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Ethnobotanical insights into plant-based therapies for dermatological disorders among tribal communities of Parvathipuram Manyam District, Eastern Ghats, India

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Dermatological disorders are common among tribal communities of the Eastern Ghats, where medicinal plants remain an important source of primary healthcare. This study documents and evaluates the traditional knowledge of medicinal plants used to treat skin disorders in Parvathipuram Manyam District, Andhra Pradesh, a biologically and culturally rich region with limited ethnodermatological documentation. Ethnobotanical information was collected from 86 informants representing nine tribal communities through semi-structured interviews and guided field surveys. A total of 102 medicinal plant species belonging to 96 genera and 49 families were recorded for the treatment of 41 categories of dermatological disorders. Herbs were the dominant growth form, leaves were the most frequently used plant part, and paste was the principal mode of preparation, reflecting the preference for topical application. Quantitative ethnobotanical analysis showed a high level of agreement among informants, with Informant Consensus Factor (ICF) values ranging from 0.98 to 1.00. Species such as *Aristolochia bracteolata*, *Semecarpus anacardium*, *Byttneria herbacea*, *Getonia floribunda*, and *Cycas circinalis* recorded high Use Value (UV) and Fidelity Level (FL), indicating their cultural importance and widespread therapeutic use. The study highlights the richness of indigenous knowledge for managing dermatological disorders while emphasizing its gradual decline due to changing socio-cultural practices. These findings provide a valuable foundation for future phytochemical and pharmacological investigations and support the conservation of medicinal plants and the associated traditional knowledge of the tribal communities of the Eastern Ghats.

Keywords: Dermatological disorders, Ethnomedicine, Parvathipuram manyam District, Quantitative ethnobotany, Traditional knowledge

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Skin disorders constitute a major public health concern, particularly in rural and tribal communities where warm climatic conditions, poor sanitation, and limited access to modern healthcare increase the prevalence of dermatological ailments[1]. In many parts of India, medicinal plants continue to play a central role in primary healthcare, and indigenous communities have developed a wealth of traditional knowledge for treating wounds, infections, eczema, and other skin diseases. Over generations, local healers have preserved this knowledge through oral traditions, and many of these remedies have contributed to the identification of bioactive compounds with therapeutic potential in dermatology and drug discovery[2]. The remarkable diversity of medicinal plants used in different Indian traditional healthcare systems further reflects the richness of the country's ethnomedicinal heritage[3].

Parvathipuram Manyam District, situated in the Eastern Ghats of Andhra Pradesh, is home to several tribal communities that possess extensive knowledge of medicinal plants. Despite this rich cultural heritage, ethnobotanical studies focusing specifically on dermatological disorders from this region remain limited. Although ethnomedicinal investigations have been conducted in neighbouring parts of Andhra Pradesh and Odisha, comprehensive documentation of plant-based remedies used for skin diseases in Parvathipuram Manyam District is still lacking[4,5]. Moreover, rapid socio-cultural changes, habitat degradation, and declining transmission of traditional knowledge to younger generations threaten the continuity of these valuable healthcare practices[6].

The present study was undertaken to document the medicinal plants traditionally used by tribal communities of Parvathipuram Manyam District for the treatment of dermatological disorders. It records the diversity of medicinal species, growth forms, plant

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parts used, methods of preparation, and the range of skin ailments treated. In addition, quantitative ethnobotanical indices, including Use Value (UV), Fidelity Level (FL), and Informant Consensus Factor (ICF), were employed to assess the cultural importance and therapeutic relevance of the recorded species. The findings are expected to strengthen the ethnobotanical database of the Eastern Ghats and provide a scientific basis for future phytochemical, pharmacological, and conservation-oriented research.

Materials and Methods

Study area

The present ethnomedicinal survey was conducted in Parvathipuram Manyam District, Andhra Pradesh, India, located on the northern coastal plains of the state between latitudes 17°15′ and 19°15′ N and longitudes 83°01′ and 83°45′ E. The district shares borders with Odisha to the northwest, Visakhapatnam District to the southwest, Vizianagaram District to the south, and Srikakulam District to the east (Fig. 1). The survey encompassed both tribal and non-tribal regions, covering 42 tribal pockets and five plain mandals. Tribal and hilly areas included Kurupam, G.L. Puram, Parvathipuram, Komarada, Pachipenta, Salur, Makkuva, Bhamini, and Seethampeta, whereas plain regions included Palakonda, Veeraghattam, Balijipeta, Garugubilli, and Seetanagaram. Being part of the Eastern Ghats, the district exhibits rich floristic diversity and is home to communities with well-preserved ethnomedicinal knowledge.

Field surveys

Field surveys were conducted from 2021 to 2025, covering pre-monsoon, monsoon, and post-monsoon seasons to capture seasonal variation in plant availability and use. Multiple visits ensured verification of plant identification and use-reports and allowed inclusion of a representative sample of knowledgeable informants.

Informant selection and data collection

Informants were selected using purposive and snowball sampling methods, prioritizing traditional healers (Vaidyas), elderly tribal members, farmers, agricultural laborers, and tribal priests. Data was collected through semi-structured interviews, personal discussions, and field walks. Basic demographic details- including age, gender, education, occupation, and community affiliation, were recorded for methodological purposes. Prior informed consent was obtained from all participants. A pre-tested questionnaire (Telugu language) was used to document plant names; parts used, preparation methods, modes of administration, dosage, and

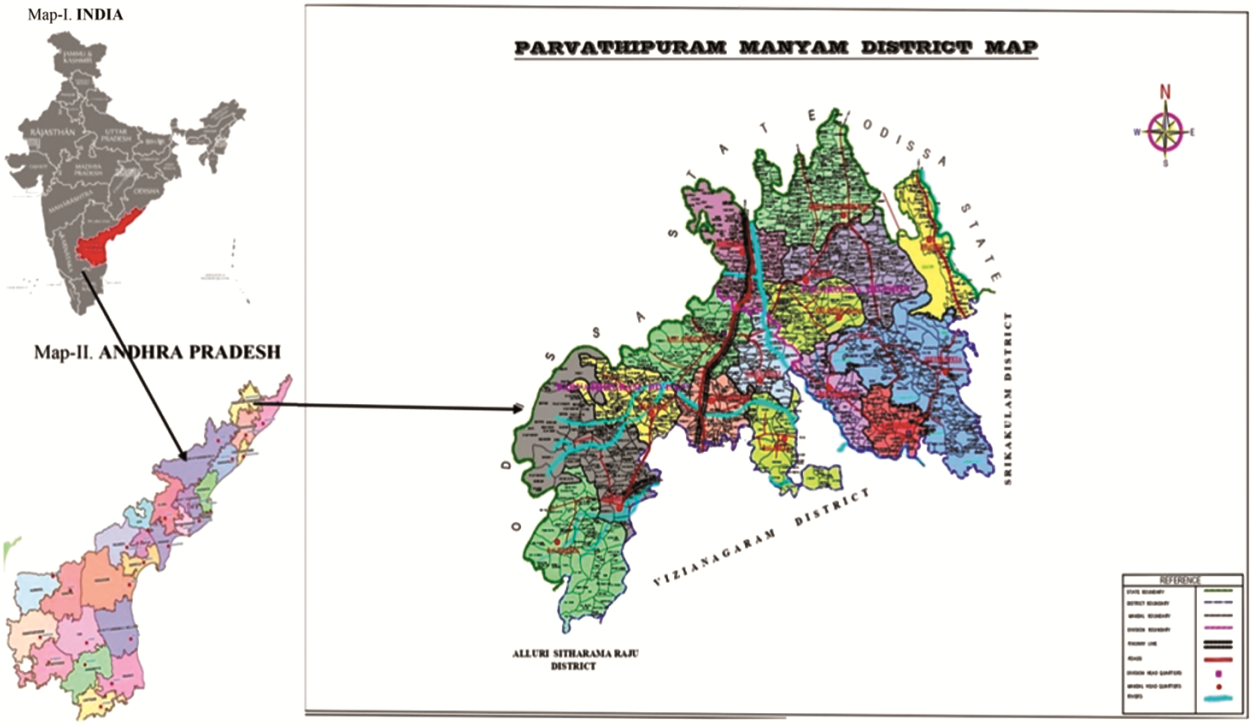

Fig. 1 — Study area map of Parvathipuram Manyam District, Andhra Pradesh, India, (Source: Divisional Forest Office, Palakonda)

associated cultural practices. Ethical standards were followed according to the International Society of Ethnobiology (ISE) Code of Ethics[7].

Plant collection and identification

Medicinal plants reported by the informants were collected during field surveys and processed into herbarium specimens following standard botanical procedures, including pressing and drying. The specimens were identified using regional floras[8,9], particularly *Flora of the Presidency of Madras*[10] and *Flora of Andhra Pradesh*[11]. Species identification was further authenticated at the Department of Botany, Andhra University, Visakhapatnam, through comparison with authenticated herbarium specimens and relevant taxonomic monographs.

Data analysis

The ethnomedicinal information collected from the informants was analyzed using descriptive and quantitative approaches to understand plant-use patterns and assess the cultural importance of the recorded species.

Descriptive analysis

Descriptive analysis was carried out to summarize the diversity of medicinal plants with respect to taxonomic composition, growth forms, family representation, plant parts used, methods of preparation, and the spectrum of dermatological disorders treated. This analysis provided an overview of the traditional utilization patterns of medicinal plants in the study area.

Quantitative analysis

Quantitative ethnobotanical indices were used to evaluate the relative importance of medicinal plants and the level of agreement among informants.

***Use value* (*UV*)**

The Use Value (UV), proposed by Phillips and Gentry[12], was calculated to estimate the relative importance of each medicinal plant based on the number of use citations reported by the informants. The index was calculated using the following formula:

$$UV = \frac{\sum U}{n}$$

Where **U** represents the total number of use citations recorded for a species, and n is the number of informants who cited that species.

Higher UV values indicate that a species is widely recognized and frequently used within the community, whereas lower values reflect comparatively limited use or recognition. The UV index measures the relative importance of a species but does not differentiate between plants used for a single ailment and those employed for multiple therapeutic purposes.

***Fidelity level* (*FL*)**

The Fidelity level (FL) is used to assess the extent to which a plant species is specifically used to treat a single major ailment. It serves as an indicator of the plant's cultural preference for treating a specific health issue. The formula is as follows:

$$FL(\%) = \frac{Ni}{Nt} X\ 100$$

Where:

$\mathbf{N_i}$ is the number of respondents, who mentioned the use of a plant for the same primary ailment,

$\mathbf{N_t}$ is the total number of informants who reported any use for that species.

Higher FL percentages reflect a strong association between the plant and the treatment of a specific ailment, making such species prime candidates for further scientific validation[13].

***Informant consensus factor* (*ICF*)**

The Informant Consensus Factor (ICF) is applied to evaluate the degree of agreement among informants regarding the use of plants for particular disease categories. This factor helps in identifying ailments for which there is a high concentration of traditional knowledge. The ICF is calculated using the formula:

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

Where:

$\mathbf{N_{ur}}$ represents the number of individual use-reports for a particular ailment category,

$\mathbf{N_t}$ is the number of species cited for that category.

An ICF approaching 1 indicates a high level of consensus among informants, suggesting a few key species are predominantly used for a specific condition. Lower ICF values reflect greater variability in plant selection for treating the ailment[14].

Results

Informant profile

The Parvathipuram Manyam District is inhabited by nine tribal communities who predominantly reside

in hilly terrains and depend extensively on surrounding forests for medicinal plant resources. A total of 86 informants contributed ethnomedicinal knowledge on dermatological disorders in Parvathipuram Manyam District (Table 1). Males formed the majority (67.4%), and most informants were above 60 years (55.8%), indicating that knowledge is concentrated among elder males. The largest occupational group was traditional healers (41.8%), and most informants were illiterate (58.1%). Informants represented multiple communities, with Savara (30.2%), Konda Dora (25.6%), and Jatapu (23.2%) as the major tribal groups. These findings underscore the importance of documenting orally preserving traditional knowledge from elder tribal members.

Taxa and growth-form diversity

The survey documented 102 medicinal plant species representing 96 genera and 49 families, traditionally used by tribal communities for the treatment of dermatological disorders. Among the recorded species, herbs were the predominant growth form (36 species), followed by trees (35 species), shrubs (25 species), and climbers (6 species). The predominance of herbs and trees reflects their abundance in the study area and their important role in traditional healthcare practices. Overall, the diversity of growth forms demonstrates the rich floristic resources of Parvathipuram Manyam District and the extensive use of locally available plant species in the management of skin disorders.

Table 1 — Demographic characteristics of informants.

S. No.	Category	Description / group	Number of informants	Percentage (%)
1	Gender	Male	58	67.4
		Female	28	32.6
2	Age group (years)	20–40	8	9.3
		41–60	30	34.8
		>60	48	55.8
3	Education level	Illiterate	50	58.1
		Primary education	22	22.5
		Secondary and above	14	16.2
4	Occupation	Traditional healers (Vaidyas)	36	41.8
		Farmers	22	25.5
		Agricultural laborers	18	20.9
		Tribal Priests / Elders	10	11.7
5	Community representation	Savara	26	30.2
		Jatapu	20	23.2
		Konda Dora	22	25.6
		Gadaba	10	11.6
		Non-tribal plains (Palakonda etc.)	8	9.3

Family-wise species distribution

The 102 species documented were distributed across 49 families (Fig. 2). Fabaceae contributed the highest number of species (8), followed by Asteraceae (7), Apocynaceae (6), and Malvaceae (5), indicating their prominence in local dermatological remedies. Families such as Anacardiaceae, Combretaceae, Euphorbiaceae, Acanthaceae, Aristolochiaceae, Lamiaceae, Lythraceae, Meliaceae, Phyllanthaceae, and Solanaceae contributed 3–4 species each, reflecting their moderate ethnomedicinal relevance. Several families including Annonaceae, Araceae, Boraginaceae, Cycadaceae, Moraceae, Rutaceae, Sapindaceae, and Verbenaceae were represented by two species each. The remaining 27 families were represented by a single species, indicating broad botanical diversity with numerous specialized taxa.

Species distribution by use count

Most medicinal plants were associated with a single dermatological application. Of the 102 species, 90 species were reported for one specific use, reflecting high therapeutic specialization. Six species—*Aristolochia bracteolata*, *Azadirachta indica*, *Byttneria herbacea*, *Cycas circinalis*, *Getonia floribunda*, and *Semecarpus anacardium*—were each associated with two uses, contributing a total of 12 use-reports. This distribution demonstrates a highly targeted traditional pharmacopoeia for skin-related ailments.

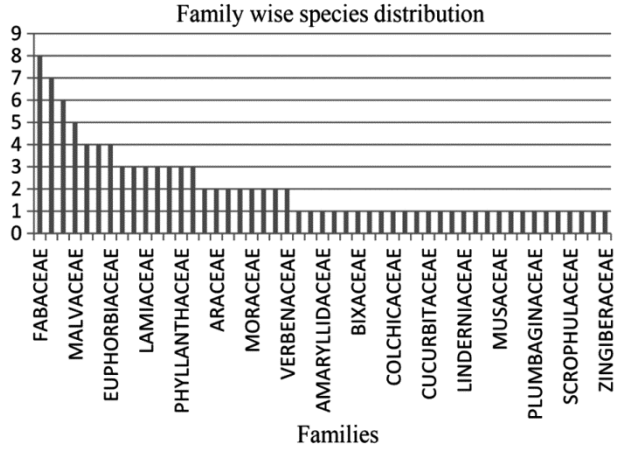

Fig. 2 — Bar diagram of species richness per family

Part-wise plant use

The distribution of plant parts used in the preparation of traditional remedies is presented in (Fig. 3). Among the recorded species, leaves were the most frequently utilized plant part (36 species), indicating their widespread availability and importance in traditional dermatological practices. Roots (17 species), flowers (14 species), and fruits (11 species) were also commonly employed. Comparatively fewer remedies involved the use of whole plants (9 species) and bark (7 species). Other plant parts, including stem latex, nuts, rhizomes, ovules, mucilage, and tubers, were used only occasionally. The predominance of leaves suggests a preference for easily accessible plant material that can be harvested with minimal impact on plant survival, thereby supporting sustainable utilization of medicinal plant resources.

Preparation methods

The different methods used for preparing traditional herbal remedies are summarized in (Fig. 4). Topical formulations were the predominant mode of treatment for dermatological disorders. Among the recorded preparation methods, paste was the most frequently used (77 species), followed by powder (8 species), decoction (7 species), juice (7 species), oil (2 species), and extract (1 species). The predominance of paste preparations reflects the traditional preference for direct application of herbal formulations to the affected skin, allowing localized treatment of dermatological conditions.

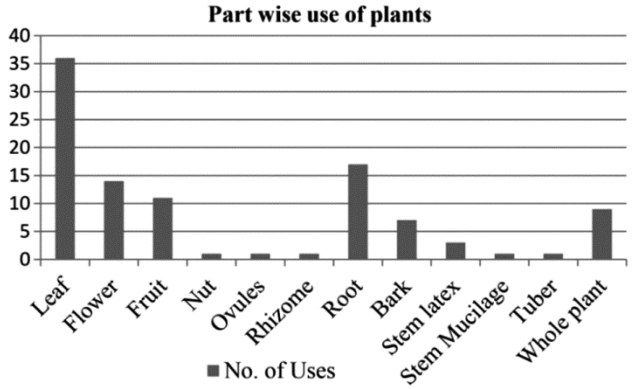

Fig. 3 — Bar diagram showing frequency of use of plant parts

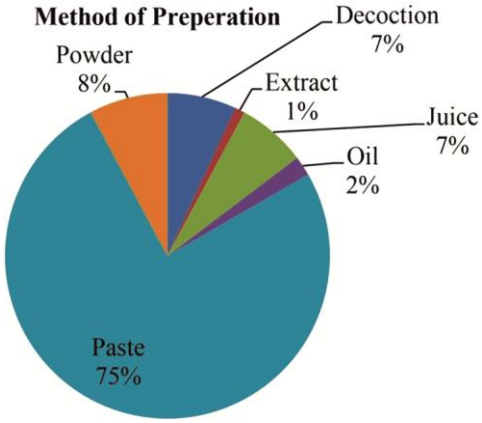

Fig. 4 — Distribution of preparation methods used in traditional remedies for dermatological disorders

Diversity of dermatological ailments treated

A total of 41 categories of dermatological disorders were recorded during the study, reflecting the extensive ethnomedicinal knowledge of the tribal communities (Fig. 5). The largest proportion of medicinal plant species was used to treat wounds and injuries (12%) and psoriasis disorders (12%), followed by hypopigmentation disorders (9%), eczema (7%), and acne (6%). Other conditions, including alopecia, dandruff, foot skin disorders, and lichen planus, each accounted for 3% of the recorded species. Several less frequently reported conditions, such as macules, sores, warts, folliculitis, rashes, and blisters, were treated using a single medicinal plant species. The diversity of ailments and the range of associated plant species demonstrate both the breadth of traditional dermatological knowledge and the specificity of certain plant remedies for particular skin conditions.

Use value (UV)

The Use Value (UV) of the recorded medicinal plants ranged from 0.17 to 1.86, indicating considerable variation in their cultural importance and frequency of use among the tribal communities. *Aristolochia bracteolata* (1.86) recorded the highest UV, followed by *Semecarpus anacardium* (1.47), *Byttneria herbacea* (1.36), *Getonia floribunda* (1.35), and *Cycas circinalis* (1.09), suggesting their widespread recognition and therapeutic significance in the treatment of dermatological disorders. Other frequently cited species, including *Ageratum conyzoides* and *Senna alata*, also exhibited relatively high UV values (≥0.90), indicating their importance in traditional healthcare practices. In contrast, species such as *Clitoria ternatea* and *Abutilon indicum*, with UV values below 0.40, were reported less frequently, reflecting their comparatively limited or specialized use.

Fidelity level (FL %)

The Fidelity Level (FL) analysis demonstrated a high degree of agreement among informants

regarding the use of several medicinal plant species for specific dermatological disorders. Very high FL values (>90%) were recorded for *Ageratum conyzoides*, *Getonia floribunda*, *Manihot esculenta*, *Naringi crenulata*, and several other species, indicating their consistent use in the treatment of particular skin ailments. Species such as *Albizia lebbeck*, *Caryota urens*, and *Vitex pinnata* also exhibited high FL values (80-90%), reflecting their strong therapeutic preference among the tribal communities. Moderate FL values (50-80%) observed in *Aegle marmelos* and *Eclipta prostrata* suggest that these species are used for a wider range of dermatological conditions rather than for a single specific ailment. In contrast, a few species recorded comparatively low FL values, indicating greater variation in their use among individual healers.

The complete list of the 102 medicinal plant species, together with their Use Reports (UR), Use Value (UV), and Fidelity Level (FL%), is provided in (Table 2).

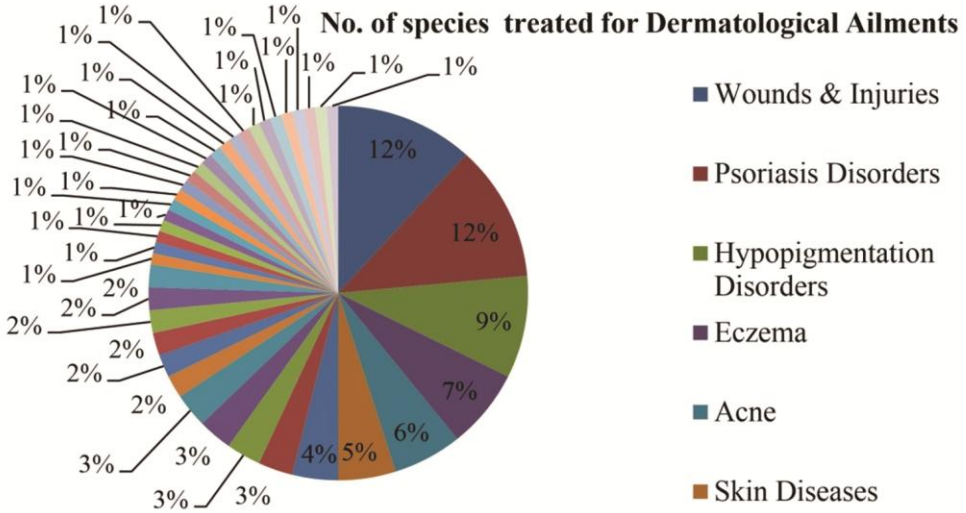

Fig. 5 — Distribution of medicinal plant species used for the treatment of different dermatological disorders

Table 2 Ethnomedicinal plants used for dermatological disorders with Use Reports, Use Value, and Fidelity Level

S.N.	Botanical Name	Family	Habit	Part	Method of preparation	Ailment	Use Reports (UR)	Use Value (UV = UR / 86)	FL%
1	*Abutilon indicum*	MALVACEAE	S	L	P	blisters, carbuncles	23	0.27	26.74%
2	*Acanthospermum hispidum*	ASTERACEAE	H	L	P	wounds	61	0.71	70.93%
3	*Aegle marmelos*	RUTACEAE	T	L	P	skin conditions	49	0.57	56.98%
4	*Ageratum conyzoides*	ASTERACEAE	H	R	P	wounds	82	0.95	95.35%
5	*Alangium salvifolium*	ALANGIACEAE	S	L	P	scalp inflammation	42	0.49	48.84%
6	*Albizia lebbeck*	MIMOSACEAE	T	F	P	dermatitis	77	0.9	89.53%
7	*Allophylus cobbe*	SAPINDACEAE	S	L	P	psoriasis	46	0.53	53.49%
8	*Aloe vera*	LILIACEAE	H	L	P	hair growth	42	0.49	48.84%
9	*Alstonia venenata*	APOCYNACEAE	T	SL	G	macules	67	0.78	77.91%
10	*Amarphophallus paeonifolius*	ARACEAE	H	L	P	lichen planus	65	0.76	75.58%
11	*Ammania baccifera*	LYTHERACEAE	H	W	P	boils	67	0.78	77.91%
12	*Anacardium occidentale*	ANACARDIACEAE	T	SB	Pw	vitiligo	71	0.83	82.56%
13	*Andrographis echioides*	ACANTHACEAE	H	W	P	wounds	66	0.77	76.74%
14	*Annona reticulata*	ANNOACEAE	T	Fr	Pw	skin diseases	65	0.76	75.58%
15	*Argyreia nervosa*	CONVOLVULACEAE	S	L	P	wounds	67	0.78	77.91%
16	*Aristolochia bracteolata*	ARISTOLOCHIACEAE	H	L	P	atopic dermatitis	80	1.86	93.02%
16	*Aristolochia bracteolata*	ARISTOLOCHIACEAE	H	L	P	skin Rashes	80	1.86	93.02%
17	*Aristolochia indica*	ARISTOLOCHIACEAE	S	W	P	psoriasis	69	0.8	80.23%

… *Contd.*

Table 2 Ethnomedicinal plants used for dermatological disorders with Use Reports, Use Value, and Fidelity Level (Contd.)

S.N.	Botanical Name	Family	Habit	Part	Method of preparation	Ailment	Use Reports (UR)	Use Value (UV = UR / 86)	FL%
18	*Azadirachta indica*	MELIACEAE	T	F	P	acne	32	0.9	37.21%
18	*Azadirachta indica*	MELIACEAE	T	Fr	O	skin conditions	45	0.9	52.33%
19	*Bacopa monnieri*	SCROPHULACEAE	H	W	P	alopecia	48	0.56	55.81%
20	*Barleria prionitis*	ACANTHACEAE	S	F	P	vitiligo	67	0.78	77.91%
21	*Bombax ceiba*	BOMBACACEAE	T	F	P	acne	67	0.78	77.91%
22	*Breynia vitisidea*	PHYLLANTHACEAE	S	Fr	P	dandruff	59	0.69	68.60%
23	*Bridelia retusa*	EUPHORBIACEAE	T	Fr	J	exfoliant	60	0.7	69.77%
24	*Butea superba*	FABACEAE	Cl	R	P	eczema	67	0.78	77.91%
25	*Byttneria herbacea*	MALVACEAE	H	L	P	acne	55	1.36	63.95%
25	*Byttneria herbacea*	MALVACEAE	H	Fr	J	skin regeneration	62	1.36	72.09%
26	*Cardiospermum helicacabum*	SAPINDACEAE	Cl	Fr	P	burn injuries	67	0.78	77.91%
27	*Caryota urens*	ARACACEAE	T	N	Pw	dandruff	78	0.91	90.70%
28	*Catheranthus pusillus*	APOCYNACEAE	H	Fr	P	warts	70	0.81	81.40%
29	*Cayratia pedata*	VITACEAE	S	R	P	psoriasis	72	0.84	83.72%
30	*Celosia argentea*	AMARANTHACEAE	H	R	P	wounds	72	0.84	83.72%
31	*Chloroxylon swetenia*	RUTACEAE	T	SB	D	skin rejuvenation	53	0.62	61.63%
32	*Cleistanthus collinus*	PHYLLANTHACEAE	T	L	P	interdigital ulcers	62	0.72	72.09%
33	*Cleome rutidosperma*	CLEOMACEAE	H	L	P	skin disease	52	0.6	60.46%
34	*Clitoria ternatea*	FABACEAE	Cl	F	D	genital injuries	15	0.17	17.44%
35	*Cochlospermum religiosum*	BIXACEAE	T	L	D	folliculitis	33	0.38	38.37%
36	*Coldenia procumbens*	BORAGINACEAE	H	L	P	leucoderma	42	0.49	48.84%
37	*Commelina longifolia*	COMMELINACEAE	H	W	P	ichthyosis	34	0.4	39.53%
38	*Crinum asiaticum*	AMARYLLIDACEAE	H	F	P	leucoderma	44	0.51	51.16%
39	*Crotalaria pallida*	FABACEAE	S	F	P	cracked heels	60	0.7	69.77%
40	*Cryptolepis buchananii*	APOCYNACEAE	S	SL	G	foot Cracks	43	0.5	50.00%
41	*Cycas circinalis*	CYCADACEAE	T	Ov	P	wounds	62	1.09	72.09%
41	*Cycas circinalis*	CYCADACEAE	T	SL	P	foot diseases	32	1.09	37.21%
42	*Cynanchum annulrium*	APOCYNACEAE	T	R	D	skin diseases	43	0.5	50.00%
43	*Datura metal*	SOLANACEAE	H	Fr	P	psoriasis	43	0.5	50.00%
44	*Diospyros chloroxylon*	EBANACEAE	T	L	P	psoriasis	72	0.84	83.72%
45	*Ecbolium viride*	ACANTHACEAE	S	W	P	skin diseases	49	0.57	56.98%
46	*Eclipta prosrata*	ASTERACEAE	H	L	P	interdigital dermatitis	57	0.66	66.28%
47	*Elephantopus scaber*	ASTERACEAE	H	L	P	psoriasis	56	0.65	65.12%
48	*Emilia sonchifolia*	ASTERACEAE	H	W	P	sores	62	0.72	72.09%
49	*Ensete glaucum*	MUSACEAE	H	Fr	Pw	lichen planus	37	0.43	43.02%
50	*Ficus benghalensis*	MORACEAE	T	SL	P	cracked heels	67	0.78	77.91%
51	*Ficus hispida*	MORACEAE	T	L	P	leucoderma	65	0.76	75.58%
52	*Getonia floribunda*	COMBRETACEAE	S	R	Pw	wounds and injuries	82	1.35	95.35%
52	*Getonia floribunda*	COMBRETACEAE	S	F	Pw	dark Spots	34	1.35	39.53%
53	*Gloriosa superba*	COLCHICACEAE	H	R	P	skin problems	66	0.77	76.74%
54	*Grangea maderaspatana*	ASTERACEAE	H	F	P	acne	49	0.57	56.98%
55	*Heliotropium indicus*	BORAGINACEAE	H	L	J	cuts and wounds	56	0.65	65.12%
56	*Hibiscus vitifolius*	MALVACEAE	S	L	P	wounds and injuries	57	0.66	66.28%
57	*Hiptage benghalensis*	MALPIGHIACEAE	Cl	R	P	vitiligo	47	0.55	54.65%
58	*Holoptelea integrifolia*	ULMACEAE	T	L	P	wounds	59	0.69	68.60%
59	*Ichnocarpus frutescens*	APOCYNACEAE	S	L	P	skin diseases	59	0.69	68.60%
60	*Impatiens balsamina*	BALSAMINACEAE	H	F	P	lamellar ichthyosis	69	0.8	80.23%
61	*Jatropha curcas*	EUPHORBIACEAE	S	W	J	eczema	57	0.66	66.28%

… *Contd.*

Table 2 Ethnomedicinal plants used for dermatological disorders with Use Reports, Use Value, and Fidelity Level (Contd.)

S.N.	Botanical Name	Family	Habit	Part	Method of preparation	Ailment	Use Reports (UR)	Use Value (UV = UR / 86)	FL%
62	*Lagerstroemia parviflora*	LYTHRACEAE	T	L	Pw	psoriasis	77	0.9	89.53%
63	*Lantana camara*	VERBENACEAE	S	L	P	wounds	56	0.65	65.12%
64	*Lawsonia inermis*	LYTHRACEAE	S	L	P	vitiligo	67	0.78	77.91%
65	*Leptadenia reticulata*	APOCYNACEAE	H	L&R	P	trichogenic activity	46	0.53	53.49%
66	*Madhuca longifolia*	SAPOTACEAE	T	N	O	seborrheic dermatitis	67	0.78	77.91%
67	*Mangifera indica*	ANACARDIACEAE	T	Fr	P	vitiligo	78	0.91	90.70%
68	*Manihot esculenta*	EUPHORBIACEAE	S	Rh	P	heel fissures	82	0.95	95.35%
69	*Melia azedarach*	MELIACEAE	T	F	P	rashes	56	0.65	65.12%
70	*Naringi crenulata*	RANUNCULACEAE	T	L	P	eczema	82	0.95	95.35%
71	*Ocimum americanum*	LAMIACEAE	H	L	P	skin desquamation	67	0.78	77.91%
72	*Passiflora foetida*	PASSIFLORACEAE	Cl	F	P	skin pigmentation	56	0.65	65.12%
73	*Pentapetes phoenicea*	MALVACEAE	H	F	P	acne	65	0.76	75.58%
74	*Phyllanthus emblica*	PHYLLANTHACEAE	T	Fr	J	hair Growth	67	0.78	77.91%
75	*Plumbago zeylanica*	PLUMBAGINACEAE	S	SB	J	vitiligo	79	0.92	91.86%
76	*Polyalthea suberosa*	ANNOACEAE	S	SB	D	hair Loss	76	0.88	88.37%
77	*Pongamia pinnata*	FABACEAE	T	N	P	lichen planus	34	0.4	39.53%
78	*Prosopis cineraria*	FABACEAE	T	SB	D	skin desquamation	56	0.65	65.12%
79	*Pueraria tuberosa*	FABACEAE	S	L	P	psoriatic lesions	78	0.91	90.70%
80	*Ricinus communis*	EUPHORBIACEAE	T	SB	P	burns	70	0.81	81.40%
81	*Semecarpus anacardium*	ANACARDIACEAE	T	N	P	eczema	80	1.47	93.02%
81	*Semecarpus anacardium*	ANACARDIACEAE	T	Fr	G	foot Injuries	46	1.47	53.49%
82	*Senna alata*	FABACEAE	S	L	P	psoriasis	78	0.91	90.70%
83	*Senna occidentalis*	FABACEAE	H	N	P	eczema	78	0.91	90.70%
84	*Sesamum indicum*	PEDALIACEAE	H	L	P	urticaria	22	0.26	25.58%
85	*Solanum incanum*	SOLANACEAE	S	Fr	P	alopecia	48	0.56	55.81%
86	*Solanum torvum*	SOLANACEAE	S	Fr	J	alopecia areata	77	0.9	89.53%
87	*Sonchus oleraceus*	ASTERACEAE	H	R	P	eczema	69	0.8	80.23%
88	*Stachytarpheta jamaicensis*	VERBENACEAE	H	W	P	psoriasis	62	0.72	72.09%
89	*Tectona grandis*	LAMIACEAE	T	F	P	acne	45	0.52	52.33%
90	*Terminalia arjuna*	COMBRETACEAE	T	L	P	dandruff	47	0.55	54.65%
91	*Terminalia pendula*	COMBRETACEAE	T	L	P	dermatitis	78	0.91	90.70%
92	*Torenia crustacea*	LINDERNIACEAE	H	L	D	skin irritation	67	0.78	77.91%
93	*Trichosanthus bracteata*	CUCURBITACEAE	Cl	R	P	psoriasis	67	0.78	77.91%
94	*Typhonium trilobatum*	ARACEAE	H	L	Ex	eczema	66	0.77	76.74%
95	*Vitex pinnata*	LAMIACEAE	T	SB	P	wounds and injuries	78	0.91	90.70%
96	*Zingiber roseum*	ZINGIBERACEAE	H	Rh	Pw	psoriasis	68	0.79	79.07%

Legend (Abbreviations):
Habit: H = Herb, S = Shrub, T = Tree, Cl = Climber
Part: L = Leaf, R = Root, F = Flower, Fr = Fruit, SL = Stem Latex, SB = Stem Bark, Rh = Rhizome, N = Nut, W = Whole Plant, Ov = Ovules, L&R = Leaf & Root, Ov-Ovule.
Method of Preparation: P = Paste, D = Decoction, J = Juice, O = Oil, G = Gum, Ex = Extract, Pw = Powder

Informant consensus factor (ICF)

ICF values for all dermatological categories were exceptionally high (0.98-1.00), indicating strong agreement among informants on plant selection for specific conditions (Table 3). Perfect consensus (ICF = 1.00) was observed for ailments such as atopic dermatitis, blisters, boils, dark spots, folliculitis, rashes, skin irritation, and warts. Major ailments, including acne, dandruff, eczema, psoriasis, and wounds, also recorded very high agreement (ICF = 0.99). These values demonstrate a well-preserved and culturally coherent ethnomedicinal tradition.

Discussion

Traditional knowledge continues to play an essential role in the management of dermatological disorders

Table 3 — ICF values across dermatological ailment categories

Ailment category	NUR	NT	ICF
Acne	313	6	0.99
Alopecia Disorders	173	3	0.99
Atopic Dermatitis	80	1	1
Blisters & Carbuncles	23	1	1
Boils	67	1	1
Burns	137	2	0.99
Foot Skin Disorders	121	3	0.98
Cracked Heels	127	2	0.99
Wounds & Injuries	798	12	0.99
Dandruff	184	3	0.99
Dark Spots	34	1	1
Dermatitis	155	2	0.99
Eczema	499	7	0.99
Exfoliant	60	1	1
Folliculitis	33	1	1
Genital Injuries	15	1	1
Hair Disorders	231	4	0.99
Heel Fissures	82	1	1
Ichthyosis Disorders	103	2	0.99
Interdigital Dermatitis	57	1	1
Interdigital Ulcers	62	1	1
Hypopigmentation Disorders	560	9	0.99
Lichen Planus	136	3	0.99
Macules	67	1	1
Psoriasis Disorders	788	12	0.99
Rashes	56	1	1
Scalp Inflammation	42	1	1
Seborrheic Dermatitis	67	1	1
Skin Conditions	94	2	0.99
Keratinization Disorders	123	2	0.99
Skin Diseases	268	5	0.99
Skin Irritation	67	1	1
Skin Pigmentation	56	1	1
Skin Problems	66	1	1
Skin Rashes	80	1	1
Skin Regeneration	62	1	1
Skin Rejuvenation	53	1	1
Sores	62	1	1
Urticaria	22	1	1
Warts	70	1	1

among tribal communities, particularly in areas where access to modern healthcare is limited. Understanding the demographic profile of informants is therefore important for interpreting how this knowledge is acquired, practiced, and transmitted across generations. In the present study, ethnomedicinal knowledge was largely retained by elderly, predominantly illiterate male healers, a pattern that has been widely reported in ethnobotanical and ethnodermatological investigations from tribal regions of India, including Andhra Pradesh[15,16]. The active contribution of the Savara, Konda Dora, and Jatapu communities further supports earlier reports recognizing these tribes as important custodians of traditional medicinal knowledge in the Eastern Ghats[17,18]. However, the gradual decline in oral knowledge transmission, coupled with changing socio-cultural practices, highlights the need for systematic documentation and preservation of this valuable heritage.

The present investigation recorded 102 medicinal plant species belonging to 96 genera and 49 families used in the treatment of dermatological disorders, demonstrating the rich ethnomedicinal diversity of Parvathipuram Manyam District. Herbs and trees constituted the dominant growth forms, suggesting that readily available plant resources continue to meet local healthcare needs. Comparable observations have been reported from Odisha and other parts of the Eastern Ghats, where abundant and easily accessible species are widely used in traditional treatment practices[19-21]. Families such as Fabaceae, Asteraceae, Apocynaceae, and Malvaceae were well represented, reflecting both their ecological abundance and the presence of phytochemically active compounds known for antimicrobial, anti-inflammatory, and wound-healing properties[22]. Most medicinal plants were associated with a single dermatological disorder, whereas species such as *Azadirachta indica*, *Aristolochia bracteolata*, and *Semecarpus anacardium* were employed for multiple skin ailments. The predominance of leaf-based remedies and paste preparations also indicates a preference for easily available plant material and topical formulations, practices that support sustainable harvesting and facilitate direct application to affected skin[23].

The diversity of dermatological conditions treated by the tribal communities reflects their extensive practical knowledge of plant-based healthcare. Wounds, injuries, and psoriasis were represented by the highest number of medicinal plant species, which agrees with previous reports emphasizing the widespread use of herbal remedies for inflammatory and infectious skin diseases[24]. The therapeutic value of many of these plants is supported by phytochemical studies demonstrating the presence of flavonoids, phenolic compounds, and tannins with antioxidant, antimicrobial, and anti-inflammatory activities[25]. Quantitative ethnobotanical indices further strengthened the reliability of the documented knowledge. High Use Values recorded for *Aristolochia bracteolata*, *Semecarpus anacardium*,

and *Byttneria herbacea* indicate their widespread acceptance and frequent utilization within the study communities[20,26]. Likewise, very high Fidelity Levels observed for *Ageratum conyzoides*, *Getonia floribunda*, and *Manihot esculenta* demonstrate their consistent use for particular dermatological disorders, whereas moderate and lower FL values suggest comparatively broader or more variable therapeutic applications[13,27].

The exceptionally high Informant Consensus Factor (ICF = 0.98–1.00) recorded across all dermatological categories reflects a remarkable level of agreement among traditional healers regarding the selection of medicinal plants[28]. Complete consensus for conditions such as atopic dermatitis, boils, blisters, folliculitis, and skin rejuvenation further indicates that these remedies are deeply rooted in local healthcare practices and may represent promising candidates for detailed phytochemical and pharmacological investigations[29,30]. Overall, the findings demonstrate that the tribal communities of Parvathipuram Manyam District possess a rich body of ethnomedicinal knowledge for the treatment of skin disorders. Documenting and conserving this knowledge is essential not only for safeguarding the region's biocultural heritage but also for identifying medicinal plant species with potential value in the development of future dermatological therapies.

Conclusion

This study documents the rich ethnomedicinal knowledge of tribal communities in Parvathipuram Manyam District, recording 102 plant species used to treat 41 dermatological ailments. Herbs and trees predominated, leaves were the most utilized plant part, and paste preparations dominated topical applications. High Use Values, Fidelity Levels, and Informant Consensus Factors highlight culturally trusted species such as *Aristolochia bracteolata*, *Semecarpus anacardium*, and *Getonia floribunda*, reflecting strong healer agreement and therapeutic reliability. The findings underscore the scientific and ethnopharmacological significance of local dermatological remedies and identify priority species for future phytochemical and pharmacological studies. Urgent documentation and conservation of this knowledge are essential to preserve biocultural heritage and support the development of novel plant-based therapies.

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Author Contributions

JRV: Conceptualization; Field investigation; Data curation; Formal analysis; Writing – original draft. SSB: Resources; Plant identification verification. PKRK: Review and editing; Manuscript revision. All authors reviewed and approved the final manuscript.

Conflict of Interest

The author declares that there is no competing or conflict of interests related to the research, authorship, or publication of this manuscript.

Ethics statement

The ethnobotanical survey was conducted in accordance with accepted ethical guidelines for research involving human participants and indigenous traditional knowledge holders.

Informed Consent

Prior informed consent was obtained from all participants before collecting ethnobotanical information and documenting traditional knowledge.

Use of Artificial Intelligence (AI)

The authors used AI-assisted language tools for English language editing, grammatical improvement, and Hindi translation of the title, abstract, affiliations, and keywords. The AI tools were used only to improve the language and presentation of the manuscript. The authors take full responsibility for the accuracy, integrity, originality, and final content of the manuscript.

Data availability

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

References

1 Breijyeh Z & Karaman R, Antibacterial activity of medicinal plants and their role in wound healing, *Future J Pharm Sci*, 10 (2024) 68. https://doi.org/10.1186/s43094-024-00634-0

2 Fabricant D S & Farnsworth N R, The value of plants used in traditional medicine for drug discovery, *Environ Health Perspect*, 109 (Suppl 1) (2001) 69-75. https://doi.org/10.1289/ehp.01109s169

3 Friedman J, Yaniv Z, Dafni A & Palewitch D, A preliminary classification of the healing potential of medicinal plants, based on rational analysis of an ethnopharmacological field survey among Bedouins in the Negev Desert, *J Ethnopharmacol*, 16 (2-3) (1986) 275-287. https://doi.org/10.1016/0378-8741(86)90094-2

4 Gamble J S & Fischer C E C, *Flora of the Presidency of Madras*, Vols I-III (West, Newman & Adlard, London), 1915-1936.

5 Sikarwar R L S, Kushwaha M, Mukherjee P, Mishra T, Vyas M K, *et al.*, Erosion of ethnobotanical knowledge: Drivers, consequences and conservation strategies- A systematic review, *J Anim Environ*, 18 (2s) (2026) 292-299.

6 Giday M, Asfaw Z, Elmqvist T & Woldu Z, An ethnobotanical study of medicinal plants used by the Zay people in Ethiopia, *J Ethnopharmacol*, 85 (1) (2003) 43-52.

7 Heinrich M, Ankli A, Frei B, Weimann C & Sticher O, Medicinal plants in Mexico: Healers' consensus and cultural importance, *Soc Sci Med*, 47 (11) (1998) 1859-1871. https://doi.org/10.1016/S0277-9536(98)00181-6

8 International Society of Ethnobiology, *International Society of Ethnobiology Code of Ethics* (*with 2008 additions*) (International Society of Ethnobiology), 2006.

9 Bhat P, Hedge G R, Hedge G & Mulgund G S, Ethnomedicinal plants to cure skin diseases – An account of the traditional knowledge in the coastal parts of Central Western Ghats, Karnataka, India, *J Ethnopharmacol*, 151 (1) (2014) 493-502. https://doi.org/10.1016/j.jep.2013.10.062

10 Mukherjee P K, Maity N, Nema N K & Sarkar B K, Bioactive compounds from natural resources against skin aging, *Phytomedicine*, 19 (1) (2011) 64-73. https://doi.org/10.1016/j.phymed.2011.10.003

11 Tungmunnithum D, Thongboonyou A, Pholboon A & Yangsabai A, Flavonoids and other phenolic compounds from medicinal plants for pharmaceutical and medical aspects: An overview, *Medicines*, 5 (3) (2018) 93.

12 Naidu B V A R, Swamy N S & Reddi T V V S, Ethnomedicine for cuts and wounds by the tribes of Srikakulam district, Andhra Pradesh, India, *J Non Timber For Prod*, 25 (3) (2018) 137-140. https://doi.org/10.54207/bsmps2000-2018-ZQ90SE

13 Panghal M, Arya V, Yadav S, Kumar S & Yadav J P, Indigenous knowledge of medicinal plants used by Saperas community of Khetawas, Jhajjar District, Haryana, India, *J Ethnobiol Ethnomed*, 6 (1) (2010) 4. https://doi.org/10.1186/1746-4269-6-4

14 Policepatel S S & Manikrao V G, Ethnomedicinal plants used in the treatment of skin diseases in Hyderabad Karnataka region, Karnataka, India, *Asian Pac J Trop Biomed*, 3 (2013) 882-886.

15 Phillips O & Gentry A H, The useful plants of Tambopata, Peru: I. Statistical hypotheses tests with a new quantitative technique, *Econ Bot*, 47 (1) (1993) 15-32. https://doi.org/10.1007/BF02862203

16 Pradhan J, Nayak S & Bindhani B K, Evaluation of the usage of ethnobotanical medicinal plants in the treatment of skin diseases in India, *World J Pharm Sci Res*, 5 (2) (2026) 621-643.

17 Prasanthi S, Suneetha J & Seetharami R T V V, Ethno-medicine for gastrointestinal diseases by the Savaras of Andhra Pradesh, *Med Plant Res*, 7 (2) (2017) 7-18. doi: 10.5376/mpr.2017.07.0002

18 Padal S, Raju J B & Chandrasekhar P, Traditional knowledge of Konda Dora tribes, Visakhapatnam District, Andhra Pradesh, India, *IOSR J Pharm*, 3 (2013) 22-28.

19 Pullaiah T, *Flora of Andhra Pradesh*, Revised edition (Scientific Publishers, Jodhpur), 1997-2018.

20 Rai P K & Lalramnghinglova H, Ethnomedicinal plants of India with special reference to an Indo-Burma hotspot region: An overview, *Ethnobot Res Appl*, 9 (2011) 379-420.

21 Ram A, Bhakshu L M & Raju R V, *In vitro* antimicrobial activity of certain medicinal plants from Eastern Ghats, India, used for skin diseases, *J Ethnopharmacol*, 90 (2004) 353-357.

22 Mohapatro M, Panda S K, Behera M & Mohanty B K, Ethnomedicinal plants used against skin diseases by the tribal of Ganjam district of Odisha, India, *J Emerg Technol Innov Res*, 6 (6) (2019) 611-623.

23 Seshagiri Rao R & Hara Sreeramulu, *Flora of Srikakulam District, Andhra Pradesh, India*, (Department of Botany, Government College, Srikakulam) 1986.

24 Tomar J B, Bishnoi S K & Saini K K, Healing the tribal way: Ethno-medicinal formulations used by the tribes of Jharkhand, India, *Int J Med Aromatic Plants*, 2 (1) (2012) 97-105.

25 Singh K, Chandu K D, Thattantavide A, Gour V S, Gairola S, *et al*., Indigenous ecological knowledge and the usage of medicinal plants in Polavaram Mandal of Andhra Pradesh, India, *Ethnobot Res Appl*, 29 (2024) 1-27.

26 Tardío J & Pardo de Santayana M, Cultural importance indices: A comparative analysis based on the useful wild plants of Southern Cantabria (Northern Spain), *Econ Bot*, 62 (1) (2008) 24-39. DOI:10.1007/s12231-007-9004-5

27 Trotter R T & Logan M H, Informant consensus: A new approach for identifying potentially effective medicinal plants, In: *Plants in Indigenous Medicine and Diet*, Etkin N L (Ed.), (Redgrave Publishing), (1986) 91-112.

28 Umair M, Altaf M & Abbasi A M, An ethnobotanical survey of indigenous medicinal plants in Hafizabad district, Punjab, Pakistan, *PLoS One*, 12 (6) (2017) e0177912. https://doi.org/10.1371/journal.pone.0177912

29 Venkaiah M, *Studies on Vegetation and Flora of Vizianagaram District, Andhra Pradesh*, (Andhra University Press, Visakhapatnam), 2004.

30 World Health Organization, *Traditional Medicine Strategy 2002–2005* (World Health Organization, Geneva), 2002.