



ETHNOMEDICINAL PLANTS USED IN THE HEALTHCARE SYSTEMS OF NAGARAM MANDAL PEOPLE, GUNTUR DISTRICT ANDHRA PRADESH, INDIA-A CASE STUDY

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ABSTRACT

Ethnobotanical studies were carried out to collect information on the use of medicinal plants by the tribals and other people who live in Nagaram Mandal (Sub-district) in Guntur district, Andhra Pradesh, India were carried out during March 2013 to July 2014. The survey of medicinal plants was recorded through knowledge of elder people to study on medical uses of local common medicinal plants in 12 villages of Nagaram sub district. Direct oral record of elders' knowledge might be helpful for conservation of traditional knowledge of medicinal plants that have been recorded through questionnaire and personal interviews. A total of 114 plants from 19 families were recorded in this study. The plants are employed to treat simple diseases (cough, cold, fever, and burns, snake-bite, sex problems, toothache, vomiting, worm, wound and others.) and some serious diseases (typhoid, jaundice, cancer etc diseases). In majority cases, leaves of the medicinal plants were found leading in terms of their use followed by whole plant, stem, bark, fruits, rhizome, seed, root and flower. In addition, the indigenous knowledge regarding the use of lesser-known plants of this region is also rapidly declining. Therefore, the documentation of plant resources is a necessary step towards the goal of raising awareness in local communities about the importance of these plants and their further conservation. The largest family is Asteraceae represented by 12 species followed by Cucurbitaceous represented by 11 species.

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INTRODUCTION

India is well known for significant geographical diversity which has favoured the formation of different habitats and vegetation types. India is also home to many languages, cultures and beliefs which have in turn contributed to the high diversity of traditional knowledge. Traditional healing systems play an important role in maintaining the physical and psychological well being of the vast majority of tribal people in India. Today continued deforestation and environmental degradation in many parts of India brought about depletion of medicinal plants and associated knowledge. The need for the integration of local indigenous knowledge for a sustainable management and conservation of natural resources receives more and more recognition. Moreover, an increased emphasis is being placed on possible economic benefits especially of the medicinal use of tropical forest products instead of pure timber harvesting.

**Background**

Ethnobotanical studies are often significant in revealing locally important plant species especially for the discovery of crude drugs. Right from its beginning, the documentation of traditional knowledge, especially on the medicinal uses of plants, has provided many important drugs of modern day. Traditional medicine still remains the main resource for a large majority (80%) of the people in Ethiopia for treating health problems and a traditional medical consultancy including the consumption of the medicinal plants has a much lower cost than modern medical attention.

Study Area Description

The study area is the part of the Guntur district, Nagaram mandal consist of 73 Villages and 25 Panchayats. Thotapalle is the smallest Village and Allaparru is the biggest Village. It is in the 10 m elevation(altitude). Geographical coordinates are 16°0'16"N/80°43'28"E (Long/Latitude) (Figure 1). It is located 53 KM towards South from District head quarters Guntur. 331 KM from State capital Hyderabad towards west. Telugu is the Local Language here. Also People Speaks Urdu . Total population of Nagaram Mandal is 51,388 living in 14,546 Houses, Spread across total 73 villages and 25 panchayats . This area is also located in Coastal line of the state and 20 KM far way from bay of bengal. Telugu is the Local Language here. Also People Speaks Urdu . Total population of Nagaram Mandal is 51,388 living in 14,546 Houses, Spread across total 73 villages and 25 panchayats. Weather and Climate of Nagaram Mandal is Hot in summer. Nagaram summer highest day temperature is in between 32 ° C to 42° C . Average temperatures of January is 24 ° C , February is 26 ° C , March is 28 ° C , April is 31 ° C , May is 33 °C. The sub district is home to about 50 thousand people, among them about 25 thousand (50%) are male and about 25 thousand (50%) are female. 75% of the whole population are from general caste, 23% are from schedule caste and 3% are schedule tribes. Child (aged under 6 years) population of Nagaram mandal is 9%, among them 51% are boys and 49% are girls. There are about 15 thousand households in the sub district and an average 3 persons live in every family. 100% population of Nagaram mandal live in the Nagaram Sub District rural part. Total about 30 thousand people in the sub district are literate, among them about 16 thousand are male and about 14 thousand are female. Literacy rate (children under 6 are excluded) of Nagaram is 65%. 71% of male and 58% of female population are literate here. Overall literacy rate in the sub district has increased by 4%. Male literacy has gone up by 2% and female literacy rate has gone up by 5%.

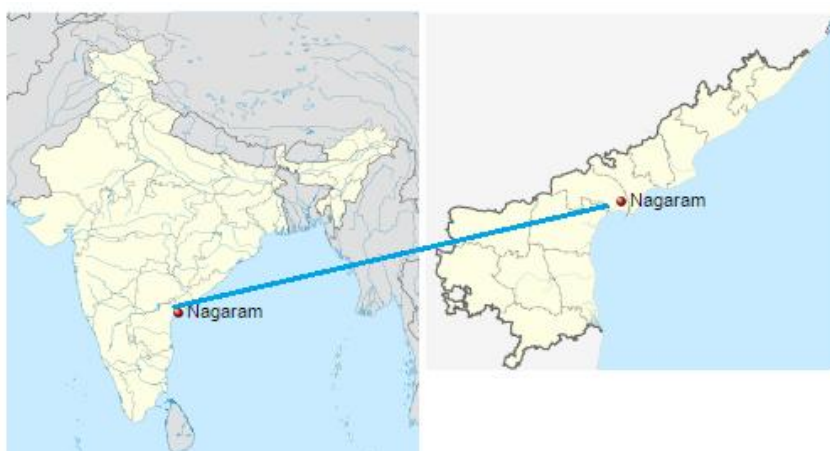


Figure 1: Location of Study area

Reasons fog undertaking the present work and its significance!

The importance of survey of plant resources have been emphasized by Jain (1978) who says After independence our planners realised that in agricultural country like India where the flora' is so varied and rich,



a proper consensus of the flora of the country aid its evaluation for economic exploitation is very important". In this regard, it is essential that we should have full knowledge regarding the occurrence, frequency, distribution and phenology of various plants for their proper utilization.

Methodology

Survey on the Use of Medicinal Plants

The information regarding the traditional knowledge, local uses of plants within the study area, the local names, parts used, purposes, modes of administration, and curative properties, and so forth was recorded through intensive interviews and discussions with elderly people (men/women), herbal healers, local vaid, using a well-structured questionnaire (Annexure-1).

The ethnobotanical surveys were carried out from March 2013 to July 2014 using semistructured questionnaire (Martin 1995) and interview was conducted with the senior residents of the study area. Prior to the administration of the questionnaire, conversations with the informants were held with the assistance of local Farmers' Association representative to elaborate the objective of the study and to build on trust with the common goal to document and preserve the knowledge on medicinal plants. 350 informants were interviewed and the female informants' age ranges from 30 to 85 years and the mean age is 51 years, and the male informants' age ranges from 30 to 93 years and the mean age is 64 years (Figure 2). The informants, except the healers, were selected randomly and no appointment was made prior to the visits. They were asked to give their knowledge about the plants they use against a disease, plant parts harvested, method of preparation of the remedy, details of administration and the dosage. Specimens of the reported medicinal plants were collected during regular systematic walk in the fields.



Figure 2: Interview with senior residents

RESULTS AND DISCUSSION

Knowledge of Informants and Medicinal Plants

The ethnobotanical information about the various plants was collected through interviews and discussions with elderly/experienced people. The data reveal that villagers used 114 species for common ailments and other purposes (Table 1). 92% of informants reported remedies for 67 ailments. Of which 54% are females and 46% are males, which indicated that most people continue to use traditional systems of health care including medicinal plants alone or in combination with modern pharmaceuticals. This continued reliance of many local people of Andhra Pradesh on traditional medicines is partly due to economic circumstances, which place modern health facilities, services and pharmaceuticals out of the reach of the majority of the population. However, in many cases, it is also attributable to the widespread belief in the effectiveness of many traditional therapies. Even where western biomedical care is available, many people still prefer traditional treatments for treating many ailments.



All the healers were male and the number of ailments reported by them ranged from six to twenty. They also reported combination of multiple medicinal plants to treat an illness, whereas most of the non-healers, both females and males reported only a single medicinal plant treatment (Table 1).

The most frequently utilized plant part was the leaf (Leaf in combination of root/fruit/seed = 23.68%) (Table 2). In studies conducted in the study area, Fruit (16.67%) is one of the most extensively used plant part in preparation of traditional herbal medicine. In this study, whole plant is used as predominantly (19.30) as in most part of the study area and various parts and their percent uses are given in Table 2 and Figure 3

Table 1: Flora of Nagaram Mandala and their location in the study area

S.NO	Botanical name	Family	Used part as medicine	Medicinal practice in the study area	Village name of Occurance in Nagaram Mandal
1	<i>Abelmoschus esculentus</i>	Malvaceae	Fruit	Chronic dysentery; gonorrhoea, urinary discharges, strangury and diarrhoea	Allaparru, Dhulipudi, Pedamatlapudi, Eletipalem,
2	<i>Achillea millefolium</i> L.	Asteraceae	Leaves	Leaves crushed and used for curing indigestion, cough, cold, and toothache problems.	Allaparru, Dhulipudi, Pudiwada, Siripudi, Peddavaram
3	<i>Aegle marmelos</i>	Rutaceae	Fruit	Diarrhoea, dysentery and ripe fruit for constipation.	Pedamatlapudi, Eletipalem, Nagaram, Edupalle, Pedapalle,
4	<i>Ainsliaea aptera</i> DC.	Asteraceae	Roots	Roots powder is applied on cut and wounds, and also stomachache, diuretic.	Edupalle, Pedapalle, Pudiwada, Siripudi, Eletipalem,
5	<i>Allium cepa</i>	Liliaceae	Bulb	Cough, catarrh, asthma, rheumatism, colic and insect bites.	Nagaram, Edupalle, Pedapalle, Pudiwada, Siripudi, Peddavaram
6	<i>Allium sativum</i>	Liliaceae	Bulb	Fevers, coughs, bronchitis, rheumatism, inflammation, leucoderma, piles, indigestion, heart diseases and wounds; gas formation, painful menstruation and pain in abdomen and ears.	Eletipalem, Nagaram, Edupalle, Pedapalle,
7	<i>Alstonia scholaris</i>	Apocynaceae	Sap, gum and roots	Cancer	Pedamatlapudi, Peddavaram, Allaparru, Dhulipudi, Nagaram,
8	<i>Alternanthera sessilis</i>	Amaranthaceae	Whole Plant	Blood vomiting.	Allaparru, Dhulipudi, Pedamatlapudi,
9	<i>Amaranthus spinosus</i>	Amaranthaceae	Whole Plant	Appetite, burning sensation, hallucination, leprosy, piles, bronchitis, leucorrhoea, constipation and flatulence.	Allaparru, Dhulipudi,
10	<i>Amaranthus</i>	Amaranthaceae	Whole	Burning sensation, hallucination,	Pedamatlapudi,



	<i>viridis</i>		Plant	leprosy, bronchitis, piles, leucorrhoea and constipation.	Siripudi, Peddavaram
11	<i>Anaphalis nubigena</i> DC.	Asteraceae	Leaves	Fibre collected from backside of leaves is rubbed with runka (iron instrument) to produce fire.	Pudiwada, Siripudi, Peddavaram
12	<i>Annona squamosa</i>	Annonaceae	Root, Bark	Drastic purgative, diarrhoea.	Nagaram, Edupalle, Pedapalle,
13	<i>Anthocephalus chinensis</i>	Rubiaceae	Leaves	Aphthae and stomatitis.	Pudiwada, Siripudi, Peddavaram
14	<i>Argemone mexicana</i>	Papaveraceae	Latex	Skin cracks, dropsy, jaundice warts, tumours, cancer, and cutaneous affections.	Allaparru, Dhulipudi,
15	<i>Artemisia vulgaris</i> L.	Asteraceae	Leaves	Fresh juice of leaves cures itching in eyes, occurring during summer months.	Pedamatlapudi, Siripudi, Peddavaram
16	<i>Artocarpus heterophyllus</i>	Moraceae	Leaves	Skin diseases	Nagaram, Edupalle, Pedapalle,
17	<i>Artocarpus lacucha</i>	Moraceae	Seed	Constipation.	Pudiwada, Siripudi, Peddavaram
18	<i>Aster himalaicus</i> C. B. Clarke	Asteraceae	Roots	Any person having blood problem during stools is given the decoction of its roots.	Eletipalem, Siripudi, Peddavaram
19	<i>Azadirachta indica</i>	Meliaceae	Bark	Fever, thirst, cough and bad taste in the mouth.	Edupalle, Pedapalle, Dhulipudi,
20	<i>Benincasa hispida</i>	Cucurbitaceae	Fruits	Haemoptysis and other haemorrhages from internal organs, particularly beneficial in phthisis.	Pedamatlapudi, Siripudi, Peddavaram
21	<i>Cajanus cajan</i>	Fabaceae	Leaves	Jaundice and pneumonia	Eletipalem, Siripudi, Peddavaram
22	<i>Calotropis procera</i>	Asclepiadaceae	Root bark	Dyspepsia, flatulence, constipation, loss of appetite, indigestion and mucus in stool.	Pudiwada, Pedamatlapudi, Siripudi, Peddavaram
23	<i>Cannabis sativa</i> L.	Cannabaceae	Seed	Seeds powder mixed with oil for typhoid, jaundice, malaria, and fever.	Eletipalem, Edupalle, Pedapalle,
24	<i>Capsicum frutescens</i>	Solanaceae	Leaves	Headache, night blindness, pain, adenitis, sores, dysuria and bronchitis.	Pedamatlapudi, Siripudi, Siripudi, Peddavaram
25	<i>Carissa carandas</i>	Apocynaceae	Fruit	The fruit has been used remedy for diabetes.	Edupalle, Pedapalle, Edupalle,
26	<i>Catharanthus roseus</i>	Apocynaceae	Whole Plant, Leaves	Diabetes, wasp-sting, menorrhagia.	Allaparru, Dhulipudi,
27	<i>Celosia cristata</i>	Amaranthaceae	Whole	Dysentery and strangury, diarrhoea	Pedamatlapudi,



			Plant/Flower	and excessive menstrual discharges.	Siripudi, Peddavaram
28	<i>Cinnamomum tamala</i>	Lauraceae	Leaves	Prevention of coughing.	Nagaram, Edupalle, Pedapalle,
29	<i>Cinnamomum verum</i>	Lauraceae	Bark	Parched mouth, bronchitis, hiccup, piles, diarrhoea and heart trouble.	Pudiwada, Siripudi, Peddavaram
30	<i>Citrus aurantifolia</i>	Rutaceae	Fruit	Skin irritation and nausea; juice is appetizer, stomachic, antiscorbutic, refrigerant, antiseptic and anthelmintic; used in biliousness, sore throat and eye complaints, relieves vomiting.	Eletipalem, Siripudi, Peddavaram
31	<i>Citrus grandis</i>	Rutaceae	Fruit	Influenza, cough, catarrh and asthma	Edupalle, Pedapalle, Dhulipudi,
32	<i>Clerodendrum inerme</i>	Verbenaceae	Leaves, Root	Scrofulous and venereal diseases.	Pedamatlapudi, Siripudi, Peddavaram
33	<i>Clerodendrum viscosum</i>	Verbenaceae	Leaves, Root	Asthma, tumours and certain skin diseases.	Eletipalem, Siripudi, Peddavaram
34	<i>Clitoria ternatea</i>	Fabaceae	Root	Tonic to the brain; good for ulcers of cornea, tuberculous glands, elephantiasis and headache; cures leucoderma, burning sensation, pains, biliousness, inflammations and ulcers.	Pudiwada, Pedamatlapudi, Siripudi, Peddavaram
35	<i>Corchorus capsularis</i>	Malvaceae	Leaves	Dysentery.	Eletipalem, Edupalle, Pedapalle,
36	<i>Croton bonplandianum</i>	Euphorbiaceae	Leaves, Seed	Cough, eczema and ringworm	Pedamatlapudi, Siripudi, Siripudi, Peddavaram
37	<i>Cucumis melo</i>	Cucurbitaceae	Pulp of the fruit	Eczema, biliousness, insanity, ascites and allays fatigue.	Edupalle, Pedapalle, Edupalle,
38	<i>Cucumis sativus</i>	Cucurbitaceae	Fruits	Relieve inflammation, sunburn and eyestrain.	Nagaram, Edupalle, Pedapalle,
39	<i>Cucurbita maxima</i>	Cucurbitaceae	Pulp of the fruit	Burns, inflammations and boils; migraine and neuralgia.	Pudiwada, Siripudi, Peddavaram
40	<i>Curcuma longa</i>	Zingiberaceae	Rhizome	Scabies, itches, boils, abscess, eczema, leucoderma, eye diseases, pains, bruises and sprains; internally for cough, cold, fever.	Nagaram, Edupalle, Pedapalle,
41	<i>Cuscuta reflexa</i>	Cuscutaceae	Stem	Prevent hair fall.	Pudiwada, Siripudi, Peddavaram
42	<i>Dalbergia sissoo</i>	Fabaceae	Bark, Leaves	Haemorrhages, epistaxis, menorrhagia and bleeding piles. Decoction of the leaves is useful in acute stage of	Allaparru, Dhulipudi,



				gonorrhoea.	
43	<i>Datura metel</i>	Solanaceae	Seed, Leaves, Root	Insanity, fever with catarrh, diarrhoea, skin diseases and cerebral complications.	Pedamatlapudi, Siripudi, Peddavaram
44	<i>Datura stramonium L.</i>	Solanaceae	Seed	Seed is dried and ground. The powder of seeds is mixed with mustard oil and boiled. After cooling, it is applied to pained joints to relieve pain.	Nagaram, Edupalle, Pedapalle,
45	<i>Eclipta alba</i>	Asteraceae	Whole Plant	Inflammations, hernias, eye diseases, bronchitis and asthma.	Pudiwada, Siripudi, Peddavaram
46	<i>Erythrina variegata</i>	Fabaceae	Leaves	Pain of the joints and inflammations; earache, toothache.	Allaparru, Dhulipudi,
47	<i>Euphorbia hirta</i>	Euphorbiaceae	Whole Plant	Abscesses, inflamed glands, ulcers, oedemas and phlegmons.	Pedamatlapudi, Siripudi, Peddavaram
48	<i>Ficus benghalensis</i>	Moraceae	Whole plant	Toothache, dysentery, diarrhoea, piles and diabetes	Nagaram, Edupalle, Pedapalle,
49	<i>Ficus hispida</i>	Moraceae	Whole plant, Fruit	Ulcers, biliousness, psoriasis, anaemia, piles, jaundice, haemorrhage of the nose and mouth, diabetis	Pudiwada, Siripudi, Peddavaram
50	<i>Ficus racemosa</i>	Moraceae	Fruit	Menorrhagia, haemoptysis, bronchitis, dry cough, diseases of kidney and spleen.	Eletipalem, Siripudi, Peddavaram
51	<i>Ficus religiosa</i>	Moraceae	Fruit	Asthma	Edupalle, Pedapalle, Dhulipudi,
52	<i>Fragaria vesca L.</i>	Rosaceae	Fruits, roots	Fruits are edible. Roots infused with ghee butter and honey is used to cure dysentery.	Pedamatlapudi, Siripudi, Peddavaram
53	<i>Gardenia jasminoides</i>	Rubiaceae	Whole plant	Antiseptic.	Eletipalem, Siripudi, Peddavaram
54	<i>Glinus oppositifolius</i>	Molluginaceae	Whole plant	Earach, skin diseases	Pudiwada, Pedamatlapudi, Siripudi, Peddavaram
55	<i>Gmelina arborea</i>	Verbenaceae	Young Leaves, Flower	Gonorrhoea and cough, leprosy and blood diseases	Eletipalem, Edupalle, Pedapalle,
56	<i>Helianthus annuus</i>	Asteraceae	Leaves	Lumber pain, malaria.	Allaparru, Dhulipudi,
57	<i>Hibiscus rosa-sinensis</i>	Malvaceae	Flower bud	Burning of the body, urinary discharges, seminal weakness and piles	Pedamatlapudi, Siripudi, Peddavaram
58	<i>Ipomoea alba</i>	Convolvulaceae	Leaves	Filariasis, constipation, boils and wounds.	Allaparru, Dhulipudi,



59	<i>Ipomoea aquatica</i>	Convolvulaceae	Whole Plant	Leucoderma, leprosy, fever, jaundice, biliousness, bronchitis and liver complaints	Pedamatlapudi, Siripudi, Peddavaram
60	<i>Ipomoea batatas</i>	Convolvulaceae	Whole Plant, Root	Low fever and skin disease, strangury and diarrhoea.	Nagaram, Edupalle, Pedapalle,
61	<i>Ixora coccinia</i>	Rubiaceae	Root, Flower	Hiccup, fever, gonorrhoea, diarrhoea, dysentery, leucorrhoea, dysmenorrhoea, haemoptysis and catarrhal bronchitis.	Pudiwada, Siripudi, Peddavaram
62	<i>Jatropha gossypifolia</i>	Euphorbiaceae	Leaves	Diabetes.	Eletipalem, Siripudi, Peddavaram
63	<i>Justicia adhatoda</i>	Acanthaceae	Whole plant	Bleeding piles.	Edupalle, Pedapalle, Dhulipudi,
64	<i>Justicia gendarusa</i>	Acanthaceae	Leafs	Insecticidal; chest pain.	Pedamatlapudi, Siripudi, Peddavaram
65	<i>Lablab purpureus</i>	Fabaceae	Seed	Inflammations.	Eletipalem, Siripudi, Peddavaram
66	<i>Lagenaria sicararia</i>	Cucurbitaceae	Whole Plant, Leaves, Fruit	Powerful laxative, muscular pain and dry cough.	Pudiwada, Pedamatlapudi, Siripudi, Peddavaram
67	<i>Leonuros sibiricus</i>	Lamiaceae	Whole Plant	Puerperal and menstrual diseases; useful towards uterus contraction.	Eletipalem, Edupalle, Pedapalle,
68	<i>Leucas aspera</i>	Lamiaceae	Leaves	Chronic rheumatism, psoriasis and other chronic skin eruption	Pedamatlapudi, Siripudi, Siripudi, Peddavaram
69	<i>Limonia acidissima</i>	Rutaceae	Fruit	Tonic to the liver and lungs; cures cough, hiccup and dysentery; good for asthma, consumption, tumours, ophthalmia and leucorrhoea.	Edupalle, Pedapalle, Edupalle,
70	<i>Litsea monopetala</i>	Lauraceae	Bark	Diarrhoea and dysentery.	Allaparru, Dhulipudi,
71	<i>Luffa acutangula</i>	Cucurbitaceae	Leaves	Splenitis, haemorrhoides, ringworms and leprosy.	Pedamatlapudi, Siripudi, Peddavaram
72	<i>Luffa cylindrica</i>	Cucurbitaceae	Fruits	Biliousness, spleen diseases, leprosy, piles, fever and bronchitis.	Nagaram, Edupalle, Pedapalle,
73	<i>Lycopersicon esculentum</i>	Solanaceae	Fruit	Canker of the mouth.	Pudiwada, Siripudi, Peddavaram
74	<i>Meconopsis aculeata</i> Royle	Papaveraceae	Root	Root is ground and given to animals along with salt for creating resistance to diseases.	Eletipalem, Siripudi, Peddavaram



75	<i>Mentha longifolia</i> (Linn.) Huds.	Lamiaceae	Root, leaves	Fresh root is dried, powdered, mixed with pepper, and then given to patient suffering from piles. Leaf extract is used to cure vomiting, dysentery, stomachache, and headache.	Edupalle, Pedapalle, Dhulipudi,
76	<i>Mimosa pudica</i>	Mimosaceae	Whole plant	Snake bites.	Pedamatlapudi, Siripudi, Peddavaram
77	<i>Mimusops elengi</i>	Sapotaceae	Stem bark	Antidote to bleeding gums and swelling of the mouth and tongue	Eletipalem, Siripudi, Peddavaram
78	<i>Morinda citrifolia</i>	Rubiaceae	Fruit	Dysentery	Pudiwada, Pedamatlapudi, Siripudi, Peddavaram
79	<i>Mukia maderaspatana</i>	Cucurbitaceae	Fruits	Asthma, earache, ozoena, inflammations, epilepsy and rheumatism; cures hemicrania, weakness of limbs, ophthalmia and leprosy.	Eletipalem, Edupalle, Pedapalle,
80	<i>Nerium indicum</i>	Apocynaceae	Root and root bark	Cancers and ulcers on the penis, chronic pain in the abdomen and pain in the joints.	Pedamatlapudi, Siripudi, Siripudi, Peddavaram
81	<i>Ocimum sanctum</i>	Lamiaceae	Leaves	Coughs, colds, catarrh and bronchitis; gastric disorder, earache, ringworm, leprosy and itches.	Edupalle, Pedapalle, Edupalle,
82	<i>Origanum vulgare</i> L.	Lamiaceae	Whole plant	Utensils of milk and ghee are washed using this plant as it gives good aroma to the utensil.	Allaparru, Dhulipudi,
83	<i>Panicum miliaceum</i> L.	Poaceae	Seed	Seed is edible.	Pedamatlapudi, Siripudi, Peddavaram
84	<i>Physalis minima</i>	Solanaceae	Leaves, Fruit	Earache, gonorrhoea and spleen disorder.	Nagaram, Edupalle, Pedapalle,
85	<i>Podophyllum hexandrum</i> (Royle) Wedd.	Berberidaceae	Rhizome, fruits, roots	Rhizome used for kidney problem and as health tonic. Fruit is eaten by Gaddis to cure chronic constipation. Roots are ground and mixed with sugar and decoction is given to patient.	Pudiwada, Siripudi, Peddavaram
86	<i>Polyalthia longifolia</i>	Annonaceae	Bark, Leaves	Fever, against wide range of pathogens.	Eletipalem, Siripudi, Peddavaram
87	<i>Potentilla argyrophylla</i> Wall ich	Rosaceae	Leaves	Decoction of leaves is used to treat diarrhea, arthritis, and kidney stones.	Edupalle, Pedapalle, Dhulipudi,

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88	<i>Prunella vulgaris L.</i>	Lamiaceae	Stems	Young stems of plants are kept in cluster in living rooms to expel mosquitoes and flies.	Pedamatlapudi, Siripudi, Peddavaram
89	<i>Psidium guajava</i>	Myrtaceae	Root bark, Root	Diarrhoea, dysentery.	Eletipalem, Siripudi, Peddavaram
90	<i>Rosa moschata Miller</i>	Rosaceae	Fruits	Fruit is eaten because of its vermicide properties	Pudiwada, Pedamatlapudi, Siripudi, Peddavaram
91	<i>Saussurea gossypiphora D. Don</i>	Asteraceae	Flower	Considered very auspicious and kept for worship along with baan and also used in havan and is known to purify air.	Eletipalem, Edupalle, Pedapalle,
92	<i>Saussurea lappa (Decne.) Sch. Bip.</i>	Asteraceae	Seed	Oil of the seeds is applied on aching joints to relieve pain.	Pedamatlapudi, Siripudi, Siripudi, Peddavaram
93	<i>Saussurea taraxifolia Wall.</i>	Asteraceae	Roots	Little quantity of root is ground and mixed in boiling milk and given to pregnant lady before delivery. This prevents pain and helps in easy delivery. People with falling hair are advised to use root powder for washing hair. Dhuni is also given to ward off evil spirits	Edupalle, Pedapalle, Edupalle,
94	<i>Senna sophora</i>	Fabaceae	Leaves	Asthma, bronchitis and hiccup.	Pedamatlapudi, Siripudi, Siripudi, Peddavaram
95	<i>Solanum melongena</i>	Solanaceae	Fruit	Appetite and lessens inflammation	Edupalle, Pedapalle, Edupalle,
96	<i>Solanum nigrum</i>	Solanaceae	Fruit	Fevers	Allaparru, Dhulipudi,
97	<i>Solanum torvum</i>	Solanaceae	Whole plant	Cough	Pedamatlapudi, Siripudi, Peddavaram
98	<i>Species name</i>	Family	Parts used	Ethnobotanical Use	Nagaram, Edupalle, Pedapalle,
99	<i>Streblus asper</i>	Moraceae	Leaves	Urinary inflammation	Pudiwada, Siripudi, Peddavaram
100	<i>Swietenia mahagoni</i>	Meliaceae	Seed	Diabetes.	Eletipalem, Siripudi, Peddavaram
101	<i>Syzygium cumini</i>	Myrtaceae	Bark	Sore throat, bronchitis, asthma and dysentery;	Edupalle, Pedapalle, Dhulipudi,
102	<i>Syzygium jambos</i>	Myrtaceae	Bark, Leaves	Asthma, fatigue, dysentery and sore-eyes.	Pedamatlapudi, Siripudi, Peddavaram



103	<i>Tabernaemontana divaricata</i>	Apocynaceae	Roots	Tonic to the brains, liver and spleen.	Eletipalem, Siripudi, Peddavaram
104	<i>Tagetes patula</i>	Asteraceae	Whole Plant, Leaves	Rheumatism, cold and bronchitis, Kidney troubles, muscular pains.	Pudiwada, Pedamatlapudi, Siripudi, Peddavaram
105	<i>Tamarindus indica</i>	Caesalpiniaceae	Pulp of the ripe fruit	Fever, dyspepsia, gastritis, dysentery and diarrhoea; diseases supposed to cause by deranged bile, such as burning of the body and costiveness.	Eletipalem, Edupalle, Pedapalle,
106	<i>Tectona grandis</i>	Verbenaceae	Wood	Piles, leucoderma and dysentery.	Pedamatlapudi, Siripudi, Siripudi, Peddavaram
107	<i>Thymus serpyllum L.</i>	Lamiaceae	Whole plant	Flavouring agent is also eaten for stomach ailments.	Edupalle, Pedapalle, Edupalle,

Table 2: Frequency of plant parts used for the preparation of remedies

Plant part as medicine	Number of medicinal plant species	%
Fruit	19	16.67
Leaves	27	23.68
Roots	12	10.53
Bulb	2	1.75
Sap, gum and roots	1	0.88
Whole Plant	22	19.30
Latex	1	0.88
Seed	9	7.89
Bark	7	6.14
Leaves, Root	2	1.75
Leaves, Seed	1	0.88
Pulp of the fruit	3	2.63
Rhizome	3	2.63
Stem	3	2.63
Young Leaves, Flower	1	0.88
Flower bud	2	1.75
Leaves, Fruit	1	0.88
Wood	1	0.88
Petiole	1	0.88

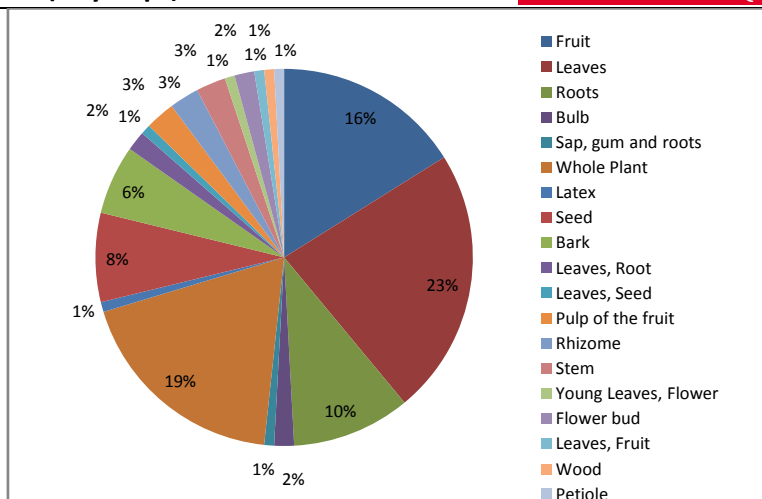


Figure 3: Percentages of habits of medicinal plants.

Conclusion

The rural communities are very much prone to these ailments because of one of the prominent reasons as virtually nonexistent health care installations. This forced the rural people of the study area to adopt their own traditional herbal medicine for their healthcare. The relationship between indigenous knowledge and practices shapes the ecosystem and affects the constituent plant population. By incorporating indigenous knowledge and use in the process of scientific research, new hypotheses for the sustainable conservation of resources can be developed. Indigenous knowledge and use have to be analyzed to develop appropriate management measures that build on both scientific and local knowledge. Due to the changing perception of local people and the ever-increasing influence of global commercialization and socioeconomic transformation, indigenous knowledge of plant resource use is constantly diminishing. Rural community's practitioners and older people of Nagaram Mandal, Guntur district utilize a number of plant species grown around their homes for several medicinal uses. However, the younger generation by ignoring their ancestral traditional medicine is inclining towards the allopathic medicine. Since, several bioactive compounds are being extracted from traditional medicinal plants; they are in great demand in pharmaceutical industries. The photochemical analysis and pharmacological investigations of traditional medicinally important plants by taking in view their proper conservation too, would help in developing novel drugs to treat ailments.

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Annexure-1. Questionnaire used to collect information on plant use.(7)

Informant Details

Name:

Sex:

Age:

Panchayat:

Village:

Mandal:

District:

Subsidiary occupation:

Main occupation:

Education:

Ethnobotanical uses of plants.

- 1) Local/vernacular name of plant:
- 2) Scientific name of plant:
- 3) Part used of plant:
- 4) Name of ailment/other purposes in which plant part is used:
- 5) Mode of preparation:
- 6) Use (externally/internally):
- 7) Availability in natural habitat:
- 8) Cause of declining of ethnobotanical plants if any (overgrazing, encroachments, forest fire, mining activities, climatic change, and others):
- 9) Who knows best about plant and uses: vairs, shepherds, old people/new generation, and others:
- 10) Any ethnobotanical plant species under cultivation:
- 11) Any awareness camps /trainings /exposure visits organized for ethnobotanical plants:
- 12) Any conservation practices on ethnobotanical plants: