Plant Archives Vol. 25, No. 1, 2025 pp. 2356-2372 e-ISSN:2581-6063 (online), ISSN:0972-5210

Plant Archives

Journal homepage: http://www.plantarchives.org

DOI Url : https://doi.org/10.51470/PLANTARCHIVES.2025.v25.no.1.339

UNLOCKING THE SECRETS OF THE BAIGA COMMUNITIES HEALING PRACTICES: AN ETHNOBOTANICAL STUDY IN GAURELLA-PENDRA-MARWAHI, CHHATTISGARH, INDIA

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(Date of Receiving-16-02-2025; Date of Acceptance-22-04-2025)

ABSTRACT

The present study is one of the initial efforts to explore the ethnobotanical knowledge and plant usage practices of the Baiga tribe in the Gaurella-Pendra-Marwahi (GPM) district, Chhattisgarh, India. Ethnobotanical data were collected through intensive field surveys in ten forest fringe villages, involving 43 traditional healers using semi-structured questionnaires, interviews, and direct observations. A total of 73 plant species from 45 families were documented, with Fabaceae being the most represented family (15 species). Herbs were the dominant growth form (44%), and leaves (20 species) were the most frequently used plant parts. Paste (29 species) emerged as the most preferred mode of preparation. The use value (UV) of the documented plant species ranged from 0.14 to 0.93, with Dryopteris cochleata and Gymnema sylvestre showing the highest UV (0.93). The fidelity level (FL) for 15 plant species varied between 53.65% and 100%, with Dryopteris cochleata exhibiting the highest FL (100%), signifying unanimous agreement on its therapeutic use. The highest Informant Consensus Factor (ICF) value (0.90) was recorded for genitourinary and reproductive disorders, reflecting strong healer consensus. Traditional healers utilized these plants to treat 50 different ailments, highlighting the significance of indigenous knowledge in primary healthcare. The findings emphasize the need for conservation and pharmacological validation of medicinal plants to support sustainable healthcare practices among the Baiga community.

***Key words*:** Ethnobotanical study; Medicinal plants; Baiga; Traditional healers; Gaurella-Pendra-Marwahi; Chhattisgarh

Introduction

Indian tribes across the country rely predominantly on ethnomedicine because of their intrinsic cohabitation with nature. The World Health Organization has estimated that 80% of the global. population, particularly in developing nations, relies on ethnomedicine for disease treatment (WHO, 2008). In addition to utilizing plants for therapeutic purposes, tribal communities also gain economic benefits by selling these botanical resources in local markets. Nevertheless, the past two decades have witnessed a notable increase in research investigating the role of ethnobotanical plants among ethnic groups across various disciplines. These studies were intended to explore how communities across different parts of the world utilized ethnobotanical plants for disease administration within various socioeconomic circumstances (Debbarma *et al*., 2017). Furthermore, it was observed that the budding acceptance of ethnomedicine among communities can be ascribed to factors including inadequate access to or absence of public healthcare facilities, increasing the price of Western medicine, and adjoining anxieties concerning its possible side effects (Wagh & Jain, 2020).

Chhattisgarh is home to several tribal communities inhabiting the hilly and forested regions of the state. Among these communities, the Baiga tribe, traditionally referred to as 'Medicine Men,' known for its venerable exercise of ethnomedicine (Ahirwar, 2022a). Identified as a

Primitive Vulnerable Tribal Group (PVTG), the Baiga community lives mainly in remote forest areas and holds a profound acquaintance of locally available ethnobotanical plants (Mutatkar, 2023). This knowledge is hereditary in nature, gained from their descendants, and conceded through generations via cultural communication. Nevertheless, due to increasing acculturation with modern lifestyles and contact with non-tribals, ethnobotanical practices within the Baiga tribe are weakening, and currently, they are mostly retained by elder members of the community (Ahirwar & Gupta, 2024).

Approximately 50 million tribes are involved in the extraction of ethnobotanical plants, revealing their significant involvement in this practice (Tewari, 1992). Notably, nearly 1500 plant species have been recognized as potential sources of ethnomedicine in India. It was also observed that various plant species from local forests play ritualistic roles in the social and cultural traditions of the Baiga tribe, highlighting their deep connection with nature.

According to the Ministry of Tribes, Government of India, Baiga is considered a Primitive Vulnerable Tribal Group (PVTG) due to its decreased population and backward socio-economic life. The Baiga tribe has a deep cultural heritage that is connected to the forests in which they live. In Chhattisgarh, the majority of the Baiga population is found in the Gaurella-Pendra-Marwahi (GPM) Kawardha, and Bilaspur Districts, along with some touching districts of Madhya Pradesh. Racially, they belong to the Dravidian category and speak the 'Baigani' language, which falls under the Austro-Asiatic language family (Vidyarthi, 1977). By collecting various plant species from nearby forests in Central India, the Baiga tribe becomes highly skillful in ethnomedicine and healing practices. Due to this expertise, Baiga tribe earned the title of 'medicine men,' reflecting their true knowledge on ethnobotanical plants. Baiga girls and women are often decorated with 'Godna' (tattoos) on their bodies, symbolizing their unique cultural identity.

Despite the rich ethnobotanical heritage of Chhattisgarh, no comprehensive study has been conducted in the Gaurella-Pendra-Marwahi (GPM) district. Previous research has primarily focused on neighboring regions (Ahirwar *et al.*, 2024; Kareti *et al.*, 2023; Nirala & Bhagat, 2024; Nagwanshi, *et al.*, 2024; Ahirwar *et al.*, 2025; Gupta *et al.*, 2018; Babu & Panda, 2016), leaving a significant gap in the documentation of traditional plant knowledge within this specific area. This study aims to address this gap by systematically documenting the ethnobotanical knowledge of the Baiga tribe, a Particularly Vulnerable Tribal Group (PVTG), through empirical field surveys in the GPM district. Unlike prior studies that encompass multiple tribal communities, this research provides a focused investigation into the Baiga tribe's medicinal plant usage, highlighting lesser-known species and indigenous therapeutic applications. The findings contribute to the conservation of traditional knowledge and offer novel insights into plant-based healthcare practices within this marginalized community.

Materials and Methods

Study area

The GPM district is one of the newly created districts, originally carved out of Bilaspur district on January 26th, 2020. The district is located between 81.97° to 82.78° East longitude and 21.97° to 23.05° North latitude. Geographically, the district is characterized by lavish greenery, continuing hills, and condensed forests. The forests are tropical dry deciduous, with annual temperatures varying from 9°C to 45°C. The district has a rich tribal population, comprising 57.09% of the total population. Consequently, the Gaurella-Pendra-Marwahi (GPM) district is home to several tribal groups, including Baiga, Korwa, and Gond, each with a distinct cultural fabric.

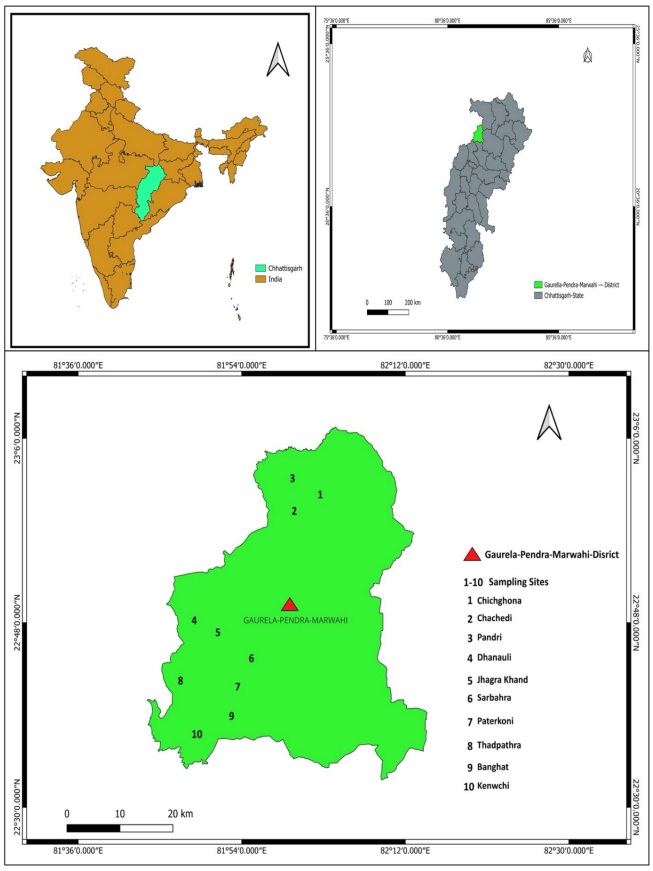

Fig. 1: Location map of the study sites in district Gaurela-Pendra-Marwahi, Chhattisgarh, India.

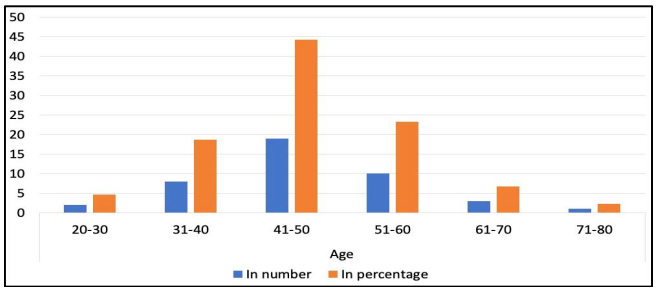

Fig. 2: Age-wise demographic distribution of informants.

Field survey and selection of traditional healers

Between December 2023 and May 2024, a series of systematic field surveys were conducted at regular intervals in ten forest-fringe villages of the Gaurella and Marwahi blocks in the Gaurella-Pendra-Marwahi (GPM) district, Chhattisgarh, India. The surveyed villages in the Gaurella and Marwahi block included Chichgohna, Chalchali, Pandri, Dhanauli, Jhagra Khand, Sarbahra, Paterkoni, Thadpathra, Banghat, and Kenwchi. Initially, demographic data were collected from selected households to establish rapport with the villagers (Fig. 1-3). Interviews were conducted in the local language to facilitate effective communication with both villagers and traditional healers. A purposive sampling method was employed to select key informants, particularly traditional healers, based on their knowledge and role in the community's ethnomedicinal practices. A semi-structured questionnaire was employed to gather information on various ethnobotanical aspects, including local plant names, sources of collection, plant parts used, methods of preparation, and directions for usage. Additionally, traditional healers were requested to demonstrate the application of ethnobotanical plants for the preparation of a herbarium. Prior to conducting interviews, informed consent was obtained from each traditional healer through a formal consent form. This ethnomedicinal study was approved by the Ethical Committee of Guru Ghasidas Vishwavidyalaya, Bilaspur, Chhattisgarh. Authorization for plant collection and ethnomedicinal data gathering was secured from the Forest Department of Gaurella-Pendra-Marwahi (GPM) district.

Table 1: Socio-demographic feature of Baiga traditional healers.

S.	Category	Sub-category	No.	(%)
1.	Informants	Men	38	88.37
		Women	5	11.62
2.	Occupation	Farmer	27	62.79
		Shopkeeper	5	11.62
		Cycle mechanic	4	9.3
		Government employee	2	4.65
		Housewife	5	11.62
3.	Age	20-30	2	4.65
		31-40	8	18.6
		41-50	19	44.18
		51-60	10	23.25
		61-70	3	6.69
		71-80	1	2.32
4.	Education	Never attended a school	17	39.53
		Primary level	12	27.9
		Upper primary level	7	16.27
		High School level	5	11.62
		Above High School level	2	4.65

Plant identification

Taxonomical identification was performed to validate the samples gathered during the interviews, with an herbarium prepared to procure dry specimens in support of this process. The herbarium technique has been specifically employed to identify unidentified species. Dr. Ramesh Kumar Ahiwar, Assistant Professor in the Department of Botany at Guru Ghasidas Vishwavidyalaya, Bilaspur (C.G.), India, utilized local flora (Hooker, 1875) and pertinent literature for the identification of plant samples collected from medicinal plants. The identified plants were cross-referenced to the World Flora online website (https://wfoplantlist.org/). Well-labelled and identified herbarium specimens were archived in the Department of Botany at Guru Ghasidas Vishwavidyalaya for future reference.

Statistical data analysis

Relative frequency citation (RFC)

The collected ethnomedicinal information was

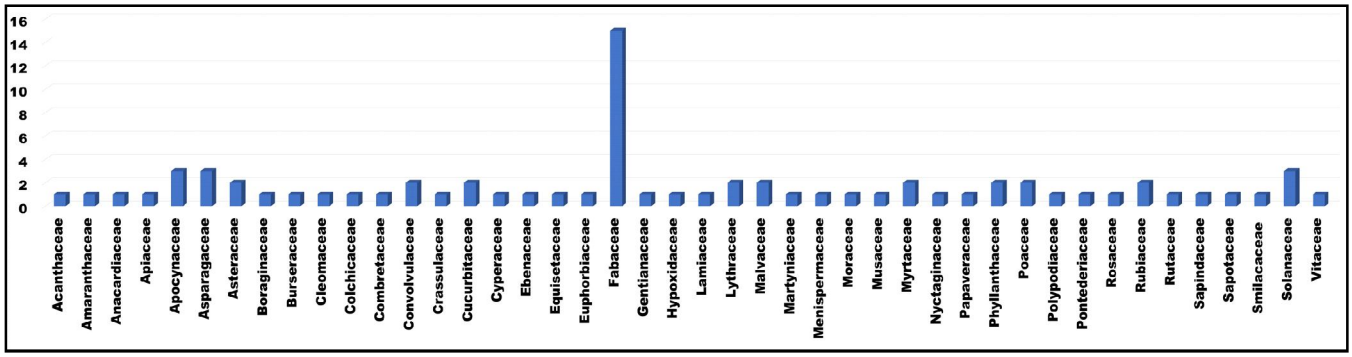

Fig. 3: Distribution of reported species among the botanical families.

Table 2: Ethnomedicinal plants used by the Baiga tribes of district Gaurella-Pendra-Marwahi (GPM), Chhattisgarh.

S. No.	Scientific name	Family	Local name	Voucher Number	Life form /Habit	Plants parts used	Ethnomedicinal uses	Prepar-ation mode	FC	RFC	UV
1	*Aegle marmelos* (L.) Corrêa	Rutaceae	Bel	GPMR-196	Tree	Leaves	1 teaspoon of fresh leaf paste is taken orally twice daily before meals with lukewarm water to help manage and cure diabetes.	Paste	15	0.34	0.34
2	*Pseudalbizzia berteroana* (Balb. ex DC.) Britton & Rose	Fabaceae	Kala siris	GPMR-093	Tree	Bark	The paste is applied directly to the affected skin twice daily to aid in healing leprosy lesions.	Paste	31	0.72	0.67
3	*Neolamarckia cadamba* (Roxb.) Bosser	Rubiaceae	Kadam	GPMR-122	Tree	Bark	2–3 g of bark powder mixed with water is taken twice daily on an empty stomach to treat diabetes.	Powder	14	0.32	0.19
4	*Argemone mexicana* L.	Papaveraceae	Pili Katilii	GPMR-149	Herb	Latex	1 drop of diluted latex is carefully applied to the eye once daily to relieve symptoms of conjunctivitis.	Latex	3	0.06	0.47
5	*Asparagus racemosus* Willd.	Asparagaceae	Satavar	GPMR-019	Shrub	Root	3–5 g of root powder mixed with milk is taken once daily in the morning to support the treatment of syphilis.	Powder	5	0.11	0.44
6	*Hygrophila auriculata* (Schumach.) Heine	Acanthaceae	Talmakhana	GPMR-067	Shrub	Seed	2 g of dried plant powder with honey is taken twice daily for 15 days to cure syphilis.	Powder	10	0.23	0.79
7	*Bauhinia variegata* L.	Fabaceae	Koilar	GPMR-072	Tree	Bark	50 ml of bark decoction is taken twice daily after meals to relieve symptoms of asthma.	Decoction	28	0.65	0.19
8	*Bauhinia vahlii* Wight & Arn.	Fabaceae	Mahroii	GPMR-005	Climber	Seed	2 g of leaf powder mixed with honey is taken once daily to help stop coughing up blood.	Powder	31	0.72	0.60
9	*Benincasa hispida* (Thunb.) Cogn.	Cucurbitaceae	Bariha	GPMR-078	Climber	Leaves	2–3 drops of warmed fruit juice are instilled into the ear twice daily to alleviate ear pain.	Juice	14	0.32	0.65
10	*Boerhavia erecta* L.	Nyctagin-aceae	Patharchata	GPMR-008	Herb	Root	Fresh root paste is applied topically on affected areas twice daily to treat syphilis and gonorrhoea.	Paste	26	0.6	0.19

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11	*Boswellia serrata* Roxb.	Burseraceae	Salai	GPMR-174	Tree	Stem	50 ml of gum resin decoction is taken twice daily to manage diabetes.	Decoction	13	0.3	0.14
12	*Kalanchoe pinnata* (Lam.) Pers.	Crassulaceae	Bhasam patti	GPMR-026	Herb	Leaves	2–3 fresh leaves are chewed once daily in the morning to aid digestion.	Chewed	11	0.25	0.74
13	*Buchanania lanzan* Spreng.	Anacardi-aceae	Char	GPMR-083	Tree	Leaves	1 teaspoon of seed paste is consumed with warm water at bedtime to relieve constipation.	Paste	5	0.11	0.60
14	*Butea monosperma* (Lam.) Kuntze	Fabaceae	Palas	GPMR-192	Tree	Root	40–50 ml of flower decoction is taken twice daily to reduce pneumonia symptoms.	Decoction	17	0.39	0.28
15	*Carissa spinarum* L.	Apocynaceae	Van karaunda	GPMR-039	Shrub	Root	Fresh leaf paste is applied on wounds twice daily to promote healing.	Paste	8	0.18	0.47
16	*Centella asiatica* (L.) Urb.	Apiaceae	Brahmi	GPMR-147	Herb	Leaves	Paste of fresh leaves is applied externally on affected skin twice a day to cure scabies and ringworm.	Paste	14	0.32	0.21
17	*Baccharoides anthelmintica* (L.) Moench	Asteraceae	Vanjeer	GPMR-159	Herb	Seed	3 g of seed powder is taken with honey twice daily to expel stomach worms and treat typhoid.	Powder	31	0.72	0.14
18	*Chenopodium album* L.	Amarant-haceae	Bathua bhaji	GPMR-162	Herb	Leaves	50 ml of leaf decoction is taken once daily to relieve asthma.	Decoction	23	0.53	0.74
19	*Chlorophytum tuberosum* (Roxb.) Baker	Aspara-gaceae	Safed musali	GPMR-170	Herb	Root	5 g of tuber powder is taken with milk in the morning to reduce general weakness.	Powder	15	0.34	0.16
20	*Cleome viscosa* L.	Cleomaceae	Hurhur	GPMR-181	Herb	Leaves	Decoction of the whole plant is applied externally to wounds twice daily for healing.	Decoction	26	0.6	0.40
21	*Clitoria ternatea* L.	Fabaceae	Aprajita	GPMR-199	Herb	Root	Fresh flower paste is applied locally on affected areas twice daily to reduce symptoms.	Paste	12	0.27	0.40
22	*Curculigo orchioides* Gaertn.	Hypoxidaceae	Kalimusli	GPMR-020	Herb	Rhizome, Leaves	3 g of rhizome powder is taken with water daily to manage diabetes.	Powder	20	0.46	0.47
23	*Cuscuta cassytoides* Nees ex Engelm.	Convolvu-laceae	Amarbel	GPMR-041	Herb	Stem	2 teaspoons of juice are taken once daily to kill stomach worms and relieve pain.	Juice	4	0.09	0.63

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24	*Cyperus rotundus* L.	Cyperaceae	Gangaura	GPMR-057	Herb	Rhizome	1 teaspoon of tuber paste is taken with warm milk once daily to enhance milk secretion in lactating mothers.	Paste	5	0.11	0.40
25	*Dalbergia sissoo* Roxb. ex DC.	Fabaceae	Shisham	GPMR-068	Tree	Leaves	Leaf paste is applied externally on affected areas twice daily for treatment.	Paste	4	0.09	0.70
26	*Datura stramonium* L.	Solanaceae	Dhatoora	GPMR-080	Herb	Fruit	1–2 drops of juice applied on joints and scalp; orally taken (1 ml) for asthma under supervision.	Juice	24	0.55	0.84
27	*Dendrocalamus strictus* (Roxb.) Nees	Poaceae	Bans	GPMR-172	Tree	Leaves	1 teaspoon of young shoot paste is taken with honey once daily to control vomiting.	Paste	17	0.39	0.91
28	*Desmostachya bipinnata* (L.) Stapf	Poaceae	Kusha	GPMR-194	Herb	Root	Root paste is applied over boils twice daily to promote pus drainage and healing.	Paste	12	0.27	0.19
29	*Diospyros chloroxylon* Roxb.	Ebenaceae	Kala tendu	GPMR-127	Tree	Root	Leaf paste is applied immediately on the bite site and renewed every few hours to counter snake venom.	Paste	19	0.44	0.42
30	*Lablab purpureus* subsp. purpureus	Fabaceae	Semi	GPMR-076	Climber	Root, Seed	Paste of leaves is applied externally on the bite site twice daily to reduce pain and inflammation.	Paste	19	0.44	0.30
31	*Dryopteris cochleata* (D. Don) C. Chr.	Polypodi-aceae	Jata shankri	GPMR-036	Herb	Rhizome	A thick paste of the whole plant is applied externally 2–3 times a day to heal skin issues and bites.	Paste	4	0.09	0.93
32	*Pontederia crassipes* Mart.	Pontederi-aceae	Jal kumbhi	GPMR-116	Herb	Leaves, Root	Leaf paste is mixed with honey and taken orally (1 tsp) twice daily to relieve sore throat.	Paste	12	0.27	0.70
33	*Equisetum ramosissimum* var. huegelii (Milde) Christenh. & Husby	Equisetaceae	Harjor	GPMR-190	Herb	Whole plant	Paste of whole plant is applied on fractures and bandaged for immobilization and healing.	Paste	31	0.72	0.37
34	*Syzygium cumini* (L.) Skeels	Myrtaceae	Jamun	GPMR-032	Tree	Bark	Seed paste is taken (1 tsp) twice daily for dysentery and sugar regulation.	Paste	25	0.58	0.28

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35	*Euphorbia hirta* L.	Euphorbi-aceae	Badi dudhi	GPMR-063	Herb	Whole plant	Leaf paste (1 tsp) is taken with warm water twice daily to stop diarrhea.	Paste	23	0.53	0.81
36	*Ficus lacor* Buch.-Ham.	Moraceae	Pakri	GPMR-089	Tree	Latex	1 drop of latex mixed with water is taken once daily to treat leucorrhea.	Latex	3	0.06	0.21
37	*Gloriosa simplex* L.	Colchicaceae	Kalihari	GPMR-025	Herb	Root	Root juice (2 tsp) is taken with water daily to cure venereal diseases and relieve pain.	Juice	19	0.44	0.77
38	*Gymnema sylvestre* (Retz.) R.Br. ex Sm.	Apocynaceae	Gudmar	GPMR-034	Climber	Seed	3 g of leaf powder is taken with honey twice daily to ease asthma symptoms.	Powder	13	0.3	0.93
39	*Heliotropium indicum* L.	Boraginaceae	Hathi sund	GPMR-126	Herb	Whole plant	Leaf paste is applied immediately to the bite area and replaced every few hours.	Paste	18	0.41	0.26
40	*Ipomoea pes-caprae* (L.) R.Br.	Convolvulaceae	Bashram	GPMR-152	Shrub	Latex	Latex is applied on affected skin twice daily to cure scabies.	Latex	17	0.39	0.84
41	*Lawsonia inermis* L.	Lythraceae	Mehendi	GPMR-166	Shrub	Leaves	Leaf paste (1 tsp) is applied externally or taken with water to treat skin diseases and jaundice.	Paste	19	0.44	0.81
42	*Madhuca longifolia* var. latifolia (Roxb.) A.Chev.	Sapotaceae	Mahua	GPMR-096	Tree	Seed	Oil extracted from seeds is applied externally on affected skin twice daily to relieve scabies.	Oil	15	0.34	0.84
43	*Martynia annua* L.	Martyniaceae	Bichhu	GPMR-132	Herb	Seed	Oil from seeds is applied twice a day over infected skin to relieve eczema and scabies.	Oil	13	0.3	0.63
44	*Melilotus indicus* (L.) All.	Fabaceae	Banmethi	GPMR-119	Herb	Whole plant	Fresh leaf paste is applied on swollen areas to reduce pain and inflammation.	Paste	24	0.55	0.74
45	*Mimosa pudica* L.	Fabaceae	Lajvanti	GPMR-143	Herb	Leaves	Root paste is applied externally twice daily to reduce swelling in hydrocele.	Paste	12	0.27	0.88
46	*Momordica charantia* L.	Cucurbit-aceae	Karelia	GPMR-155	Climber	Fruit, Seed	10 ml of fresh juice or 3 g of powder is taken on empty stomach daily to control blood sugar.	Juice, Powder	20	0.46	0.40
47	*Mucuna pruriens* (L.) DC.	Fabaceae	Kewanch	GPMR-183	Climber	Root	Seed paste is applied on bite area to reduce pain and toxin effects.	Paste	3	0.06	0.37

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48	*Musa* × *paradisiaca* L.	Musaceae	Kela	GPMR-046	Herb	Leaves	Ash from dried peels is applied on itching skin for relief.	Ash	27	0.62	0.67
49	*Ocimum americanum* L.	Lamiaceae	Mamri	GPMR-070	Herb	Leaves	50 ml of leaf decoction is taken twice a day to reduce fever.	Decoction	30	0.69	0.91
50	*Vigna* Maréchal *aconitifolia* (Jacq.)	Fabaceae	Moth	GPMR-048	Herb	Leaves	50 ml of seed decoction is taken twice daily to lower body temperature.	Decoction	24	0.55	0.47
51	*Phyllanthus emblica* L.	Phyllan-thaceae	Amla	GPMR-169	Tree	Seed	5 g of fruit powder is taken with warm water to control diabetes and strengthen hair.	Powder	20	0.46	0.65
52	*Phyllanthus niruri* L.	Phyllan-thaceae	Bhui amla	GPMR-043	Herb	Leaves	Leaf paste (1 tsp) is taken with honey twice daily to treat sore throat.	Paste	30	0.69	0.65
53	*Pongamia pinnata* (L.) Pierre	Fabaceae	Karanji	GPMR-014	Tree	Flower	3 g of seed powder is consumed with water twice daily to manage diabetes.	Powder	9	0.2	0.72
54	*Psidium guajava* L.	Myrtaceae	Bihi	GPMR-086	Tree	Fruit	Fresh fruit is eaten daily after meals to improve digestion.	Raw	11	0.25	0.88
55	*Pterocarpus marsupium* Roxb.	Fabaceae	Bijahra	GPMR-140	Tree	Stem	50 ml of bark decoction is taken on an empty stomach every morning.	Decoction	22	0.51	0.65
56	*Pueraria tuberosa* (Willd.) DC.	Fabaceae	Patal Kohnda	GPMR-061	Shrub	Root	3 g of tuber powder is consumed twice daily to manage blood sugar.	Powder	20	0.46	0.70
57	*Catunaregam spinosa* (Thunb.) Tirveng.	Rubiaceae	Mainphal	GPMR-178	Tree	Fruit	2 g of fruit powder is mixed with honey and taken twice daily to control vomiting.	Powder	17	0.39	0.19
58	*Rosa* × *centifolia* L.	Rosaceae	Gulab	GPMR-011	Shrub	Flower	1–2 drops of petal juice are instilled in eyes to treat conjunctivitis.	Juice	12	0.27	0.53
59	*Sapindus trifoliatus* L.	Sapindaceae	Ritha	GPMR-058	Tree	Seed	Seed powder is applied directly on the bite area to relieve pain.	Powder	8	0.18	0.37
60	*Sida rhombifolia* L.	Malvaceae	Balraj	GPMR-085	Shrub	Root	Paste from whole plant is applied on the bite site for rapid healing.	Paste	25	0.58	0.58
61	*Smilax zeylanica* L.	Smilacaceae	Ram datoon	GPMR-099	Climber	Root	5 g of root powder with milk is taken every morning to overcome weakness.	Powder	12	0.27	0.40

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62	*Solanum virginianum* L.	Solanaceae	Bhatkataiya	GPMR-060	Herb	Whole plant	50 ml of fruit decoction is taken twice daily to cure cough and fever.	Decoction	26	0.6	0.37
63	*Solanum nigrum* L.	Solanaceae	Makoia	GPMR-161	Herb	Leaves	Leaves are cooked and eaten once daily to reduce swelling in the feet.	Cooked	4	0.09	0.74
64	*Sphaeranthus suaveolens* var. suaveolens	Asteraceae	Gorakh-mundi	GPMR-104	Herb	Whole plant	2–3 g of flower powder is taken with warm water daily to control diabetes.	Powder	10	0.23	0.35
65	*Sterculia urens* Roxb.	Malvaceae	Kulu	GPMR-111	Tree	Bark	Gum paste is applied externally on the affected area twice daily to relieve itching and pain.	Paste	27	0.62	0.63
66	*Swertia chirayita* (Roxb.) H.Karst.	Gentianaceae	Chireta	GPMR-030	Herb	Whole plants	10 ml of plant extract is taken twice daily to treat fever.	Extract	34	0.79	0.84
67	*Tamarindus indica* L.	Fabaceae	Imli	GPMR-065	Tree	Leaves	Leaf paste is applied on swollen areas twice daily to reduce inflammation.	Paste	19	0.44	0.81
68	*Terminalia elliptica* Willd.	Combretaceae	Kahua	GPMR-141	Tree	Bark	3 g of bark powder is taken with milk to strengthen bones and increase blood pressure.	Powder	24	0.55	0.23
69	*Cascabela thevetia* (L.) Lippold	Apocynaceae	Kaner	GPMR-016	Tree	Latex	Latex is applied once daily on skin to treat itching and ringworm.	Latex	5	0.11	0.77
70	*Tinospora cordifolia* (Willd.) Hook.f. & Thomson	Menisper-maceae	Gurich	GPMR-002	Climber	Leaves, stem	50 ml of stem decoction is taken twice daily to reduce fever.	Decoction	16	0.37	0.79
71	*Drimia indica* (Roxb.) Jessop	Asparagaceae	Van Pyaj	GPMR-135	Herb	Bulb	Paste of the bulb is applied externally to relieve burning sensations.	Paste	33	0.76	0.14
72	*Cissus quadrangularis* L.	Vitaceae	Harjor	GPMR-051	Climber	Whole plant	Stem paste is applied and bandaged on fracture site to promote healing.	Paste	30	0.69	0.88
73	*Woodfordia fruticosa* (L.) Kurz	Lythraceae	Dhawai	GPMR-096	Shrub	Flower	2 g of flower powder is taken with warm water twice daily to relieve piles.	Powder	8	0.18	0.72

quantitatively analyzed using the index of relative frequency citation (RFC). This index shows the local importance of each species, and is given by the frequency of citation (FC, the number of informants mentioning the use of the species) divided by the total number of informants participating in the survey (N), without considering the use categories (Faruque *et al*., 2018).

$$RFC = \frac{FC}{N}$$

Use value

The use value (UV) was estimated following the methodology described in reference (Phillips & Gentry, 1993) providing an objective assessment of the relative significance of each plant species (Wagh & Jain, 2020). The relative value of each medicinal species, based on its use among informants, was calculated using the following formula:

$$UV = \sum \frac{Ui}{N}$$

where UV represents the use value, Ui is the number of uses recorded for a specific plant species, and N is the total number of informants reporting that plant species.

Fidelity level

The importance of a species in curing a specific disorder is indicated by its fidelity level (FL). The FL was calculated for each of the 15 preferred species based on their popularity among key informants, who cited them for treating specific ailments, as described in reference (Friedman *et al*., 1986). The formula used is as follows:

$$FL(\%) = \frac{Np}{N} \times 100$$

where Np is the number of informants who mentioned the plant for any significant ailment and N is the total number of informants who mentioned the plant for any major ailment.

Informant consensus factor

The informant consensus factor (ICF) was calculated for each disease category to assess the degree of agreement among participants regarding the medicinal plants employed for the treatment of ailments (Phillips & Gentry, 1993). This factor measures the extent of variation in the use of medicinal plants and highlights plants that may be especially important for additional pharmacological or clinical investigations.

The ICF is determined by the equation

$$ICF = \frac{Nur - Nt}{Nur - 1}$$

where Nur represents the total number of citations for each disease and Nt represents the total number of species reported to treat the disease (Friedman *et al*., 1986).

Jaccard index (JI)

We also analyzed the percentages of the mentioned species and their medicinal uses to compute the Jaccard index (JI) for comparison with published data gathered from nearby regions. The following equations were used to determine JI:

$$JI = \frac{C \times 100}{(A + B - C)}$$

where *a* represents the total number of species in area A, *b* represents the total number of species in area B, and *c* represents the total number of species found in both areas A and area B (Weckerle *et al*., 2018).

Results

Demographic features of traditional healers

This study examined 43 traditional healers located in the assessed villages in the Gaurella and Marwahi Blocks, GPM District. The villagers recognized their function as traditional healers due to their consistent prescription of ethnomedicine, which was validated by consumers. The percentage of male members practicing ethnomedicine was significantly higher (88.37%) that of female members (11.62%). Most of the practitioners, including 62.79% of the total, were involved in farming. A smaller percentage were engaged in shopkeeping (11.62%), cycle mechanics (9.3%), government employment (4.6%), and housekeeping (11.62%), indicating their reliance on these occupations (Table 1). Age group was a critical element for possessing knowledge of ethnomedicine. The medium age group (41-50) had a higher success rate in understanding ethnobotanical knowledge (44.18%), followed by the 51-60 age group (23.25%). The oldest traditional healer was identified in the 71-80 to age group. Illiteracy was prevalent at a high rate in Baiga as it was at 39.53%) (Fig. 4). Sadly, no one attained the graduation level of study, whereas only two traditional healers reported being above high school. Nevertheless, the researchers noted that even though illiteracy was rampant, the Baigas had exceptional proficiency in recognizing ethnobotanical plants. They asserted that this knowledge was passed down from their ancestors.

Ethnobotanical knowledge of the Baiga tribe

The ethnobotanical survey conducted among the Baiga tribe of Gaurella and Marwahi Blocks in the GPM district documented the use of 73 plant species belonging to 45 families for the treatment of various ailments (Table

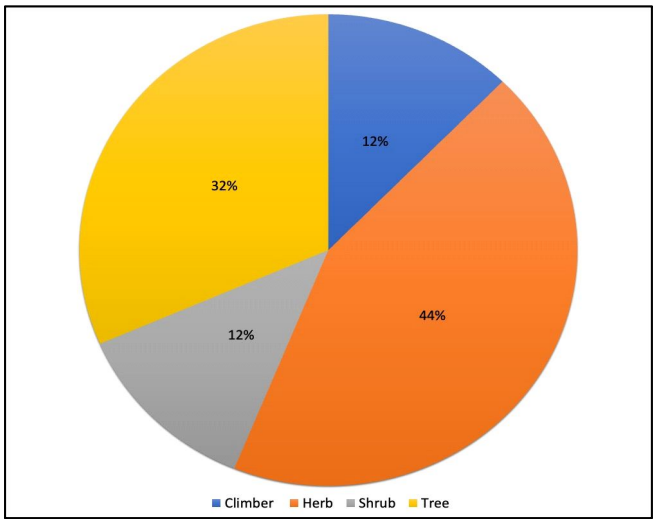

Fig. 4: Percentage contribution of plants according to life forms.

2). The Fabaceae family was the most represented, comprising 15 species (Fig. 5), followed by Solanaceae and Apocynaceae, each with three species. Most of these plants were collected from nearby forests. In terms of growth forms, herbs constituted the largest proportion (44%), followed by trees (32%), while climbers and shrubs each accounted for 12% of the recorded species (Fig. 6).

Relative frequency citation (RFC)

The RFC values ranged from 0.06 to 0.79. *Swertia chirayita* (Roxb.) H.Karst. exhibited the highest RFC value (0.79), followed by *Drimia indica* (Roxb.) Jessop (0.76). Other species with high RFC values included *Pseudalbizzia berteroana* (Balb. ex DC.) Britton & Rose, *Bauhinia vahlii* Wight & Arn., *Equisetum ramosissimum* var. huegelii (Milde) Christenh., and *Baccharoides anthelmintica* (L.) Moench, each with an RFC of 0.72. Additionally, 67 plant species recorded RFC values below 0.72**.**

Use value (UV)

The UV values of the documented plants ranged from 0.14 to 0.93. *Dryopteris cochleata* (D. Don) C. Chr. and *Gymnema sylvestre* (Retz.) R.Br. ex Sm. exhibited the highest UV value (0.93), followed closely by *Dendrocalamus strictus* (Roxb.) Nees and *Ocimum americanum* L. (0.91). Notable species such as *Mimosa pudica* L., *Psidium guajava* L., and *Cissus quadrangularis* L. each recorded a UV of 0.88. Furthermore, *Datura stramonium* L., *Ipomoea pes-caprae* (L.) R.Br., *Madhuca longifolia* var. latifolia (Roxb.) A.Chev., and *Swertia chirayita* (Roxb.) H.Karst. had a UV of 0.84, while Euphorbia hirta L., *Lawsonia inermis* L., and *Tamarindus indica* L. each exhibited a UV of 0.81. A total of 59 other plant species had UV values below 0.81.

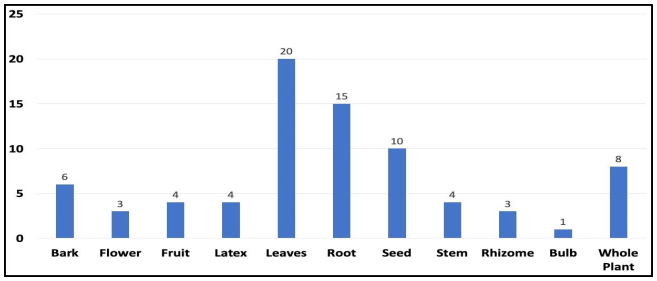

Fig. 5: Percentage contribution of plant parts used.

Fidelity level (FL)

Fidelity Level (FL) was calculated to determine the most preferred medicinal plants among informants for treating specific ailments. FL is an important indicator of the consistency of plant use within a community, with higher values signifying greater consensus among informants regarding a plant's therapeutic efficacy.

In the present study, *Dryopteris cochleata* (D. Don) C. Chr. exhibited the highest FL value (100%), as all 15 informants who reported this plant consistently cited its use for the same disorder. This indicates strong ethnomedicinal significance and reliability in traditional healing practices. *Gymnema sylvestre* (Retz.) R.Br. ex Sm. followed with an FL of 95.83%, primarily used for a single ailment, demonstrating its specific and well-established medicinal role. Similarly, *Dendrocalamus strictus* (Roxb.) Nees (86.11%), *Ocimum americanum* L. (81.25%), and *Mimosa pudica* L. (80.76%) were highly cited for specific disorders, emphasizing their strong cultural and therapeutic acceptance. *Psidium guajava* L. (78.04%) and *Cissus quadrangularis* L. (77.27%) also showed considerable fidelity in use, reinforcing their relevance in traditional medicine. Moderate FL values were observed for *Datura stramonium* L. (75%), *Ipomoea pes-caprae* (L.) R.Br. (72.41%), and *Madhuca longifolia* var. latifolia (Roxb.) A.Chev. (64.28%), suggesting their widespread use but with some variation in application. The lower FL values of *Swertia chirayita* (Roxb.) H.Karst. (61.9%), *Euphorbia hirta*

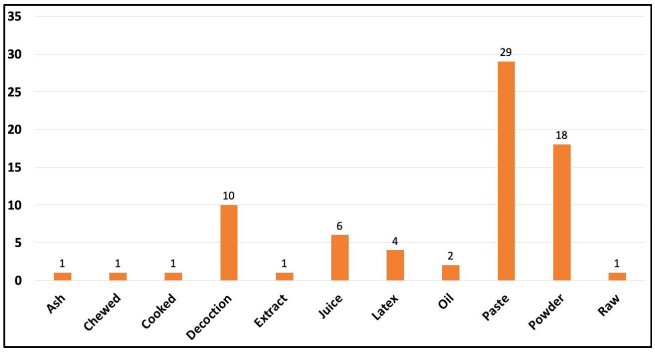

Fig. 6: Representing the mode of preparation of herbal remedies.

Table 3: Fidelity level of ethnomedicinal plants used by the Baiga tribes of district Gaurella-Pendra-Marwahi (GPM), Chhattisgarh.

Scientific name	Number of informants reported of the taxa (N)	Number of disorders treated	Number of uses most frequently determinated by the informants (Np)	Fidelity level
Dryopteris cochleata (D. Don) C. Chr.	15	7	15	100
Gymnema sylvestre (Retz.) R.Br. ex Sm.	24	1	23	95.83
Dendrocalamus strictus (Roxb.) Nees	36	1	31	86.11
Ocimum americanum L.	16	1	13	81.25
Mimosa pudica L.	26	1	21	80.76
Psidium guajava L.	41	1	32	78.04
Cissus quadrangularis L.	22	1	17	77.27
Datura stramonium L.	20	3	15	75
Ipomoea pes-caprae (L.) R.Br.	29	1	21	72.41
Madhuca longifolia var. latifolia (Roxb.) A.Chev.	14	1	9	64.28
Swertia chirayita (Roxb.) H.Karst.	21	1	13	61.9
Euphorbia hirta L.	32	1	19	59.37
Boswellia serrata Roxb.	34	1	20	58.82
Baccharoides anthelmintica (L.) Moench	34	3	19	55.88
Drimia indica (Roxb.) Jessop	41	1	22	53.65

L. (59.37%), *Boswellia serrata* Roxb. (58.82%), *Baccharoides anthelmintica* (L.) Moench (55.88%), and *Drimia indica* (Roxb.) Jessop (53.65%) indicate relatively diverse usage patterns, likely due to multiple reported medicinal applications. Overall, these findings highlight the strong ethnobotanical consensus for certain species, reinforcing their potential for further pharmacological studies. The high FL values of specific plants suggest their importance in traditional healing systems, warranting conservation and further validation through phytochemical and pharmacological investigations.

Informant consensus factor (ICF)

The Informant Consensus Factor (ICF) was calculated for different disease categories to assess the agreement among informants regarding the therapeutic use of plant species. Higher ICF values indicate a strong consensus on the use of certain plants for specific ailments, reflecting their potential efficacy and cultural significance. Among the identified disease categories, the genitourinary and reproductive disorders exhibited the highest ICF value (0.90), indicating strong agreement among informants. This suggests that the medicinal plants used for hydrocele and leucorrhea are well-recognized and widely accepted within the community. The ocular conditions category, which included conjunctivitis, had an ICF of 0.83 (Table 4), demonstrating a relatively high consensus on the use of plant-based remedies for eye-related ailments. Circulatory system disorders, such as low blood pressure and piles, showed an ICF of 0.75, reflecting moderate agreement among informants. The gastrointestinal disorders category, which included conditions such as constipation, indigestion, and ulcers, had a slightly lower ICF (0.73). This value suggests that while multiple plants were employed for digestive ailments, there was still substantial agreement on their efficacy. Traumatic injuries and bites (ICF: 0.72) and dermatological conditions (ICF: 0.70) had comparable levels of informant consensus. The wide range of conditions in these categories, including bone fractures, insect bites, eczema, and scabies, suggests that numerous plant taxa are recognized for their therapeutic potential in wound healing and skin-related disorders. Similarly, neurological and pain disorders had an ICF of 0.70, indicating that traditional remedies for ailments such as headaches, migraines, and paralysis were well-documented and agreed upon. Respiratory conditions, such as asthma, cough, and sore throat, exhibited an ICF of 0.68, highlighting moderate informant agreement. The metabolic and endocrine disorders category, which included diabetes, goiter, and jaundice, had an ICF of 0.60. The relatively lower consensus suggests that a diverse range of plants is used for these ailments, possibly due to variations in individual responses to treatment. A lower degree of consensus was observed for infectious diseases (ICF: 0.56), miscellaneous conditions (ICF: 0.50), and systemic and autoimmune disorders (ICF: 0.44). These lower values indicate a broader diversity of plant taxa used and potentially less agreement among healers on the most effective remedies for these conditions. The wide range of infections and general ailments such as fever, rheumatism, and swelling may contribute to this variation.

Table 4: Informant Consensus Factor (ICF) for Disease and Condition Categories.

Category	Conditions	Number of diseases	Number of use reports (Nur)	Number of taxa used (Nt)	ICF
Genitourinary and Reproductive	Hydrocele, Leucorrhea	2	11	2	0.9
Ocular Conditions	Conjunctivitis	1	7	2	0.83
Circulatory System Conditions	Low blood pressure, Piles	2	5	2	0.75
Gastrointestinal Disorders	Constipation, Indigestion, Stomach worm, Ulcer, Vomiting	5	24	7	0.73
Traumatic Injuries and Bites	Bone fracture, Cut, Dog bite, Chameleon bite, Insect bite, Scorpion bite, Snake bite	7	44	13	0.72
Dermatological Conditions	Boil, Eczema, Itching, Skin disease, Ringworm, Scabies, Burning	7	41	13	0.7
Neurological and Pain Disorders	Headache, Migraine, Pain, Paralysis, Ear pain	5	21	7	0.7
Respiratory Conditions	Asthma, Cough, Coughing up blood, Sore throat	4	23	8	0.68
Metabolic and Endocrine Disorders	Diabetes, Goitre, Jaundice	3	31	13	0.6
Infectious Diseases	Gonorrhoea, Leprosy, Pneumonia, Ringworm, Syphilis, Typhoid, Diarrhea, Dysentery	7	42	19	0.56
Miscellaneous Conditions	Hair problem, Milk secretion, Swelling, Weakness, Wound healing	5	19	10	0.5
Systemic and Autoimmune Disorders	Fever, Rheumatic	2	10	6	0.44

Jaccard coefficient of similarity (JI)

The Jaccard Index (JI) was employed to assess the similarity between the ethnobotanical knowledge documented in the present study and previous studies conducted in Chhattisgarh and neighboring states. A higher JI value signifies a greater overlap in medicinal plant usage, indicating shared ethnobotanical knowledge across regions. The highest similarity was observed between the present study and Maikal Hill, Central India (JI: 12.34) as reported by Chandel & Budharam (2023), followed by Anuppur, Madhya Pradesh (JI: 9.87) as documented by Ahirwar (2017) (Table 5). The strong resemblance in medicinal plant usage across these regions suggests the influence of similar environmental conditions, cultural heritage, and indigenous knowledge transmission over generations. This also implies that certain medicinal plants have been consistently recognized for their therapeutic value across different ethnic groups. Moderate similarity was observed with Dindori, Madhya Pradesh (JI: 6.17) (Singh *et al*., 2022) and Mandla, Madhya Pradesh (JI: 6.17) (Ahirwar & Shakya, 2013), reflecting a reasonable degree of agreement in plant utilization. While medicinal plant use appears consistent across these areas, variations in ecological conditions and healer preferences might contribute to the observed differences. In contrast, lower JI values were recorded for the Bilaspur district of Chhattisgarh (JI: 3.70) (Rai & Nath, 2006) and Umaria, Madhya Pradesh (JI: 3.70) (Ahirwar, 2022b), indicating more region-specific variations in medicinal plant usage. The lowest similarity was observed with the Amarkantak region (JI: 1.23) (Malviya *et al*., 2012), suggesting distinct ethnobotanical practices, which could be attributed to variations in local flora, cultural traditions, or limited interaction between the studied communities. The variation in JI values highlights both the conservation and diversification of traditional medicinal knowledge across regions. The high similarity with certain areas underscores the potential universality of specific medicinal plants, whereas the lower values indicate localized adaptations in ethnobotanical practices. These findings emphasize the need for further comparative ethnobotanical studies to understand regional variations in medicinal plant utilization and to ensure the conservation of indigenous knowledge for future generations.

Utilization of medicinal plant parts

Traditional Baiga healers utilized various plant parts for therapeutic purposes, including leaves, roots, seeds, bark, flowers, fruits, latex, rhizomes, and stems. Leaves were the most frequently used plant part (20 species), followed by roots (15 species) and seeds (10 species). The whole plant was utilized in eight cases, while bark (6

Table 5: Comparison of local and neighboring countries using the Jaccard index (JI).

Study of the area		Indices				Jaccard index (JI)	References
		S.No.	A	B	C		
Chhattisgarh	Bilaspur district	1	70	14	3	3.70	(Rai & Nath, 2006)
	Amarkantak region	2	72	5	1	1.23	(Malviya et al., 2012)
Neighboring States	Maikal hill, Central India	3	63	43	10	12.34	(Chandel & Budharam, 2023)
	Dindori, Madhya Pradesh, India	4	68	20	5	6.17	(Singh et al., 2022)
	Mandla, Madhya Pradesh, India	5	68	25	5	6.17	(Ahirwar & Shakya, 2013)
	Umaria, Madhya Prdaesh, India	6	70	33	3	3.70	(Ahirwar, 2022b)
	Anuppur, Madhya Pradesh, India	7	65	68	8	9.87	(Ahirwar, 2017)

Legend: A = Number of species that have been documented in the current research area a, B = Number of species that have been documented in another study area b, C = Number of species that are shared by both areas a and b, and S.No. = Serial number.

species), fruits (4 species), latex (4 species), stems (4 species), flowers (3 species), and rhizomes (3 species) were also used (Fig. 7). The bulb was exclusively used from *Drimia indica* (Roxb.) Jessop. Notably, in addition to leaves, roots, and seeds, Baiga healers prescribed the whole plant for treating several ailments. The selection of plant parts was based on their extensive traditional knowledge and experience.

Ethnomedicinal preparations involved different processing techniques, with paste being the most used form (29 species). Powdered formulations were prepared from 18 species, while decoctions (10 species), juices (6 species), and latex-based preparations (4 species) were also recorded. Other less common preparation methods included oil (two species), ash, chewing, and cooking, each represented by a single plant species. *Psidium guajava* L. was the only plant consumed in its raw form (Fig. 8). A similar trend was observed in a study conducted by Bhoi and Ahirwar (2025).

The documented ethnobotanical plants were used to treat 50 different diseases. Traditional healers demonstrated extensive knowledge of disease-specific plant applications. The highest number of species (11) was used for managing diabetes, followed by syphilis (6 species), fever (5 species), asthma (4 species), and snakebite (3 species) (Fig. 9). Several ethnomedicinal plants were also used to treat tropical diseases, including

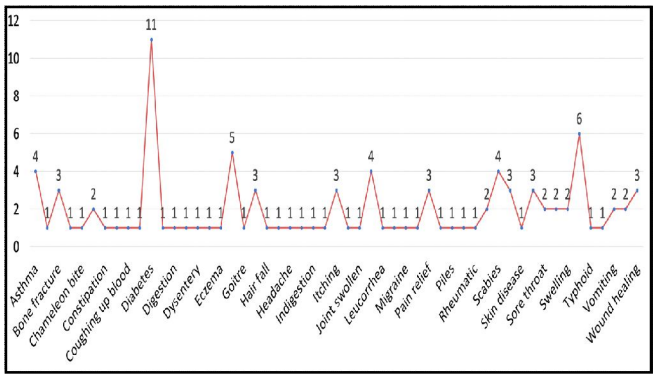

Fig. 7: Representing the treated diseases of medicinal plants.

leprosy (4 species), worm infections, typhoid, insect bites, and conjunctivitis. Additionally, certain plants were used for common ailments, such as itching (*Musa* × *paradisiaca* L.), hair fall (*Phyllanthus emblica* L.), sore throat (*Pontederia crassipes* Mart.), diarrhea (*Euphorbia hirta* L.), and wound healing (*Carissa spinarum* L.).

Discussion

The present study provides a comprehensive analysis of the demographic characteristics of traditional healers in the Gaurella and Marwahi blocks of the GPM District, along with an in-depth ethnobotanical assessment of medicinal plant usage among the Baiga tribe. The recognition of traditional healers within the community underscores their established role in healthcare, as validated by the local population. The observed gender disparity, with 88.37% male and only 11.62% female healers, aligns with previous studies suggesting that traditional knowledge transmission in patriarchal societies is predominantly male-dominated (Ahirwar, 2022a). The occupational diversity among healers, with the majority engaged in farming (62.79%), highlights their reliance on multiple sources of livelihood while maintaining their role in traditional medicine. Age was identified as a crucial determinant of ethnomedicinal knowledge, with the 41-50 age group demonstrating the highest level of expertise (44.18%), followed by the 51-60 group (23.25%). This finding supports the notion that ethnobotanical knowledge accumulates over time, often through intergenerational transmission (Lal *et al*., 2023). Despite a high illiteracy rate (39.53%), the Baiga healers exhibited exceptional proficiency in plant identification, reinforcing the role of oral tradition in preserving indigenous knowledge.

The study documented 73 ethnobotanical plant species belonging to 45 families used by the Baiga tribe to treat various ailments. Fabaceae emerged as the most represented family (15 species), followed by Solanaceae and Apocynaceae (3 species each). The predominance

of Fabaceae aligns with its widespread medicinal use in traditional systems (Singh *et al*., 2022). The collected plants were predominantly herbs (44%), followed by trees (32%), climbers, and shrubs (12% each), reflecting a diverse range of available flora for therapeutic purposes. The high representation of herbs is consistent with previous ethnobotanical studies, which suggest that herbs are preferred due to their accessibility and ease of preparation (Ahirwar & Shakya, 2013).

The Relative Frequency of Citation (RFC) values ranged from 0.06 to 0.79, with *Swertia chirayita* (Roxb.) H.Karst. (0.79) exhibiting the highest RFC, followed by *Drimia indica* (Roxb.) Jessop (0.76). The high RFC values for these species indicate their widespread recognition and therapeutic importance among the healers. This pattern suggests that specific medicinal plants enjoy greater consensus due to their effectiveness and historical usage (Lal *et al*., 2023). Similarly, the Use Value (UV) ranged from 0.14 to 0.93, with *Dryopteris cochleata* (D. Don) C. Chr. and *Gymnema sylvestre* (Retz.) R.Br. ex Sm. exhibiting the highest UV (0.93), followed by *Dendrocalamus strictus* (Roxb.) Nees and *Ocimum americanum* L. (0.91). The high UV values for these plants indicate their broad applicability and frequent utilization in traditional healing practices.

The Fidelity Level (FL) assessment revealed *Dryopteris cochleata* (D. Don) C. Chr. as the most consistently used plant (FL = 100%), followed by *Gymnema sylvestre* (95.83%). These high FL values signify a strong agreement among informants regarding their efficacy for specific ailments, reinforcing their potential for further pharmacological validation. Moderate FL values for *Datura stramonium* L. (75%) and *Ipomoea pes-caprae* (L.) R.Br. (72.41%) suggest variability in usage, possibly due to diverse treatment approaches within the community.

The Informant Consensus Factor (ICF) analysis identified genitourinary and reproductive disorders as the most treated ailment category (ICF = 0.90), indicating a strong consensus on the use of medicinal plants for conditions such as hydrocele and leucorrhea. The high ICF values suggest that these remedies have been consistently validated through communal experience (Ahirwar, 2017). Ocular disorders exhibited an ICF of 0.83, reflecting substantial agreement among healers. Conversely, systemic, and autoimmune disorders exhibited the lowest ICF (0.44), indicating a lack of consensus and possibly reflecting a broader range of treatment strategies or limited efficacy of plant-based remedies for these conditions.

The Jaccard Index (JI) comparison highlighted the highest similarity with Maikal Hill, Central India (JI = 12.34), followed by Anuppur, Madhya Pradesh (JI = 9.87), suggesting that medicinal plant usage in these regions is strongly influenced by shared ecological and cultural factors. Lower similarity with Bilaspur, Chhattisgarh (JI = 3.70), and Umaria, Madhya Pradesh (JI = 3.70), indicates region-specific variations in ethnobotanical practices. The lowest similarity observed with Amarkantak (JI = 1.23) suggests distinct ethnobotanical knowledge, possibly influenced by variations in local flora and cultural traditions (Malviya *et al*., 2012).

The study further revealed that leaves (20 species) were the most utilized plant parts, followed by roots (15 species) and seeds (10 species). This preference for leaves aligns with previous research indicating that they are easier to harvest and often contain bioactive compounds in high concentrations (Singh *et al*., 2022). Paste (29 species) emerged as the predominant mode of preparation, followed by powder (18 species) and decoction (10 species), highlighting the practical methods employed by traditional healers. The documentation of 50 diseases treated with ethnobotanical plants underscores the extensive therapeutic applications within the Baiga community. Notably, diabetes was treated with the highest number of plant species (11), followed by syphilis (6) and fever (5), reinforcing the relevance of traditional medicine in managing prevalent health conditions.

Conclusion

This study highlights the vast ethnobotanical knowledge of the Baiga tribe, emphasizing their reliance on medicinal plants for primary healthcare. The documentation of 73 plant species and their therapeutic applications provides valuable insights into indigenous healing practices. The high RFC, UV, and FL values of specific plants indicate their strong medicinal significance, warranting further pharmacological investigations. The high informant consensus for certain disease categories, such as genitourinary disorders (ICF: 0.90), suggests well-established traditional treatment practices. The Jaccard Index analysis indicates a significant overlap with previous ethnobotanical studies, reinforcing the consistency of medicinal plant use across regions. Despite a high illiteracy rate among healers, their proficiency in identifying and utilizing medicinal plants underscores the depth of traditional knowledge. However, modernization and declining interest among younger generations pose challenges to the preservation of this heritage. Conservation efforts, coupled with scientific validation, are essential to safeguard and integrate this traditional

wisdom into contemporary medicine. Future studies should focus on phytochemical and pharmacological analyses to validate the therapeutic potential of these medicinal plants, ensuring their sustainable utilization and potential inclusion in mainstream healthcare.

Funding details

This research was supported by the Indian Council of Social Science Research (ICSSR), New Delhi, India, under File No. ICSSR/RPD/MJ/2023-24/SC/121.

Disclosure statement

No potential competing interest was reported by the author(s).

Authors contributions statement

Reshma Jangde: Investigation, Methodology, Writing-original draft, Writing-review, and editing. **Diptesh Kumar Bhoi:** Data curation, Validation, Conceptualization, Writing-original draft, Writing-review, and editing. **Roshan Kumar:** Writing-review and editing. **Subhandu Patra:** Writing-review, and editing**. Ramesh Kumar Ahirwar:** Data curation, Supervision, Conceptualization, Validation, Writing-original draft, Writing-review, and editing. All authors read and approved the final version of the manuscript.

Conflict of interest

The authors state that their publication of this work does not include any conflicts of interest. All authors read and approved the final version of the manuscript.

Data availability statement

The datasets generated and analyzed in this study are incorporated within the main text of this paper.

Declaration (Ethics approval)

The questionnaire-based survey, utilizing semi-structured interviews, was developed from written conversations between the authors and informants. No animal-related research was conducted by any of the authors. Informed consent was obtained from each participant before the interviews were conducted.

Acknowledgements

The authors are grateful to the Indian Council of Social Science Research, New Delhi, India, for funding this work (File No. ICSSR/RPD/MJ/2023-24/SC/121). They also extend their gratitude to the Gaurella-Pendra-Marwahi Forest Service and the Baiga tribes for their support in facilitating this study.

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