The prevalence and cultural perceptions of hysteria among rural communities in India: An ethnobotanical study in Balangir and Bargarh Districts of Odisha, India

Biswajeet Acharya, Durga Prasad Mishra, Swarnajeet Tripathy, Binapani Barik, Kanhu Charan Pradhan, Sasthimayee Singhgartia, Debashish Parida, Prafulla Kumar Sahu

Correspondence

Biswajeet Acharya, Durga Prasad Mishra, Swarnajeet Tripathy, Binapani Barik, Kanhu Charan Pradhan, Sasthimayee Singhgartia, Debashish Parida, Prafulla Kumar Sahu*

School of Pharmacy, Centurion University of Technology and Management, Odisha, India

*Corresponding Author: kunasahu1@gmail.com

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Research

Abstract

Background: Anomalist psychology bases supernatural explanations on psychological and physical traits. Maladaptive psychopathological behaviors disturb life. Religious healers, help many patients and caregivers. On this basis, the current study explores the prevalence and cultural perceptions of hysteria among rural communities in Odisha's Balangir and Bargarh districts, India. Traditional therapies for psychopathological illnesses are commonly used in these communities, and we investigate the usage of medicinal plants by traditional healers.

Methods: Through a six-month study involving various research methods, we identified 40 plant species across 25 families that are frequently used for treating hysteria and other psychiatric disorders. Statistical analysis was performed to evaluate the credit score of traditional herbs, and we found that plant leaf powder was frequently employed orally for most treatments.

Results: The study found that traditional healers in the Balangir and Bargarh ethnic communities frequently use plant leaf powder, including species such as *Chromolaena odorata* (L.) R.M.King & H.Rob. and *Murraya paniculata* (L.) Jack, for the treatment of hysteria and other psychiatric disorders.

Conclusion: The pharmacological research of these plants could provide useful insights for the treatment of mental health disorders. This study highlights the importance of traditional therapies in managing psychopathological illnesses in rural India.

Keywords: Hysteria, Ethnobotanical survey, Traditional Plant Knowledge, Wild Useful Plants, Ethnomedicine, Cultural Practices, Mental Disorders, Neurological Disorders

Background

India is a rapidly developing country that faces the burden of neurological and mental health conditions. The prevalence of neurological disorders varies from 2394 to 7236 per 100,000 estimated population in different regions of the country, with over 30 million people estimated to have neurological disorders in India (Singh *et al,* 2021). Mental health disorders also present a significant challenge, with an estimated 150 million Indians requiring treatment for mental ailments, including depression, anxiety, and a higher risk of suicide (Manjunatha *et al,* 2022). Traditional beliefs and practices continue to influence causal theories and present help-seeking behaviour for mental illnesses in India (Marrow & Jocelyn*,* 2022).

In rural areas, hysteria is one of the most prevalent disorders, characterized by uncontrollable emotional excess or passing moods or emotions (Gilman *et al,* 2022). Mass hysteria, also known as conversion disorder, is another term used to describe physiological symptoms that affect the nervous system without a physical cause of illness and may manifest in response to psychological distress. Lay public perceptions of the causes of mental diseases have also been evaluated in India (Santiago *2021*).

The phenomenon of mass delusions has claimed lives in India and other parts of the world, and it may be influenced by social pressure, anxiety, and groupthink (Lee & Raymond, 2022). The belief in superstitious and spiritual powers is also responsible for inciting hysteria in healthy people (Bouguila *et al,* 2021*;* Seale-Feldman & Aidan*,* 2022). In India, there are numerous types of beliefs and practices associated with black magic, spirits, and paranormal activities. It is essential to note that these beliefs and practices vary across the country's various regions and cultures. It is believed to entail employing supernatural forces or dark rituals to injure or control others. It is often associated with negative spellcasting, curses, and the use of talismans. Despite being predominantly associated with African traditions, voodoo practices have made their way to certain regions of India (Gnanaolivu *et al*, 2022). It employs rituals, spells, and voodoo figurines to influence or damage others. Tantra and mantra are ancient practices that employ sacred chanting and rituals to achieve spiritual powers. Nonetheless, some people may use these practices for evil purposes, such as black magic. India's folklore and beliefs in various categories of spirits and demons are extensive. These include bhoots, daayan, pretas, bramha-rakhyas, pisachas, and chudails. It is essential to keep in mind that these beliefs and practices are founded on folklore, cultural traditions, and individual beliefs (Christopher 2022). Others may view them as superstitions or myths, despite the fact that some people have a firm faith in them. It is always advisable to approach such matters with skepticism and an open mind. However, understanding the role of faith healers may aid in the planning of community mental health services in underserved rural areas. Pandas, Ojhas, Gunia, Baidya, and Sokhas are the go-to faith healers for mental illness in rural areas of India (Canna & Maddalena, 2022; Loke & Andrew, 2022).

Herbal medicine has been used in India for centuries, and most village people rely on medications derived from plants, herbs, or shrubs, either directly or indirectly (Kota *et al*, 2020; Kota *et al*, 2022). Ethnobotanical research is important for the development of new crude drugs derived from traditional medicinal plants (Feldmeier 2021). However, few studies have employed standardized measures to quantify the burden of common mental disorders, particularly in rural areas (Rani & Jyoti, 2019). The primary objective of our investigation was to identify the most prevalent mental health problem in rural regions, referred to as 'hysteria' (local words: 'Peten dhara/Bhoot dhara'), and to identify useful plant species for hysteria and other associated mental or psychiatric diseases in the study locations.

Material and Methods

Study Area

The districts of Bargarh and Balangir were bordered by the Ramayana-famous Gandhamardan hills in the northwest and the rocky Mahanadi valley in the northeast. Balangir district is located between 20.72°N and 83.48°E, whereas Bargarh district is located between 21.333°N and 83.616°E. The primary forest area extends along the western boundary, abutting Kalahandi and Sonepur districts, before turning east and extending parallel to the Gandhamardan range (Figure 1) (Bhadra *et al,* 2010). Gandhamardan Hills, or Gandhamardan Parbat, is a hill situated in Odisha, India, between the districts of Balangir and Bargarh. This slope is renowned for its therapeutic plants (Sahu *et al*, 2021). The Botanical Survey of India has identified approximately 2000 plant species with therapeutic properties in that particular location. However, locals assert that there are around 5000 types of medicinal plants in this region. The vegetation in the buffer zone is the most susceptible (Reddy & Pattanaik, 2009). The forest path includes occasional clearings and small towns but is predominantly characterized by dense foliage, with prominent tree species such as bamboo, Sal, Sahaj, Piasal, Dhaura, Ebony and others. The top of the Gandhamardan hill range is approximately 17 km long and has an average height of 3000 feet. Both districts are situated in the valleys of rivers such as the Ang and the Tel. Important Tel tributaries include Lanth, Sonegarh, and Suktel. It is the natural

cradle of the Kutia, Khonds, Binjhals, and Gands tribes. Both districts are renowned for their expert artisans, the Bhulias and Kastias, who create exquisite designs on cotton and tassar textiles.

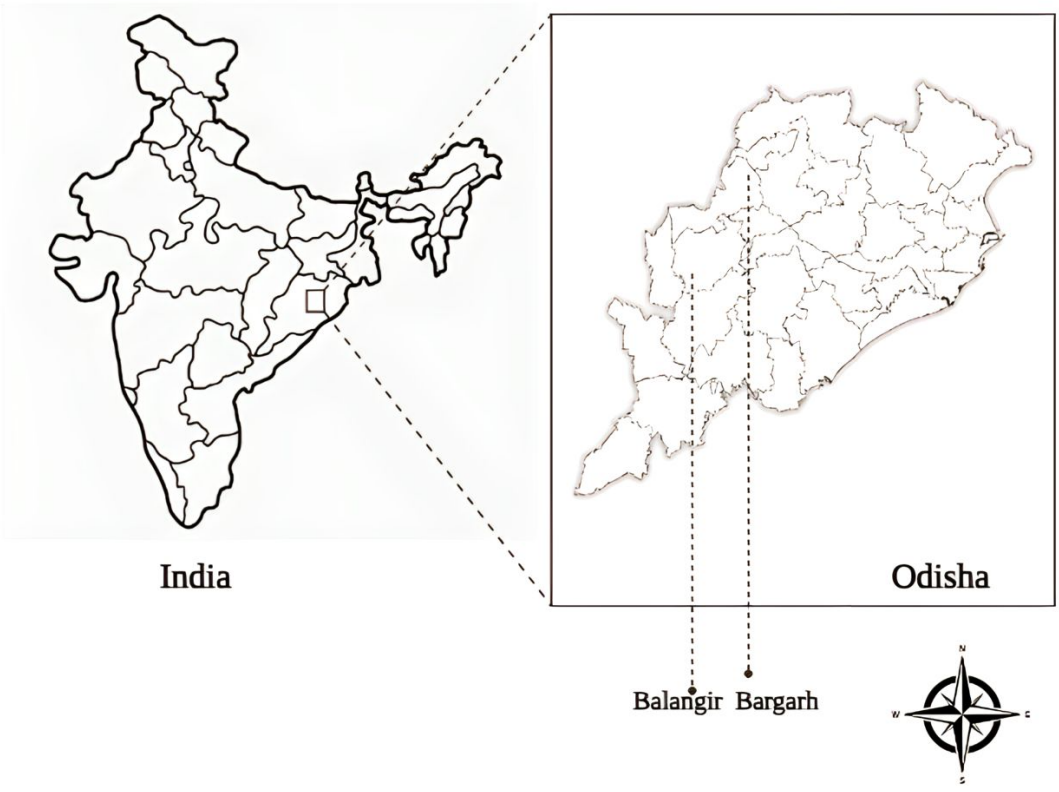

Figure 1. Map of Balangir and Bargarh district (Study area)

Survey on Hysteria patient

The study involved a total of 105 participants from the tribal communities in the study area, who provided information about hysteria symptoms they had experienced in the past year. The participants were randomly selected irrespective of age, gender, and socioeconomic background. They were individually interviewed using a set of questionnaires (Appendix A) while maintaining a high level of confidentiality. Participants were assured that their responses would remain anonymous and be used solely for research purposes. Additionally, the researchers followed ethical guidelines and obtained informed consent from each participant before the study began.

Ethnobotanical Survey and Data Analysis

The ethnobotanical survey was conducted between July 2022 and October 2022 in Balangir and Bargarh districts of Odisha, India. The survey employed a range of methods, including semi-structured surveys, interviews, incidental encounters, open and group dialogues, and overt investigations with traditional healers and other community members. The same methodology as Vogl and Vogl (2004) was used, with semi-structured questionnaires distributed. The questionnaire survey (Appendix A) consisted of two sections: the first section collected informant profiles, such as age, gender, and academic background, while the second section collected indigenous knowledge about the plants, including their place names and whether or not they could be used to treat hysteria. Information on the use of psychopharmacological agents was also gathered. The respondents included men and women from various professions, primarily traditional healers, old people, herb traders, and other educated people. Most of them reported learning about these important plants through their ancestors and education (Figure 2). Prior to the interview, each informant provided their consent.

The collected plant samples were taxonomically classified by comparing them to herbarium samples and recognized scientific literature. The common names (in English), botanical names, families, and key chemical components of the plants were identified using published reference materials and plant databases. To evaluate the credit score of traditional herbs, three

quantitative value indices were calculated: relative frequency citation (RFC), cultural importance index (CI), and fidelity level (FL).

Figure 2. Ethnobotanical investigation of plant species from various areas of Balangir and Bargarh districts with the assistance of traditional practitioners and herbalists from the research region

RFC was used to assess the ethnobotanical data. The parameters "U" and "S" were used to define use reports. Where "U" is denoted as usage category, "I" is denoted as informants, and "S" is denoted as species. The RFC was then calculated by dividing the frequencies of citation (FC) (the number of respondents who mentioned using the species) by the total number of respondents in the survey (N). This index ranges from zero when no one mentions the plant as useful to one when every informant mentions it as useful (Mahomoodally 2014; Martin 2010). The formula used to calculate RFC is:

$$\mathrm{RFCs} = \frac{\mathrm{FCs}}{\mathrm{N}} = \frac{\sum_{\mathrm{i=i1}}^{\mathrm{iN}} \mathrm{URi}}{\mathrm{N}}$$

CI was calculated as the sum of the percentage of informants who mentioned each species' use. That is, the number of participants who indicated each species' use was added and divided by the total number of informants (N). The CI considers

the distribution of usage (number of informants) for each species as well as its flexibility, i.e., the diversification of its applications (Bibi *et al,* 2022). The formula used to calculate CI is:

$$\mathrm{CIi} = \sum_{u=u1}^{uNC} \sum_{i=i1}^{iN} \mathrm{URui}\,/\mathrm{N}$$

FL was calculated using the formula:

$$Fl\,(\%) = \frac{Ns}{N} \times 100$$

Where, Ns denotes the number of participants who supplied knowledge about the effectiveness of a certain plant, and N denotes the overall number of respondents who provided information regarding the plant's therapeutic effects (Ugulu 2011).

Results

Demographic Profile and other basic information about hysteria in the study area

A total of 105 participants from a variety of communities, including Bhulia, Teli, Mali, Shundhi, Harijan, Kandh, and Brahmins, were involved in the study. According to the demographic characteristics of the participants, 60% were male, 40% were female, and their ages ranged from 18 to 65, with an average age of 35. Female informants were found to be more prone to hysteria, accounting for 70% of reported instances. This shows that the prevalence of hysteria in the examined population may differ by gender. Most of the participants believed that their illness (hysterical symptoms) was caused by ghosts or supernatural beings. Among all the communities, the Bhulia community in particular believed that this condition was primarily caused by ghosts or other paranormal activities. The majority of the informants had a strong believe that traditional healing practices and rituals from their respective cultural backgrounds can effectively cure the disease (hysteria). This emphasizes the importance of integrating culturally sensitive treatments for hysteria, enabling patients to maintain their beliefs and values while seeking relief from their symptoms. Most of them believe that plants or herbs are beneficial in treating hysteria, and they frequently seek cures from traditional healers or alternative medicine practitioners. Moreover, rituals and ceremonies are the common methods of their treatment approaches, believed to be essential for addressing the spiritual and emotional aspects of the ailment. The participants' perception of traditional healers as qualified and culturally sensitive specialists strengthens their willingness to seek their assistance. Treatment by plants and related products aligns with the local population's preference for holistic approaches, emphasizing the importance of addressing the underlying causes of hysteria rather than just the symptoms. The survey details and data of informants are represented in Tables 1 and 2.

Table 1. Demographics/Sociocultural parameters of Participants in the hysterical survey (N=105)

Demographics/ Sociocultural variables	Parameter	Sample number	Percentage (%)
Locality	Bijepur	15	14.28
	Gandhamardhan Hill	23	21.90
	Samleipadar	20	19.04
	Phapsi	09	8.57
	Saintala	14	13.33
	Luhurapali	17	16.19
	Agalpur	16	15.23
Gender	Male	41	39.04
	Female	64	60.95
Age group	18-30	15	14.28
	31-40	14	13.33
	41-50	19	18.09
	51-60	20	19.04
	61-70	21	20
	71-80	16	15.23
Name of the community of informants	Bhulia	22	20.95
	Teli	14	13.33
	Mali	18	17.14
	Brahmin	11	10.41
	Harijan	17	16.19

	Shundhi	10	9.52
	Kandha	13	12.38
Sociocultural belief about hysteria	Mental sickness[a]	25	23.80
	Possession of negative spirit[b]	48	45.71
	Black magic[c]	32	30.47
Majorly reported treatment options according to informants	Medical treatment	25	23.82
	Chanting of Mantra	26	24.76
	Herbal therapy	54	51.42
Perception towards traditional healer and their treatment strategies	Positive	64	60.95
	Negative	14	13.33
	Neutral	27	5.4

[a] Baya, Pagala, Munda Kharap, Adabaya, and Moonda

[b] Dahani dhara, Bhoota dhara, Peten dhara, Debta dhara, Chirangul dhara, and Rakat chuhini

[c] Guni garedi, Jaadu-tona, Kala jaadu, Nakha Darpana, Pangana Nashana, and Vashikarana

Table 2. Socio-demographic characteristics of traditional healers/ practitioners in the ethnobotanical survey (N=80)

Socio-Demographic Variables	**Parameters**	**Sample number**	**Percentage (%)**
Locality	Bijepur	08	10
	Gandhamardhan Hill	15	18.75
	Samleipadar	14	17.5
	Phapsi	09	11.25
	Saintala	13	16.25
	Luhurapali	09	11.25
	Agalpur	12	15
Gender	Male	52	65
	Female	28	35
Function	Herbalist	31	38.75
	Ordinary inhabitant	49	61.25
Age	<30	11	10.31
	30-60	32	40
	60-80	21	26.25
	>80	16	20
Study level	No study	13	16.25
	Primary	27	33.75
	High school	32	40
	University	08	10

Traditional Therapies for Treatment of Hysteria

This ethnobotanical study identified 40 species from 25 botanical families used for treating hysteria in rural communities in Odisha's Balangir and Bargarh districts. Table 3 displays the common botanical information associated with each species, such as the botanical name, common name, vernacular name, family, nature, habitat, commonly used methods for dosage form preparation, route of administration, parts used for medicine preparations, and many other details.

The ethnobotanical survey registered a total of 8,818 usage reports, with *Chromolaena odorata* and *Murraya paniculate* having the highest number of useful reports (72 UR) in this study, followed by *Asparagus rigidulus*, *Iris germanica*, *Murraya koenigii*, *Acalypha wilkesiana* and Acorus calamus each with a total use report of 70. These plants had the highest cultural importance index (CI), with *Murraya koenigii* ranking first, followed by *Iris germanica*, *Acalypha wilkesiana* and *Senna didymobotrya*, based on their relative frequency citation (RFC). The obtained results from all quantitative parameters were mentioned in Table 4. The above study reported a total of 25 families, with the Asteraceae and Fabaceae obtaining the highest number of species, with each contributing a total of four species (Figure 3). Based on their nature of availability status, wild species were mostly reported as compared to cultivated species (Figure 4). The majority of the reported species' habitat consists of plants, followed by trees, runners, and shrubs (Figure 5). For all of the recorded plant species in the research region, winter is the growth season that is most favorable (Figure 6). According to the survey, the majority of recorded species in the research region are extremely seldom found (Figure 7). Plucking is the most widely used method for the survey, as compared to digging or picking (Figure 8).

Table 3. Botanical Details and Traditional Use of Plants for Treating Neurological Disorders in the study area.

Biological name	Common name	Vernacular name	Family	Nature	Habitat	Mostly available season	Present Status	Collection methods	Part used	Dosage form	Route of administration
Abrus precatorius L.	Rosary pea	Gunja	Fabaceae	W	P	Summer	R	Plucking	Fruit	Powder	Oral
Acalypha wilkesiana Müll.Arg.	Copperleaf	Poi	Euphorbiaceae	W	T	Rainy	R	Picking	Leaves and bark	Syrup	Oral
Acorus calamus L.,	Sweet flag	Bacha	Acoraceae	C	P	Winter	R	Digging	Root	Powder	Oral
Asparagus rigidulus Nakai	Satavari	Satavari	Asparagaceae	C	S	Rainy	R	Plucking	Root	Powder	Oral
Bacopa monnieri (L.) Pennell	Water hyssop	Brahmi	Plantaginaceae	W	R	Rainy	A	Plucking	Plant	Powder	Oral
Celastrus paniculatus Willd.	*Black Oil Plant*	Malkangini	Celastraceae	W	P	Winter	R	Plucking	Total plant	Decoction	
Chlorophytum borivilianum Santapau&R.R.Fern.	White tubers	Safed musli	Asparagaceae	C	S	Winter	R	Digging	Root	Powder	Oral
Chromolaena odorata (L.) R.M.King & H.Rob.	Devil weed	Sahadevi	*Asteraceae*	W	P	Winter	A	Plucking	Leaves	Syrup	Oral
Cissus quadrangularis L.	Veldt grape	Hadjudi	Vitaceae	W	P	Winter	R	Plucking	Total plant	Powder	Oral
Citrus cavaleriei H. Lév.	*Ichang papeda*	Tebha	*Viridiplantae*	W	P	Winter	A	Plucking	Leaves	Syrup	Oral
Curculigo orchioides Gaertn.	*Golden eye-grass*	Kalamusli	Hypoxidaceae	W	P	Autumn	R	Digging	Root	Powder	Oral
Euphorbia heterophylla L.	Wild poinsettia	Dudhee	Euphorbiaceae	W	P	Spring	A	Plucking	Total plant	Decoction	Oral
Foeniculum vulgare Mill.	Fennel	Saumph	Umbelliferae	W	P	Autumn	A	Plucking	Fruit	Syrup	Oral
Gmelina arborea Roxb.	Gamhar	Gambhari	Lamiaceae	W	T	Autumn	R	Digging	Root	Powder	Oral
Grewia asiatica L.	Phalsa	Falsa lakha	Malvaceae	W	P	Spring	A	Plucking	Bark	Powder	Oral
Inula racemosa Hook.f.	Pushkarmool	Puskara	Asteraceae	W	R	Rainy	R	Plucking	Flower	Syrup	Oral
Ipomoea mauritiana Jacq.	Morning glory	Bhuinkakharu	Convovulaceae	W	R	Summer	R	Plucking	Fruit	Powder	Oral
Iris × germanica L.	Common flag	Bal bach	Iridaceae	W	S	Winter	R	Plucking	Total plant	Decoction	Oral
Kalanchoe pinnata (Lam.) Pers.	*Cathedral bells*	Patragaja	Crassulaceae	W	R	Rainy	R	Plucking	Stem	Decoction	Oral
Lavandula stoechas L.	French lavender	Dhanu	Lamiaceae	C	P	Spring	A	Plucking	Flower	Powder	Oral
Murraya paniculata (L.) Jack	Orange jasmine	Kamini	Rutaceae	W	P	Rainy	A	Plucking	Leaves	Syrup	Oral

Murraya koenigii (L.) Sprengel	Curry tree	Mersinga	Rutaceae	C	P	Summer	A	Plucking	Stem	Decoction	Oral
Nardostachys jatamansi (D.Don) DC.	Spikenard	Jatamansi	Carprifoliaceae	W	P	Winter	R	Plucking	Total plant	Decoction	Oral
Nerium oleander L.	Nerium	Karigar	Apocynaceae	W	P	Spring	A	Plucking	Leaves	Syrup	Oral
Ocimum tenuiflorum L.	Holy Basil	Tulsi	Lamiaceae	*W*	P	Rainy	A	Plucking	Leaves	Decoction	Oral
Onosma echioides L.	Goldendrop	Ratanjyoti	Boraginaceae	W	S	Spring	R	Plucking	Total plant	Decoction	Oral
Petasites japonicus (Siebold & Zucc.) Maxim.	Japanese sweet coltsfoot	Fuki	Asteraceae	C	P	Spring	R	Plucking	Stem and flower	Decoction	Oral
Piper betle L.	Betel	Paan	*Piperaceae*	C	R	Rainy	A	Picking	Leaves	Powder	Oral
Ricinus communis L.	Castor oil plant	Jada	Euphorbiaceae	W	T	Autumn	A	Picking	Leaves	Syrup	Oral
Rubia cordifolia L.	Indian madder	Manjistha	Rubiaceae	W	P	Summer	A	Plucking	Leaves and flowers	Decoction	Oral
Senna didymobotrya (Fresen.) Irwin & Barneby	Oatmeal cassia	Dao patta	Fabaceae	W	T	Winter	R	Picking	Leaves	Syrup	Oral
Senna tora (L.) Roxb.	Sickle senna	Chakunda	Fabaceae	W	P	Autumn	A	Plucking	Leaves	Decoction	Oral
Sesbania sesban (L.) Merr.	Egyptian riverhemp	Thaitimul	Fabaceae	W	P	Winter	A	Digging	Root	Powder	Oral
Sida cordifolia L.	Flannel weed	Bajaramuli	Malvaceae	W	P	Spring	R	Plucking	Total plant	Powder	Oral
Terminalia bellirica (Gaertn.) Roxb.	Beleric	Behera	Combretaceae	W	T	Summer	A	Picking	Fruit	Powder	Oral
*Terminalia chebula.*Retz.	Chebulic Myroblan	Harida	Combretaceae	W	T	Summer	A	Picking	Fruit	Powder	Oral
Tridax procumbens L.	coatbuttons	Bisalyakarani	Asteraceae	W	P	Rainy	R	Plucking	Leaves	Syrup	Oral
Valeriana jatamansi Jones ex Roxb.	Indian Valerian	Mudimansi	Caprifoliaceae	W	P	Autumn	R	Plucking	Leaves and root	Syrup	Oral
Withania somnifera (L.) Dunal	Ashwagandha	Ashwagandha	Solanaceae	W	S	Autumn	R	Digging	Root	Decoction	Oral
Zingiber officinale Roscoe	Dry ginger	Sunthi	Zingiberaceae	*C*	S	Summer	A	Digging	Rhizome	Decoction	Oral

Table 4. Quantitative Parameter Measurements and Results Obtained from the Study Participants

Biological name	Informant participant (IP)	Informant response (IR)	Use report (UR)	Relative frequency citation (RFC)	Cultural index (CI)
Abrus precatorius L.	65	60	57	0.81	0.87
Acalypha wilkesianav Müll.Arg.	78	75	70	0.97	0.89
Acorus calamus L.	75	73	70	0.93	0.93
Asparagus rigidulus Nakai	75	73	70	0.93	0.93
Bacopa monnieri (L.) Pennell	77	75	60	0.96	0.77
Celastrus paniculatus Willd.	70	66	60	0.87	0.85
Chlorophytum borivilianum Santapau & R.R.Fern.	60	55	50	0.75	0.83
Chromolaena odorata (L.) R.M.King & H.Rob.	76	74	72	0.95	0.94
Cissus quadrangularis L.	70	65	55	0.87	0.78
Citrus cavaleriei H. Lév.	77	70	60	0.96	0.77
Curculigo orchioides Gaertn.	59	57	50	0.73	0.84
Euphorbia heterophylla L.	77	73	60	0.96	0.75
Foeniculum vulgare Mill.	75	70	67	0.93	0.89
Gmelina arborea Roxb.	70	65	60	0.87	0.80
Grewia asiatica L.	60	57	53	0.75	0.88
Inula racemosa Hook.f.	70	66	57	0.87	0.84
Ipomoea mauritiana Jacq.	67	63	59	0.83	0.88
Iris × germanica L.	79	75	70	0.98	0.88
Kalanchoe pinnata (Lam.) Pers.	75	70	60	0.93	0.80
Lavandula stoechas L.	70	67	65	0.87	0.75
Murraya paniculata (L.) Jack	76	73	72	0.95	0.94
Murraya koenigii (L.) Sprengel	80	75	70	1	0.87
Nardostachys jatamansi (D.Don) DC.	75	70	63	0.93	0.84
Nerium oleander L.	70	65	61	0.87	0.87
Ocimum tenuiflorum L.	75	70	67	0.93	0.89
Onosma echioides L.	67	60	55	0.83	0.82
Petasites japonicus (Siebold & Zucc.) Maxim.	75	62	50	0.93	0.66
Piper betle L.	60	58	50	0.75	0.83
Ricinus communis L.	77	67	60	0.96	0.77
Rubia cordifolia L.	50	55	50	0.67	0.84
Senna didymobotrya (Fresen.) Irwin & Barneby	78	75	65	0.97	0.83

Senna tora (L.) Roxb.	73	70	60	0.91	0.83
Sesbania sesban (L.) Merr.	75	60	50	0.93	0.66
Sida cordifolia L.	75	70	60	0.93	0.80
Terminalia bellirica (Gaertn.) Roxb.	60	55	50	0.75	0.83
Terminalia chebula Retz.	60	55	50	0.75	0.83
Tridax procumbens L.	70	60	50	0.87	0.71
Valeriana jatamansi Jones ex Roxb.	75	70	60	0.93	0.86
Withania somnifera (L.) Dunal	75	60	55	0.93	0.73
Zingiber officinalen Roscoe	70	65	60	0.87	0.86

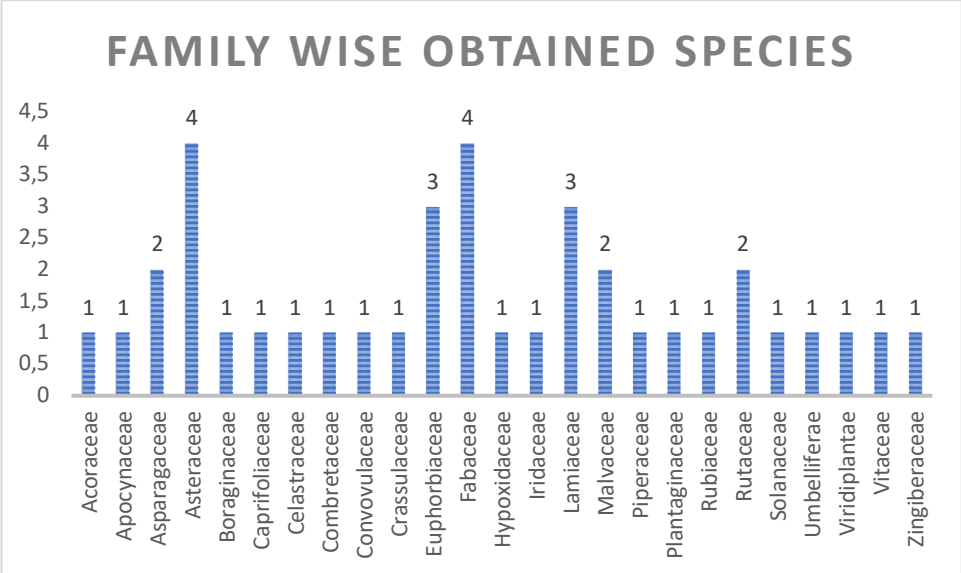

Figure 3. The total number of species represented by each family in order

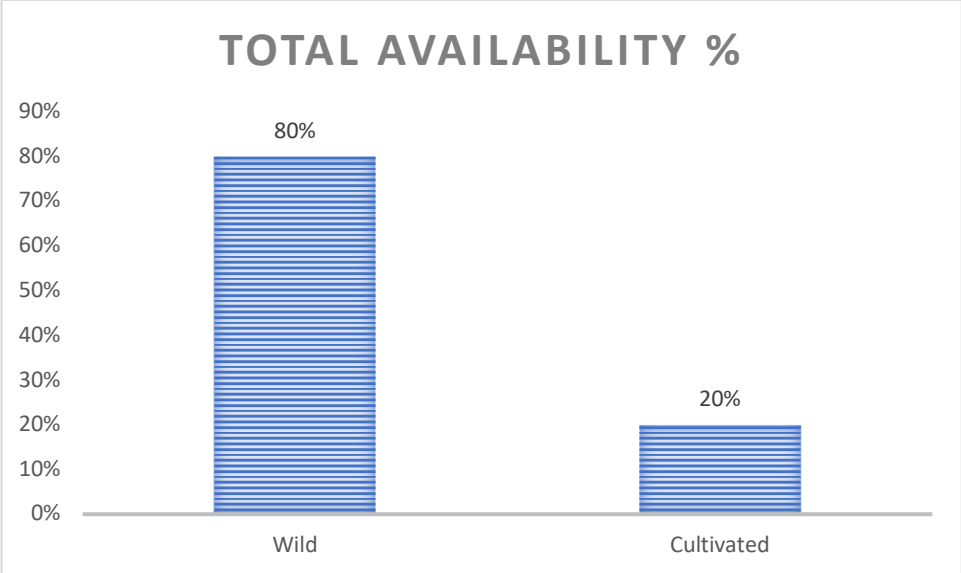

Figure 4. Different proportions of reported plant species in their nature-wise

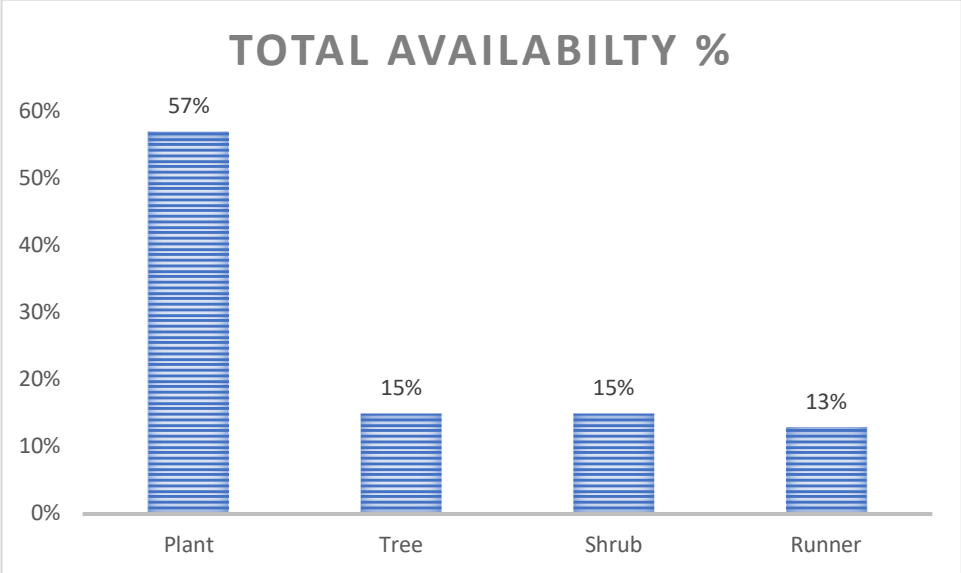

Figure 5. Different proportions of reported plant species in their habitat-wise

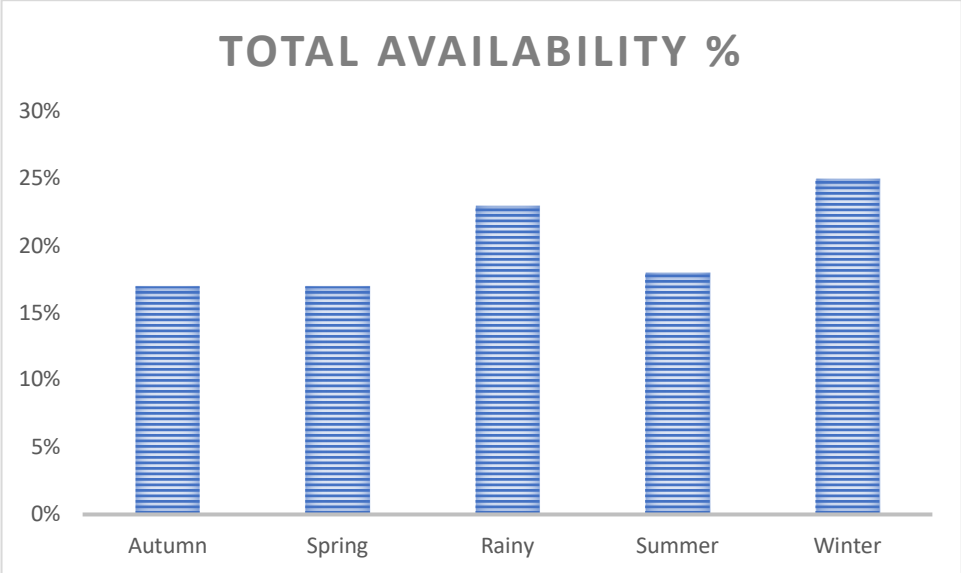

Figure 6. Different proportions of reported plant species based on their availability season

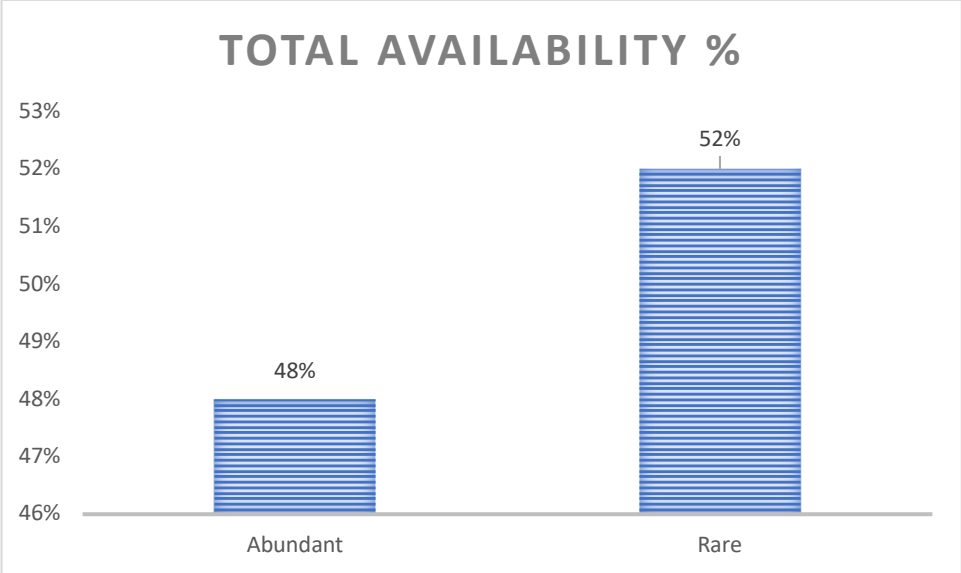

Figure 7. Different proportions of reported plant species based on their available status

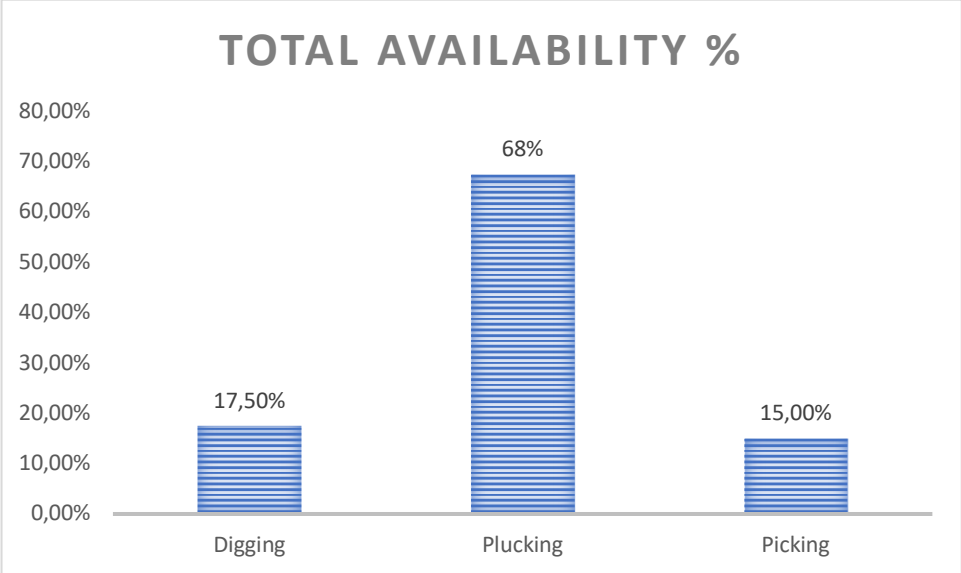

Figure 8. Different proportions of reported plant species with their method of collections

Table 3 provides data on quantitative parameters such as informant participants (IP), informant responses (IR), UR, RFC, and CI for each plant species. Table 5 groups the plant species according to their corresponding fidelity level, based on their family, and their beneficial effects in treating hysteria. The fidelity level ranged from 68.70% to 93.75%, with *Senna didymobotrya* having the highest fidelity level (93.75%) in the Fabaceae family and *Acalypha wilkesiana* having the highest fidelity level (93.75%) in the Euphorbiaceae family.

Table 5. Ethnobotanical Study of Plant Fidelity Levels by Family

Family	**Plant name**	**Fidelity level**
Asteraceae	*Tridax procumbens* L.	75%
	Chromolaena odorata (L.) R.M.King & H.Rob.	92.5%
	Petasites japonicus (Siebold & Zucc.) Maxim.	77.5%
	Inula racemosa Hook.f.	82.5%
Lamiaceae	*Lavandula stoechas* L.	78.75%
	Gmelina arborea Roxb.	81.25%
	Ocimum tenuiflorum L.	87.5%
Asparagaceae	*Chlorophytum borivilianum* Santapau & R.R.Fern.	68.7%
	Asparagus rigidulus Nakai	91.2%
Combretaceae	*Terminalia chebula* Retz.	82.5%
	Terminalia bellirica (Gaertn.) Roxb.	87.5%
Malvaceae	*Sida cordifolia* L.	87.5%
	Grewia asiatica L.	71.25%
Fabaceae	*Senna tora* (L.) Roxb.	87.5%
	Abrus precatorius L.	75%
	Sesbania sesban (L.) Merr.	75%
	Senna didymobotrya (Fresen.) Irwin & Barneby	93.75%
Euphorbiaceae	*Euphorbia heterophylla* L.	91.25%
	Acalypha wilkesiana Müll.-Arg.	93.75%
	Ricinus communis L.	83.75%
Carprifoliaceae	*Nardostachys jatamansi* (D.Don) DC.	87.5%
	Valerian ajatamansi Jones ex Roxb.	87.5%
Rutaceae	*Murraya paniculata* (L.) Jack	91.25%
	Murraya koenigii (L.) Sprengel	93.7%
Solanaceae	*Withania somnifera* (L.) Dunal	75%
Zingiberaceae	*Zingiber officinale* Roscoe	81.25%
Rubiaceae	*Rubia cordifolia* L.	68.7%
Iridaceae	*Iris × germanica* L.	93.75%
Hypoxidaceae	*Curculigo orchioides* Gaertn.	71.25%
Convovulaceae	*Ipomoea mauritiana* Jacq.	78.7%
Plantaginaceae	*Bacopa monnieri* (L.) Pennell	93.75%
Vitaceae	*Cissus quadrangularis* L.	81.25%
Celastraceae	*Celastrus paniculatus* Willd.	87.5%
Umbelliferae	*Foeniculum vulgare* Mill.	87.5%
Boraginaceae	*Onosma echioides* L.	75%
Apocynaceae	*Nerium oleander* L.	81.25%
Piperaceae	*Piper betle* L.	72.5%
Crassulaceae	*Kalanchoe pinnata* (Lam.) Pers.	87.5%
Viridiplantae	*Citrus cavaleriei* H. Lév.	87.5%

The most commonly used traditional medicinal components were leaves (33%), followed by entire plants (23%), roots (18%), fruit (13%), stem (8%), and flower (5%) (Figure 9). Leaves were commonly used for preparing herbal medicine, consistent with traditional practices across tribal communities worldwide. The most common forms of preparation were powder (50%), decoction (20%), juice (22.5%), and paste (7.5%) (Figure 10). The recovered plant species that are capable of dispelling each form of black magic have been accurately identified using their regional names. Table 6 presents the Ayurvedic preparation names of various plant species, along with the corresponding tribal groups that predominantly utilize these plant species.

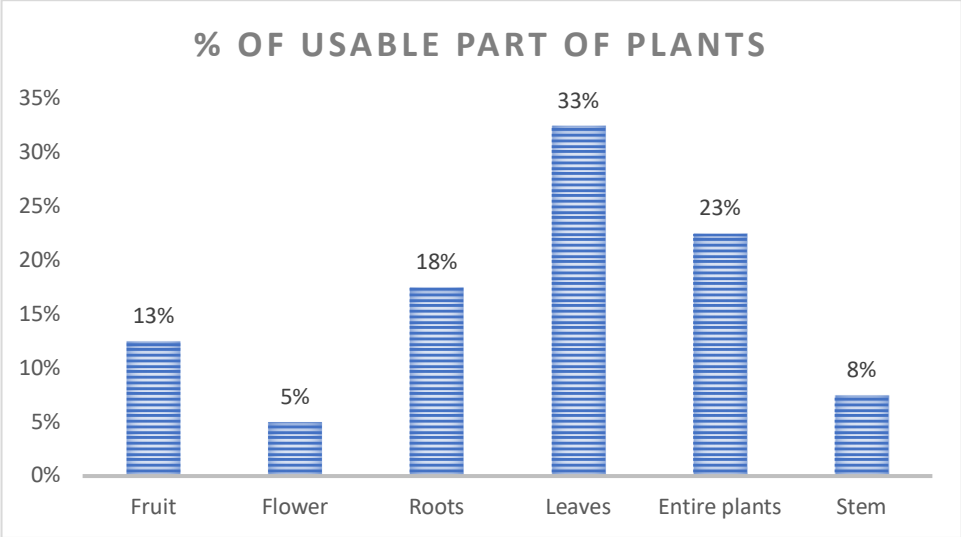

Figure 9. Different plant parts are utilized in different proportions to produce traditional medicinal preparations.

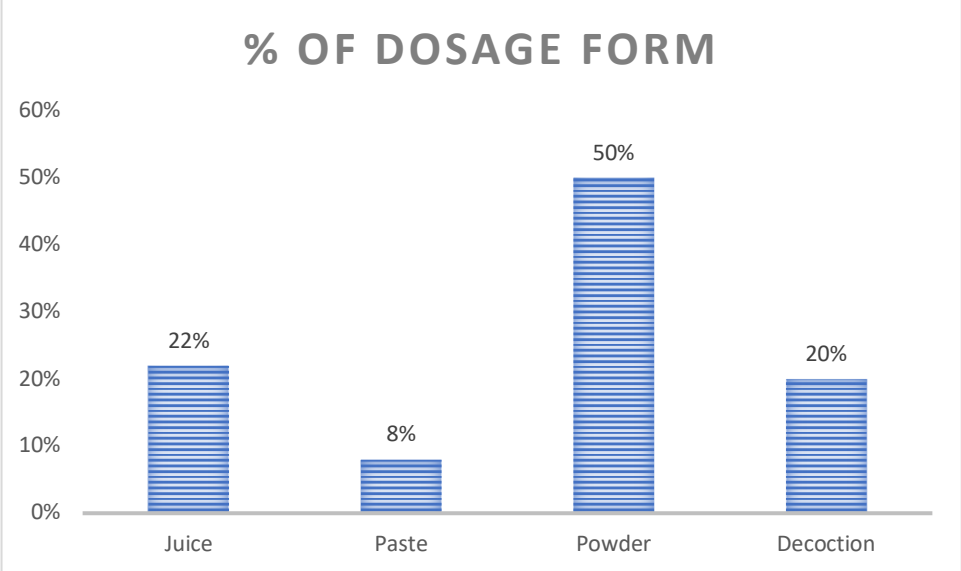

Figure 10. Different dosage forms are used for pharmaceutical preparation in different proportions

Discussion

For generations, people have been fascinated by paranormal occurrences connected with hysteria. From inexplicable supernatural events to intriguing ghost sightings, the connection between paranormal phenomena and hysteria has generated curiosity among both skeptics and believers (Marks 2021). This topic was of interest to Campbell *et al.* (2021), who conducted a study on the association between paranormal beliefs and hysteria, shedding new light on this intriguing issue. According to their theory, individuals with higher levels of hysteria were found to be more inclined to believe in paranormal events, suggesting a potential psychological basis for these experiences. Another topic of interest in psychology is the interaction between hysteria and herbal treatment. Although additional study is needed to properly understand this connection, several studies have revealed that specific herbal remedies may help decrease symptoms of hysteria. Herbal therapy is frequently used as a cure for hysteria by the traditional healer community. They think that certain herbs have qualities that help restore bodily equilibrium and reduce symptoms associated with hysteria (Shrama *et al*, 2018). Herbal therapy for hysteria often employs plants such as *Lavandula angustifolia, Chamaemelum nobile*, and *Valeriana wallichi*. These plants are thought to have soothing effects on the nervous system and may aid in the reduction of anxiety and other mental illness. Herbal therapy is also considered a more natural and holistic approach to treating hysteria, which may appeal to people looking for alternative treatment choices (Chowdhury *et al*, 2022; Shahrajabian *et al*, 2021).

Table 6. The conventional utilization of acquired species, connected with the cultural beliefs linked to each specific species.

Plant name	Reported neuropharmacological action by informants	Name of "Black magic" mostly applicable for	Reported other pharmacological action by informants	Name of the tribal community who are mostly using this as remedy	Name of the used products in local language
Withania somnifera (L.) Dunal	Sedative, anxiolytic, antidepressant, anticonvulsant	Daayan-dhara, Chirangul, Ghusri chandi, Mathia-debta	Immunomodulatory, antioxidant, anticancer, hypolipidemic	Kandha, Gouda, Bhulia, Sundhi, Ojha	Laxmi patrika
Zingiber officinale Roscoe	Antiemetic, anxiolytic, antioxidant, anticonvulsant	Daayan-dhara, Chirangul, Ghusri chandi, Duma-dhara	Anti-inflammatory, analgesic, antimicrobial, hypoglycemic	Gouda, Bhulia, Sundhi, Brahmin	Saraswati paduka
Ocimum tenuiflorum L.	Anxiolytic, sedative, antidepressant, anticonvulsant	Peten-dhara, Rakat Chuhini, Mathia-debta	Antimicrobial, antioxidant, immunomodulatory, analgesic	Kandha, Bhulia, Harijan, Ojha	Matrushakti
Rubia cordifolia L.	Antidepressant, sedative, anxiolytic, anticonvulsant	Daayan-dhara, Chirangul, Mathia-debta, Duma-dhara	Antimicrobial, antioxidant, antitumor, hepatoprotective	Gouda, Harijan, Mali, Brahmin	Kalaratrika
Senna tora (L.) Roxb.	Sedative, anticonvulsant, antidepressant, anxiolytic	Peten-dhara, Mathia-debta, Duma-dhara	Laxative, antimicrobial, antipyretic, hepatoprotective	Kandha, Harijan, Sundhi, Brahmin	Parbatika
Nardostachys jatamansi (D.Don) DC.	Sedative, anti-anxiety Migraine, Meningitis, Hysteria, epilepsy, syncope	Daayan-dhara, Chirangul, Ghusri chandi, Mathia-debta, Duma-dhara	Digestive, anti-inflammatory, anti-epileptic antispasmodic, stimulant, tonic, laxative	Gouda, Bhulia, Sundhi, Brahmin, Ojha	Setupati
Curculigo orchioides Gaertn.	Hysteria, Depression, Epilepsy, aphrodisiac	Daayan-dhara, Chirangul, Mathia-debta	limb limpness, impotence, watery diarrhea, arthritis of the lumbar and knee joints	Kandha, Gouda, Harijan, Sundhi	Rebati
Ipomoea mauritiana Jacq.	Hysteria, epilepsy, Anxiety, Meningitis	Peten-dhara, Rakat Chuhini	tuberculosis and for the treatment of external and breast infections	Kandha, Gouda, Sundhi, Ojha	Madhu
Chlorophytum borivilianum Santapau&R.R.Fern.	Hysteria, Ataxia, Epilepsy, Depression	Daayan-dhara, Peten-dhara, Mathia-debta	Revitalize, physical illness and weakness, as a general sex tonic, increase lactation in feeding mothers, remedy for diabetes, curative for natal and postnatal problems, arthritis, and increasing body immunity, for rheumatism and joint pains	Bhulia, Harijan, Mali, Ojha	Aristakam
Asparagus rigidulus Nakai	Ataxia, Hysteria, Epilepsy, Depression, aphrodisiac	Daayan-dhara, Ghusri chandi, Mathia-debta	immunostimulants, antioxidants, antihepatotoxic, anti-inflammatory antioxytocic, antibacterial,and reproductive agents.	Kandha, Bhulia, Sundhi, Ojha	Abantika
Abrus precatorius L.	Ataxia, Spinal cord injury, Brain tumors, Ben's palsy, Hysteria	Chirangul, Mathia-debta,Ghusri chandi	rabies, cat bites, treat scratches and sores, and wounds caused by dogs and mice	Gouda, Bhulia, Sundhi, Ojha	Swarnatmika
Bacopa monnieri (L.) Pennell	Ataxia, Alzheimer's disease, Multiple sclerosis, Hysteria, aphrodisiac	Peten-dhara, Ghusri chandi, Duma-dhara	sedative, memory and learning enhancer, and anti-epileptic.	Kandha, Harijan, Mali, Brahmin	Smaran pani

Grewia asiatica L.	Spinal cord injury, Bipolar disorder, Hysteria	Chirangul, Ghusri chandi	anti-inflammatory for burning in the eyes, urine, or chest	Kandha, Bhulia, Mali, Ojha	Ashish jal
Cissus quadrangularis L.	Spinal cord injury, Hysteria, Cerebral aneurysm	Daayan-dhara, Ghusri chandi, Duma-dhara, Pretatma-dhara	obesity, diabetes, bone fractures, high cholesterol, cancer, stomach upset, allergies, asthma, painful menstrual periods wound healing, malaria, peptic ulcer disease, weak bones	Gouda, Harijan, Sundhi, Mali	Asava
Sida cordifolia L.	Parkinson's disease, Epilepsy, Depression, Brain tumor, Hysteria,	Daayan-dhara, Chirangul, Rakat Chuhini, Mathia-debta, Pretatma-dhara	tuberculosis, bronchial asthma, flu, colds, swine flu, lack of perspiration, chills, nasal congestion, headaches, urinary infections, cough and wheezing, sore mouth, and fluid retention.	Gouda, Bhulia, Sundhi, Mali, Khandayat	Madhukampa
Terminalia chebula Retz.	Headache, Eye pain, Mennier's disease, Hysteria	Peten-dhara, Ghusri chandi, Mathia-debta	digestive aid, increase appetite, stomachic, liver stimulant, gastrointestinal prokinetic agent, and mild laxative	Gouda, Bhulia, Mali, Khandayat	Harithaki
Terminalia bellirica (Gaertn.) Roxb.	Headache, Eye pain, Hysteria, brain stroke	Daayan-dhara, Rakat Chuhini	astringent, anthelmintic, laxative, and antipyretic properties and are used in Ayurveda against various disorders like hepatitis, asthma, dyspepsia, bronchitis, piles, coughs, diarrhea, and eye diseases	Kandha, Harijan, Sundhi, Brahmin	Baharaki
Lavandula stoechas L.	Syncope, hysteria, Petit-mal seizure, Anxiety, Hysteria, aphrodisiac	Chirangul, Ghusri chandi, Pretatma-dhara	antispasmodic in colic pain, wounds, against eczema, urinary tract infections, analgesic, sedative, and antiseptic properties	Kandha, Harijan, Khandayat, Brahmin	Sugandharaj
Celastrus paniculatus Willd.	Dementia, hysteria, insomnia, Grand-mal seizure	Peten-dhara, Ghusri chandi, Sabakhai-Dahani, Pretatma-dhara	Amnesia, Sciatica, Leprosy, Pleurisy, Anaemia, Pneumonia, Ascites, Flatulence, Loss of appetite, Sexual weakness, Leucoderma, Amenorrhea, and Gout	Gouda, Bhulia, Harijan, Brahmin	Alakananda
Foeniculum vulgare Mill.	Insomnia, ataxia, Headache, dementia, Hysteria,	Daayan-dhara, Ghusri chandi, Mathia-debta, Sabakhai-Dahani	intestinal gas, heartburn, loss of appetite, bloating and used for upper respiratory tract infections, colic in infants, bronchitis, cholera, coughs, backache, bedwetting, and visual problems.	Kandha, Harijan, Khandayat, Brahmin	Panmadhurima
Inula racemosa Hook.f.	Ataxia, dementia, Hysteria, Anxiety, Syncope	Peten-dhara, Chirangul, Pretatma-dhara	precordial chest pain, cough, and dyspnea	Gouda, Bhulia, Harijan, Brahmin	Narmada
Onosma echioides L.	Alzheimer's disease, Hysteria, Tremors	Daayan-dhara, Rakat Chuhini, Mathia-debta, Pretatma-dhara	used for kidney obstruction, gout, and sciatic pain	Gouda, Harijan, Khandayat	Bhasmasuta

Iris × germanica L.	Bradykinesia, Dementia, Headache, Hysteria,	Ghusri chandi, Mathia-debta, Sabakhai-Dahani, Pretatma-dhara	antineoplastic, anti-tuberculosis, pesticide	Kandha, Harijan, Brahmin	Sundara charchita
Valeriana jatamansi Jones ex Roxb.	Attention deficit hyperactive disorder, Hysteria	Daayan-dhara, Rakat Chuhini, Sabakhai-Dahani	antidepressant, antianxiety, and sedative effects.	Kandha, Bhulia, Teli	Manasi Pani
Murrayakoenigii (L.) Sprengel	Insomnia, Headache, Hysteria	Peten-dhara, Rakat Chuhini, Mathia-debta, Pretatma-dhara	inflammation, treating piles, fresh cuts, itching, bruises, dysentery, and edema	Gouda, Harijan, Kulta	Kalpita
Nerium oleander L.	Bradykinesia, Migraine, Tremor, Rigidity, Hysteria,	Peten-dhara, Ghusri chandi, Rakat Chuhini	asthma, treatment of cardiac illness, epilepsy, corns, scabies, cancer, diabetes mellitus, in wound healing as an antibacterial/antimicrobial	Kandha, Harijan, Khandayat, Brahmin	Gulabi asava
Euphorbia heterophylla L.	Hysteria, Absence of seizure, Insomnia	Daayan-dhara, Ghusri chandi, Mathia-debta, Pretatma-dhara	, respiratory ailments (cough, coryza, bronchitis, and asthma), female disorders, worm dysentery, infestations in children, pimples, gonorrhea, jaundice, tumors, and digestive problems	Gouda, Bhulia, Teli, Kulta, Khandayat	Archana jal
Acalypha wilkesiana Müll.Arg.	Anxiety, Syncope, Ataxia, Hysteria	Peten-dhara, Ghusri chandi, Sabakhai-Dahani	headache, fungal skin diseases, swellings, and colds	Bhulia, Harijan, Teli, Kulta	Biswajeeta
Petasites japonicus (Siebold & Zucc.) Maxim.	Migraine, Depression, Alzheimer's disease, Hysteria,	Daayan-dhara, Rakat Chuhini, Sabakhai-Dahani	decrease blood plasma and hepatic lipid, anti-inflammatory,	Kandha, Harijan, Sundhi, Brahmin	Arundhatika
Ricinus communis L.	Anxiety, Ataxia, Epilepsy, Hysteria,	Peten-dhara, Rakat Chuhini, Mathia-debta, Sabakhai-Dahani	arthritis, abdominal disorders, bilharziasis, backache, chronic headache, muscle aches chronic backache and sciatica, the expulsion of the placenta, gallbladder pain, constipation, period pain, rheumatism, menstrual cramps, sleeplessness, and insomnia.	Kulta, Kandha, Mali, Brahmin	Trinatha patrika
Senna didymobotrya (Fresen.) Irwin &Barneb	Dementia, Anxiety, Hysteria	Daayan-dhara, Ghusri chandi. Rakat Chuhini	*Used to treat external parasites such as ticks*	Kandha, Bhulia, Harijan, Kulta, Mali	Peeta barna
Chromolaena odorata (L.) R.M.King & H.Rob.	Hysteria, Migraine, Anxiety, Syncope, Dementia	Peten-dhara, Rakat Chuhini, Mathia-debta, Sabakhai-Dahani	wounds, treatment of malaria, skin infection, toothache, diarrhea, stomachache, dysentery, sore throat, piles, convulsions, coughs, and colds.	Gouda, Bhulia, Teli, Sundhi, Kulta	Saptamatruka
Kalanchoe pinnata (Lam.) Pers.	Ataxia, Bradykinesia, Absence seizure, Hysteria,	Daayan-dhara, Rakat Chuhini, Mathia-debta, Sabakhai-Dahani	Anti-ulcers, Analgesics, and Antimicrobial effect	Kandha, Harijan, Teli, Mali, Khandayat	Astamatruka

Tridax procumbens L.	Analgesic, Dementia, Pshycosis, Depression, Hysteria,	Daayan-dhara, Rakat Chuhini, Sabakhai-Dahani	diarrhea, bronchial asthma, dysentery, and liver diseases	Bhulia, Harijan, Khandayat, Brahmin	Hanumatika
Citrus cavaleriei H. Lév.	Migraine, Hysteria, Syncope, Epilepsy	Peten-dhara, Ghusri chandi, Sabakhai-Dahani	Analgesics, Used in mosquito repellent cream, Antioxidant, and flavoring agent	Kandha, Bhulia, Teli, Sundhi	Subarnna rekha
Sesbania sesban (L.) Merr.	Syncope, Ataxia, Hysteria, Spinal cord injury	Daayan-dhara, Ghusri chandi, Sabakhai-Dahani	Hair tonic and biofertilizer	Bhulia, Harijan, Sundhi, Brahmin	Mayamohini
Murraya paniculata (L.) Jack	Hysteria, Anxiety, Epilepsy, Headache, Anxiety	Peten-dhara, Chirangul, Rakat Chuhini	Diarrhea, treatment of abdominal pain stomachache, edema, thrombosis, headache, and blood stasis	Gouda, Bhulia, Kulta, Khandayat	Kamini
Gmelina arborea Roxb.	Hysteria, Migraine, Anxiety	Peten-dhara, Chirangul, Rakat Chuhini, Sabakhai-Dahani	bitter, astringent, digestive, diuretic, laxative cardiotonic, and pulmonary and nervine tonic	Kandha, Bhulia, Harijan, Brahmin	Sarbanashini
Acorus calamus L.	Anxiety, Psychosis, epilepsy, Hysteria,	Daayan-dhara, Peten-dhara, Ghusri chandi, Sabakhai-Dahani	Respiratory, useful in several gastrointestinal, metabolic, kidney, and liver disorders	Bhulia, Harijan, Teli, Sundhi, Kulta	Ghodapani
Piper betle L.	Parkinson's disease, Hysteria, Spinal cord injury, Ataxia	Peten-dhara, Chirangul, Sabakhai-Dahani	Useful for curing many communicable and non-communicable diseases like cough, cold, bronchial asthma, stomach algia, rheumatism and used to treat other diseases like boils, bad breath, and abscesses, constipation, conjunctivitis, swelling of gums, cuts	Kandha, Bhulia	Bhootamardini

The use of herbaceous medicinal plants is widespread across different regions of the world due to their diverse spectrum of bioactive components. Plant taxonomy at the family level is crucial in identifying whether a plant species is valuable to locals, as some plant genera are more valuable than others in certain application categories. In this study, all 40 plant species identified were reported by informants to possess powerful medicinal potential effective against hysteria, along with several other psychopharmacological activities such as antianxiety, antidepressant, antiepileptic, antimanic, and analgesic properties.

Among the plant families utilized in traditional medicine, the Asteraceae family is one of the most prevalent. The Indian Asteraceae family is very varied, with over 1,500 species found throughout the nation. This diversity within the Indian Asteraceae family significantly enhances the availability of medicinal plants for traditional healing practices. These plants may be found in various environments, ranging from woodlands and grasslands to wetlands, and they exhibit a wide range in size, from small herbs to large shrubs (Mg *et al*, 2023). *Achillea millefolium, Arnica Montana, Bellis perennis, Calendula officinalis, Chamaemelum nobile, Eupatorium cannabinum, Helichrysum stoechas*, and *Taraxacum officinale* are some of the examples frequently utilized for traditional treatment of hysteria. Moreover, the vibrant blossoms of *Calendula officinalis* and *Chamaemelum nobile* possess strong aesthetic and aromatic properties, potentially enhancing their suitability for use in hysteria treatment (Premkumar *et al*, 2022). Additionally, the high antioxidant content in *Eupatorium cannabinum* and *Taraxacum officinale* has led to their inclusion in herbal decoctions and nutritional supplements, possibly offering benefits for brain health (Garcia-Oliveira *et al*, 2022).

Several plants from the family Fabaceae, such as *Sutherlandia frutescens* (Omokhua *et al*, 2016), *Ebenus stellata* (Khodaparast *et al,* 2012), *Albizia julibrissin* (Ebrahimzadeh *et al*, 2019), *Prosopis juliflora* (Mohammad *et al*, 2015), *Vachellia nubica* and *Astragalus obtusifolius* (Sayyah *et al*, 2011), are also known to possess GABAmimetic and anticonvulsant activity and are thus commonly used among traditional healers to treat hysteria symptoms. Additionally, the plant *Chromolaena odorata* has been reported to have tremendous potential against epileptogenesis due to the presence of flavonoids, essential oils, phenolics, tannins, and saponins in it (Kamat *et al,* 2013).

Furthermore, the presence of coumarin compound "7-isopentenyloxycoumarin" in the plant *Murraya paniculata* makes the plant more potent in fighting against all excitatory central nervous system disorders such as epilepsy, psychosis, anxiety, and bipolar disorder (Skalicka-Woźniak *et al,* 2016). Another plant, *Murraya koenigii* has a tendency to balance the acetylcholine level in the brain's hippocampus region, which controls memory and cognitive functions, making it a potential memory booster and treatment for dementia and Alzheimer's disorder (Halder *et al,* 2021).

The majority of the plants reported in this survey were from home gardens and roadside, and the common mode of consumption of plant extracts is through the oral route. The herbs that were helpful against hysteria were primarily leaves, fruits, and seeds. In the case of tiny herbaceous plants, aerial parts of the plant and full plants were also employed. Higher plant roots are a metabolically active and mostly unknown biological frontier. Their capacity to produce a surprisingly wide array of secondary metabolites, as well as change their metabolic activity in response to various abiotic and biotic stimuli, is one of their most notable characteristics (Bais *et al,* 2001*;* Joshi *et al,* 2016).

In Ayurveda, Churna, or powdered herbs, are widely used for medicinal purposes. Several Churna formulations, such as Sarasvatachurna (Kaushik *et al,* 2017), Chopchiniyadichurna (Jain *et al,* 2001), and Shatavarichurna (Pathak *et al,* 2015), have been found to be effective in treating neurological disorders, including epilepsy (Apasmara) and seizures. These formulations have been used for centuries in India and have gained popularity among rural communities in Odisha. However, it is important to note that the use of traditional remedies should be approached with caution, and further research is needed to establish their safety and efficacy. Nevertheless, the findings of this study highlight the importance of exploring traditional knowledge and cultural perceptions in understanding and addressing health issues in rural communities.

According to the study, the number of cultivated species is smaller than the number of wild species, indicating a reduction in agricultural diversity. This finding raises concerns about potential threats to food security and the long-term viability of our agricultural systems. The cultivated species *Petasites japonicus, Acorus calamus*, and *Piper betle* were among the least represented crop species in agriculture (Magule *et al*, 2014). Due to their high nutritional content and resistance to environmental stresses, these underutilized crops have the potential to offer significant medicinal properties. The presence of bioactive compounds in these species enables the development of novel pharmaceutical and nutraceutical products. Not only few species, but some plants from entire families, such as the Lamiaceae, Rutaceae, and Solanaceae, are also categorized as neglected crops. These plants possess distinct traits and properties that render them valuable for various

purposes, including medicinal and culinary applications (Gebregizabher *et al*, 2020). The landraces of these neglected crops have adapted to specific environmental conditions over centuries, resulting in a wealth of genetic diversity that can be utilized for agricultural development and resilience. Furthermore, cultivating and using neglected crops can promote sustainable agricultural practices and food security by diversifying our food sources and reducing our dependence on a few large staple crops (Assefa and Fitamo, 2016).

Conclusion

Hysteria is a prevalent yet underreported issue in rural communities in India's Balangir and Bargarh districts, causing social instability and financial strain on affected communities and emergency health systems. Rural residents face significant barriers to mental healthcare, including limited access to mental health professionals, lower mental health insurance rates, and stigma around mental health care in small communities. However, Indian families have a strong tradition of meeting their members' physical, spiritual, and emotional needs, which persists despite social changes. Antiepileptic drugs have shown promising results in treating both epilepsy and mental illnesses like hysteria, with clinical-pharmacological validation confirming their efficacy. Traditional healers in the community use herbs with high anticonvulsant potential to treat hysteria, and future research may identify bioactive components for psychopathological illnesses. Greater efforts are needed to document traditional knowledge and local plant studies to provide a safe, cost-effective, and environmentally friendly way to treat psychopathological disorders. As there is a lack of chemical information on these plants, further research is needed to identify bioactive components and evaluate the efficacy of standard approaches. Overall, addressing the prevalence and cultural perceptions of hysteria in rural communities in India requires a multidisciplinary approach, including increased access to mental healthcare, support for traditional knowledge, and further research into effective treatments.

Declarations

List of abbreviations: RFC - Relative frequency citation**;** CI - Cultural Index**;** FL- Fidelity level

Ethics approval and consent to participate: Verbal prior informal information consent was obtained before the survey

Consent for publication: People who participated in this study gave their prior informed consent for the publication of the article.

Availability of data and material: All the supporting data available in the article

Competing interests: The author declared no competing interest

Funding: No funding was received for the work.

Author's Contribution

Biswajeet Acharya and Prafulla Kumar Sahu designed and analyzed the data and framed the final manuscript. Swarnajeet Tripathy and Durga Prasad Mishra prepared and proofread the manuscript. Sasthimayee Singhgartia, Binapani Barik Kanhu Charan Pradhan and Debashish Parida carried out the survey and collected the data. All authors read and approved the final manuscript.

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Appendix A: Questionnaires

1. Demographic Information

1.1. Name:
1.2. Age:
1.3. Gender:
1.4. Education:
1.5. Occupation:
1.6. Marital status:

2. Knowledge about hysterical patients

2.1. Have you ever heard of hysterical patients?
2.2. What are your beliefs about the causes of hysteria?
2.3. How do you think hysteria can be treated?

3. Use of herbal extracts therapy

3.1. Have you ever used herbal extracts to treat hysteria?
3.2. What specific herbs have you used?
3.3. How do you prepare and administer the herbal remedies?
3.4. What is the dosage and frequency of use?
3.5. How effective do you believe these remedies to be?

4. Perception and attitudes towards traditional healers

4.1. Do you trust traditional healers in your community?
4.2. Have you sought treatment from traditional healers before?
4.3. What are your perceptions of traditional healing practices?

5. Family members' involvement

5.1. Have any of your family members suffered from hysteria?
5.2. Have you or your family members ever used herbal extracts therapy for the treatment of hysteria?
5.3. What role do family members play in the treatment of hysteria in your community?

6. Socio-cultural factors

6.1. What are the social and cultural factors that influence the use of herbal extracts therapy for hysteria in your community?
6.2. What are the traditional beliefs and practices that surround the use of herbal remedies for hysteria?

7. Additional information

7.1. Is there anything else you would like to add about your experience with hysteria and the use of herbal extracts therapy?