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# Ethnobotanical investigation of *Nadars* in Atoor village, Kanyakumari District, Tamilnadu, India

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## ABSTRACT

**Objective:** To conduct an ethnobotanical survey and collect information about the medicinal plants used in the treatments of various ailments by the *Nadars* of Atoor village of Kanyakumari district, Tamilnadu, India. **Methods:** Information presented in this document was gathered from the *Nadars* using an integrated approach of botanical collections, discussions with the elderly people, traditional medicinal practitioners (locally known as *Vaidhyars*) and local faith healer and interviews with questionnaires in the years 2009–2010. **Results:** A total of 89 plant species representing 47 families have been reported to be in use among the *Nadars* of the study area. Family wise distribution of medicinal plants shows Acanthaceae, Asclepiadaceae and Lamiaceae was the most speciose family with 5 genus and 5 species each and Liliaceae was the co-dominant family represented by 3 genus and 4 species. Of the 89 plants species, 14 were tree species, 18 shrubs, 47 herbs and 10 climbers. **Conclusion:** The study revealed that *Nadars* have a great faith in the traditional healing system and they rely on medicinal plants for treatment of various illnesses. Further studies on phytochemistry, pharmacology and pharmacognosy on these species may lead to the invention of novel bioactive compounds to treat pathogenic diseases.

## 1. Introduction

Medicinal plants, since times immemorial, have been used in virtually all cultures as a source of medicine. The widespread use of herbal remedies and healthcare preparations, as those described in ancient texts such as the Vedas and the Bible, and obtained from commonly used traditional herbs and medicinal plants, has been traced the occurrence of natural products with medicinal properties[1]. Plants play significant role not only in our economy but also used as traditional medicines[2–12]. Almost 75% of the medicinally important plant species grow in wild condition [13,14]. Kanyakumari district of Southern Western Ghats is one of the botanically rich areas of Indian peninsula. The richness and diversity of the medicinal flora of this region are largely due to the varied topography, tropical climate and heavy rainfall[15]. Rural people of the area have strong relations with their surrounding environment[16]. Therefore, the indigenous people have not forgotten their age-old ethnicity and traditions. Knowledge about medicinal plants,

which are used in their daily life against various ailments, still lies with them[17–21].

*Nadar* is one of the prominent castes of Tamilnadu, south India. The tern *Nadar*, in Tamil literally means one who rules the land. Historically, majority of the *Nadars* were humble cultivators of Palmyra tress and mostly engaged in the Palmyrah industry, including the production of toddy. They have the vast knowledge of the medicinal plants surrounds them. Although different workers have documented the uses of various medicinal plants from different parts of Kanyakumari district, Tamilnadu, India[22–32] information on the traditional and cultural practices of the *Nadar* communities residing in the Kanyakumari district of Tamilnadu is unavailable. Therefore, a need was felt to gather in-depth information on the plant species used by the *Nadar* community and document their traditional knowledge and cultural practices which may be under threat due to the influence of modernization

## 2. Materials and methods

### 2.1. Study area

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Attoor village is situated in Kalkulaum Taluk of Kanyakumari district, Tamilnadu, India. The total area of this village is 15.75 km<sup>2</sup>. According to the 2001 census the village had a population of 11 744 with 5 922 males and 5 822 females. Out of this 168 people are SC and 16 are ST. *Nadars* are the predominant community, 75% are Christian and 25% Hindus. The number of household is 3 523. The literacy rate is 74.78 and having 12 schools, 8 hospital and cashewnut factories. Agriculture is the major occupation of this village.

## 2.2. Climate

The climate of the district is favorable warm and humid. The summer starts from March to May followed by southwest monsoon from June to September. October and November constitute the post-monsoon or retreating monsoon season with frequent thunderstorms. From December to February, northeast monsoon season is confined with rains and rest months are generally with bright weather. The rainfall varies from 103 cm to 310 cm, and elevation varied from sea level to 1 829 m.

## 2.3. Soil

The soil of the district is broadly classified into two major groups namely, red and alluvium soils. Red soil is further classified into red loam and sandy soils. Alluvium soil is divided into coastal and river alluvium soils. An area of the district occupied by red soil is greater than alluvial soil. The black colour of forest soil is mainly due to high contents of humus and minerals.

## 2.4. Landscape and land use pattern

Topographically, it has prominent natural features such as richly varied and crowded vegetation, majestic undulating hills with surrounding plains, and coconut plantations, which make splendid landscapes. According to the village profile of Atoor village a total area of 15.75 km<sup>2</sup>. in which 80% of the area is covered with traditional agroforestry system and the remaining area of land is covered by road, streets, residential area and agricultural land. Agriculture is the main occupation of local people. Basically *Oryza sativa* (Paddy), *Musa paradisiaca* (Banana), *Manihot esculenta* (Tapioca), *Dioscorea* sps. (Yam) etc are cultivated. As the vegetables, brinjal, tomato, bitter gourd, bottle gourd, chilli, pumpkin, etc are cultivated. Mango (*Mangifera indica*), jack fruit, banana, guava are major fruits. There is a wide probability of professionalism in agricultural but because of lack of technical education, lack of irrigation and unawareness it has been only for subsistence.

## 2.5. Vegetation

The forests of this village are coming under traditional agroforestry system with integrated farming practices. Most of the household had the lofty trees such as, *Artocarpus hirsutus*, *Artocarpus heterophyllus* (Moraceae), *Mangifera indica* (Anacardiaceae) and *Tamarindus indica*

(Caesalpiniaceae), etc. However, in recent days due to monocultural practices the giant specimen *Artocarpus hirsutus*, which yield edible fruit and nut, has been replaced by *Heavea brasiliensis*.

## 2.6. Data collection

Regular field trip was conducted to collect ethnobotanical information of *Nadars* residing in Atoor village, Kanyakumari district during July 2009–June 2010. The old people, medicinal men, local faith healer were intensively interviewed and obtained information mainly concerning their knowledge on ethnomedicinal uses of plant species. The plants species was collected and identified taxonomically by using the regional and local flora<sup>[33–35]</sup>. The Herbaria of Botanical Tropical Botanical Garden and Research Institute, Trivandrum, Kerala, and Botany Department of Neasmony Memorial Christian College, Marthandam, were consulted for correct identification of plant specimens.

## 3. Results

The local inhabitants of Attoor village of Kanyakumari district are found to possess a very rich ethnobotanical knowledge. Even to this date, they have been making use of a large number of plants species for various purposes such as medicine, fodder, firewood, timber, ceremonies, etc. A total 89 plant species representing 47 families have been reported to be in use among the *Nadars* of the study area (Table 1). Both cultivated and non cultivated plant species have been documented in the present study. The use of the same plant or plant part was found to vary in some cases among the *Nadars* of different hamlets. Among 89 plants species used by the villagers, 14 were tree species, 18 shrubs, 47 herbs and 10 climbers (Figure 1).

Family wise distribution of the medicinal plant shows Acanthaceae, Asclepiadaceae and Lamiaceae having 5 genus and 5 species each was the most speciose family, followed by Liliaceae was the co-dominant family having 3 genus and 4 species. Four families (Fabaceae, Asteraceae, Verbenaceae and Solanaceae) had 3genus and 3 species each. Nine families viz. Amaranthaceae, Arecaceae, Apiaceae, Apocynaceae, Dioscoreaceae, Malvaceae, Myrtaceae, Nyctaginaceae and Rutaceae representing 2 genus and 2 speceis each, however, 26 families were monospecific (Table 2).

Among the different plant parts used for the preparation of medicine, leaves (48.24%) and whole plants (15.29%) were predominantly and co-dominantly used (Figure 2), followed by fruits (9.41%), roots (8.24%), flowers (5.88%), bulbs, rhizome, seeds and stem (2.35% each), bark, latex and pseudo stem (1.18%).

From the present study it was found that the plants are used to treat about 34 types of ailments such as, bone fracture and hair fall (8 species each), diabetes (7 species), cold, cough, jaundice and wounds and cuts (6 species each), poisonous bites (5 species), breathing problem, dental carries and

**Table 1.**

Medicinal plants used by the Nadars of Attoor village of Kanyakumari district, Tamilnadu, India.

Botanical name	Family	Local name	Uses
<i>Acalypha indica</i> L.	Euphorbiaceae	Kuppaimeni	A pinch of common salt is added with leaf extract is used to cure whooping cough.
<i>Achyranthes aspera</i> L.	Amaranthaceae	Nayuruvi	The paste of fresh leaves is applied on insect bites. The root juice is given as an antidote against snake bite. The infusion of one teaspoon of leaves and flowers is mixed with a cup of water. It is consumed half a cup thrice a day to cure cough, cold and fever. The stem is used for cleaning the teeth. Root is ground into paste and made a small ball, taken orally for 15 days to cure rabbit and dog bites.
<i>Adathoda vasica</i> (L.) Nees.	Acanthaceae	Adathoda	The leaf is boiled with water and consumed orally to cure rheumatism. The juices of leaves are used to cure cough and cold. Fresh root juice with honey also cures fever and vomiting.
<i>Aerva lanata</i> (L.) Juss	Amaranthaceae	Sirukanpoolai	The leaf decoction is used to cure diabetes.
<i>Allium cepa</i> L.	Liliaceae	Garlic	Small amount of garlic, bark of Moringa pterygosperma and ginger crushed juice is applied on the ear to cure earache.
<i>Allium sativum</i> L.	Liliaceae	Onion	The decoction is given for cough.
<i>Aloe vera</i> (L.) Burm.f.	Liliaceae	Sottukattalai	The leaf juice is used to cure nail infection. The juice of leaves is applied on burns and boils. The leaf juice is used to remove the dirty substances on the hair. The leaf juice is applied on the face to remove pimples
<i>Ananas comosus</i> (L.) Merr.	Bromeliaceae	Annasi	Skin of the fruit is removed and cut into small pieces. It is consumed daily before going to bed, to increase digestive power.
<i>Andrographis paniculata</i> (Burm.f) Wall.ex.Ness	Acanthaceae	Nilavempu	The infusion of leaf is used to cure cough.
<i>Anisomeles malabrica</i> (L) R.Br.	Lamiaceae	Perumthumbai	Leaves are boiled in water and the extracted juice is used to cure vomiting, fever, cough and cough. Inhalation of the vapour of this extracted fraction is also cures fever.
<i>Areca catechu</i> L.	Arecaceae	Pakkumaram	Grind the tender leaf and apply all over body to cure skin diseases.
<i>Aristolochia indica</i> L.	Aristolochiaceae	Karudakodi	Fresh juice of the plant mixed with gingelly oil and applied on skin diseases.
<i>Asparagus racemosus</i> Willd.	Liliaceae	Sathaveri	The powder of the root is taken with milk orally to treat internal piles.
<i>Azadirachta indica</i> A. Juss	Meliaceae	Veppu	The leaf is boiled with water and it is inhaled to cure headache. Leaf paste with turmeric is used to cure pimples. The twigs are used as a tooth brush.
<i>Bambusa arundinacea</i> (Retx.) Rexb.	Poaceae	Mungil	Equal proportion of leaf juice is mixed with honey to cure the cough in children.
<i>Biophytum sensitivum</i> (L.) DC.	Oxalidaceae	Mukkutti	The leaves are used to cure eye diseases.
<i>Boerhavia diffusa</i> L.	Nyctaginaceae	Mukkarattikeerai	The extract of leaves along with 2 grains of Horedum vulgare,(Barley) black pepper, given twice a day for 7 days to cure leucoderma.
<i>Calophyllum inophyllum</i> L.	Clusiaceae	Punnaimaram	The green fruit is heated, cooled and applied on pimples.
<i>Calotropis gigantea</i> (L.) R.Br.	Asclepiadaceae	Erukku	The leaves along with pepper are used to treat snake bite. Dry leaf powder is mixed and boiled with oil and powdered turmeric and applied to ulcer.
<i>Capsium annum</i> L.	Solanaceae	Kantharimilagu	Regular consumption of Capsicum annum together with food regularly reduces blood pressure.
<i>Cardiosepermum halicacabum</i> L.	Sapindaceae	Mudakatan	The leaf along with water is boiled and used to cure body pain. It promotes hair growth and cleaning the hair.
<i>Carica papaya</i> L.	Caricaceae	Papaya	The fruit is eaten continuously to expel the intestinal worms.
<i>Catharathus roseus</i> (L.)G.Don.	Apocyanaceae	Sudukattumalli	The shade dried and powdered leaves are mixed with water is used to treat diabetes. Root extract is used to control cancer growth.
<i>Celome viscosa</i> L.	Capparaceae	Naikaduku	Juice obtained from the fresh leaves is applied to the ear to relieve from earache.
<i>Centella asiatica</i> L.	Apiaceae	Vallarai	The leaves are chewed as mouth freshness. Juice extracted from the plant is used externally for rheumatic swellings. Poultice of the fresh leaves is applied for ulcers.
<i>Cinnamomum zeylanicum</i> Garetn.	Lauraceae	Karuvapattai	The bark along with water is boiled and used as a medicine.
<i>Cissus quardrangluris</i> L.	Vitaceae	Perandi	Young stem is pickled and eaten to cure gastric disorders. The plant is ground into paste along with equal quantity of turmeric. It is applied on the affected parts (for external application) and left undisturbed until it cures.
<i>Citrus lemon</i> (L.) Burm.f.	Rutaceae	Ellumichai	The fruit juice applied on the face regularly is used to cure pimples.
<i>Cledodendron inerme</i> (L.) Gaertn.	Verbenaceae	Pervilai	Leaves boiled with water and used to cure rheumatic swellings and pains.

<i>Clitoria ternatea</i> L.	Fabaceae	Sankhu puspham	The leaf paste is applied on wounded parts. The juice extracted from leaves of the plant is mixed with ginger juice and taken orally for fever.
<i>Cloeus aromaticus</i>	Lamiaceae	Navarapachalai	The leaves are boiled with coconut oil and applied on the head to cure headache and cold. Hot juice of the leaves is applied for sore throat.
<i>Cocos nucifera</i>	Areaceae	Thennaiaram	Mix tender coconut with rose water (locally known as panner) and apply it on pimples.
<i>Coriandrum sativum</i> L.	Apiaceae	Kothamalli	The fruits are chewed to control vomiting. The leaves are used to treat eye diseases and bile.
<i>Crocus sativus</i> Lin.	Iridaceae	Kungymapoo	If pregnant women consume saffron along with milk had a belief that the baby would develop a bright skin complexion.
<i>Cuminum cyminum</i> L.	Apiaceae	Jeeragam	Soak the seeds in water, taken in a cloth and gently applied over the eye to cure eye diseases.
<i>Curculigo orchiodes</i> Gaertn.	Hypoxidaceae	Nilapanai	A hand full of the root is taken, powdered and squeezed, to cure sprines.
<i>Curcuma longa</i> L.	Zingiberaceae	Manchal	The rhizome is made into paste along with water and is used to cure small pox and chicken pox. The burned rhizome is made into paste and applied to cure wounds.
<i>Cynodon dactylon</i> (L.) pers.	Poaceae	Arukampul	Cleaned and crushed leaves along with black pepper (10 nos.), coconut milk and boiled in water is consumed 3 to 4 times to cure breathing problems.
<i>Cyperus rotundus</i> L.	Cyperaceae	Koraikilangu	The tubers are sliced and boiled with one cup of milk to cure indigestion.
<i>Datura metel</i> L.	Solanaceae	Ummattai	The roots are used to treat rabies dog bites.
<i>Diosorea alata</i> L.	Dioscoreaceae	Kachilkilangu	The juice from the leaf is used to alleviate the effect of snake poison. Heat the bark and crush it to get the juice. It is poured into the ear to cure the pain.
<i>Eclipta alba</i> (L.) Hassk	Asteraceae	Kaithoni	The leaf is boiled with coconut oil and applied on the head, to increase the growth of hair.
<i>Elephantopus scaber</i> L.	Asteraceae	Anachavadi	The whole plant is washed with water and is powdered. Then it is crushed and boiled with coconut oil and apply this mixture to cure head ache.
<i>Eruvatamia divaricata</i> (L.) Burkill	Acanthaceae	Anadiarvattai	The flowers are used to cure eye diseases.
<i>Euphorbia hirta</i> L.	Euphorbiaceae	Amman paccarici	Plant juice is applied to treat wounds between raw toes caused by constant walking base footed during rainy season. The leaves are crushed and applied on cuts to prevent bleeding.
<i>Ficus benghalensis</i> L.	Moraceae	Aal	Latex is pasted on teeth to relieve toothache.
<i>Gymnema sylvestre</i> (Retz.) R.Br.	Asclepiadaceae	Charkaraikolli	The leaf is eaten to cure diabetes.
<i>Gynandropis pentaphylla</i> (L.) DC	Apparaceae	Thivalai	Inhalation of crushed juice from leaves removes headache.  Crush the leaves, flowers with hand. Take 50ml of the juice mix it with one table spoon of salt, having it single time cures diarrhoea.
<i>Helianthus annus</i> L.	Asteraceae	Sunflower	The oil obtained from seed is used for cooking purpose to cure diabetes.
<i>Heliotropium indicum</i> L.	Boraginaceae	Thelkodukku	Juice of the leaves boiled with castor oil and applied to scorpion sting. Juice fresh juice of leaves is used for eye diseases.
<i>Hemidesmus indicus</i> (L.)R.Br.	Asclepiadaceae	Nannari	The root decoction is used to cure ulcer and removes bad breath. The infusion of the root with milk and sugar used as tonic especially for diarrhoea. The latex of the plant is used to cure eye diseases.
<i>Hybiscus rosa-sinensis</i> L.	Malvaceae	Chemparuthi	Oil is made by mixing the juice of the fresh petals, leaf and coconut oil is used to promote hair growth and darkening of hair. The leaf and flower is made into paste and applied on head, before taking bath to remove dandruff.
<i>Hyptis suaveolensis</i> (L.) Poir	Lamiaceae	Narachappai	The leaf paste is used to cure cuts and wounds and cuts. The juice of the leaves is instilled into nostrils of the patient suffering from unconsciousness.
<i>Ixora coccinea</i> L.	Rubiceae	Thetti	The flower extract is used externally for dermal irritation.
<i>Justicia simplex</i> D.Don.	Acanthaceae	Oduodukki	The plant is used to cure bone fracture.
<i>Lantana camara</i> L.	Verbenaceae	Poochadi	Decoction of the root is used as mouth wash.
<i>Lawsonia inermis</i> L.	Lythraceae	Maruthani	The leaf is made into paste and applied on the infected nails to cure felon. It is also used for the treatment of Jaundice.
<i>Leucas aspera</i> (Willd.) L.	Lamiaceae	Thumbai	Two teaspoon of water, one teaspoon of honey, 3 drops of <i>Leucas aspera</i> leaf juice and 2 drops of <i>Pergularia daemia</i> leaf juice are mixed one by one. It is used to cure stomach problems in children. Plant decoction is used internally for cold. Fresh leaf juice is applied externally used as a first aid for poisonous bites. To remove heaviness in the head, this flower is boiled with gingerly oil and ( <i>Sesamum indicum</i> ) applied on head.
<i>Mimosa pudica</i> L.	Mimosaceae	Thottavadi	It is used to treat wounds and cuts.

<i>Mirabilis jalapa</i> L	Nyctaginaceae	Nalumanichedi	Fresh leaf juice cures wounds and burns.
<i>Momordica charantia</i> L	Cucurbitaceae	Pakarkai	The fruits are used as a medicine for diabetes.
<i>Moringa oleifera</i> Lam	Moringaceae	Murungi	The leaf paste is applied on insect bite. The leaf decoction is taken orally to increase the content hemoglobin.
<i>Mukia maderaspatana</i> (L.) M.Roem	Cucurbitaceae	Musumusukkai	Eating roasted leaves along with noon meals to cure respiratory problems.
<i>Murraya koenigii</i> (L.) Spreng.	Rutaceae	Karileaf	The leaf paste is applied on dog bites. The oil prepared from curry leaves is used to promote hair growth.
<i>Musa paradisiaca</i> L.	Musaceae	Valai	The juice of pseudo stem is used as first aid for snake bite.
<i>Ocimum sanctum</i> L.	Lamiaceae	Tulasi	The leaf is boiled with water and it is inhaled to cure cold and cough.
<i>Piper nigrum</i> L.	Piperaceae	Nallanilagu	Pepper, dried ginger and palm sugar (Karuppatti) are mixed along with water and prepare a coffee to cure cold. Omelet is made with powdered pepper and salt and is given for cold and coughs. Pepper along with common salt is used for dental carries (toothache). Pepper is also used to cure stomach disorders.
<i>Pergularia daemia</i> (Forssk.) chiov.	Asclepiadaceae	Veliparuthi	Leaf juice is taken orally thrice a day to cure blood clot wounds.
<i>Phyllanthus niruri</i> L.	Euphorbiaceae	Kellanelli	The plant extract is mixed with coconut juice used to cure jaundice.
<i>Psidium guajava</i> L.	Myrtaceae	Koyya	The leaf is boiled with water and taken orally to cure diabetes.
<i>Trichopus zeylanicus</i> Gaertn.	Dioscoreaceae	Arokkiyapachai	It is consumed to give energy to the body.
<i>Rhynacanthus nasutus</i> (L.) Kurz	Acanthaceae	Nagamalli	The whole plant is crushed and the juice from the plant should be drunk regularly for 3 days to cure snake bite.
<i>Ricinus communis</i> L.	Euphorbiaceae	Amanaku	The oil is obtained from seeds, used for cleaning the hair.
<i>Rosa indica</i> L.	Rosaceae	Roja	The flower is smashed and applied on the face, gives shining.
<i>Santalum album</i> L.	Santalaceae	Santhanam	A paste of wood is applied on the forehead to give a cooling effect.
<i>Scoparia dulcis</i> L.	Scrophulariaceae	Kallurukki	Plant juice ca. 2 teaspoon thrice a day is given to treat fever and applied on forehead to cure headache. The juice of leaves is taken orally for kidney stone.
<i>Sida rhombifolia</i> L.	Malvaceae	Kuranthotti	The plant is used for rheumatism. It removes dirt from the hair.
<i>Solanum nigrum</i> L.	Solanaceae	Manathakali	The whole plant is mixed with one litre of water and boiled in a mud pot. Have it is early morning and evening for 12 days to cure ulcer.
<i>Solanum surattense</i> Burm.f.	Solanaceae	Kandankathiri	The whole plant is grinded and a spoon full of the grinded juice is taken to cure diarrhoea in children.
<i>Solanum torvum</i> Sw.	Solanaceae	Sundai	The roots are made into poultice and applied over cracked feet.
<i>Solanum trilobatum</i> L.	Solanaceae	Thiithuvalai	Few drops of juice obtained from the fresh leaves are applied to the ear to relieve from ear pain.
<i>Syzygium aromaticum</i> (L.) Merr.	Myrtaceae	Kirumbu	The oil (clove oil) obtained from the flower bud of the plant is used to cure dental carries.
<i>Tamrindus indica</i> L.	Caesalpiniaceae	Puli	The leaf along with water is boiled and applied externally for pains, and swellings.
<i>Tridax procumbens</i> L.	Asteraceae	Muriampachalai	The fresh juice obtained by smashing the leaves is the remedy for wounds and cuts.
<i>Trigonella foenum-graceum</i> L.	Fabaceae	Venthayam	The seeds are soaked in water at overnight and made into paste. The paste is applied over scalp for preventing hair fall. It is also used to control dandruff, and keep hair healthy, long, strong and black. A paste of fresh leaf is applied over scalp regularly before taking bath for controlling dandruff, luxurious growth and blackening of hair. The seeds added with ( <i>Trigonella foenum-graceum</i> ) omum and made into powder. This powder is mixed with coconut and grinds it and prepares chutney is used to cure stomach disorders.
<i>Tylophora asthmatica</i> (L.f) Wight & Arn,	Asclepiadaceae	Nancharuppan	The juice of the plant is an effective antidote.
<i>Viola suffruticosa</i> L.	Violaceae	Orithalthamarai	The leaf extract is used as a shampoo to clean the hair.
<i>Vitex negundo</i> L.	Verbenaceae	Nochi	Leaf juice is given for rheumatism.
<i>Zingiber officinale</i> Rosc.	Zingiberaceae	Inchi	Chewing a piece of ginger after meals regularly promotes digestion, gastritis and gastro intestinal infection. Chewing a piece of fresh ginger along clove and crystal of common salt is a medicine for loss of voice due to shouting and singing paralyzed muscles of tongue and face. Burnt ginger, mixed with common salt is rubbed to cure dental sensitiveness caused by eating sour fruits and toothache. The dried ginger, salt, and rice are mixed and made into paste and applied on the nail infections. Ginger, garlic and salt is grinded well, and is given to cure stomach pain

**Table 2.**  
Family-wise distribution of medicinal plants in the study area.

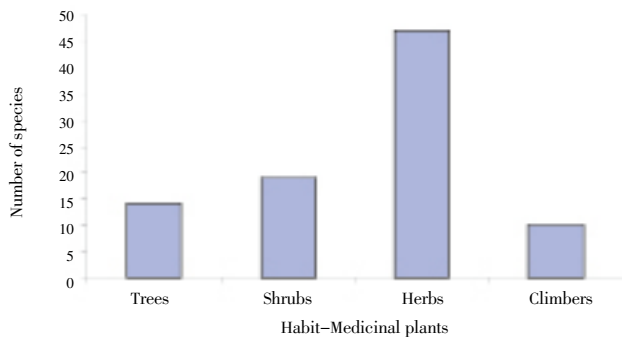
Family rank	Family	Genus	Species
1	Acanthaceae	5	5
2	Asclepiadaceae	5	5
3	Lamiaceae	5	5
4	Liliaceae	3	4
5	Asteraceae	3	3
6	Euphorbiaceae	3	3
7	Solanaceae	3	6
8	Verbenaceae	3	3
9	Amaranthaceae	2	2
10	Arecaceae	2	2
11	Apiaceae	2	2
12	Apocynaceae	2	2
13	Dioscoreaceae	2	2
14	Malvaceae	2	2
15	Myrtaceae	2	2
16	Nyctaginaceae	2	2
17	Rutaceae	2	2
18	Zingiberaceae	2	2
19	Cucurbitaceae	2	2
20	Capparaceae	2	2
21	Boraginaceae	1	1
22	Aristolochiaceae	1	1
23	Bromeliaceae	1	1
24	Cyperaceae	1	1
25	Fabaceae	1	1
26	Clusiaceae	1	1
27	Hypoxidaceae	1	1
28	Iridaceae	1	1
29	Lauraceae	1	1
30	Lythraceae	1	1
31	Meliaceae	1	1
32	Moraceae	1	1
33	Mimosaceae	1	1
34	Moringaceae	1	1
35	Musaceae	1	1
36	Oxalidaceae	1	1
37	Poaceae	1	1
38	Piperaceae	1	1
39	Rubiaceae	1	1
40	Solanaceae	1	1
41	Sapindaceae	1	1
42	Santalaceae	1	1
43	Scrophulariaceae	1	1
44	Vitaceae	1	1
45	Violaceae	1	1
46	Caesalpiniaceae	1	1
47	Rosaceae	1	1

fever (4 species each), burns and boils, child diseases, ear disease, headache, nail infection, skin disease and vomiting (3 species each), bile, body pain, diarrhea, kidney stone, rheumatism, small pox, sore throat and ulcer (2 species each), bleeding, dermal irritation, pimple, respiratory problem, chicken pox and stomach disorders, etc. (1 species each).

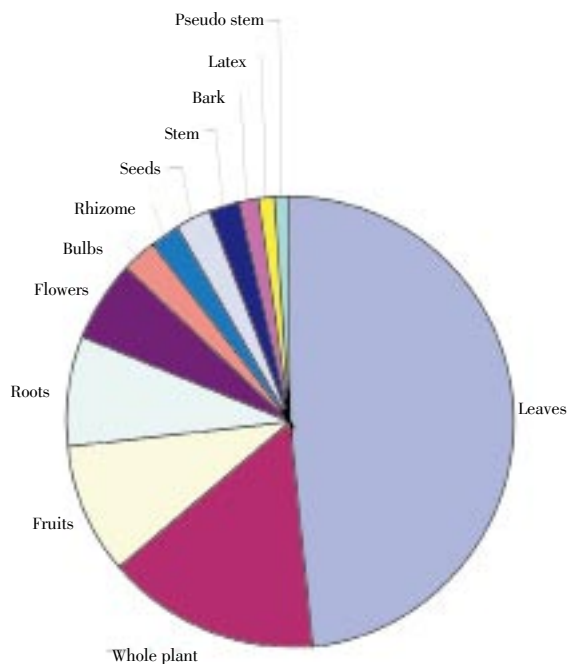
The *Nadars* of the study area have access to modern health care facilities to certain extent; they do not prefer to use it readily. They prefer traditional ways of

healthcare. There are a number of traditional healers in the study area, who provide medical service. Traditional healers, who are called Vaidhyars in Tamil language, are generally the elder members of the communities. They are rich in ethnobotanical uses of plants to treat illness. Ethnomedication, in most cases, involves certain rituals with spells and charms along with the application of herbal medicines. From the discussion with traditional healers of the study area, large number of ailments was found to be treated using plant species. Among these ailments, both

human and animal illnesses were reported. A single problem is treated by a number of plant species while a single plant species also treat a number of problems. Some most important plant species found used by traditional healers and farmers are enlisted in Table 1.



**Figure 1.** Habitwise distribution of medicinal plants in the study area.



**Figure 2.** Percentage of plant parts used in the preparation of medicine.

#### 4. Discussion

In the present investigation, a total of 89 medicinal plants belonging 65 genera from 47 families were collected and documented in Table 1 and 2. The dominant family of study area is Asclepiadaceae, Acanthaceae, and Lamiaceae (6 species). As for as plant parts are concerned, the remote people use a wide variety of parts studied in ethnomedicine. Out of 89 plants recorded to cure as many as 35 different of human medicinal ailments such as snake bite, cough, cold, insect bite, fever, diarrhoea, eye diseases, kidney stone etc. Most of these plants are being used directly by the people or to prepare decoction or with slight preparation like applying the paste, boiling the useful parts of these

plants, simply chewing leaves, making extract of the plant and using it etc. Some other plants which are combined with some preparation. For example the whole plants are boiled together and the decoction is given for fever, cough like this simple treatment there are hundreds used by the rural population. Among the different plant parts used in the preparation of medicine leaves are predominantly used. It is evident by the recent ethnobotanical studies confirmed that leaves are the major portion of the plant used in the treatment of diseases<sup>[36–40]</sup>. The later appears in the case of ethnobotany of the Nadars residing in the lingering areas of Kanyakumari district of Tamilnadu, India is under study.

#### Conflict of interest statement

We declare that we have no conflict of interest.

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