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Urban Ethnobotany: Traditional Plant Knowledge and Household Herbal Practices in Metro Cities of India

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Abstract: *Urban ethnobotany studies how city people use and understand plants. In India, traditional plant knowledge still remains important even with modern medicine. This review brings together published studies from the last decade on household herbal practices, medicinal plants, cultural beliefs, and the transfer of plant knowledge in Indian metropolitan cities. It also compares rural and urban practices. The studies show that urban families still use medicinal plants for basic healthcare, religious practices, food, and cultural identity. Common plants include Tulsi (Ocimum tenuiflorum), Neem (Azadirachta indica), Turmeric (Curcuma longa), Aloe vera, and Giloy. Studies from Mumbai, Kolkata, Varanasi, Bengaluru, Jaipur, and Udaipur show that this knowledge is supported by family traditions, temple rituals, local markets, Ayurveda, and migrant communities. However, rapid urbanization, habitat loss, lifestyle changes, and weak intergenerational transfer are reducing this knowledge. The review highlights the need for documentation, conservation, urban medicinal gardens, and use of ethnobotanical knowledge in sustainable urban planning.*

Keywords: Urban ethnobotany, medicinal plants, traditional knowledge, herbal practices, metro cities, India, ethnopharmacology, urban biodiversity, household remedies, Ayurveda

I. INTRODUCTION

Ethnobotany is the study of the relationship between people and plants. It includes medicinal, nutritional, cultural, religious, and ecological uses. Earlier, most ethnobotanical research focused on tribal and rural communities. Today, rapid urbanization has created a new area called urban ethnobotany. This field studies plant knowledge and plant use among people living in cities. (ScienceDirect)

India has a rich tradition of plant-based healthcare. These systems include Ayurveda, Siddha, Unani, and folk medicine. About 7,500 medicinal plant species are reported to be used by different communities in India. (ScienceDirect) Even in cities, many households use herbal remedies for cough, cold, digestion problems, skin infections, and stress-related conditions.

Urbanization has changed how people interact with plants in Indian cities. Migrants often carry plant knowledge from rural areas to cities. This creates mixed urban ethnobotanical practices. Local markets, temples, home gardens, balconies, terrace gardens, and green spaces help preserve medicinal plant diversity. (ScienceDirect)

Research from Varanasi demonstrated that urban environments still support substantial medicinal plant diversity, with 72 medicinal species documented within the campus ecosystem of Banaras Hindu University. (Springer Nature Link) Similarly, urban temple ethnobotany studies from Udaipur documented 43 culturally significant plant species used in rituals and healing practices. (Journal of Traditional and Folk Practices)

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The discipline of urban ethnopharmacology has gained prominence globally because cities increasingly depend on medicinal plant trade networks for healthcare and cultural continuity. (PMC) This is particularly relevant in developing countries where low-income urban populations rely on affordable herbal remedies.

The present paper reviews published literature from the last decade to evaluate:

1. Traditional plant knowledge in Indian metro cities.
2. Household herbal practices in urban and rural populations.
3. Common medicinal plant species used in urban India.
4. Challenges associated with conservation and knowledge transmission.

II. MATERIALS AND METHODS

The present study is a review-based synthesis of published ethnobotanical literature from 2015–2025. Literature was collected from indexed databases including:

- PubMed
- ScienceDirect
- SpringerLink
- Google Scholar

Keywords used included:

- Urban ethnobotany India
- Medicinal plants in Indian cities
- Household herbal remedies
- Urban ethnopharmacology
- Traditional plant knowledge
- Ethnomedicinal practices in metro cities

Only peer-reviewed papers, reviews, and ethnobotanical surveys with documented field data were included. Studies focusing solely on phytochemistry without ethnobotanical relevance were excluded.

The review comparatively analyzed:

- Rural and urban medicinal plant usage
- Household herbal practices
- Modes of knowledge transmission
- Frequently used medicinal species
- Sociocultural significance of plants

III. RESULTS AND DISCUSSION

3.1 Urban Ethnobotanical Knowledge in India

Urban ethnobotanical knowledge in India survives through cultural continuity, religious traditions, and migration from rural regions. Studies reveal that older generations, women, traditional healers, and market vendors are the primary custodians of this knowledge. (ScienceDirect)

In metropolitan cities such as Mumbai, Delhi, Kolkata, and Bengaluru, medicinal plants are commonly cultivated in balconies, terrace gardens, and community spaces. Major Indian metropolitan cities with reported urban ethnobotanical studies are summarized in Table 1.

Table 1. Major Indian metropolitan cities with reported urban ethnobotanical studies

City	Major Ethnobotanical Features
Mumbai	Herbal household remedies, mangrove-associated medicinal plants
Kolkata	Urban ethnopharmacology and medicinal markets
Varanasi	Urban medicinal flora documentation

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City	Major Ethnobotanical Features
Udaipur	Temple ethnobotany
Bengaluru	Home gardens and Ayurvedic plant usage
Delhi	Urban herbal trade networks

Source: Compiled from published ethnobotanical literature. (ScienceDirect)

3.2 Comparison between Rural and Urban Herbal Practices

Traditional medicinal knowledge remains more extensive in rural populations due to direct interaction with forests and natural ecosystems. Rural communities frequently use fresh plant material collected from nearby habitats. In contrast, urban populations depend more on cultivated medicinal plants, dried herbal products, packaged Ayurvedic preparations, and local herbal markets. Table 2 compares rural and urban ethnobotanical practices in India.

Table 2. Comparison of Rural and Urban Ethnobotanical Practices in India

Parameter	Rural Population	Urban Population
Source of plants	Forests, farms, wild habitats	Markets, home gardens, nurseries
Knowledge transmission	Oral tradition within communities	Family traditions, Ayurveda, media
Dependence on herbal medicine	High	Moderate
Common plant use	Primary healthcare	Complementary healthcare
Biodiversity access	Greater	Limited
Conservation awareness	Traditional ecological knowledge	Increasing urban sustainability awareness

Studies indicate that rural populations possess broader species-level knowledge, whereas urban populations retain selective but culturally important medicinal plant practices. (ScienceDirect)

3.3 Common Medicinal Plants Used in Urban Households

Several medicinal plants are consistently reported across Indian urban households. Table 3 lists frequently used medicinal plants and their common household uses.

Table 3. Frequently Used Medicinal Plants in Indian Urban Households

Plant Name	Botanical Name	Common Uses
Tulsi	*Ocimum tenuiflorum*	Cold, cough, immunity
Neem	*Azadirachta indica*	Skin diseases, antiseptic
Turmeric	*Curcuma longa*	Inflammation, wound healing
Aloe vera	*Aloe barbadensis*	Burns, cosmetics
Ginger	*Zingiber officinale*	Digestive disorders
Giloy	*Tinospora cordifolia*	Fever and immunity
Amla	*Phyllanthus emblica*	Vitamin supplement
Centella	*Centella asiatica*	Memory enhancement

(PubMed)

The COVID-19 pandemic further increased the use of herbal immunity boosters in urban India, particularly preparations involving tulsi, giloy, turmeric, and ginger.

3.4 Role of Religion and Culture in Urban Ethnobotany

Religious institutions significantly contribute to plant conservation in urban environments. Temple ethnobotany studies from Udaipur demonstrated the use of 43 plant species in rituals, offerings, and healing traditions. (Journal of Traditional and Folk Practices) Sacred plants such as tulsi, peepal (*Ficus religiosa*), banana (*Musa paradisiaca*), and bael (*Aegle marmelos*) are protected due to religious significance.

Urban festivals also sustain ethnobotanical traditions. For example:

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- Mango leaves used during festivals
- Banana leaves in rituals
- Marigold flowers in worship
- Neem leaves during seasonal disease outbreaks

Thus, cultural and religious practices indirectly support biodiversity conservation in cities.

3.5 Urban Herbal Markets and Household Healthcare

Local medicinal plant markets are essential centers for ethnobotanical exchange. Urban herbal trade networks provide affordable healthcare alternatives for economically weaker populations. (ScienceDirect)

Women play a major role in household healthcare decision-making. Common household preparations include:

- Herbal decoctions
- Turmeric milk
- Tulsi tea
- Neem paste
- Aloe vera gel applications

These remedies are generally used for preventive healthcare and minor illnesses.

3.6 Threats to Urban Ethnobotanical Knowledge

Despite persistence of traditional practices, several factors threaten urban ethnobotanical systems:

1. Rapid urbanization
2. Habitat destruction
3. Decline in intergenerational knowledge transfer
4. Dependence on allopathic medicine
5. Commercial exploitation of medicinal plants
6. Loss of native biodiversity

Younger generations in metropolitan areas often possess limited ethnobotanical knowledge compared to elders. (PMC)

3.7 Global Perspectives

Urban ethnobotanical studies from South America, Africa, and Europe show similar patterns where migrant communities maintain traditional plant practices within cities. (ScienceDirect)

Research from Brazil and South Africa reported that urban medicinal markets act as important repositories of cultural identity and healthcare systems. Such findings align with Indian urban ethnobotanical trends.

IV. CONCLUSION

Urban ethnobotany shows the link between traditional knowledge and modern city life. People in Indian cities still use medicinal plants for healthcare, culture, religion, and nutrition. Urban people usually know fewer plant species than rural people. Still, many useful household herbal traditions continue in cities.

Medicinal plants such as tulsi, neem, turmeric, aloe vera, and giloy continue to play central roles in urban household healthcare. Religious institutions, herbal markets, home gardens, and migrant cultural practices contribute significantly to the preservation of ethnobotanical knowledge in Indian cities.

However, modernization and rapid urban expansion threaten the continuity of these traditions. Documentation of urban ethnobotanical practices, establishment of urban medicinal plant gardens, educational awareness programs, and integration of traditional knowledge into sustainable urban planning are urgently needed.

Future research should focus on quantitative ethnobotanical analysis, GIS-based urban medicinal plant mapping, ethnopharmacological validation, and conservation strategies for urban medicinal biodiversity.

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