

# Ethnobotanical Knowledge Loss Among Younger Generation: Causes and Conservation Strategies

\*Brajesh Kumar, \*\*Poonam Sinha

\*Research Scholar, Department of Botany, BRAB University Muzaffarpur, Bihar, India

\*\*Associate Professor, Department of Botany, MDDM College, BRAB University Muzaffarpur, Bihar, India

DOI:10.37648/ijrst.v16i03.001

<sup>1</sup>Received: 07 May 2026; Accepted: 22 June 2026; Published: 08 July 2026

---

## Abstract

Ethnobotanical knowledge is the wisdom that communities have built over many years about plants, how they are used, how they are made, their importance in culture, and how they fit into the environment. This knowledge helps in traditional medicine, growing food, making a living, holding cultural values, and protecting nature. But changes in society, money, technology, and the environment are causing this knowledge to disappear, especially among younger people. This study looks at how much of this knowledge is being lost and why. It also finds ways to record, pass on, and protect this knowledge. The study uses different methods like talking to families, having interviews, group discussions, watching what people do in the field, and testing their knowledge. Factors like age, education, jobs, involvement in traditional ways, talking to older generations, moving away from home, changes in lifestyle, using digital tools, and relying on store-bought products are studied to see how they affect knowledge levels. The study also looks at how schools, local groups, technology, gardens, people who know the knowledge, and working with the community can help keep this knowledge alive. A new idea is created showing how changes in society affect how knowledge is passed down and how well it is kept safe. The study says that this knowledge should not just be seen as old history but as something living that connects culture and nature. Combining traditional knowledge with school, community efforts, digital tools, and involving young people can help share knowledge better and support the protection of nature.

**Keywords:** *Ethnobotany; Indigenous knowledge; Traditional knowledge; Younger generation; Knowledge erosion; Medicinal plants; Biodiversity conservation; Intergenerational transmission; Indigenous communities; Sustainable development.*

## Introduction

Ethnobotany is a field that studies how people and plants are connected. It includes the knowledge people have about plants, like how to find them, use them, and what they can do. This knowledge covers a lot, such as using plants for medicine, food, building, rituals, and farming. Over many years, Indigenous and local communities have built a deep understanding of the plants around them by living and working in their environment. This knowledge is a valuable part of their culture and helps with health, food, managing nature, and protecting biodiversity. This knowledge is usually passed down within families and communities, not through schools.[1]

People like elders, healers, farmers, gatherers, and others who have experience often share this knowledge. Young people learn by watching, taking part in collecting plants, helping at home, farming, healing, and taking part in ceremonies. However, this way of passing on knowledge is changing a lot. Research from around the world shows

---

<sup>1</sup> How to cite the article: Kumar B., Sinha P.; July 2026; Ethnobotanical Knowledge Loss Among Younger Generation: Causes and Conservation Strategies; *International Journal of Research in Science and Technology*, Vol 16, Issue 3, 1-9, DOI: <http://doi.org/10.37648/ijrst.v16i03.001>

that a lot of this knowledge is disappearing. This is because of things like globalization, modern life, and markets becoming more connected. The loss is especially bad for knowledge about plants used for medicine and traditional practices. This issue is especially important in countries like India, where many plants are used in traditional medicine, food, and culture. [2] Recent studies in India show that this knowledge is still closely tied to plant diversity and how people make a living. For example, a study with the Mullu Kuruman people in Wayanad found they have a lot of knowledge about wild and less used plants. But it also showed how modernization and globalization are changing traditional ways of eating and living. The loss of this knowledge is not just a cultural issue. It also affects how we protect nature, manage resources, provide traditional healthcare, and how strong communities are. Because of this, it's important to work on recording, checking the accuracy of, teaching, and keeping this knowledge safe. We also need to make sure the communities who hold this knowledge are respected and their rights are protected [1].

### **Background of the Study**

Traditional knowledge is generally acquired through direct interaction with the environment. Children may learn plant names while accompanying parents during farming, collecting medicinal plants, grazing livestock, preparing food, or participating in cultural activities.

Historically, this process created a continuous chain of knowledge transmission [3]:

#### **Elders → Parents → Children → Future generations**

In many communities, however, this chain is weakening.

Young people increasingly spend less time in forests, agricultural fields, grazing areas, and traditional household environments. Formal education frequently emphasizes standardized scientific knowledge rather than local ecological knowledge. Employment opportunities may encourage migration from villages to towns and cities. At the same time, commercially available medicines, packaged foods, synthetic materials, and modern agricultural products have reduced dependence on several traditional plant resources [1-3].

Consequently, knowledge loss may occur even before the associated plant species become biologically threatened. This creates an important distinction:

#### **Biodiversity loss and knowledge loss are related but not identical processes.**

A plant may remain abundant in an ecosystem while knowledge concerning its traditional uses disappears. Conversely, loss of a culturally important plant species can accelerate the disappearance of associated knowledge [4].

### **Problem Statement**

Ethnobotanical knowledge is fading among younger people because traditional knowledge is becoming less connected to daily life. Less contact with older generations and nature, along with modernization, moving away from rural areas, going to school, changing jobs, and relying more on store-bought products have made it harder for knowledge to pass from one generation to the next. Even though past studies have recorded how plants are used for medicine and culture, there's still more work to be done to understand why young people are forgetting this knowledge and what kinds of efforts can help bring it back. Because of this, this study looks into the main reasons behind the loss of ethnobotanical knowledge among young people and creates practical, community-based solutions to help protect and pass on this knowledge[1-4].

### **Aim of the Study**

The goal of this study is to fully understand how much traditional plant knowledge is being lost among younger people and to find out the main reasons for this loss. Traditional plant knowledge includes the ways people have used plants for medicine, food, culture, religion, farming, and the environment. This knowledge has been passed down from older to younger generations through families, communities, stories, and direct contact with nature[4]. The study looks at how much knowledge younger people have compared to older ones and examines how factors like modern life, city living, moving away from home, education, changes in jobs, less time with elders, new technology, and lifestyle changes affect this knowledge. It also checks how interested young people are in learning and keeping traditional

plant knowledge alive. The study also looks at what stops knowledge from being passed down between generations and evaluates how schools, colleges, community groups, online tools, apps, and special plant gardens can help keep this knowledge safe[4-5]. In the end, the study wants to create realistic and long-lasting plans that involve young people and those who know traditional knowledge. By helping pass knowledge from one generation to the next and by combining traditional knowledge with modern education and technology, the study hopes to help protect cultural heritage, plant diversity, the use of natural resources in a sustainable way, and environmental protection at the community level [5].

### Objectives

The study will follow these main goals:

1. To record the plant knowledge that different age groups know in certain communities.
2. To check how much plant knowledge the younger people have.
3. To compare the plant knowledge of young people with that of older people.
4. To find out what social, economic, and cultural reasons are causing the loss of this knowledge.
5. To look at how family and community elders pass on their knowledge to others.
6. To see how factors like education, moving away from home, job choices, and changes in society affect plant knowledge.
7. To understand what young people think about traditional knowledge of plants.
8. To find out what is stopping knowledge from being passed from older to younger generations.
9. To look into how digital tools can help in recording plant knowledge.
10. To suggest ways to protect plant knowledge that work well with local communities and involve young people.

### Research Questions

1. What level of ethnobotanical knowledge exists among younger generations?
2. Is ethnobotanical knowledge significantly different between younger and older generations?
3. What socio-economic factors contribute to knowledge loss?
4. Does interaction with elders influence ethnobotanical knowledge?
5. Does participation in traditional activities increase knowledge levels?
6. How do migration and urbanization affect knowledge transmission?
7. What role does formal education play in traditional knowledge retention?
8. Can digital technology improve knowledge documentation and transmission?
9. What conservation strategies are most acceptable to younger people?

### Hypotheses

**H<sub>1</sub>** There is a significant difference in ethnobotanical knowledge between younger and older generations.

**H<sub>2</sub>** Frequency of interaction with elders is positively associated with ethnobotanical knowledge among younger people.

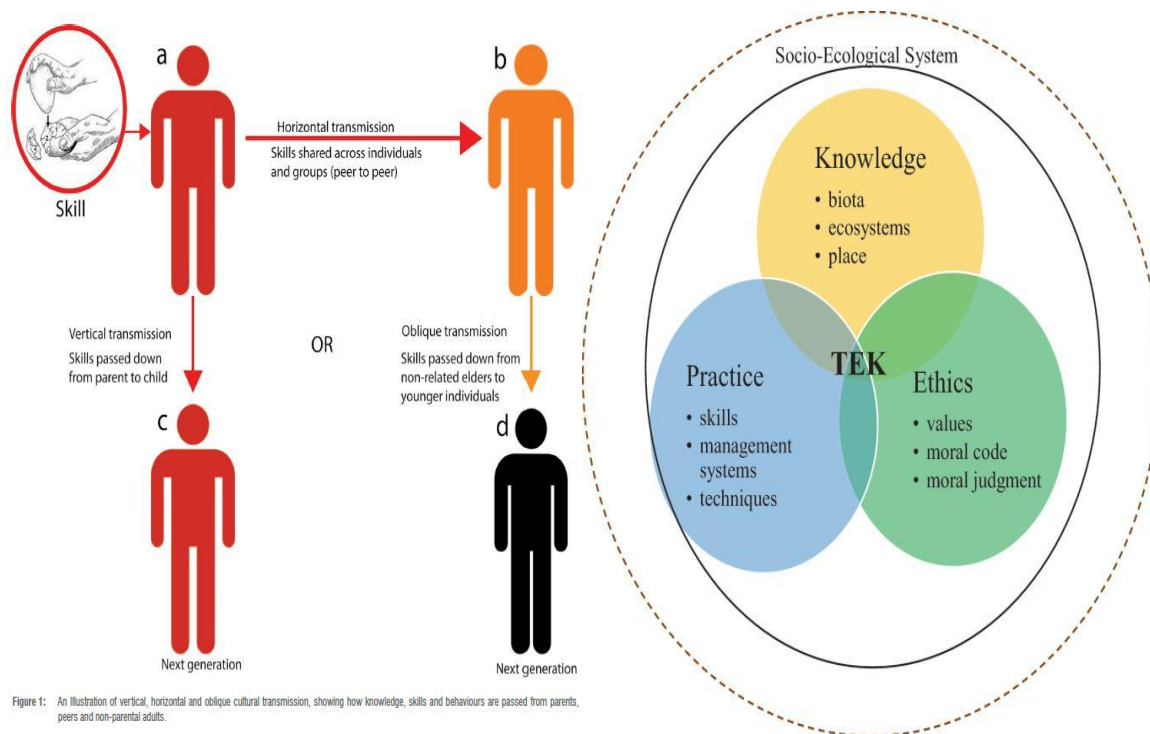
**H<sub>3</sub>** Participation in traditional plant-related activities is positively associated with ethnobotanical knowledge.

**H<sub>4</sub>** Migration and urbanization are negatively associated with ethnobotanical knowledge.

**H<sub>5</sub>** Young people who participate in community-based conservation activities demonstrate greater interest in traditional plant knowledge.

### Conceptual Framework

The proposed framework considers ethnobotanical knowledge as the outcome of interactions among social, cultural, educational, technological, and environmental factors[5].



### Conceptual relationship



### Methodology

#### Research Design

A **mixed-method research design** is recommended because ethnobotanical knowledge contains both measurable and culturally contextual dimensions [6].

The quantitative component can measure knowledge levels and relationships between demographic variables and ethnobotanical knowledge.

The qualitative component can explain why knowledge is disappearing and how communities perceive possible conservation strategies [6].

### Study Area

The study can be conducted in selected rural and semi-rural communities where traditional plant knowledge continues to exist.

The study area should ideally contain:

- traditional medicinal plant use;
- agricultural communities;
- access to natural vegetation;
- elderly knowledge holders;
- younger residents;
- traditional food practices;
- locally important medicinal or cultural plants.

For an India-focused study, villages representing different ecological and cultural conditions may be selected from Punjab or neighboring northwestern Indian regions.

### Study Population

Three broad age categories may be considered:

| Group              | Age         | Description                                     |
|--------------------|-------------|-------------------------------------------------|
| Older generation   | ≥60 years   | Traditional knowledge holders                   |
| Middle generation  | 35–59 years | Knowledge transmitters                          |
| Younger generation | 18–34 years | Target population for knowledge-loss assessment |

If the study specifically focuses on adolescents, the younger group can instead be defined as 15–24 years, subject to ethical approval and parental consent where required[7].

### Ethnobotanical Knowledge Assessment

A **Plant Knowledge Score (PKS)** can be developed.

For example:

$$PKS = \frac{\text{Number of correctly identified plants}}{\text{Total plants assessed}} \times 100$$

A more comprehensive index could assign scores to:

- plant identification;
- local name;
- medicinal use;
- food use;
- preparation;
- plant part used;
- seasonal availability;
- conservation practice.

The resulting score can be standardized from 0–100.

#### **Suggested interpretation**

| Score  | Knowledge level |
|--------|-----------------|
| 0–25   | Very low        |
| 26–50  | Low             |
| 51–75  | Moderate        |
| 76–100 | High            |

These categories should be validated against the actual questionnaire and study context rather than treated as universally established thresholds.

#### **Major Causes of Ethnobotanical Knowledge Loss**

##### **Modernization**

Modern lifestyles reduce dependence on locally available plant resources. Traditional foods, medicines, and household materials may increasingly be replaced by commercially manufactured alternatives[7].

##### **Urbanization**

Urbanization separates young people from the environments where traditional knowledge is practiced.

##### **Migration**

When young people migrate for education or employment, opportunities for learning traditional practices from elders decrease[8].

##### **Declining Intergenerational Communication**

Traditional knowledge is frequently transmitted orally. Reduced communication between grandparents, parents, and children can therefore accelerate knowledge loss.

##### **Formal Education**

Formal education provides important scientific and professional knowledge but may give little attention to local ecological knowledge[1].

The issue is therefore not that education itself causes knowledge loss; rather, **education systems that exclude local knowledge may weaken opportunities for its transmission.**

##### **Changing Occupations**

As communities move away from farming, forest-based livelihoods, and traditional occupations, practical knowledge concerning plants becomes less relevant to everyday life.

##### **Commercialization**

Commercial medicines, packaged foods, cosmetics, and agricultural inputs can reduce the use of traditional plant resources[1].

##### **Environmental Change**

Deforestation, habitat fragmentation, pollution, invasive species, and climate change can reduce the availability of culturally important plants.

### Changing Cultural Values

Some younger people may perceive traditional knowledge as outdated or associated with older generations.

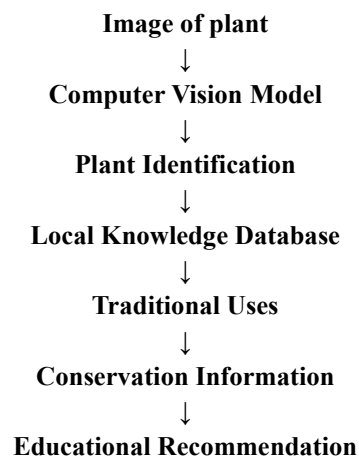
### Lack of Documentation

Oral knowledge can disappear when knowledge holders die without transferring their knowledge to younger generations or documenting it appropriately.

### Role of Artificial Intelligence and Digital Technology

Emerging technologies provide new opportunities for ethnobotanical conservation.

A proposed **AI-assisted Ethnobotanical Knowledge System** could include[8]:



Machine-learning models could assist plant identification, while natural-language processing could organize oral histories and interview transcripts.

However, technology should function as a documentation and educational tool rather than replacing community knowledge holders[5-6].

### Proposed Conservation Model

#### "ETHNO-YOUTH CONSERVATION MODEL"



This model combines traditional knowledge with modern educational and technological approaches.

### Discussion

The loss of ethnobotanical knowledge represents more than the disappearance of information about plants. It may signify the weakening of cultural identity, ecological understanding, traditional healthcare practices, and community relationships with local environments [9].

Traditional knowledge is dynamic and should not be viewed as an unchanging collection of historical practices. Young people can reinterpret and adapt this knowledge using contemporary technologies and scientific approaches.

An important conservation principle is therefore [10]:

The objective should not simply be to preserve traditional knowledge in archives, but to keep appropriate knowledge meaningful and usable within communities.

Schools and universities can provide an important bridge between traditional knowledge and modern scientific education. Digital platforms can similarly make local knowledge attractive and accessible to young people, provided that intellectual property, prior informed consent, cultural ownership, and benefit-sharing are respected [8].

### Limitations

The study may have several limitations:

1. Ethnobotanical knowledge is highly dependent on local cultural context.
2. Self-reported traditional uses may contain recall bias.
3. Some knowledge may be culturally sensitive and unavailable for public documentation.
4. Plant identification may require expert botanical verification.
5. Knowledge scores may not fully capture experiential knowledge.
6. Results from one geographical region may not be generalized to all communities.
7. Cross-sectional research cannot establish long-term changes without longitudinal follow-up [10].

### Ethical Considerations

Ethnobotanical research requires particular attention to community rights.

The study should include:

- informed consent;
- voluntary participation;
- confidentiality;
- community consultation;
- appropriate acknowledgement of knowledge holders;
- protection of sensitive traditional knowledge;
- compliance with applicable biodiversity and access-and-benefit-sharing regulations.

Traditional knowledge should not be commercially exploited without appropriate consent and benefit-sharing mechanisms [9].

### Conclusion

Ethnobotanical knowledge is a key area where biology, culture, traditional medicine, food practices, and understanding of nature meet. There's a growing gap between older and younger people, which is making it harder to keep this knowledge alive. The reasons for losing this knowledge include changes like modern life, moving to cities, people leaving their homes, changing jobs, less contact with older generations, new ways of living, less use of traditional plants, damage to the environment, and not properly recording the knowledge. To properly protect this knowledge, we need more than just writing it down. We need learning between generations, involving young people,

working with communities, teaching it in schools, using digital tools to record it, creating gardens that show traditional plants, and using new technology responsibly. A good way to do this is to put the community and those who hold the knowledge at the heart of the efforts, helping young people take on the role of protectors of their culture and environment. Combining traditional knowledge with modern science and technology could be a lasting way to save both plant life and the knowledge connected to it.

## References

- Rinto, R., Iswari, R. S., Mindyarto, B. N., & Saptono, S. (2023). Bridging the generational gap: Exploring youth understanding on ethnobotanical knowledge and its integration in higher education curricula. *Ethnobotany Research and Applications*, 26, 1–16.
- Mota, M. R. L., Lauer-Leite, I. D., & Novais, J. S. (2023). Intergenerational transmission of traditional ecological knowledge about medicinal plants in a riverine community of the Brazilian Amazon. *Polibotánica*, 56, 311–329. <https://doi.org/10.18387/polibotanica.56.16>
- Broomé, S., Feighelstein, M., Zamansky, A., Carreira Lencioni, G., Haubro Andersen, P., Pessanha, F., et al. (2023). Going deeper than tracking: A survey of computer-vision-based recognition of animal pain and emotions. *International Journal of Computer Vision*, 131(2), 572–590.
- Intergenerational transmission of environmental knowledge and pro-environmental behavior: A dyadic relationship.* (2023). *Journal of Environmental Psychology*, 89, 102058.
- Cultural transmission vectors of essential knowledge and skills among Tsimane forager-farmers.* (2023). *Evolution and Human Behavior*, 44(6), 530–540.
- Influence of socio-demographic factors on medicinal plant knowledge among three selected ethnic groups in south-central Ethiopia.* (2024). *Journal of Ethnobiology and Ethnomedicine*.
- Rao, K. K. (2024). Cultural constraints on knowledge transmission and knowledge erosion: An indigenous community in India. *Asian Journal of Social Science*, 52(4), 23–30.
- Kik, A., Duda, P., Bajzeková, J., Kama, K., Jorge, L. R., Novotný, V., et al. (2025). Language skills and ethnobiological knowledge in the young and educated Indigenous Melpa speakers in Papua New Guinea. *Journal of Ethnobiology*, 45(2).
- H. N., Karthik, Mahaboob Basha, Chetan Bhanu Rathod, Akshata Hegde, & Arvind B. Rathod. (2025). Traditional knowledge and ethnobotany of wild plants from the Central Western Ghats, Karnataka, India. *Archives of Current Research International*, 25(3), 102–116.
- The shifting dynamics of plant and mushroom foraging in Kashmir.* (2025). *Journal of Ethnobiology and Ethnomedicine*.