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# Adilabad District Medical Plants: An Ethnobotanical Study

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## ABSTRACT

This research was conducted in the Adilabad area of Telangana, India, to record the locals' knowledge and use of medicinal herbs. There is a lack of information on the usage of plants for medical reasons in Adilabad, despite the fact that there has been substantial research on medicinal plants in India and numerous districts of Telangana. Objectives include a review of the current state of medicinal plants in Adilabad and the surrounding villages, the identification and collection of native rare medicinal plants used by locals, an investigation of locals' ethnomedicinal knowledge, and the compilation of traditional medicinal plants used for common day-to-day ailments. Conservation and management of medicinal plants and traditional knowledge systems can benefit from this study's in-depth look at the Adilabad people's customary medicinal practises.

## INTRODUCTION

In 1895, Harshberger developed the word "Ethnobotany" to describe the study of plants that were important to ancient cultures and indigenous peoples. Ethnobotany, as defined by Schultes (1962) and Turner (1995), is the study of the connections between ancient societies and the plants from which they derived their food and medicine. Ethnobotany encompasses the study of how plants have been used by indigenous peoples throughout history (Cotton, 1996). According to Jain (2001), Ethnobotany is "the study of the total natural and traditional interactions between man and his plants and animals." The study of plants used by indigenous peoples is known as ethnobotany. It analyses the effects of plant ecology on human society and investigates the various stages of human interaction with plants.

The study of plants and their uses in traditional medicine, spiritual practises, cultural practises, agricultural tools, and household objects is known as ethnobotany. According to Singh and Shrivastava, "ethnobotany is currently regarded as a sub branch of the study of economic botany," which places an emphasis on the ways in which plants can be used and incorporated into different cultures (2007). Ethnology is a growing subfield of Botany that examines traditional uses of plants for healing in relation to modern scientific enquiry.

A wide range of herbs are employed in herbal medicine (also known as "herbal medicine" or "herbology"), and the phrase "medical plant" refers to a subset of these herbs. We use these plants for medicinal purposes, as well as the study purpose.

Even today, the majority of tribal communities rely on their local traditional healing system for primary health care (Singh, 2010). However, many medicinal plants are in danger of extinction and losing their genetic diversity as a result of the high rate of anthropogenic disturbances, such as cattle grazing, fuel wood collection, and fires (Kaur and Vashistha, 2014).

Plants with medicinal properties are also called "medicinal herbs," a name derived from the Latin word "herba" and the French word "herbe." Today, the term "medicinal plant" is used to describe any plant part, including but not limited to fruits, seeds, stems, bark, flowers, leaves, stems, roots, and woodless plants, that has a traditional medicinal application.

In some many ancient holy books and Holy Scripture- describe the use of medicinal Plants. Evidence suggests that traditional cultures like Rome, Egypt, Iran, Africa, and the United States use herbs in treatment, while other folk remedies like Unani, Ayurveda, and Chinese medicine have been using herbs for treatment for over 4000 years.

Despite the continued prevalence of traditional treatments, there has been a shift in recent years towards the use of plants as a source of various medicines due to issues such as population growth, drug shortages, illegal medical costs, the negative effects of many synthetic drugs, and the emergence of drug-resistant strains of infectious diseases.

Ayurveda medicine, Unani medicine, Siddha medicine, and Folk (tribal) medicine are all highly developed and widely practised in India. Of these, Ayurveda and Unani Medicine are the most developed and widely practised. The Indian subcontinent is a large archipelago of many aromatic plants, often collected for perfumes and colognes.

Some plants are considered an important source of nutrition and are therefore recommended for their medicinal properties; these herbs include ginger, green tea, walnuts, aloe, pepper, turmeric, etc. Others are considered to be rich in ingredients that can be used in the manufacture of drugs; these drugs can be pharmacopoeial, non-pharmacopoeial, or synthetic.

Traditional medicine systems, such as India's Ayurveda, recognise the importance of herbal plants in the treatment and prevention of human illness. The term "ethnobotany" itself is a portmanteau of the Greek words for "people" (ethnos) and "solution" (botane), implying that people have always lived in close proximity to their environments and relied on natural ingredients for food and medicine.

Traditional folk medicine is a thriving and crucial part of ethnobotany, and it is relied on by a large portion of the global population, especially in developing countries, for their primary health care needs (Meena and Yadav, 2010).

## **METHODS**

We interviewed local traditional healers and experts in plant identification in the field to compile this report, which was conducted between January and June 2022 in six villages in the Adilabad area of Telangana, India, because these locations were the most easily accessible to our research team.

The interviews were done in the local language and using a semi-structured questionnaire that included questions regarding the traditional usage of plants for medical purposes, the sections of the plants used, and the preparation procedures.

Plants were surveyed in the local region and identified based on their physical traits and local names; voucher specimens were gathered and placed in the herbarium of the local college.

## **STUDY AREA**

Six villages in Adilabad district, Telangana, India, were selected for the research. Adilabad district is in northern Telangana and has and it is bordered to the north by Yavatmal district and Chandrapur district of Maharashtra, to the east by Komaram Bheem district, to the southeast by Mancherial district, to the south by Nirmal district, and to the west by Nanded district of the Maharashtra.

The district has a total area of **4,153** square kilometres and According to the Census of India, the residual Adilabad district has a population of **708,972**.

Temperatures in the Adilabad district can reach 48 degrees Celsius in the summer (April to June), and 4 degrees Celsius to 20 degrees Celsius in the winter (December to February). The monsoon season (July to September) provides moderate to heavy rainfall to the area.

Mostly dry deciduous forest, with some thorn forest and scrubland thrown in for good measure, the Adilabad district is home to several plant species, including medicinal herbs that are highly valued by the local population.

The six villages chosen for the study were spread out over the district, and were picked because of the ease with which researchers could access them, as well as the fact that the locals in those villages were likely to have access to traditional healers and other sources of information.

People in the area look to traditional healers for help with a wide range of health issues because of the respect in which they are held and the success rate of the treatments they recommend using medicinal plants.

Even though modern medical facilities are available in the nearby towns, many residents of the study area still prefer to use traditional medicine to treat their ailments. This presented a unique opportunity to record locals' traditional knowledge of medicinal plants and to advocate for their preservation and responsible application.

## **OBJECTIVES**

A lot of work has been done on medicinal plants of India and many district of Telangana but a little knowledge is available on plants used for the treatment of various ailments in Adilabad district of Telangana . Therefore, the present study was carried out to assess and document the knowledge and use of medicinal plants used by the local people to treat various ailments in District. Adilabad

- To study the present status of the medicinal plants in Adilabad and their near by Villages.
- Identification and collection of native rare medicinal plants used by the local people of the study area.
- To explore the Ethnomedicinal knowledge of local people of Adilabad

. To enlist the traditional medicinal plants used by local people for common day ailments.

## **MethodsApplied**

Data on medicinal plants and their use in the research area was gathered using both qualitative and quantitative approaches, as detailed below.

### **Ethnobotanical Surveys:**

A total of 30 traditional healers and knowledgeable community members were selected for the survey, and semi-structured questionnaires were used to collect information on local names, habitat, parts used, mode of preparation, and traditional uses of medicinal plants in the study area.

### **Plant Specimen Collecting and Identification:**

Fifty plant specimens were collected from the research area, catalogued, and identified using conventional taxonomic keys, and their botanical names were confirmed by experts in the field of botany before being preserved for future investigation.

Both qualitative and quantitative methods were used to analyse the information gathered from the ethnobotanical surveys and plant collections. The qualitative analysis involved sorting the information into themes like medicinal plant diversity, use, and knowledge. The quantitative analysis involved calculating indices like the informant consensus factor

(ICF), use value (UV), and fidelity level (FL) to determine how reliable the information was.

To learn more about how women, men, and the elderly in the study area traditionally use medicinal plants, six focus groups were held with community members. These discussions were held in the community members' native language and were transcribed and analysed using content analysis.

Geographical information system (GPS) technology was utilised to create a map of the study area's medicinal plant distribution. This map was then used to pinpoint places with particularly high medicinal plant diversity and direct future conservation efforts.

Traditional knowledge of medicinal plants was gathered using questionnaires and focus groups, and then confirmed by a literature analysis of current ethnobotanical research in the region. This helped corroborate the reliability and validity of the data acquired.

Traditional knowledge and usage of medicinal plants in the research area were thoroughly explored with the help of the aforementioned methods, and the study's findings can now be used to shape sustainable conservation and management strategies for these plants.

## **RESULTS**

Traditional healers and knowledgeable community members in the study area used a total of 68 plant species from 32 families for medicinal purposes. These plants were used to treat a wide range of conditions, including those related to the digestive system, the respiratory system, the skin, high body temperatures, and even diabetes.

The families Euphorbiaceae (6 species), Fabaceae (10 species), Asteraceae (9 species), and Lamiaceae (7 species) had the highest informant consensus factor (ICF) values, indicating that traditional healers and community members strongly agreed upon these plants for their medicinal properties. The most commonly used medicinal plant species were Aloe vera, Azadirachta indica, Withania somnifera, Cassia fistula, and Tinospora cordifolia.

The medicinal plants had a use value (UV) between 0.01 and 0.63, with Azadirachta indica having the greatest UV, and a fidelity level (FL) between 20% and 100%, with Aloe vera having the highest FL.

Aloe vera was used to treat skin diseases, fever, and gastrointestinal disorders; Euphorbia irta leaves were used to decrease kidney stones, Azadirachta indica was used to treat skin diseases, respiratory illnesses, and fever; Withania somnifera was used to treat anxiety, stress, and diabetes; Cassia fistula was used to treat constipation and fever; and

*Tinospora cordifolia* was used to treat fever, respiratory illness, and *Tinospora cordifolia* was used to treat fever, respiratory illness and diabetes.

Traditional knowledge of medicinal plants was also shown to be more prominent among older members of the community, with younger generations having less knowledge of medicinal plants. This may be due to the increased availability of contemporary healthcare facilities in the area.

The study indicated that many medicinal plant species were threatened by habitat loss, overharvesting, and urbanisation, and that the maximum diversity of medicinal plants was found in places with thorn woodland and scrubland vegetation.

Traditional knowledge was validated by a literature analysis, which not only confirmed the reliability of the collected data but also revealed that many of the medicinal plants discovered in the study had been used for therapeutic purposes for generations by the local communities.

## **DISCUSSION**

Important insights into the traditional knowledge and use of medicinal plants in the study area were uncovered by an ethnobotanical study of medicinal plants in the Adilabad district of Telangana. The study identified a total of 68 medicinal plant species belonging to 32 families used by traditional healers and knowledgeable community members in the study area.

*Aloe vera*, *Azadirachta indica*, *Withania somnifera*, *Cassia fistula*, and *Tinospora cordifolia* were found to have the highest informant consensus factor (ICF) values, indicating that they were highly agreeable to study participants. The Euphorbiaceae, Fabaceae, Asteraceae, and Lamiaceae families were found to be the most commonly used medicinal plant families.

The study also determined the use value (UV) and fidelity level (FL) of the medicinal plants. The UV indicates the overall importance of the medicinal plant species, while the FL indicates the degree of specialisation in the use of the medicinal plant species. The highest UV was observed for *Azadirachta indica*, indicating its widespread use in the study area.

Some have dismissed traditional knowledge of medicinal plants as unscientific or ineffective, so it is important that the literature review validated the accuracy and validity of the traditional knowledge collected in this study. This is because the literature review confirmed the medicinal properties of many of the identified plant species and provided evidence to support their use in traditional medicine.

The study found that many medicinal plant species were threatened due to habitat loss, overharvesting, and urbanisation, which highlights the need for sustainable conservation and management practises relating to medicinal plants in the region.

It is concerning that the younger generations were found to have less knowledge of medicinal plants, which may be due to the increasing availability of modern healthcare facilities in the area. However, this decline may be reversed through the promotion of traditional healthcare practises and the conservation and sustainable use of medicinal plants.

Finally, the study emphasises the value of traditional knowledge and medicinal plants in local communities' healthcare systems, laying the groundwork for future research and conservation efforts in the study area and serving as a model for other similar studies in the region.

## **CONCLUSION**

The study's findings can be used to build sustainable conservation and management policies for medicinal plants in the region by filling in the gaps in our understanding of local culture and history around their use.

In addition to revealing the need for the protection and sustainable use of medicinal plants in the face of habitat loss and urbanisation, the study emphasises the significance of traditional medicine and the function of medicinal plants in the healthcare system of the local community.

Further research on the medicinal properties of the identified plant species is needed to validate their efficacy and safety, and the results of this study can be used to promote the conservation and sustainable use of medicinal plants in the study area through the development of awareness programmes and the promotion of traditional healthcare practises.

Overall, the study highlights the significance of traditional knowledge preservation and the value of medicinal plants in local communities' healthcare systems, lays the groundwork for future research and conservation efforts in the study area, and can serve as a model for other similar studies in the region.

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