**Traditional Medicine in India: Cultural Importance, Health Applications, and Insights from Chhattisgarh, India**

**Abstract**

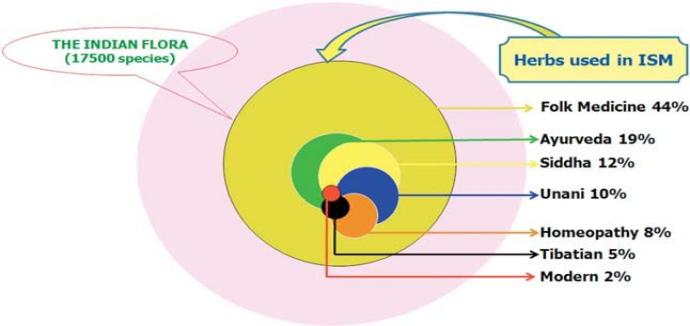
Traditional medicine (TM)—also known as ethno-medicine, folk medicine, native healing, or complementary and alternative medicine (CAM)—is the oldest form of healthcare system that has stood the test of time. The medical ethnobotany of India refers to the study of Indian medicinal plants and their traditional uses. For thousands of years, plants have been used across the Indian subcontinent for treating diseases and maintaining health, and they continue to play a vital role in the healthcare practices of millions. Even today, Indians use medicinal plants for both primary medical care—particularly in rural and underserved areas—and as a supplementary treatment alongside modern medical science. India has one of the richest traditions of plant-based medicine in the world, with an estimated 25,000 effective plant-based formulations used in folk medicine and passed down within rural communities. This study presents the current status of traditional medicine in India, with a specific focus on Chhattisgarh, highlighting its widespread use in rural healthcare. It identifies key challenges such as a lack of scientific validation, inadequate regulation, and the gradual loss of traditional knowledge. The study also outlines future directions, including promoting research, establishing certification systems for healers, encouraging sustainable cultivation of medicinal plants, and implementing supportive policy frameworks. Additionally, traditional medicine significantly contributes to rural employment and the preservation of cultural heritage, demonstrating its potential for both healthcare delivery and socio-economic development.

**Keyword :** Chhattisgarh, Complementary and Alternative Medicine (CAM), Ethno-medicine, Indigenous Knowledge, Medical Ethnobotany, Medicinal Plants, Rural Healthcare, Scientific Validation, Sustainable Cultivation, Traditional Medicine (TM).

1. **INTRODUCTION**

India, described as the “botanical garden of the world” (Abdullah & Andrabi, 2021) has a history of traditional knowledge and use of traditional medicines, also called ethno-medicine, folk medicine, native healing, or complementary and alternative medicine (CAM). This traditional health care system which has been in existence for centuries, depends on numerous medicinal plants for the cure of ailments (Abdullahi, 2011).Plants occupy an important space in the healing systems commonly used to treat human related ailments, and such traits have been attributed to its bioactive chemical compounds which contribute in one way or the other to the general well-being of humans. Natural products and in particular plant-derived compounds are still the most fertile source for the development of new drugs. According to reports, about 20,000 plant species have medicinal value all over the world, while 70% of them are found in the Indian subcontinent (Minakshi *et al*., 2016). Agroforestry is a comprehensive term encompassing land-use systems where woody perennials like trees, shrubs, and bamboos are cultivated alongside herbaceous plants such as crops, pasture, and/or livestock. These elements are organized spatially or temporally, facilitating ecological and economic interactions between the tree and non-tree components (Bargah *et al.,* 2024). Traditional healers provide health care to all age groups for a variety of problems and they have the advantage of being both locally available and affordable. Their treatments can be holistic, involving not only cures but also protections and prevention's. Treatments may be natural, Ritualistic, or a combination of both, based on what is thought to cause's illness. These may consist of practices of rituals, such as the sacrificing of offerings to the ancestors to establish goodwill, spiritual or magic invigoration of humans and objects, smoking, purification's (that is, of effluvium, impurity), or such purification's through ritual washing or emetics and purgatives, smelling, cutting small incisions, using charms and amulets, and deliberately penetrating (Shankar *et al*., 2012)

Each geographical region of India is supported by ancient environmental factors, accompanied by tribal lore and folk knowledge systems, featuring a wide assortment of herbal medicine plants. The employment of herbal therapies started as early as human civilization itself. In India, people have been exploring plants for myriad uses such as medicine, food, fuelwood, gums, paper, tannin herbs, spices, and beverages since the Vedic period. India stands out as having the world’s second largest tribal population next only to Africa (Jagtap *et al.*, 2006).Herbs continue to play a vital role in traditional healing systems. Herbs have always played an important role in the field of medicine. They have been used to treat liver damage, arthritis, cardiovascular disorders, diabetes, and even cancer.In the state of Chhattisgarh, there are many tribal communities that possess knowledge of herbal medicine, and to this day, there are nearly six thousand of them working as traditional healers. They prescribe herbal medicine to treat a variety of illnesses ranging from simple to complex, using traditional diagnostic methods (Beck & Samal, 2012). Chhattisgarh, a state in East-Central India, is renowned for its rich biodiversity and abundance of medicinal plant species. With over 8,000 plant species possessing therapeutic significance, the region has earned the title of “Herbal state.” The indigenous communities of Chhattisgarh have long utilized these medicinal plants to cure various ailments, showcasing their extensive knowledge of traditional healing methods (Jan *et al*.,2022; Saloki&Saraf, 2025).

**Figure 1.** Traditional medicine used in the Indian system of medicine (Mukherjee *et al.,* 2016).

1. **CULTURAL SIGNIFICANCE AND THERAPEUTIC VALUE**

Medical ethnobotany in India focuses on traditional Indian medicinal plants and their uses. For millennium, plants have been crucial for health across the subcontinent, remaining vital in healthcare and folk medicine. Today, they're used for primary care, especially in rural areas, and as supplementary treatments alongside modern medicine. An estimated 70% of rural Indians depend on traditional plant-based remedies for their primary healthcare (Sen *et al*., 2017; Choudhury *et al*., 2017).Indian medicine is based on the Five Elements Theory (Prithvi, Jala, Agni, Vayu, Akasha) which explains human physiology through corresponding bodily elements, and the Three Humoralisms Theory (Tridosha), which posits that health relies on the balance of Vata (gas), Pitta (bile), and Kapha (mucus). Imbalances in these humors, caused by internal or external factors, lead to disease, with treatment focused on restoring equilibrium through medicine and diet (Qiu, 1999; Zhang *et al*., 2014; Shi *et al*., 2021).Forests are crucial for India's medicinal plants, hosting approximately 90% of them. The remaining 10% are found in other areas like grasslands, agricultural lands, wastelands, and freshwater vicinity (Chakraborty *et al*., 2012).Over 80,000 plant species are used medicinally worldwide, primarily through traditional, generationally-passed-down knowledge. This underscores their crucial role in traditional and folk medicine. Currently, traditional medicinal plants are gaining significant attention from mainstream medical science, as a large portion of the population in underdeveloped and developing nations still depend on them for primary healthcare (Poddar et al., 2020)

**3. INTEGRATION OF TRADITIONAL KNOWLEDGE WITH MODERN SCIENTIFIC APPROACHES**

i. Combining traditional knowledge with modern analytical techniques: Integrating traditional knowledge of medicinal plants with modern analytical techniques, such as HPLC and NMR, to identify and characterize bioactive compounds (Wang *et al.,* 2023).

ii. Using computational models to predict antiviral activity: Utilizing computational models to predict the antiviral activity of medicinal plants and their compounds, reducing the need for experimental screening.

iii. Collaboration between traditional healers and modern scientists: Fostering collaboration between traditional healers and modern scientists to validate traditional knowledge and develop new antiviral compounds (Sharma, 2024).

**4. CURRENT STATUS OF TRADITIONAL MEDICINE IN INDIA AND CHHATTISGARH**

The government has supported the adoption of traditional medicine into mainstream healthcare by integrating it with modern medicine through research, education, and infrastructure. Alongside its low cost, comprehensive advantages, and government backing, traditional medicine’s increasing acceptance makes it indispensable to Indian healthcare. One of the richest plant-based medical traditions in India is folk medicine, with about 25,000 effective plant-based formulations known to rural areas. There is more than 1.5 million practitioner in traditional medicine utilizing herbal methods for prevention, pro-motivation, and curing ailments. Furthermore, India has more than 7,800 medicinal drug-manufacturing units that together annually utilize nearly 2,000 tonnes of herbs (Verma& Singh, 2008).The Chhattisgarh State Biodiversity Board supported a 2023 survey that features a list of more than 100 traditional healers documented from Bastar, Durg, and Dhamtari regions. They apply an integration of spiritual, ecological, and community healing for treatment towards an array of medical complications, including cancer, ensuring the preservation of culture and community relations.

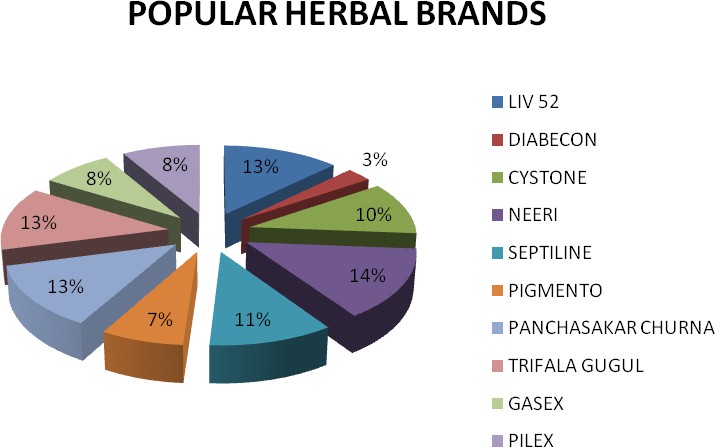
A collaborative program involving the Chhattisgarh State Biodiversity Board, Quality Council of India, and TDU, Bengaluru, certified 50 traditional healers (Traditional medicine systems of CG showcased at global seminar on medicinal plants, 2024). This highlights the rich traditional knowledge of medicinal plants held by Chhattisgarh's tribal communities, with an estimated 6,000 traditional healers still practicing herbal medicine in the state (Beck & Samal, 2012).

**5. CHALLENGES AND FUTURE DIRECTIONS OF TRADITIONAL MEDICINE IN INDIA AND CHHATTISGARH**

Major Ayurvedic and Unani pharmaceutical companies in India, including **Dabur, Himalaya, Zandu, AvesthaGengraine, Reliance, Patanjali, and Hamdard**, operate dedicated research centers for traditional and herbal medicine. However, the Siddha pharmaceutical industry has only one private R&D center, ALMAA Herbal Nature in Chennai (Vembu*et al*., 2020).A significant challenge for traditional medicine practices is the **lack of rigorous scientific evaluation**, which fosters skepticism about their safety, efficacy, and dosage standardization. Without proper clinical trials, integrating traditional medicine into modern healthcare systems remains difficult (Tilburt&Kaptchuk, 2008).

Unsustainable harvesting of medicinal plants from the wild has led to the depletion of several plant species. This poses a serious threat to biodiversity and the long-term availability of medicinal resources (Hamilton, 2004). Traditional knowledge is often exploited without fair compensation to indigenous communities. Issues of intellectual property rights and benefit-sharing remain unresolved in many countries (WHO, 2013). Many traditional medicines are sold without proper regulation, leading to variations in quality, contamination, and the presence of harmful substances (Shankar &Lavekar, 2007).

The importance of natural products in the future of drug discovery is clear: novel biologically active natural products will continue to serve as lead compounds for drug development and is biochemical probes for the discovery of pharmacological and biochemical process. Traditional knowledge and experiential database can provide new functional leads to reduce time, money and toxicity – the three main hurdles in drug development. These records are particularly valuable, since effectively these medicines have been tested for thousands of years on people. ( Rout*et al.,* 2009). In India, around 65% of the population relies on traditional medicine for healthcare, largely due to the limited accessibility, availability, and affordability of modern healthcare, particularly in rural areas (Payyappallimana, 2010; Kamboj, 2000; Sen & Chakraborty, 2015). This demand for traditional medicine is also increasing in developed nations, with usage rates around 40-50% in Germany, 42% in the USA, 48% in Australia, and 49% in France (Sen & Chakraborty, 2015).

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**Figure 2.** Popular Herbal Brands for the Treatment of Chronic and Acute Diseases (Gunjan *et al.,* 2015).

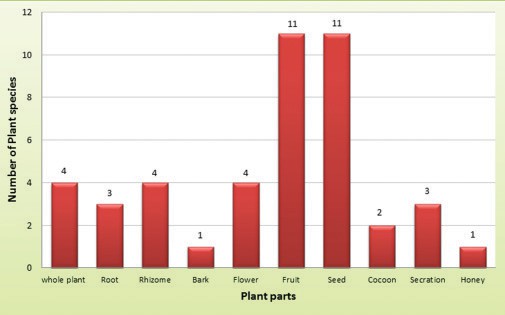
Oral traditions of Chhattisgarh are at risk of being lost due to the decline in interest among the younger generation and the traditional healers’ winding down practice (Beck & Sama 2012). The absence of scientific evaluation for herbal tribal medicine safety, efficacy, and dosage limits public and global acceptance, especially their integration into formal healthcare systems (Singh, 2025; Verma & Singh, 2008).Urbanization and migration coupled with deforestation are overrides longstanding tribal ethno-medicine. In Dantewada, for example, there is no interest in herbal medicine which threatens its survival (Tripathi 2019; survey in Barsur village). Chhattisgarh State Biodiversity Board and Quality Council of India are certifying folk healers, documenting for vernacular medical practices, and integrating formal healthcare to enhance their use (Traditional medicine systems of CG showcased at global seminar, 2024). Furthermore, agroforestry alongside designated conservation areas for medicinal plants can mitigate deforestation (Verma & Singh, 2008).

1. **SOCIO- ECONOMIC IMPACT OF TRADITIONAL MEDICINE IN INDIA AND CHHATTISGARH**

Medicinal plant cultivation is gaining traction for its potential to blend biodiversity conservation with poverty alleviation. While its role in boosting income and employment for the poor is recognized, long-term data on income effects is still limited, making careful selection of target groups and adaptation of cultivation practices crucial (Kanwat et al., 2012). The traditional medicine sector is a significant employer in India, with over 1 million traditional healers and practitioners, including Ayurvedic, Unani, Siddha, homeopathic, and informal tribal healers. Many more are involved in the collection, processing, and marketing of medicinal plants (Ministry of AYUSH Annual Report 2022-23).

Seed germination is the process in which the embryo develops into a seedling under favorable conditions . It involves a series of physiological, biochemical, and morphological changes that together lead to germination (Bargah *et al.,* 2025). Economic factors impact healthcare access: lower-income individuals often prefer traditional medicine due to its perceived affordability, potentially leading to healthcare disparities as higher-income individuals choose modern treatments (Kareem &Yoganandham, 2024). Beyond healthcare, traditional medicine also preserves tribal and folk knowledge systems, orally passed down, thus contributing to cultural heritage conservation (Planning Commission Report on Tribal Health, 2018).

The insights from tribal respondents on Traditional Knowledge of Medicinal Plants in Tribal Regions of Sitapur and Bagicha Block, Chhattisgarh, are significant. Korwa tribe identifies 41 Medicinal Plants, Gond Tribe recognizes 34, Uraon Tribe acknowledges 31, and Nagvanshi Tribe knows 28 species. This diversity highlights the role of medicinal flora in therapeutic practices and socio-economic improvement. Investigation aids in conserving knowledge of herbal treatments and plant uses within village ecosystems. Preservation, domestication, and sustainable harvesting of these resources are essential for future generations and ecological well-being.(Toppo, 2020).The Korwa tribe's medicinal plant knowledge needs conservation, awareness, and documentation. While Korba district's forests and Korwa villages (Chhatasarai and Dudhitangar) have abundant medicinal species, their use is limited by a lack of proper identification and understanding. Promoting awareness and local cultivation is vital for the region's economic development (Shukla, 1970).A study in ten forest villages of Kondagaon's North Forest Zone documented the traditional medicinal knowledge of local healers. The community, characterized by low education and strong adherence to indigenous culture, shows limited interest in modern ways most traditional healers are between 40-59 years old (58%), with 30% aged 60-80 and 12% aged 20-39 (Kaushik *et al*., 2021).Figure 4. First Approach for Treatment (Soni & Pradhan, 2016)



**Figure 3.** Plants Used by Tribals as Non-Timber Forest Products for Livelihood Security (Sinha *et al.,* 2016).

**7. CONCLUSION**

Traditional medicine, like Ayurveda, plays a key role in Indian healthcare due to its holistic approach, affordability, and cultural significance. Global interest in natural remedies, supported by initiatives like the Ministry of AYUSH, has boosted its status. India's biodiversity and ancestral knowledge offer potential for herbal medicine growth, but challenges like quality control and lack of data hinder global participation. Standardization and research can enhance credibility and export potential. Traditional medicine is crucial in rural areas with limited access to modern services. Despite high demand, systems like Ayurveda face obstacles like validation and regulation. Lack of research hinders integration into mainstream medicine. Initiatives in Chhattisgarh and private foundations are promoting positive change by certifying healers and protecting intellectual property. Documentation, conservation, and research are essential for traditional medicine preservation. With support, traditional knowledge can contribute to global healthcare. Traditional medicine is a primary source of healthcare in India, especially in rural and tribal areas. Its affordability and cultural relevance make it popular, supporting livelihoods through medicinal plant commerce. Challenges remain in resource identification and utilization. Promoting cultivation and integrating traditional knowledge can benefit community health and biodiversity. Supporting tribal healers and promoting medicinal plant cultivation can improve healthcare access and socio-economic development.

Disclaimer (Artificial intelligence)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

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