



## Original Article

# An Ethnobotanical Survey of Medicinal Plants Used By Traditional Healers of Jayashanker Bhupalpally District, Telangana, India

Swapna Gurrapu , Chowgoni Ramya , Jatavath Shirisha Naik , Pasula Raj Kumar , Dathu Mamilla, Estari Mamidala\*

Infectious Diseases Research Lab, Department of Zoology, Kakatiya University, Warangal-506009, Telangana State, India .

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**Background:** Since earliest times, plants have been used as medicine, foods, agrochemicals and pharmaceuticals by large number of tribes, rural and urban people. India has more than 300 tribal communities. The tribal region of telangana as not received proper attention of ethnomedicinal researchers. **Aim:** The aim of this study was to survey of ethnomedicinal plants used by Koya tribes of Malluru and Rajupeta villages which are on the south of the Godavari River, MangapetMandal, Jayashanker Bhupalapally District, Telangana, India was undertaken. **Methods:** The information on plants was collected by interviewing the local tribal traditional practitioners. The present study exposed that the floras which are used in traditional systems are mostly collected from wild resources. A total of 40 plant species (belonging to 38 families) of ethno botanical interest upon inquiries from these tribal informants' between the age of 35-78 were reported. **Results:** The plants have been using these parts in the form of paste, powder, decoction, juice, infusion and also in crude form, with other additives like honey, curd, and urine and cow milk to get relief from different ailments like diabetes, inflammations, wounds, skin diseases, headache, indigestion, urinary infections, fever, snake bites, immunity, fertility, anaemia, cough, and dental problems. **Conclusion:** This study therefore concludes, it is important that suitability requirements are needed in order to protect the traditional knowledge in a particular area with reference to medicinal plants utilization. The plants need to be evaluated through phytochemical investigation to discover potentiality as drugs.

**Keywords:** Ethnomedicine, Koyas, Jayashanker bhupalapally, Diseases, phytochemical, drug.

## 1. INTRODUCTION

Ethnobotany contracts with the relationship between people and plants<sup>1</sup>. It has been used to as multi-disciplinary science includes of many curious and valuable features of plant science, anthropology, history, literature and culture. Its reputation has been comprehended mostly in esteem of the various economic uses of plants among the initial human

Corresponding author \*

Estari Mamidala

Infectious Diseases Research Lab, Department of Zoology,  
Kakatiya University, Warangal-506009, Telangana State, India  
E-Mail: drestari@kakatiya.ac.in

societies. Though, in recent societies conventional uses of plants and their produces are deliberated under the ethno botany. It thus brings to light numerous small known or unknown uses of plants, some of which have potential of greater usage<sup>2</sup>. India is perhaps the richest repository of traditional information on the therapeutic uses of plants. India is one of the twelve mega – biodiversity countries of the world having rich vegetation with a wide alteration of plants with medicinal implication. In India, there are over 19,500 species of angiosperm plants, 65 gymnosperms, 1210 pteridophytes, 2,860 Bryophytes, 2,121 lichens, 15,900 fungi and 6,700 algae are specified. India is rich in its own vegetation that is, endemic plant species such as 5,725 angiosperms, 10 gymnosperms, 466 lichens, 3,500 fungi and 1,924 algae<sup>3</sup>. The utilize of plants has been in practice from centuries for medicinal and nutritive purposes. Medicinal plants are now more focused than ever because they have the ability of producing numerous benefits to society indeed to mankind, particularly in the line of drug<sup>4</sup>. Plant based drugs have been in use against different disorders since time ancient<sup>5</sup>. Any parts of plant: stem, root and leaves, stem bark, flowers and seeds etc., which have in one or more its body part constituents that can be utilized for obliging use, are named medicinal plants<sup>6</sup>.

Herbal drugs are comparatively harmless than artificial medicines. Plant based data has become a familiar instrument in investigate for new sources of medicines and nutraceuticals<sup>7</sup>. The data of medicinal plants has been collected in the course of numerous periods based on different medicinal schemes such as Ayurveda, Siddha and Unani<sup>8</sup>. In India, it is stated that traditional doctors use 2500 plant species and 100 species of plants benefit as usual sources of medicine. During the last few decades there has been agrowing attention in the enquiry of medicinal plants and their traditional use of different portions of world<sup>9</sup>. The current study focuses with the aim of producing an account of the plants used by traditional users in Jayashanker bhupalapally of Telangana to treat several diseases. This is the first investigation done in this region which specifically focuses on these diseases.

## 2 MATERIALS AND METHODS

### 2.1 Study Area

Jayashanker Bhupalapally is a city and a municipal corporation in Jayashanker bhupalapally district in the state capital of Hyderabad and consists of 40 plant species whose different parts are used for curing different diseases. The collected information includes useful plant species with local names, parts of the plant used for curing different diseases. The plant specimens collected with the help of the inhabitants of surveyed villages. The scientific names of plant species their families were identified with the help of a senior taxonomist of Department of Zoology, Kakatiya University, Warangal. The data collected from different source of ethnic botanical community.

### 2.2 Ethnobotanical survey

The ethnomedicinal data was collected from well-informed local elderly people, headsmen and local healers of Mallur and Rajupeta villages of Jayashanker Bhupalapally district, Telangana aged between 35-78 years. Hence, this study meant to determine the full data on the use of plants and their healing medical practices popular among Koya tribes of Mangapet Manadal, Jayashanker Bhupalapally district, Telangana.

### 2.3 Data Collection, Analytical Tool and Identification Methods

Ethnobotanical information were collected using open and closed semi structured interview in their local language generally in an exact order. Paired comparison was showing to informants to comprehend the people opinion on the efficacy of medicinal plants in the interviews that have been prepared in the sets of two and calculated by  $n(n-1)/2$  where 'n' is number of medicinal plants<sup>10</sup>. Field work was carried out to collect medicinal plants in the natural habitats and home gardens. Identification and classification of plant specimens were performed based on flora of Telangana<sup>11-15</sup> and deposited in the Botany Department, Kakatiya University.

## 3. RESULTS AND DISCUSSION

### 3.1 Diversity of Medicinal Plants and Ethnomedicinal Uses

The sums of forty medicinal plants (Table-1) were exposed of which Asteraceae, Fabaceae and Combretaceae, Euphorbiaceae, solanaceae and Lamiaceae were largely used medicinal plants. The fact of the biggest different uses of these families was due to the ability of medicinal uses. Similar to other studies carried out different portions of India accounted that these families were stated to have the biggest number of plant species used for medicinal purposes<sup>16</sup>. In the present enquiry, most ethnomedicinal plant species

### 3.2 Growth habit of medicinal plants

Medicinal plants showed their differences in the growing habits. They include herbs (18 species, 30.7%), tree (16 species, 27.3%), shrub (12 species, 20.7%), and climbers (10 species, 17.3%) respectively. These modifications observed mainly because of environmental situations joining with resource obtain ability that determining the delivery of plant species inhabiting a specific area. Similar studies pointed out those herbaceous medicinal plants were main sources of traditional medication<sup>17</sup>. The high Usage of seasonal herbs in this study could be a sign of old broadcast of traditional Information between informers.

### 3.3 Gathering Parts, Conditions of Preparation and Administration of Remedies Medicinal Plant Parts Used

The result of the study exposed that different portions of medicinal plants properties were working to make cures through native experts. Figure-1 shown that the most often used plant parts for medicines preparation were roots (30.0%), leaves (35%) and stem bark (10%). This may be

because of attendance of more lively organic components in these plant portions. Initial deliberate also determined that roots and leaves were maximum preferred used parts for medication than others<sup>17-20</sup>.

**3.4 Condition of Plants to Treat Various Diseases**

Figure-2 presents the proportions of plant species used to treat various disease conditions: diabetes (10%), allergy (15.6%), cough, cold & lung diseases (16.2%), severe fever (16.2%), Anaemia (8.6%), Immunity improvement (9.3%), diarrhoea/dysentery (6.7%), Ulcers (2.3%) and other infections (11.6%).

**3.5 Conditions Of Preparation Of Remedy**

The results also indicated that medicinal plants were ready in the home-basedcureslargely in new form (71%) followed by fresh/dry (22%) and dry (7%). It decided with other studies of conducted in India<sup>21</sup> which also described that fresh medicines were the largest medical application for the cure of disease. The recurrent use of freshly collected medicinal plant resources in the area was stated to be connected to the concept of achieving high ability using active components of fresh plant parts which may be lost some active components on drying or heating. On the other hand, making of cures either dry or both dry and fresh was for making medication available during shortage of plants in their nearby but comparatively fresh cures were more recommend by native people to heal diseases of human and livestock.

**3.6 Preparation Methods**

The native people working numerous approaches in order to make drugs from medicinal plants. Though, crushing and squeezing (32.3%), maceration (14.8%), diluting (12.2%), chewing (9.5%) and creaming or ointment (7.8%) were the most often used approaches of drug preparation. The smallest means of preparation of medicinal remedy includes sucking of juices (0.8%) (Figure-3). Results indicated that the majority of recognized medicinal plants were used in treatment in a single plant preparation and most additive for the preparation was water.

**3.7 Route of Administration of Remedies**

The technique of preparation of plant cures includes different administrations. The medicines were prepared and administrated in different body parts. The most frequently leaves of administration of remedies were internally through oral (83.2%). The analysis displays similarity with the studies of Teklehaymanot and Giday<sup>22</sup> and Yineger and Yewhalaw<sup>23</sup> that oral administration was the largest one. The internal administration of medicinal remedies showed that internal diseases were also more prevalence than external wounds. This used in orally-administered preparations ensuring the safety of medicinal plants totake internally.

**Table 1: List of medicinal plants and their ethno medicinal uses including other uses.**

S. No	Botanical Name	Common Name	Family	Part Used	Medicine Uses
01	<i>Adhatodav asica</i>	Malabar nut	Acanthaceae	Leaves	Treatment of cold and skin infections

02	<i>Lantana camara</i>	Pulikampa	Verbenaceae	Whole plant	Treatment of malaria, ulcers, tumours
03	<i>Phoenix dactylifera</i>	Karjuna kaya	Arecaceae	Leaves, Flowers, Fruits	Urino genital disorders, Liver complaints
04	<i>Physalis minima</i>	Kuppanti	Solonaceae	Whole plant	Enlargement of spleen
05	<i>Catharanthus roseus</i>	Billagonneru	Apocynaceae	Whole plant	Blood cancer, diabetes, stomachic
06	<i>Calotropis procera</i>	Tellajilledu	Asclepiodaceae	Root-bark, leaves, flowers	Leprosy
07	<i>Buteamonos perma</i>	Moduga	Fabaceae	Bark, seedds leaves, flowers, gum	Cough, snake, bites, piles, ringworm
08	<i>Acalypha indica</i>	Muripindi	Eupharbiaceae	Wholeplant	Gastro-intestinal irritant, skin diseases, ulcers
10	<i>Chrysanthemu m</i>	Chandra mukhi	Asteraceae	Flowers, leaves	Skin liver
11	<i>Adiantum phillippense</i>	Hamsapadi	Pteridaceae	Wholeplant	Immunity power
12	<i>Indigofera tinctoria</i>	Indian indigo neelambari	Papilionaceae	Flowers	Allergy
13	<i>Asparagus racemosus</i>	Shatavari	Asparageaceae	Roots	Fertility
14	<i>Aglaiasa moensis</i>	langali	Meliaceae	Roots	Immunity power
15	<i>Millettia pinnata</i>	Kanuga	Fabaceae	Leaves	Over heat
16	<i>Andrographis paniculata</i>	Nelavemu	Acanthaceae	Whol plant	Kidney stones, diabetes, allergy
17	<i>Aerva lanata</i>	Pindikonda	Amarantheceae	Whole plant	Kidney stones
18	<i>Achyranthes aspera</i>	Uttareni	Amarantheceae	Whole Plant	Teeth ache
19	<i>Fritillaria roylei</i>	Kakoli	Liliaceae	Leaves	Immunity power, cough
20	<i>Nardostochys</i>	Jatamanasi	Caprifoliaceae	Roots	Perfume, hair growth, cardiac health, skin, liver
21	<i>Vernonia cinerea Less</i>	Sahadevi	Compositae	Leaves	Skin problems
22	<i>Abutilon indicum</i>	Tutturabenda	Malvaceae	Leaves, roots, seeds	Nervintonic,
23	<i>Agropyron repens</i>	Couch grass	Poaceae	Roots	Diuretic kidney and bladder ailments
24	<i>Annona squamosa</i>	Sitaphalamu	Annonaceae	Roots, leaves, fruits, seeds	Anaemia, mental depression, tooth ache
25	<i>Argremone mexicana</i>	Brahmabandi	Papaveraceae	Seeds	Scabies, ophthalmic, leprosy
26	<i>Basella alba</i>	Bachali	Basellaceae	Stems, Leaves	Cooling diuretic appetiser
27	<i>Boerhavia diffusa</i>	Atikamamidi	Nyctaginaceae	Whole plant	Diuretic scabies cardiac
28	<i>Tectone grandis</i>	Teaku	Verbenaceae	Flower	Urine problems
29	<i>Tinospora cordifolia</i>	Guduchi teppatiga	Menispermaceae	Stem	Jaundice, diabetes, antioxidant
30	<i>Buchamania ianzan</i>	Sarapappu	Anacardiaceae	Seeds	Diarrhoea, intercostal pain
31	<i>Aristolochia tagalacham</i>	Nallaeshwari	Aristolochiaceae	Roots	Tonic carminative and for increasing breast milk
32	<i>Aphanamixis polystacha</i>	Chemmaram	Melliaceae	Bark	Liver and spleen Disorders.

33	<i>Clitoria ternatea</i>	Gilakarnika	Fabaceae	Roots, leaves, seed	Hemicranea cathartic weakness of sight dropsy, ascites
34	<i>Coccinia grandis</i>	Dondakaya	Cucumbrbitaceae	Roots, leaves, fruits	Diabetes gonorrhoea jaundice bronchitis skin
35	<i>Cissampelo spareira</i>	Adavibankateega	Menispermaceae	Whole plant	Crystitis, urinary disorders, fever
36	<i>Cissuspallida</i>	Nallateega	Vitaceae	Roots	Bruised roots applied rheumatic swellings
37	<i>Chonemorpha fragrans</i>	Chaga	Apocynaceae	Leaves, stem, roots	Rheumatism impureblood, gonorrhoea, leprosy, fever
38	<i>Catharanthus pusillus</i>	Errimirapa	Apocynaceae	Whole plant	Paralysis,epilepsy, Ulcers
39	<i>Catunaregum spinosa</i>	Manga	Rubiaceae	Fruit paste	Abortifacient
40	<i>Celastrus paniculatus</i>	Dantichettu	Celastraceae	Leaves, seeds, oil	Anaemia, abortifacient

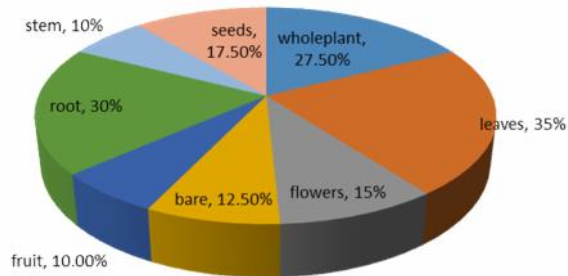


Fig 1: Parts of medicinal plants used

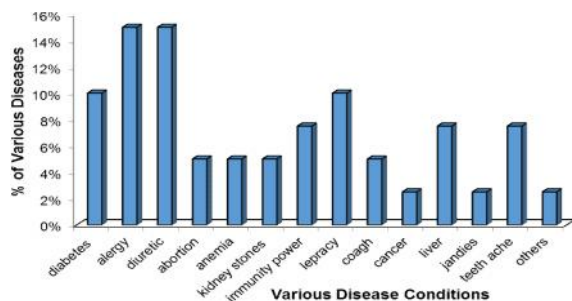


Fig 2: Percentage of Various Diseases

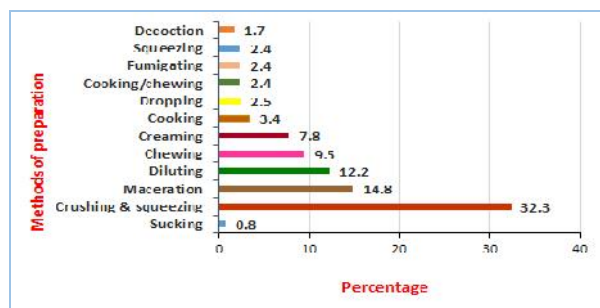


Fig 3: Methods of preparation of remedies

#### 4. CONCLUSION

Native groups of the study area have possibly promising medicinal plants for the treatment of health problems. Use of medicinal plants to manage health problems showed that people still used nearby available medicinal plants for traditional medication practices. The identification of varied plant species dispersed in different families revives that people use plants for medicinal purposes not only focused in a certain families but also they examined effective medicinal plants by observing different plant species in their environs. The taxonomy of use parts, condition of preparation, approaches of preparation and diverse routine of administration exposed that local users of medicinal plants were not only understanding of health problems but also they have understood how ethnomedicinal uses applied for the treatment of diseases. Hence, uses of ethnomedicinal plants should be confirmed conducting experimental and phytochemical studies to maximize the safety and effectiveness of these plants and witness to grow modern medicine development. Native people documented plants not only medicinal purpose but also multipurpose uses for sources of food, firewood, construction and others. The wide sources of medicinal plants from the wild state reflected that local communities had less awareness for cultivation of medicinal plants in the backyard. Collection of abundant wild medicinal plants and food resources should be turned into cultivation and commercializing to promote rural development. The major threats of medicinal plants were harvesting parts, multipurpose uses and vegetation burning raising serious questions for long-term availability of these plants, particularly of those harvested from the wild. From pragmatic perspectives, the most straight forward approach seems to establish forest priority setting for in situ conservation and motivated healers to cultivate medicinal plants in their home gardens. To save the indigenous knowledge associated with medicinal plants, raising awareness in the people and form traditional healer association is mandatory.

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