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Research Article

An ethnobotanical survey of medicinal plants used by traditional Healers of Maripeda, Mahabubabad district, Telangana, India

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ABSTRACT

In Maripeda Mandal, Mahabubabad District, Telangana, an ethnobotanical survey was conducted to gather knowledge on medicinal plants from local healers. This study's goal is to determine the medicinal plants used to cure various illnesses. With the aid of standardised questionnaires administered to three tribe informants between the ages of 32 and 60, a total of 53 angiosperm species from 31 different families were reported. The information was gathered with an emphasis on plant parts that were used, prepared (both separately and in various combinations), and applied. Three laypeople in all were questioned about their knowledge of medicinal plants that are used to cure a variety of ailments, including diarrhea, coughing, diabetes, skin rashes, paralysis, snake bites, and scorpion bites. In terms of usage, leaves accounted for 56% of all plant components, followed by fruits (6%), seeds (9%), bark (6%), stem (12%), and roots (%). The majority of the leaves are used in the preparation. To prevent the traditional medical knowledge from being lost with the elder generation, the youth should be encouraged to learn it. This could be helpful in discovering new drugs and validating existing ethnomedical expertise.

1. Introduction

It is known that 80% of people around the world rely on traditional medicines, especially plant medicines, for their basic healthcare. (Kala et al., 2006). Since the Vedic era, India has used plants for both medical treatment and human nutrition. The Rigveda, written between 1500 and 400 BC, the Athurveda, written around 1500 BC, and the Upanishada, written between 1000 and 600 BC, are the oldest texts that discuss the use of plants as medicine. (Chauhan, 1999). There are around 17000 species of higher plants in India, of which 7500 are used medicinally. (Shiva, 1996). When it comes to the production of herbal pharmaceuticals and their raw ingredients, India is one of the world's main producers. (Grunwald, 2000). While working on the Indian botanical survey, Janaki Ammal (1956) started the field of ethnobotany in that country.

In addition to its rich cultural, historical, and geographic legacy, India is also home to a large number of plants in the floristic sense. (Rajendrachary et al., 2012). Traditional knowledge of therapeutic plants is still present in the area, according to ethnobotanical studies, especially among the elderly. (Swapna Gurrappu et al, 2016). Such investigations have drawn the attention of many scientists, and governmental

foundations have boosted their financial support for this category of study.

Indigenous cultures' use of medicinal plants and traditional medical knowledge of them is important for future drug development as well as community healthcare and the preservation of cultural traditions and biodiversity. In addition to the tribal communities, numerous other rural and forest dwellers have special understanding of plants. The utilisation of medicinal plants for the treatment of various diseases and the development of indigenous medicines both have significant economic advantages. 25% of medical medications in developed nations are derived from plants or plant products.

This study's aim was to interview local traditional healers and record their knowledge of medicinal plants, how to use them, what disorders they treat, etc. The traditional healers of today are quite senior. The abundance of information in this field is dwindling as a result of the younger generation's lack of interest and propensity to relocate to cities in search of lucrative opportunities. This is the first report on the medicinal plants utilised by the local traditional healers, and up until now, no comprehensive ethnobotanical study has been conducted in this region.

2. Materials and Methods

The local traditional healers provided the knowledge about the therapeutic herbs that the inhabitants of Maripeda Mandal use. The voucher specimens of the plant species listed in the survey were gathered and placed in the herbarium of the Department of Zoology at Kakatiya University in India. Senior taxonomist from the Department of Botany at Kakatiya University in India verified the identities of the plants that were sampled.

2.1 Study area:

Study is from the state of Telangana. The Mahabubabad district is located between latitudes 17.620 North and 80.020 East. (Figure-1). There are 1,31,530 Hectors of woodland in the district as a whole. 7,74,549 people make up the district's total population, of which 2,92,77 (37.2%) are tribal. In the Mahabubabad district, the largest ethnic groups are the Lambada, Koya, Gond, Yerukalas, and Chenchu. Maripeda Mandal, the study area, is located 42 kilometres from Mahabubabad, the district's administrative centre. Thirumalayapalem mandal to the south, Nuthankal mandal to the west, Kuravi mandal to the east, and Narsimhulapet mandal to the north surround Maripeda. A temperature range of 16°C to 24°C for the minimum and 27°C to 43°C for the highest.



Figure-1. Study area-Mahabubabad district located in Telangana State, India

3. Results and Discussion

3.1 Plants to treat various diseases:

53 plants from 31 families have been identified by the medico botanical study as being used to cure a variety of disorders. Table-1 lists the scientific and common names of these plants, as well as their families and the components that are utilised for medicinal purposes. In the current survey, 53 plant species were noted for the treatment of various ailments. These ailments include skin, diarrhea, motions, sexually transmitted infections, immune system improvement, cold, cough, and lung disorders, among others. The most well-

known of these 31 families are Fabaceae, Malvaceae, and Apocynaceae.

53 and 31 families of medicinal plants were discovered throughout the survey's fieldwork, interviews, and questionnaires. The percentages of plant species utilised to cure various illness conditions are shown in Figure 2: Snake bites (4%), scorpion bites (4%), illnesses of the hair (7%), toothaches (5%), motions (6%), illnesses of the skin (6%), and other illnesses (57%).

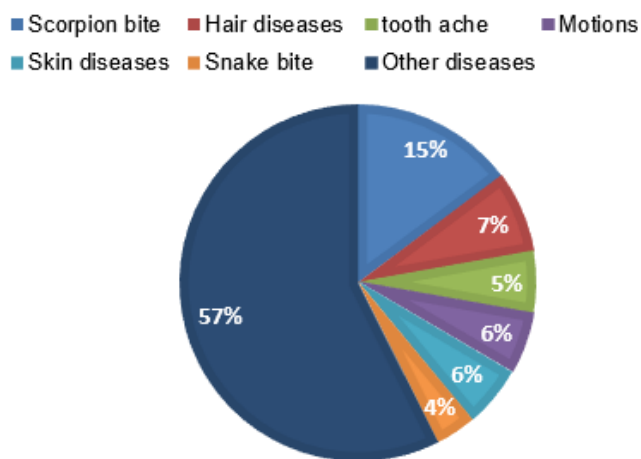


Figure-2. Percentage use of plants to treat various diseases

3.2 Plant Parts used for routes of administration:

Due to the various regional dialects spoken in the area, it was thought that several plants had more than one vernacular name when specimens were being collected. Informants frequently disclosed the medical uses for which various plants or plant components were used. So, in some instances, particularly with shrubs and trees, the entire plant served a medical purpose. The most often used plant parts, particularly for topical use, were leaves and fruits, which made up the following percentages: leaves (56%), fruits (6%), seeds (9%), bark (6%), roots (10%), and stem (12%). (Figure-3).

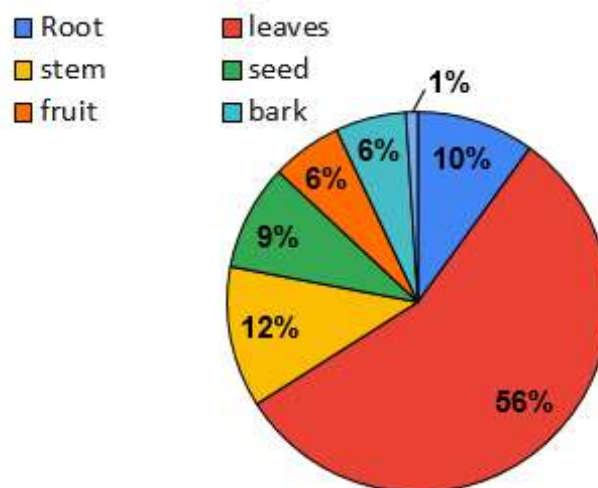


Figure-3. Percentage of plant parts used. An ethnobotanical survey of medicinal plants used by traditional Healers

The plant species that were seen were processed in a variety of methods. Decoctions, macerations, pastes, and powders were made using the plant ingredients either fresh or dry. The varied

Table-1. Medicinal plants used for the treatment and management of various diseases by traditional healers of Mahabubabad district.

| S.No | Botanical Name | Common Name | Family | Part Used | Medicinal Uses |
|------|--------------------------------|------------------------|-----------------|------------------------|--|
| 1 | <i>Abutilon Indicum</i> | Duvvena benda | Malvaceae | Leaves | For Scorpion bite |
| 2 | <i>Achyranthes Aspera</i> | Uttareni | Amaranthaceae | Root and Leaves | For Tooth ache, Scorpion bite |
| 3 | <i>Allium cepa</i> | Onion | Amaryllidaceae | Stem | For Scorpion bite |
| 4 | <i>Aloe vera</i> | Kalabanda | Asphodelaceae | Stem | For Ladies white discharge, blood purification |
| 5 | <i>Acalypha Indica</i> | Puppanti Pippe | Euphobiaceae | Leaves | Snake bite |
| 6 | <i>Andrographis Paniculata</i> | Nela Vemu | Acanthaceae | Leaves | For Motions and Pains |
| 7 | <i>Abelmoschus esulentus</i> | Lady finger | Malvaceae | Fruit | For Diabetes |
| 8 | <i>Argemone Mexicana</i> | Piche kusumu | Papaveraceae | Whole plant | Treatment of Malaria and jaundice |
| 9 | <i>Brassica nigrum</i> | Mustard tree | Brassicaceae | Seeds | Treatment of paralysis, dog bite |
| 10 | <i>Albizia Amara</i> | Narlenga | Fabaceae | Leaves | Nervous weakness |
| 11 | <i>Albizia Lebbeck</i> | Derisari | Fabaceae | Leaves | Uses for Fits |
| 12 | <i>Adadirachta Indica</i> | Neem | Meliaceae | Leaves, Stem | Smallpox and Stomach pain |
| 13 | <i>Phyllanthus amarus</i> | Bahu patra | Phyllanthaceae | Leaves, Bark | Hair growth, Heart diseases round worm |
| 14 | <i>Annon Squmosa</i> | Seetha falam | Annonaceae | Leaves | For Scorpion bite |
| 15 | <i>Celosia argentea</i> | Gunugu | Amaranthaceae | Stem, Leaves | Diarrhoea |
| 16 | <i>Crinum Asiaticum</i> | Penjara gadda | Amaryllidaceae | Root, Leaves | For snake bite |
| 17 | <i>Calotropis procera</i> | Tella Jilledu | Apocynaceae | Root, Leaves | Fits |
| 18 | <i>Cassia fistula</i> | Rela | Fabaceae | Leaves | For fever |
| 19 | <i>Pongamia</i> | Millettia pinnata | Fabaceae | Seeds | Deaf in children |
| 20 | <i>Catharanthus roseus</i> | Billa ganneru | Apocynaceae | Leaves | Cancer, Inflammation |
| 21 | <i>Cocculus Hirsutus</i> | Dusari teega | Menispermaceae | Leaves, Stem | Ladies white discharge |
| 22 | <i>Lycopodium clavatum</i> | Horn club moss | Lycopodiaceae | Leaves | Treatment of stones in kidney |
| 23 | <i>Couropita guianensis</i> | Nagamusti | Lecythidaceae | Root, Leaves | Treatment of snake bite |
| 24 | <i>Cynodon dactylon</i> | Indiandoab, grama | Poaceae | Leaves, Root | Urine diseases |
| 25 | <i>Eclipta prostrate</i> | False daisy, bhringraj | Asteraceae | Leaves | Treatment of Headache, Scorpion bite |
| 26 | <i>Thespesia populnea</i> | Indian tulip tree | Malvaceae | Bark | Treatment of skin diseases for children |
| 27 | <i>Myristica malabarica</i> | Nut mug | Myristicaceae | Leaves | Treatment of sleeping disorders |
| 28 | <i>Corallo carpus</i> | Marudonda | Cucurbitaceae | Stem, Leaves | Dyspepsia |
| 29 | <i>Senna articulate</i> | Tangedu | Fabaceae | Flowers, Leaves | Used for diabetes, skin diseases |
| 30 | <i>Myristica fragrans</i> | Jatipatri, Jajikaya | Myristicaceae | Leaves | Nerve disorders |
| 31 | <i>Caespinia bonduc</i> | Gachakaya | Caesalpiniaceae | Leaves | Used for Testis Inflammation |
| 32 | <i>Pongamia pinnata</i> | Beach tree | Faaceae | Leaves, Flowers, Seeds | Antiseptic, Antibiotic |

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| S.No | Botanical Name | Common Name | Family | Part Used | Medicinal Uses |
|------|----------------------------------|------------------------|-----------------|-----------------------|---|
| 33 | <i>Punicagratanatum</i> | Bitter gourd | Punicaceae | Fruits, Seeds, Leaves | Treatment of respiratory disorders |
| 34 | <i>Cocus nucifera</i> | Coconut | Palmaceae | Seed | Headache, Hair conditions |
| 35 | <i>Capparis sepiaria</i> | Nallauppi | Capparaceae | Leaves | Paralysis |
| 36 | <i>Datura metal</i> | Ummenthath | Solanaceae | Fruit | Treatment of Skin allergy and Scorpion bite |
| 37 | <i>Abrus precatorius</i> | Crab's eye, rosary pea | Fabaceae | Leaves | Treatment of skin diseases |
| 38 | <i>Ocimum tenuiflorum</i> | Tulasi | Lamiaceae | Leaves | Treatment of cough, cold, skin diseases |
| 39 | <i>Dregea volubilis</i> | Bandigureja | Apocynaceae | Leaves, Stem | For Dog bite |
| 40 | <i>Eclipta acaulis</i> | Nela marri | Acanthaceae | Leaves | Bone wound healing |
| 41 | <i>Eclipta alba</i> | Guntagaragada | Asteraceae | Leaves | Wound healing |
| 42 | <i>Hibiscus Rosasinensis</i> | Hibisus | Malvaceae | Leaves | Hair diseases |
| 43 | <i>Helianthus annus</i> | Sunflower | Asteraceae | Leaves, Flowers | For Scorpion bite |
| 44 | <i>Langerstroemia Parviflora</i> | Chennangi | Lytharaceae | Leaves | Used for scorpion bite |
| 45 | <i>Mimosa pudica</i> | Atti patti | Leguminaceae | Leaves | Blood pressure |
| 46 | <i>Plumbago zeylanica</i> | Chitramoolam | Plumbaginaceae | Bark | Used for Pains |
| 47 | <i>Sida acuta</i> | Broom weed | Malvaceae | Root | Used for tooth ache and scorpion bite |
| 48 | <i>Senna italic</i> | Nela tangedu | Fabaceae | Stem, Bark | Treatment for Motions and Pains |
| 49 | <i>Senna Occidentalis</i> | Adavi chennangi | Fabaceae | Leaves | Used for broken bones |
| 50 | <i>Sapindus Emarginatus</i> | Kunkudu | Sapindaceae | Fruit | For Hair wash |
| 51 | <i>Tinospora cordifolia</i> | Tippa teega | Meninspermaceae | Leaves | Dyspepsia |
| 52 | <i>Trigonella ioenum</i> | Menthulu | Graecum | Seeds | Used for Motions |
| 53 | <i>Tephrosia purpurea</i> | Vempali | Fabaceae | Root | Scorpion bite and tooth ache |

plant parts were typically administered topically as a paste, powder, sap, or latex on the diseased portion, with decoctions being consumed afterwards. The preparation techniques can be divided into a few groups, including: applying plant components as a paste (39%), extracting juice from fresh plant parts (15%), making powder from fresh or dried plant parts (30%), using some fresh plant parts (10%), and decoction (6%) (Figure-4).

The therapy of diseases was developed using both external submissions (mostly for skin conditions and wounds) and internal consumption of the arrangements. The majority of medicines were found to comprise a single plant component and more than one way of preparation. To treat one or more ailments, many treatments, however, used various portions of the same plant species. Prescriptions for children were often shorter than those for adults. Baths were frequently used to treat rashes or itchy skin problems, and steaming was employed to treat acne. The usage of a particular pharmacological research

was often continued for at least three days after symptomatic emancipation. To ensure that the illness was treated, this was especially true for oral dosing forms.

As the primary source of medicine for the rural people, medicinal plants play a crucial role in the local healthcare system. Numerous studies suggested that 82% of people in poor nations still rely mostly on traditional medicine for their treatment. (WHO, 2011).

Previous authors have discussed the reputes of the family Anacardiaceae and Euphorbiaceae in the treatment of sexually transmitted illnesses. (Prasad et al, 2013). Along with Fabaceae and Apocynaceae, the families with the highest frequency in this study, there may be a need to find these families for their bioactive components. The utility of plant parts also has implications for the preservation of species variety. The benefits of sustainable use of biodiversity across the root and entire plant are provided by the reformative nature of the leaves and

the strategies they employ. Results of this study and bark therapies used by women in South Africa for gynaecological complaints. Similar presumptions were made by Seetharam et al. (2000), who made note of the common usage of root and bark remedies for the treatment of reproductive disorders in India.

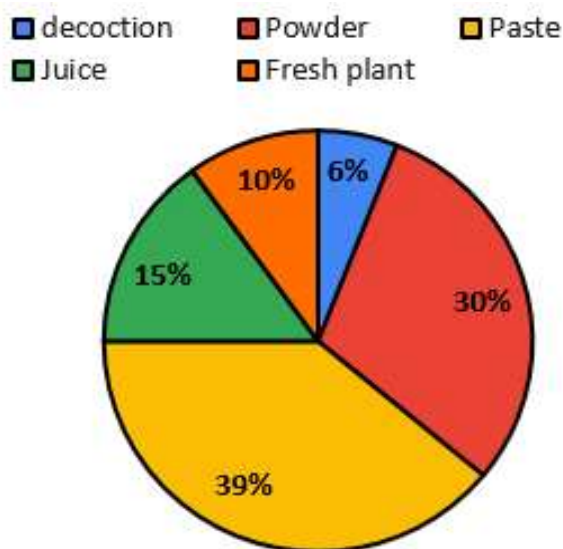


Figure-4. Percentage of plant preparation methods

While seed oil is utilised in the Adilabad area of Andhra Pradesh, bark, leaf paste, and Santalum album are used in the Hyderabad region of Karnataka. (Madhu et al, 2011). *Achyranthes aspera* leaf juice is also used to treat dysentery. (Siddalinga et al, 2013). In Bangladesh, *Embolica officinalis* leaves and fruits were utilised to treat leucorrhoea. (Hossan et al, 2010). ethnobotanical studies on medicinal plants were carried out in the districts of Bellary, Kodagu, Uttar Kannada, Chikmagalur, Tumkur, Bidar, and Gulbarga in Telangana and Karnataka. (Siddalinga et al, 2013). There hasn't been any recorded thorough research on the ethnobotany of medicinal plants used to treat various disorders in Mahabubabad, Telangana. The study adds to our understanding of traditional treatments currently used to treat a variety of illnesses, including diarrhea, which is a frequent problem among rural residents due to their filthy living conditions. The preservation of such knowledge is crucial for both the extraction and characterization of bioactive substances as well as for the development of public health policy. so that individuals in the same or other areas may utilise it.

4. Conclusion

This investigation has brought to light the locals' and Mahabubabad practitioners' traditional knowledge of the value of medicinal plants. The information suggests that there is still current and active understanding of the medicinal use of wild plant species found in the area. The village people of this region greatly benefit from the use of herbal treatments, which offer critical health care. Despite the fact that these treatments are not valued as highly as contemporary medicine, extensive research, mostly experimental, and clinical efficacy of these medicinal compositions are claimed to support their great efficacy. The necessity for documentation of this priceless knowledge is essential. When traditional cultures disintegrate with the arrival of modernization, it might be lost.

Conflicting Interests

The authors have declared that no conflicting interests exist.

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