. of the persons	% Of informants
Gender	Male	31	65
	Female	17	35
Age	20-30 year	3	6
	30-40 year	11	23
	50-60 year	15	31
	60-70 year	17	36
	More than 70 years	2	4
Class	Local people	21	44
	Medicinal plant collectors	13	27
	Traditional healers	11	23
	Traders	3	06
Educational level	Illiterate	14	29
	Primary education	17	35
	Secondary education	10	21
	Higher secondary education	1	02
	Graduates	6	13

Medicinal plant diversity and their uses

A total number of 62 plant species which belongs to 54 genera and 38 families were explored during the field survey in the study area. From the collected plant species, 37% were herbaceous species followed by 10% of shrubs, 37% of trees and climbers of 16% (Fig 2). Likewise, life form analysis has been done in different parts of India (Ayyanur and Ignacimuthu, 2011, Silambarasan and Ayyanar, 2015, Balamurugan *et al.*, 2017, Giday., 2010). The highest number of species (5 plant species) belongs to Euphorbiaceae

followed by Lamiaceae (4 plant species), Amaranthaceae, Fabaceae, Solanaceae (3 plant species), Anacardiaceae, Rutaceae, Piperaceae, Myrtaceae, lythraceae, verbinaceae, zingiberaceae, Cucurbitaceae (2 species) (Fig. 3). Previous ethnobotanical studies show Euphorbiaceae family is dominant in Thiruvavur district (Parthiban, 2016) Apocyanaceae family was dominated in ethnic groups of Theni district (Vijayakumar, 2016), Another study shows the dominance of Acanthaceae family among the paliyers tribal people of Theni district (Ayyanar *et*

al., 2010) but in Manar beat of karanmadai range, Western Ghats Leguminosae family has more therapeutic uses (Jeyaprakash *et al.*, 2011).

Asteraceae family is more in use by the people of karandamalai in Dindigul district (Ramya *et al.*, 2019).

Table 2. List of medicinal plants recorded from Bodinayakanur.

S.No.	V.No	Botanical Name	Family	Local name	Habit	Useful part	Disease	Method	FC	UV
1	V011	<i>Achyranthus aspera</i> (L.) Blume	Amaranthaceae	Naayuruvi	Herb	Leaf and stem	Cut and wound	External	18	0.37
2	V012	<i>Aloe vera</i> (L.) Burm. f.	Liliaceae	Sotthukatthalai	Herb	Leaf	Liver disease, lower blood pressure, Body coolant	Oral	30	0.62
3	V013	<i>Alternanthera sessilis</i> (L.)	Amaranthaceae	Ponnonkanni	Herb	Leaf and stem	Stomach disorder	Oral	08	0.16
4	V014	<i>Amaranthus viridis</i> L.	Amaranthaceae	Kuppaikeerai	Herb	Whole plant	Hand pain	External	18	0.37
5	V015	<i>Anacardium occidentale</i> L.	Anacardiaceae	Kollampazham	Tree	Flower	Small pox	Oral	15	0.31
6	V016	<i>Andrographis paniculata</i> (Burn. f.) wall	Acanthaceae	Nilavembu	Herb	Leaf	Jaundice, blood purifier, Fever and Diabetes	Oral	47	0.98
7	V017	<i>Annona squamosa</i> L.	Annonaceae	Sithapalam	Tree	Leaf	Reduces Urinary problem, cancer, Dandruff	External	27	0.56
8	V018	<i>Aristolochia bracteolata</i> Lamk.	Aristolochiaceae	Aduthennapalli	Climber	Leaf	Scorpion bite	External	13	0.27
9	V019	<i>Artocarpus heterophyllus</i> Lamk.	Moraceae	Palamaram	Tree	Latex	Swelling	Oral	12	0.25
10	V020	<i>Azadirachta indica</i> A. Juss.	Meliaceae	Vembu	Tree	Leaf	Chicken pox	External	18	0.37
11	V021	<i>Boerhaavia diffusa</i> L.	Nyctaginaceae	Mukkurai	Climber	Leaf and stem	Asthma	Oral	24	0.5
12	V022	<i>Calotropis gigantea</i> L.	Asclepiadaceae	Erukku	Shrub	Flower	Wound	External	15	0.31
13	V023	<i>Cardiospermum halicacabum</i> L.	Sapindaceae	Mudakathan	Climber	Stem and leaf	Joint pain	Oral	7	0.14
14	V024	<i>Carica papaya</i> L.	Caricaceae	Pappali	Tree	Latex	Swelling	Oral	10	0.20
15	V025	<i>Cassia fistula</i> L.	Fabaceae	Konnai	Tree	Leaf	Snake bite	External	13	0.27
16	V026	<i>Cassia occidentalis</i> L.	Fabaceae	Sudalai avarai	Herb	Leaf	Kidney stone	Oral	19	0.39
17	V027	<i>Catharanthus roseus</i> L.	Apocynaceae	Nithya Kalyani	Herb	Whole plant	Cancer	Oral	28	0.58
18	V028	<i>Cissus quadrangularis</i> L.	Vitaceae	Pirandai	Climber	Stem	Bone fracture	External	30	0.62
19	V029	<i>Citrus lemon</i> (L.) obseck	Rutaceae	Elumichai	Tree	Fruit	Low blood pressure	Oral	24	0.50
20	V030	<i>Clitoria ternatea</i> L.	Fabaceae	Sankupoo	Climber	Seed	Joint pain	Oral	22	0.45
21	V031	<i>Coleus aromatus</i> . Benth.	Lamiaceae	Karpuravalli	Herb	Leaf	Urinary disease	Oral	21	0.43
22	V032	<i>Cocos nucifera</i> L.	Arecaceae	Thengu	Tree	Fruit	Skin infection	Oral	17	0.35
23	V033	<i>Commelina benghalensis</i> L.	Commelinaceae	Valaipachai	Herb	Leaf	Wound	External	13	0.27
24	V034	<i>Cucurbita pepo</i> L.	Cucurbitaceae	Pusanikai	Climber	Flower	Cough and cold	Oral	11	0.22
25	V035	<i>Curcuma longa</i> L.	Zingiberaceae	Manjal	Herb	Rhizome	Throat problem, tooth pain	Oral	31	0.64
26	V036	<i>Cynodon dactylon</i> L. Pers.	Poaceae	Arugampul	Herb	Whole plant	Reduce bodyheat, blood sugar, cystitis	Oral	36	0.75
27	V037	<i>Euphorbia hirta</i> L.	Euphorbiaceae	Amman pacharissi	Herb	Latex	Pimples	External	23	0.47
28	V038	<i>Gomphrena globosa</i> L.	Amaranthaceae	Vadamalli	Herb	Leaf	eye disease	Oral	20	0.41
29	V039	<i>Heliotropium indicum</i> L.	Boraginaceae	Thelkodukku	Herb	Leaf	Ringworm	External	18	0.37
30	V040	<i>Hibiscus rosa-sinensis</i> L.	Malvaceae	Sembaruthi	Tree	Flower	Body heat	Oral	24	0.50
31	V041	<i>Ixora coccinea</i> L.	Rubiaceae	Idlipoo	Shrub	Flower	Asthma	Oral	07	0.14
32	V042	<i>Jatropha curcas</i> L.	Euphorbiaceae	Kaatamanakku	Shrub	Leaf	Muscle pain	External	09	0.18
33	V043	<i>Jatropha gossypifolia</i> L.	Euphorbiaceae	Amanakku	Shrub	Fruit	Foot pain	External	13	0.27
34	V044	<i>Justicia adhatoda</i> L.	Acanthaceae	Adhatoda	Shrub	Leaf	Ringworm	External	27	0.56
35	V045	<i>Lantana camara</i> L.	Verbenaceae	Unnichedi	Shrub	Root	Mouth wash	Oral	18	0.37
36	V046	<i>Lawsonia inermis</i> L.	Lythraceae	Maruthani	Tree	Leaf	Hair Tonic	External	30	0.62
37	V047	<i>Leucas aspera</i> (Willd.) link	Lamiaceae	Thumbai	Herb	Leaf	Head ache	External	11	0.22
38	V048	<i>Mangifera indica</i> L.	Anacardiaceae	Mamarum	Tree	Bark	Menstrual disorder	Oral	15	0.31
39	V049	<i>Manilkara zapoda</i> L.	Sapotaceae	Sapoda	Tree	Latex	Cut and wound	External	23	0.47
40	V050	<i>Mimosa pudica</i> L.	Mimosaceae	Thoothal Surungi	Herb	Leaf	Cold and Cough	Oral	17	0.35
41	V051	<i>Momordica charantia</i> L.	Cucurbitaceae	Pagarkai	Climber	Leaf	Fever	Oral	07	0.14
42	V052	<i>Moringa oleifera</i> Lamk.	Moringaceae	Murungai	Tree	Leaf	Lower blood pressure, labour pain	Oral	41	0.85
43	V053	<i>Murrya koenigii</i> (L.) Spreng.	Rutaceae	Karuvapilai	Tree	Leaf	Animal bite, hair tonic	External	11	0.22
44	V054	<i>Musa paradisiaca</i> L.	Musaceae	Valaimaram	Tree	Stem	Kidney stone	Oral	28	0.58
45	V055	<i>Ocimum basilium</i> L.	Lamiaceae	Tiruneetrapachhilai	Herb	Whole plant	Cold and cough	Oral	25	0.52
46	V056	<i>Ocimum sanctum</i> L.	Lamiaceae	Tulasi	Herb	Leaf	Tooth pain	Oral	14	0.29
47	V057	<i>Ocimum tenuiflorum</i> L.	Lamiaceae	Karuthulasi	Herb	Whole plant	Leg pain	Oral	10	0.20
48	V058	<i>Phyllanthus emblica</i> L.	Euphorbiaceae	Nellikai	Tree	Fruit	Hair problem	Oral	29	0.60
49	V059	<i>Phyllanthus niruri</i> L.	Euphorbiaceae	Keezhanelli	Herb	Leaf	Jaundice	Oral	23	0.47
50	V060	<i>Piper betle</i> L.	Piperaceae	Vettilai	Climber	Leaf	Scorpion bite	External	12	0.25
51	V061	<i>Piper nigrum</i> L.	Piperaceae	Nalla Milaku	Climber	Fruit (seed)	Fever	Oral	11	0.22
52	V062	<i>Psidium guajava</i> L.	Myrtaceae	Navalmaram	Tree	Bark	Stomach problem	Oral	08	0.16
53	V063	<i>Punica grandium</i> L.	Lythraceae	Mathulai	Tree	Fruit	Stomach pain	Oral	24	0.50
54	V064	<i>Solanum nigrum</i> L.	Solanaceae	Manathakkali	Herb	Leaf	Skin disease and ring room	External	20	0.41
55	V065	<i>Solanum trilobatum</i> L.	Solanaceae	Thoothuvilai	Herb	Leaf	Cold	Oral	19	0.39
56	V066	<i>Solanum xanthocarpum</i> L.	Solanaceae	Kandankathri	Herb	Leaves (or) Fruit	Skin Problem	External	32	0.66
57	V067	<i>Syzygium cumini</i> (L.) Skeets	Myrtaceae	Navalmaram	Tree	Bark	Reduce diabetes, Stomach problem	Oral	44	0.91
58	V068	<i>Tamarindus indica</i> L.	Caesalpinaceae	Puliamaram	Tree	Leaf	Body pain	Oral	33	0.68
59	V069	<i>Tribulus terrestris</i> L.	Zygophyllaceae	Nerinjil	Herb	Fruit	Kidney stone	Oral	06	0.12
60	V070	<i>Tridax procumbens</i> L.	Asteraceae	Vettukaya Patchalai	Herb	Leaf and root	Wound	External	11	0.22
61	V071	<i>Vitex negundo</i> L.	Verbinaceae	Nochi	Tree	Leaf	Headache	Oral	22	0.45
62	V072	<i>Zingiber officinale</i> . Roscus	Zingiberaceae	Ingi	Herb	Rhizome	Migraine	Oral	15	0.31

Theni District, Tamil Nadu, India.

Amid the plant parts used for folk medicine preparation, leaf (28 reports) was most commonly used part followed by latex, flower and whole plant parts (each with 5 reports), fruit (3 reports), bark (3 reports), stem (2 reports), rhizome (2 reports) root (1 reports), seed (1 reports) (Fig 4). Most of previous traditional medicinal knowledge-based documentation studies across the world also reported

leaves as widely used plant parts for formulation of herbal medicines, because a greater number of metabolites is present in leaves (Yasoth kumar, 2021, Ayyanar *et al.*, 2010, Jeyaprakash *et al.*, 2011, Amri, 2012, Ullah *et al.*, 2013, Yemele *et al.*, 2015, Kumar *et al.*, 2010. Mohideen *et al.*, 2002, Radha *et al.*, 2021, Esakkimuthu *et al.*, 2018).

Table 3. Illness categories and their informant consensus factor values of documented ethnomedicinal plant uses.

Illness	Disease reported	Number of Use report	Number of taxa	Fic
Fever	7,11,20	38	3	0.94
Gastro – intestinal problem (GIP)	Stomach disorder- 8,8,24,29	69	4	0.95
Kidney disorder (KD)	Kidney stone – 19,28,6	53	3	0.96
Dental illness (DI)	Tooth pain -5,14 Mouth wash – 18	37	3	0.94
Hair care (HC)	Dandruff – 17, Hair growth – 12 Hair tonic – 30,6 Hair problem - 29	94	5	0.95
Respiratory illness (RI)	Asthma -24,7, Cold – 12,19,10 Cough -13,7	92	7	0.93
Endocrinal disorder (ED)	Diabetes -16,8,15	39	3	0.94
Poisonous bite (PB)	Snake bite – 13,13,5,12	43	4	0.92
Skeleton – Muscular Disorder (SMD)	Swelling –12,10, Pain –9,13,10,33,18,7,22 Bone fracture –30	164	10	0.94
Genito- urinary infection (GUI)	Menstruation problems –15 Hasten delivery -21 Urinary problem – 21,10	67	4	0.95
Cardiovascular disease (CVD)	Low BP -24 Blood purifier – 6,20	50	3	0.95
Oncology (ONC)	Cancer – 28, 7,8	43	3	0.95
Liver disorder (LD)	Jaundice -17, 11 liver disease – 10	38	3	0.94
General health & Others (GHO)	Body heat- 24 Ring worm-27,10,18 Skin disease – 32, 10 Headache -11,22,17 Cut -10, 10 Wound 13,11,8,15,13 Throat problem – 21 Reduce body heat -21 Pimples – 23 Eye disease- 20 Body coolant -10 Small pox -15 Chicken pox 18 Migraine - 15	394	24	0.94

The local people and hakims practicing traditional medicine prepare their formulation by various methods. This formulation mainly consists of juice (13 %), decoction (23 %), paste (13%), raw plant parts (5%), and powder (14%). This herbal preparation

method was reported in previous work. (Vijayakumar *et al.*,2016). Herbal paste is prepared by crushing the raw (fresh or dried) plant part into paste with water or oil. Extract or juice made by crushing the fresh plant parts with water or oil and extract the juice after

filtration. Plant decoction was prepared by boiling the plant parts in water and content is reduced to half of its volume. Herbal powder was made by grinding the shade dried plant materials. Many researchers also reported traditional healers directly use herbal paste more often than decoction and juices etc as same in present study also.

Quantitative analysis of data

Andrographis paniculata was reported with the highest UV of 0.98 (47 use reports) due to its high curative properties. It was followed by *Moringa oleifera* (0.85), *Cynodon dactylon* (0.75), *Tamarindus indica* (0.68), *Solanum xanthocarpum*

(0.66), *Curcuma longa* (0.64), *Aloe vera*, *Cissus quadrangularis*, *Lawsonia inermis* (0.62), while *Tribulus terrestris* also revealed the lowest use value of 0.12 (Table - 2). Informant consensus factor (ICF), is calculated by grouping the 39 recorded illness into 14 major illness categorised on the basis of treated body parts. (Table- 3). For example, the diseases like asthma, cold and cough are linked to various respiratory diseases and infections which are gathered together into a major illness category Respiratory illness (RI). Furthermore, diseases like chicken pox, headache and wound are not relay to any of the above said 14 illness categories and are placed under a general health and others.

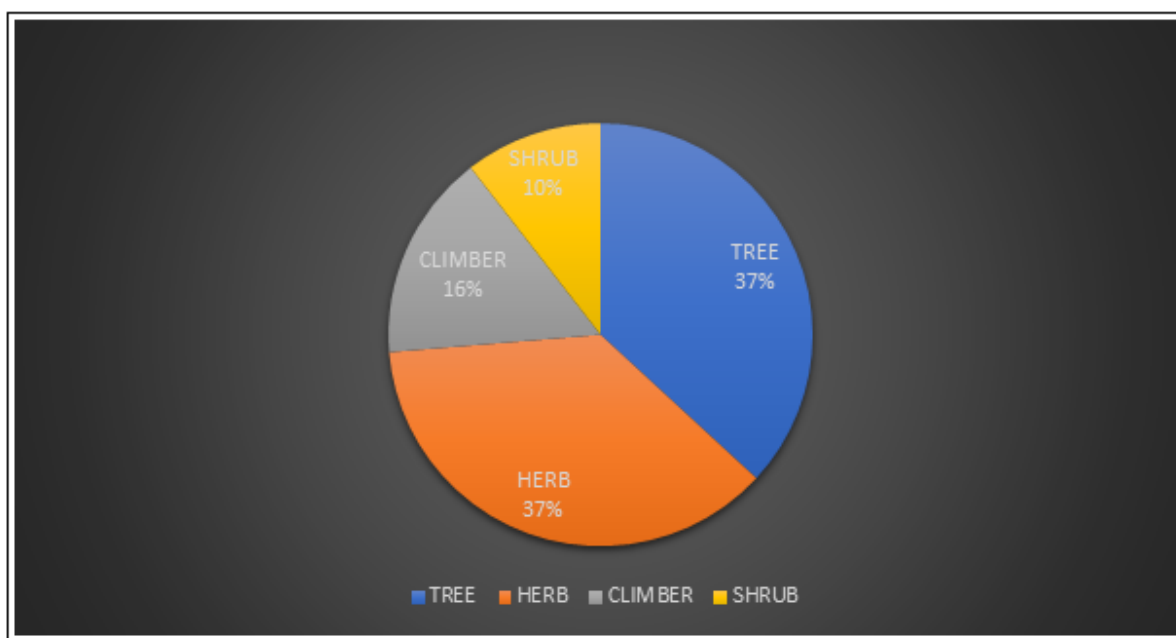


Fig. 2. Number of Plant species based on Habit.

ICF values were calculated and varies from 0.96 to 0.94. ICF with high value indicates that the informants strongly agree on the use of particular plants for that ailment as seen in kidney disorder with highest ICF score of 0.96.

Illness categories with high ICF values

Previous Review study shows that the *Andrographis paniculata* is very efficient therapeutic plant, used to treat cold, fever, diarrhoea, jaundice, liver tonic and cardiovascular health too. All part of the plant contains 55 phytoconstituent therapeutic properties. Malasars of Tamil Nadu recorded high ICF value for

jaundice and frequent use of *Phyllanthus amarus* (Ragupathy *et al.*, 2008). Also reported by in vitro and in vivo studies in curing viral hepatitis and with more laxative properties (Venkateswaran *et al.*, 1987). A combination of *Piper nigrum*, *Piper longum* and *Zingiber officinale* known as 'thrikatu' actively increase the absorption in small intestine (Prakash and Srinivasan, 2010), also increase the absorption of Curcumin (Suresh and Srinivasan, 2010), pefloxacin (Dama *et al.*, 2008) and norfloxacin (Janakiraman and Manavalan, 2008). A flavanoid glycoside (CC-I) present in *Cuminum cyminum* bioavailability of rifampicin (Sachin *et al.*, 2007).

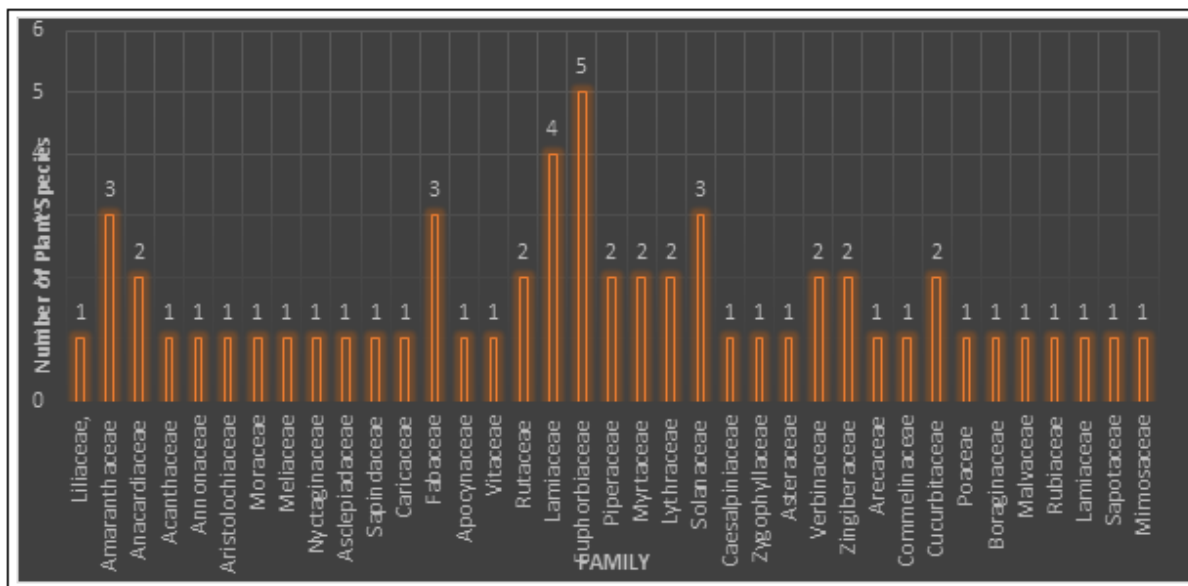


Fig. 3. Numbers of Plant Species per families.

This knowledge helps to build a novel drug where there might be possibility to reduce the surgical method of intervention (Barnert and Messmann, 2008).

Illness categories with moderate ICF values

In illness categories the plant species such as *Cardiospermum helicacabum* has diuretic and diaphoetic (Sheeba and Asha, 2009), *Syzygium cumini* shows astringent and anthelmintic property (Helmstadter, 2008), *Euphorbia hirta* effective

against UTI and antidiarrheal (Galvez *et al.*, 1993), *Cissus quadrangularis* affective against bone fracture (Jainu *et al.*, 2006), *Vitex negundo* is anti-rheumatic (Zheng *et al.*, 2009), *Phyllanthus* spp. curative property for the liver ailments (Gopi and Setty, 2010), *Solanum nigrum* effective against gastrointestinal ailments (Jainu and Devi, 2006), and *Azadirachta indica* act as a immune enhancer (Goswami *et al.*, 2010), mentioned minimum of three citations for the same usage and pharmacological support.

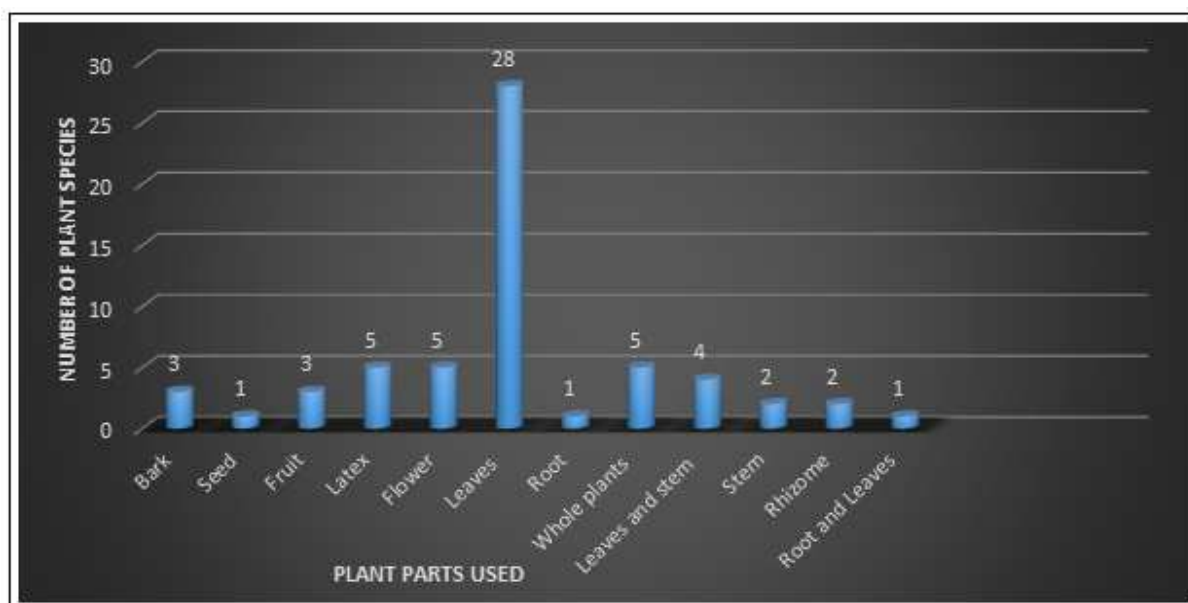


Fig. 4. Different Plant parts used for the treatment of various diseases.

Many studies focussed on *Opuntia* usage as potential home remedy drug in India (Raj *et al.*, 2023). Illness categories with low ICF values denotes the plant species reported might be an artifact or in disuse practice, or may be ineffective for prevail conditions or might be a cultural fringe of knowledge. (Heinrich *et al.*, 2009).

Acuity and diffusion of knowledge

A native person has many tales, believes and memories of his forest areas. Such form of life we never had in our pasts (Jain, 2000). These people have a unique way of transmitting their worthy store house of knowledge mainly verbal. Information gathered and recollected and passed on many generations through strong memory power (Shepard, 2002). Though the reinterpretation act as the device for knowledge transmission explaining how the plant could useful in treating particular ailments over the doctrine of signature which was considered as pre-historic (Bennett, 2007). These signatures are not a priori clues but to understand retaining the complex memories (Donald, 1997). Many such published work have recorded such knowledge transmission in India (Jain, 2000). Many beneficial plant details are maintained in the pharmacopoeia by non- literate societies in our country (Shepard, 2002).

Conclusion

A traditional use of medicinal plants used by the people in Bodinayakanur, Theni district has been obtained through this study and as a result of 15% new traditional uses were reported. The present study reveals that the flora of medicine is a main source of medicine in the primary health care system for the local communities. However, some of the plant species such as, *Annona squamosa*, *Curcuma longa*, *Tribulus terrestris*, *Tamarindus indica*, *Zingiber officinale* is taken along with food in their daily life. The plants with the highest used values in this study area indicates the presence of useful phytochemicals. Though, the folk knowledge is poor among younger generation than compare to older population. Inhabitants of the area use a wide variety of medicinal plants and the traditional knowledge of plant use is

still practiced among the people. The loss of folk knowledge could be seen as informants could not recall the medicinal uses of certain plants. This shows that the local knowledge about the use of these plants is vanishing and this trend might accelerate with the current rate of deforestation by migrating refugees as well as the local people. There is immediate need of conservation of medicinal value and to preserve the traditional knowledge about medicinal plants which opens the door for the treatment of many untreated diseases. Therefore, medicinal plants cultivation and preservation to be encouraged for our future generation.

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Competing interest

The authors of this manuscript have no competing interest to declare.

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