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Review Article

Ethnomedicinal knowledge, traditional practices, medicinal plants, and conservation challenges in the Kongu region of Tamil Nadu, India: a comprehensive review

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Ethnomedicine is the traditional knowledge of medicine, practiced by indigenous people. In Tamil Nadu, India, the Kongu region had many types of ethnomedicine practices due to its tribal and rural nature. In this review, we have made an attempt to summarize the ethnomedicinal knowledge and important medicinal plants from major districts of the Kongu region, like Coimbatore, Salem, Tiruppur, Erode, and Namakkal. The present study focuses on the ethnomedicinal uses of plants for various ailments. Declining traditional practices and medicinal uses of plants due to urbanization and the influence of allopathic medicine are emphasized in this review. Conservation of ethnomedicinal knowledge is needed to maintain the value of biocultural heritage.

Keywords: *ethnomedicine, ethnobotany, Tamil Nadu tribes, kongu region, indigenous knowledge, traditional medicine*

Introduction

Ethnomedicine is the scientific study of traditional medicine practices and knowledge of ethnic communities, which have been orally transmitted over generations and refined over generations of human existence. In India, indigenous communities still use medicinal plant-based treatment for the disease, and it should be referred to as "Ethnobotanical medicine." (Mahapatra et al., 2019). The WHO (World Health Organization) reported that ~80% in world's population uses herbs to cure ailments in humans. The report also suggests that medicinal plants have been studied for alternative therapy and support for healthcare activities (Nigussie et al., 2022). India is home to 427 tribal communities, and the growing interest in traditional medicine has led to an increasing number of ethnobotanical studies focusing on the indigenous tribal populations of Tamil Nadu (Ignacimuthu et al., 2006). Knowledge of medicinal plants has been developed over centuries through various traditional medicine systems such as Ayurveda, Unani and Siddha. In India, 2,500 plant species are utilized and 100 species serve as a primary medicine source, which are reported to be used by traditional healers. Reports indicate that ~75% of the 2,000 drugs in healthcare in India are plant based (Alagesaboopathi, 2009; Devi & Komalavalli, 2024). This review on Ethnomedicine practices in the Kongu region of Tamil Nadu, India conducted through a systematic collection of data from published literature. Relevant studies and surveys were retrieved from scientific databases using keywords like *"ethnomedicine," "ethnobotany," "Kongu region," "Tamil Nadu tribes," "indigenous knowledge"* and "*traditional medicine*." The inclusion criteria comprised published data or reports focusing on the ethnomedicine of the Kongu region: Coimbatore, Salem, Tiruppur, Erode and Namakal districts. This study excludes unclear data, duplication of results or unrelated geographical focus. The collected data were organized to identify research gaps and facilitate a comparative evaluation of ethnomedicinal practices across different districts of the Kongu region.

Ethno botanical studies in Kongu region

According to a previous review on Coimbatore, a major Kongu region and metropolitan city situated along the banks of the Noyyal River and surrounded by the Western Ghats (biodiverse landscape). The region is geographically divided into two parts: a dry eastern zone and a lush western zone with the Nilgiri Hills, Anamalai Hills and Munnar Hills and bordered by the Palghat Gap, considered a major ecological corridor linking Tamil Nadu and Kerala. An ethnobotanical study in this area reveals diverse traditional knowledge among the indigenous community, covering regions like Vellangiri Hills, Gopalswamy Hills, Palamalai Hills, and Karamadai ranges for treating various diseases such as skin disorders, respiratory ailments, rheumatism, diabetes, and snakebites. Major families of plants are Rubiaceae, Poaceae, Fabaceae, Asclepiadaceae and Euphorbiaceae are used in decoction form. In this, several plants are reported as vulnerable or endangered (Ramachandran et al., 2023). A survey on indigenous tribes of Yercaud hills, Salem district, documented the indigenous knowledge and medicinal knowledge of Malayali tribes, reporting 20 plant species from 16 families used for 44 ailments. Quantitative indices such as Use Value (UV), Informant Consensus Factor (ICF), and Fidelity Level (FL) indicate species like *Centella asiatica* with strong usage by healers for conditions like snake bites, bone fracture and reproductive issues. Several plants show fidelity levels up to 100% indicates therapeutic importance (Rekha Raja et al., 2025). An investigation of ethnomedicine in Sathyamangalam Taluk among the Irulas and Soligas tribes about their medicinal knowledge, around 65 plant species belonging to 32 families were recorded, used to treat various ailments such as asthma, jaundice, dysentery, fever and skin diseases. Plants like *Andrographis paniculata, Azadirachta indica, Cissus quadrangularis* and *Ocimum sanctum* play an important role in human healthcare, with remedies prepared as decoction and cream; however, it is declining because of a changing lifestyle (Poongodi et al., 2011).

An ethnobotanical survey in Thirumoorthy Hills, Udumalpet Taluk, Tiruppur district documented the traditional medicinal practices of the Pulaya tribes, where a total of 54 plant species belonging to 31 families are utilized to treat ailments such as diabetes, respiratory disorders, skin diseases and arthritis. The plant-dominant families include Apocynaceae, Lamiaceae and Rutaceae. The reliance on remedies in herbal medicine shows the rich indigenous knowledge system (Kiruthika & Suganthi, 2022). The earlier study done at Tiruchengode, Namakkal district, exhibited wide variation in medicinal plants and is credited to the indigenous people. The study carried out among tribals identified a total of 40 plant species from 27 families employed in treating ailments like cuts, rheumatism, jaundice, liver diseases, fractures, and gynecological disorders. The reliance continued on remedies based on plants due to their accessibility, affordability, and safety compared with modern medicines (Lekha & Menakashree, 2018). Across the Kongu region: Coimbatore, Salem, Tiruppur, Erode and Namakkal districts, Ethnobotanical investigations reveal that indigenous communities possess profound knowledge of medicinal plants used for treating various diseases. Unfortunately, the precious traditional knowledge of indigenous communities concerning plant-based medicine is decreasing day by day because of modernization. Documenting the medicinal plants is highly important; the documentation of indigenous knowledge through ethnomedicinal studies plays a critical role in the conservation and sustainable utilization of biological resources. The knowledge of medicinal plants and traditional medicine is vast; there is a need to document and preserve the information urgently; otherwise, it may lead to permanent loss (Rekha Raja et al., 2025; Lekha & Menakashree, 2018; Kiruthika & Suganthi, 2022; Poongodi et al., 2011; Ramachandran et al., 2023).

Common plants across Kongu region

The current study focuses on medicinal plants that commonly occur across five districts of the Kongu region of Tamil Nadu, including Coimbatore, Tiruppur, Erode, Namakkal, and Salem shown in Table 1 (Sathishkumar & Anbarasu, 2019; Chitra Vadivu et al., 2024; Venkatachalam et al., 2015; Anand et al., 2016).

Table 1. Medicinal plant in Kongu region

S. No	Botanical name	Family	Tamil name	Common name	Districts documented	Common medicinal uses
1	*Abrus precatorius* L.	Fabaceae	Kundumani	Rosary Pea/ Jequirity bean	Coimbatore, Tiruppur, Erode, Salem and Namakal	Fever, cough, cold, diuretic and tonic.
2	*Abutilon indicum* (L.) Sweet	Malvaceae	Thuthi	Indian Mallow	Coimbatore, Tiruppur, Erode, Salem and Namakal	Lung ailments, tuberculosis, dysentery and purgative.
3	*Acalypha indica* L.	Euphorbiaceae	Kuppaimeni	Indian copperleaf	Coimbatore, Tiruppur,	Skin problems, asthma, snake

				/Indian Acalypha	Erode, Salem and Namakal	bites and toothache.
4	*Achyranthes aspera* L.	Amaranthaceae	Nayuruvi	Prickly Chaff Flower	Coimbatore, Tiruppur, Erode, Salem and Namakal	Diuretic, asthma, kidney stones and abdominal pain.
5	*Azadirachta indica* A. Juss.	Meliaceae	Veppai	Neem	Coimbatore, Tiruppur, Erode, Salem and Namakal	Antifungal, Anthelmintic, rheumatoid pain and jaundice.
6	*Cardiospermum halicacabum* L.	Sapindaceae	Mudakathan	Balloon vine	Coimbatore, Tiruppur, Erode, Salem and Namakal	Arthritis, rheumatism, constipation and eye disease.
7	*Phyllanthus amarus* Schumach. & Thonn.	Phyllanthaceae	Keezhanelli	Stonebreaker / Bhui amla	Coimbatore, Tiruppur, Erode, Salem and Namakal	Primary treatment of jaundice, hepatitis and liver tonic.
8	*Aloe vera* (L.) Burm.f.	Asphodelaceae	Kattrazhai	Aloe vera	Coimbatore, Tiruppur, Erode, Salem and Namakal	Digestion disorders, skin burns and joint pains.
9	*Bauhinia racemosa* Lam.	Fabaceae	Aathi	Bidi leaf tree	Coimbatore, Tiruppur, Erode, and Namakal	Malaria, dysentery, ulcers and leucorrhea.
10	*Leucas aspera* (Willd.) Link	Lamiaceae	Thumbai	Common leucas	Coimbatore, Erode, Salem and Namakal	Colds, fever, throat infection and skin eruptions.
11	*Solanum nigrum* L.	Solanaceae	Manathakkali	Black nightshade	Erode, Salem and Namakal	Stomach ulcers and various skin diseases.
12	*Cissus quadrangularis* L.	Vitaceae	Pirandai	Veldt grape / Devil's backbone	Erode, Salem and Namakal	Rheumatism, obesity and insect bites
13	*Andrographis paniculata* (Burm. f.) Nees	Acanthaceae	Nilavembu	King of bitters	Tiruppur, Erode and Namakal	Fever, stomachache and blood purification.
14	*Aegle marmelos* (L.) Corrêa	Rutaceae	Vilvam	Bael / Bengal quince	Tiruppur, Erode and Namakal	Diabetes, cough, fever and cold.
15	*Datura metel* L.	Solanaceae	Oomathai	Thorn apple / Devil's trumpet	Coimbatore, Erode and Namakal	Gastric pain and rheumatism.
16	*Mimosa pudica* L.	Fabaceae	Thottal surungi	Touch-me-not	Erode, Salem and Namakal	Diarrhea and gynecological disorders.
17	*Tinospora cordifolia* (Willd.) Miers	Menispermaceae	Seenthil Kodi	Heart-leaved moonseed / Guduchi	Coimbatore and Salem	Skin diseases and enhance memory.
18	*Basella alba* L.	Basellaceae	Pasalaikkeerai	Malabar spinach	Coimbatore and Namakal	Rheumatic pain and swelling.
19	*Clitoria ternatea* L.	Fabaceae	Sangu Poo	Butterfly pea	Erode and Namakal	Dysentery and joint pain.

20	*Musa paradisiaca* L.	Musaceae	Vazhai	Banana	Erode and Namakal	Kidney stones and chronic dysentery.
21	*Santalum album* L.	Santalaceae	Sandhanam	Sandalwood	Erode and Salem	Skin disorders and heart ailments.
22	*Vitex negundo* L.	Lamiaceae	Nochi	Five-leaved chaste tree	Erode and Salem	Headaches, rheumatic pain and fever.
23	*Tridax procumbens* L.	Asteraceae	Vettukayapoondu	Coat buttons	Erode and Salem	Wound healing and anti-diabetic activity.

The recorded plants belong to various families, and they are traditionally used to treat various ailments. Among these documented species, the predominant families are Fabaceae, Lamiaceae, Solanaceae and Euphorbiaceae. The medicinal plants are associated with the presence of bioactive phytochemicals, which play a therapeutic role. This documentation of the medicinal plants is essential for the conservation of medicinal knowledge and may provide a basis for future scientific investigations.

Common human ailments treated by medicinal plants of Kongu region

The documented medicinal plants in the Kongu region, which are traditionally utilized for the treatment of various kinds of ailments, suggest a rich ethno-medicinal knowledge of the indigenous community. The commonly treated conditions, such as skin diseases, respiratory disorders, fever, rheumatism, gastrointestinal problems, jaundice and diabetes, are mainly reported. Plants such as *Acalypha indica, Azadirachta indica, Aloe vera* and *Santalum album* are extensively used for skin-related disorders, wounds, burns, and infection due its anti-inflammatory and anti-microbial properties. Respiratory issues like cough, cold, asthma, and throat infections are treated by using *Abrus precatorius, Leucas aspera, Achyranthes aspera* and *Aegle marmelos*. Some plants, such as *Phyllanthus amarus, Andrographis paniculata* and *Solanum nigrum*, are traditionally used for the management of liver disorders, jaundice and digestive issues. Inflammations, arthritis, and rheumatoid pain are treated with *Cardiospermum halicacabum, Cissus quadrangularis, Vitex negundo* and *Basella alba*. Moreover, medicinal plants like *Tinospora cordifolia, Mimosa pudica* and *Tridax procumbens* are used frequently for wound healing, enhancing immunity, and diabetes management. The often use of these plants for common ailments indicates their therapeutic significance and the rural and tribal communities' dependence on plant-based traditional healthcare systems in the Kongu region (Rekha Raja et al., 2025; Lekha & Menakashree, 2018; Kiruthika & Suganthi, 2022; Poongodi et al., 2011; Ramachandran et al., 2023; Sathishkumar & Anbarasu, 2019; Chitra Vadivu et al., 2024; Venkatachalam et al., 2015; Anand et al., 2016).

Impact of urbanization and modern medicine in ethnomedicine

The knowledge of ethnomedicine or traditional medicine is gradually declining between the people of indigenous communities due to rapid modernization, urbanization and dependency on allopathic medicine. The traditional knowledge transmission from elders to younger generations was reduced because of increasing influence of modern lifestyle in young ones. Allopathic medicine is preferred by people because of easy acceptance, rapid therapeutic effects and availability of facilities, resulting in decreasing on traditional herbal remedies. Furthermore, reducing interaction with nature and cultural changes directly leads to the erosion of indigenous knowledge associated with medicinal plants. Therefore, systematic documentation and conservation of traditional medicinal knowledge are needed to safeguard this biocultural heritage for future generations (Arjona-García et al., 2021).

Conclusion

The Kongu region in Tamil Nadu state in India is an area rich in ethnomedicine, and the ethnomedicinal plants found in this area are maintained by their indigenous as well as rural population. Ethnomedicine plants documented here are mainly used for treatment of diseases and are considered an important constituent of primary health care systems. However, because of the increasing effect of modernization, urbanization, and allopathy, there is erosion of traditional knowledge. Therefore, it is very necessary to document, conserve, and validate ethnomedicinal plants.

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Author contributions

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Conflict of interest

There is no conflict of interest among the authors.

Ethics approval

Not applicable.

AI tool declaration

The use of AI-assisted language tools was limited to checking grammar and making the writing clearer. The author assumes complete accountability for the science described in this paper.

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