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A Review of Medicinal Plants and their Therapeutic Use in the Nimar Region, Madhya Pradesh

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Abstract: ***The Nimar region of Madhya Pradesh is recognized for its rich floristic diversity and long-standing tradition of ethnomedicinal practices preserved by indigenous tribal communities such as the Bhil, Bhilala, Gond, and Korku. For generations, these communities have relied on locally available medicinal plants to treat a wide range of ailments including fever, cough, dysentery, diabetes, skin diseases, wounds, inflammation, and snakebites. The present review highlights the significance of traditional medicinal knowledge in the Nimar region by documenting important medicinal plant species and their therapeutic applications. Species such as Cassia fistula, Bauhinia variegata, Pimenta dioica, Moringa oleifera, Asparagus racemosus, and Nyctanthes arbor-tristis are commonly used in primary healthcare owing to their accessibility, affordability, and perceived safety. However, rapid socio-economic changes, urbanization, deforestation, and the gradual shift of younger generations toward modern healthcare systems have led to the erosion of this valuable knowledge base. The study emphasizes the urgent need for systematic documentation, scientific validation, and conservation of ethnomedicinal knowledge to preserve the cultural and biological heritage of the Nimar region and to ensure sustainable utilization of medicinal plant resources.***
Keywords: Ethnobotany; Medicinal plants; Tribal knowledge; Conservation; Nimar region; Madhya Pradesh.

I. INTRODUCTION

Ethnobotany plays a crucial role in understanding the intricate relationship between indigenous communities and plant resources, particularly in biodiversity-rich regions. India, being one of the world's mega-diverse countries, harbours a vast repository of traditional knowledge related to medicinal plants. The Nimar region of Madhya Pradesh, comprising parts of Khargone, Barwani, Khandwa, Burhanpur, and adjoining areas such as Dhamnod, represents a significant ethnobotanical landscape where traditional plant-based healthcare practices are still prevalent. The tribal communities inhabiting this region—primarily the Bhil, Bhilala, Gond, and Korku—possess extensive knowledge of local flora and utilize a wide variety of plant species for the treatment of common as well as chronic ailments. Due to limited access to modern medical facilities, herbal remedies prepared from roots, leaves, bark, seeds, latex, flowers, and fruits form the backbone of primary healthcare among these communities Pal & Jain (1998).

Traditional remedies are widely employed for gastrointestinal disorders such as dysentery and stomach pain, respiratory ailments including cough and asthma, metabolic disorders like diabetes, skin diseases, wound healing, and even life-threatening conditions such as snakebites Kokate, & Gokhale (2010). The medicinal plant wealth of the Nimar region reflects its favourable climatic conditions, dry deciduous forest vegetation, and rich biodiversity. However, increasing anthropogenic pressures, habitat degradation, deforestation, and cultural transitions threaten both plant resources and the associated indigenous knowledge systems. In this context, systematic ethnobotanical documentation and conservation-oriented studies are essential to safeguard this invaluable heritage and to provide a scientific basis for future pharmacological research.

II. REVIEW OF LITERATURE

Traditional knowledge of medicinal plants in central India has been the subject of numerous ethnobotanical studies, highlighting the importance of indigenous plant use in tribal healthcare systems and the urgent need for documentation and conservation Jain (1991). A foundational work specifically on the East Nimar region was conducted by Ray, Sheikh, and Mishra (2011), who documented 63 medicinal plant species used by tribal communities, detailing scientific names, vernacular names, plant parts used, and modes of administration. This study provided a critical baseline dataset for ethnomedicinal practices among tribes such as Korku, Bhil, Gond, and Bhilalas in East Nimar, indicating rich plant-based therapy for 28 categories of ailments.

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Further research **by** Jeetendra & Pachaya (2015) expanded on this by conducting surveys in multiple villages of both East and West Nimar, documenting 75 plant species used by tribes including Bhil, Bhilala, Gond, and Korku. The research underscored the dependency of these communities on local flora and emphasized the need for documentation to prevent loss of traditional knowledge due to modernization.

In addition to human healthcare, ethnobotanical investigations in Nimar have also addressed traditional ethnoveterinary practices. Parashar and Ray (2019) recorded 28 plant species used to treat livestock ailments in West Nimar, highlighting how indigenous knowledge extends to the health of domestic animals and emphasizing the multifunctional role of medicinal plants in tribal livelihoods.

The broader context of medicinal plant research in Madhya Pradesh supports the importance of these regional studies. For example, the medicinal flora of Madhya Pradesh and Chhattisgarh was reviewed by Jain, Kumane, and Bhattacharya (2006), pointing to the substantial plant wealth in the state and acknowledging that many traditional uses remain under-explored and undocumented.

Although studies such as Ahirwar and Gupta (2024**)** on Dindori district illustrate ongoing ethnomedicinal research in Madhya Pradesh, they also highlight a common theme across tribal regions: traditional knowledge is primarily transmitted orally and is at risk of being lost due to socio-economic changes. Taken together, these studies confirm that the Nimar region is part of a larger ethnobotanical landscape in Madhya Pradesh where traditional medicinal plant knowledge continues to play a key role in community health, yet remains imperilled without systematic documentation and conservation.

III. OBJECTIVE OF THE STUDY

The present study was undertaken with the following objectives:

1) To document traditional knowledge related to medicinal plants used by tribal communities of the Nimar region of Madhya Pradesh.
2) To record botanical names, local names, families, and medicinally important plant parts.
3) To study the therapeutic applications of medicinal plants used in the treatment of common and chronic diseases such as fever, dysentery, diabetes, skin diseases, wounds, and snakebites.
4) To analyze the dependence of tribal communities on plant-based healthcare systems.
5) To assess the threats to ethnomedicinal knowledge arising from modernization and generational shifts.
6) To emphasize the need for conservation, sustainable utilization, and scientific validation of medicinal plants and indigenous knowledge.

IV. MATERIALS AND METHODS

In year 2025, between the month of September to November a number of ethnobotanical surveys were conducted. Data on the observation of medicinal usage and interviews with tribal leaders were gathered through questionnaires, personal groups, elderly and experienced individuals, and local people for ethnobotanical information among various informants. Ethnic groups adhered to standard guidelines. Medicinal plant species reported by informants were collected from forests, agricultural fields, and home gardens. Plant identification was carried out using standard floras, botanical keys, and consultation with subject experts. Specimens were prepared and preserved in the college herbarium for future reference. Various publications and literature have been consulted to confirm the medical value Chopra, et.al. (2013). The collected data were systematically organized and analysed to determine the frequency of plant usage, dominant plant families, and the most commonly treated ailments in the study area.

Table1 Showing Medicinal Plants with Botanical Details

S. No.	Common Name	Botanical Name	Family	Parts Used	Traditional Uses	Medicinal Applications
1	Amaltas	*Cassia fistula*	Fabaceae	Fruit pulp, leaves	Laxative, skin disorders	Constipation, liver ailments
2	Kachnar	*Bauhinia variegata*	Fabaceae	Bark, flower buds	Goiter, ulcers	Thyroid and digestive disorders

S. No.	Common Name	Botanical Name	Family	Parts Used	Traditional Uses	Medicinal Applications
3	All Spice	*Pimenta dioica*	Myrtaceae	Dried berries	Digestive aid	Flatulence, toothache
4	Putranjiva	*Putranjiva roxburghii*	Putranjivaceae	Seeds, leaves	Fertility enhancer	Reproductive health
5	Gandhraj	*Gardenia jasminoides*	Rubiaceae	Flowers, roots	Cooling agent	Headache, fever
6	Meetha Neem	*Murraya koenigii*	Rutaceae	Leaves	Digestive tonic	Diabetes, hair problems
7	Red Sandalwood	*Pterocarpus santalinus*	Fabaceae	Heartwood	Blood purifier	Skin diseases
8	Shatavari	*Asparagus racemosus*	Asparagaceae	Roots	Female tonic	Lactation, infertility
9	Hathjod	*Cissus quadrangularis*	Vitaceae	Stem	Bone healing	Fractures
10	Reetha	*Sapindus mukorossi*	Sapindaceae	Fruits	Natural cleanser	Dandruff, skin infections
11	Surjana	*Moringa oleifera*	Moringaceae	Leaves, pods	Nutritive	Anemia, immunity
12	Vijaysar	*Pterocarpus marsupium*	Fabaceae	Heartwood	Anti-diabetic	Diabetes control
13	Sindoor	*Bixa orellana*	Bixaceae	Seeds	Wound healing	Skin protection
14	Garud Tree	*Sterculia foetida*	Malvaceae	Seeds, bark	Anti-inflammatory	Rheumatism
15	Parijat	*Nyctanthes arbor-tristis*	Oleaceae	Leaves, flowers	Fever remedy	Malaria, arthritis
16	Aparajita	*Clitoria ternatea*	Fabaceae	Roots, flowers	Brain tonic	Memory enhancement
17	Rose	*Rosa indica*	Rosaceae	Petals	Cooling agent	Digestive health
18	Karanj	*Pongamia pinnata*	Fabaceae	Seeds, oil	Skin disorders	Eczema, leprosy
19	Coconut	*Cocos nucifera*	Arecaceae	Fruit, oil	Nutritive	Dehydration
20	Arecanut	*Areca catechu*	Arecaceae	Seeds	Digestive	Intestinal worms

V. RESULTS AND DISCUSSION

The present study documents 20 medicinal plant species belonging to 18 genera and 13 families that are commonly used by tribal communities of the Nimar region of Madhya Pradesh for primary healthcare. The recorded plant species are traditionally utilized for the treatment of a wide range of ailments including digestive disorders, fever, diabetes, skin diseases, inflammation, bone fractures, and reproductive health problems. The dominance of the family Fabaceae, represented by multiple species such as *Cassia fistula*, *Bauhinia variegata*, *Pterocarpus marsupium*, and *Pongamia pinnata*, indicates its significant contribution to ethnomedicinal practices in the region.

Among the plant parts used, leaves (30%) were most frequently utilized, followed by bark and roots (20% each), fruits and seeds (15%), and flowers and latex (15%). The preference for leaves may be attributed to their easy availability and sustainable harvesting without causing severe damage to the plant. Herbal preparations were mostly administered in the form of decoctions, pastes, powders, and juices, either orally or topically depending on the ailment Kirtikar, & Basu, (2006).

The results reveal that tribal communities rely heavily on plant-based remedies due to their affordability, accessibility, and cultural acceptability. Plants such as *Moringa oleifera* and *Asparagus racemosus* were found to be commonly used as nutritive and tonic agents, while *Cissus quadrangularis* was frequently cited for bone healing. Similarly, *Nyctanthes arbor-tristis* and *Pimenta dioica* were traditionally used for fever and digestive disorders, supporting earlier ethnobotanical reports from the Nimar region Anonymous (2001).

The findings of the present study are in close agreement with earlier ethnomedicinal investigations conducted in East and West Nimar, which also reported extensive dependence of tribal populations on medicinal plants for healthcare. However, the study also highlights a gradual decline in traditional knowledge, particularly among younger generations, due to modernization, migration, and increasing reliance on allopathic medicine. Habitat loss and unsustainable harvesting further threaten the availability of several medicinal plant species.

Overall, the study underscores the importance of systematic documentation, scientific validation, and conservation of ethnomedicinal knowledge in the Nimar region. Integrating traditional healthcare practices with modern scientific research can contribute to sustainable healthcare solutions while preserving the cultural heritage of tribal communities.

VI. FUTURE SCOPE AND CONSERVATION STRATEGIES

1) Scientific validation of medicinal plants through phytochemical and pharmacological studies.
2) Promotion of community-based conservation and sustainable harvesting practices.
3) Establishment of medicinal plant gardens in tribal areas and educational institutions.
4) Awareness programs to encourage inter-generational knowledge transfer.
5) Integration of validated traditional medicine with primary healthcare systems.
6) Policy support and benefit-sharing mechanisms to protect indigenous community rights.

VII. CONCLUSION

The present review reveals that the Nimar region of Madhya Pradesh possesses a rich and diverse heritage of traditional medicinal knowledge intricately linked with tribal culture and local biodiversity. A wide range of medicinal plants are used by tribal communities as primary healthcare resources due to their availability, affordability, and therapeutic efficacy. Species such as *Pongamia pinnata*, *Pimenta dioica*, *Moringa oleifera*, *Asparagus racemosus*, and *Nyctanthes arbor-tristis* play a vital role in treating various ailments Evans, W. C. (2009).

However, this invaluable knowledge system is rapidly declining as a result of modernization, deforestation, migration of younger generations, and increasing dependence on allopathic medicine. The absence of comprehensive documentation further threatens the continuity of ethnomedicinal traditions. Therefore, immediate and coordinated efforts are required to document, scientifically validate, and conserve both medicinal plant resources and indigenous knowledge systems for future generations.

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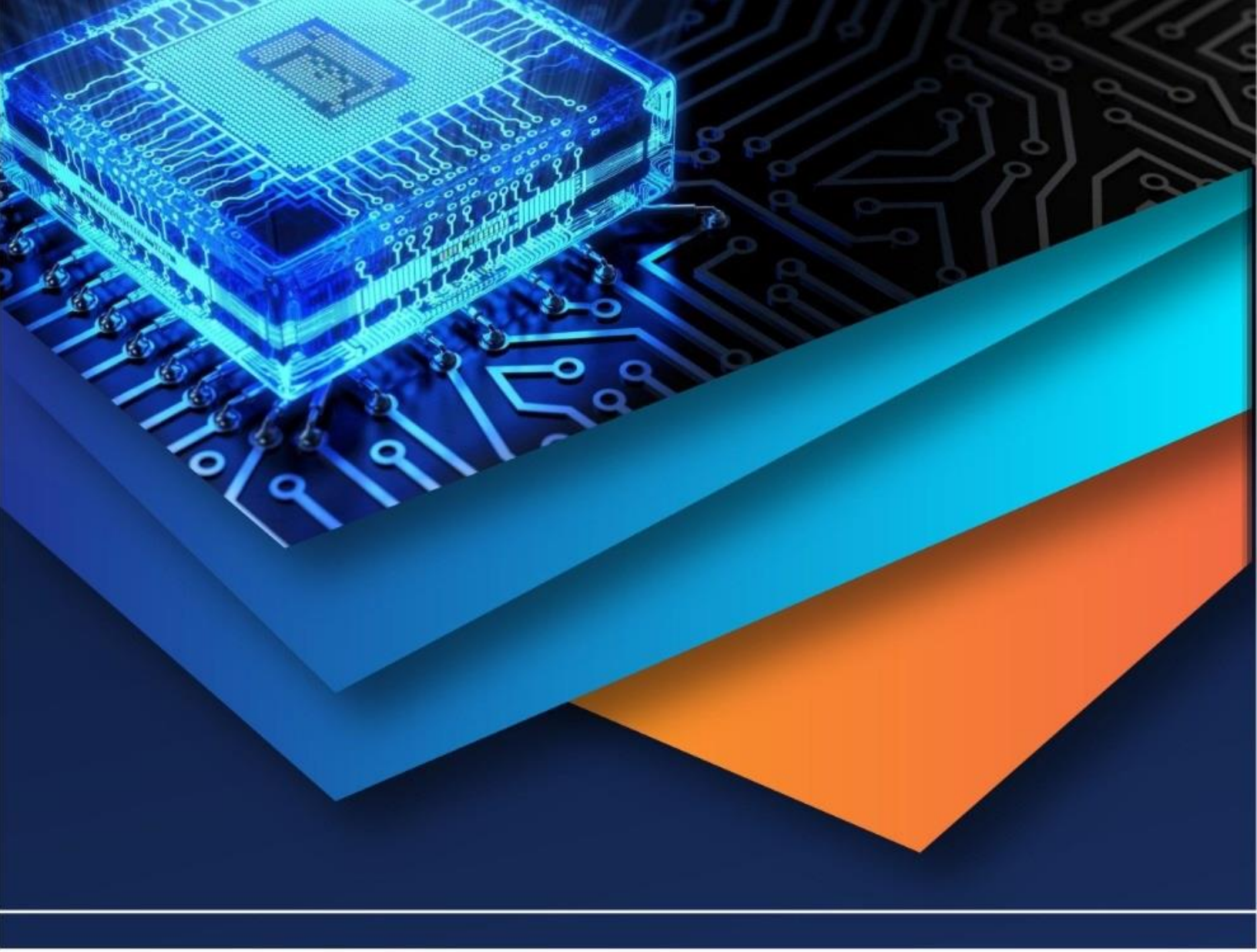

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