



ETHNOBOTANICAL APPROACH TO DERMATOLOGICAL PROBLEMS: A CASE STUDY OF BLOCK CHINYALISAUR, UTTARKASHI, UTTARAKHAND

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Abstract

Skin, an outermost largest protective organ has direct contact with the external environment, which is essential for overall health and homeostasis. Common dermatological problems like eczema, acne, psoriasis, and fungal infections can cause discomfort and affect appearance. Poor skin health may also signal underlying issues such as allergies, nutritional deficiencies, or systemic diseases. The study aims to explore and document plant species used frequently by the indigenous community of Chinyalisaur block in the treatment of various dermatological issues. Periodic field surveys were conducted in the study area and the data were collected using semi structured questionnaire, and group discussions. Mainly aged local inhabitants and traditional herbal healers (Vaidyas) were interviewed during door-to-door surveys in Hindi and local dialect (Garhwali). A total of 54 plant species belonging to 38 families were documented, used in the treatment of several dermatological problems, among these Asteraceae and Rosaceae were found most dominating. Among the reported species 45% herbs, followed by Shrubs (24%), Trees (16%), climbers (7%) and creepers (2%). The plant parts commonly used in dermal care include leaves, bark, roots, bulbs, flowers, gum, resin, rhizomes, seeds, and tubers. The study highlights a significant reliance on leaves (approximately 30%), roots (around 18%), and bark (about 11%) for dermal treatments. The mode of preparation of herbal remedies includes paste (37%), powder (22%), directly applied (16%), decoction (11%), plant juice (9%) and steam of plant parts (5%). Major dermatological ailments found in surveyed study area were pimples, acne, skin itching and redness, black and white heads, dry skin, fungal infections, brown rough patches, pigmentation, inflammation, discoloration, wound and cuts, leprosy, rheumatism, leukorrhea and eczema. This study provides valuable information about the plants used by indigenous people of the study area for dermatological problems. The study also shows that local communities still have impressive traditional knowledge and this can be a link to advanced science for the preparation of drugs. Incorporating this traditional knowledge into daily life can help prevent harmful dermal conditions.

Keywords: Skin disease, Ethnomedicinal plants, Paste, Dermatology, Cosmetics, Upper Himalayan Region

Introduction

Skin is the largest organ of human body and is an outermost protective layer which protects against various germs, maintain body temperature and enable tactile sensation. It also guards the internal organs, bone, muscles and blood vessels. The skin has three consecutive layering, Epidermis (The top layer), Dermis (The middle layer) and Hypodermis (The inner layer). It is the part which directly comes to the contact with outer environment and create first line defense, due to which skin related ailments are common and effects all age groups. Skin diseases are the fourth leading cause of non fatal disease burden, highlighting the need for finding ways to manage them (Seth et al., 2017). However, Most of the skin diseases are caused by bacteria, fungi, virus and parasites, these are classified as contagious and non- contagious diseases (Malik et al.,2019).

In tropical countries skin related conditions or dermatological infections are common as most of the population live in underdeveloped areas with poor sanitation and inattentiveness to hygienic food habits (Sharma et al., 2014; Mowobi et al., 2016; Sharif et al.,2018). Although in the Indian subcontinent, traditional medicinal system along with several cultural and socio-religious practices play a major role in healthcare (Anand et al., 2022). India's longstanding tradition of utilizing medicinal plants for primary healthcare is well-documented in ancient texts such as the Charak Samhita, which lists 340 herbal medicines (Mehra et al., 2014). Traditional healing practices, including Ayurveda, Unani and Siddha are still widely used. Nowadays people rely on herbal medicine because of providing cost effective solution with least side effects, fruitful results and availability. The increasing interest in herbal medicine reflects a broader recognition of its potential to complement conventional treatments for skin diseases (Patel, 2021).

In the northwest Indian Himalayas, Uttarakhand is considered for its enormous diversity and rich traditional knowledge system. Alongside, the diverse climatic conditions of state, poor hygiene, lack of awareness and limited medical facilities, contribute to high chances of conditions like pimples, boils, eczema, dermatitis, fungal infections, acne, psoriasis etc. These skin ailments not only cause physical discomfort but also impact the overall well-being of individuals. In various parts of Uttarakhand, mainly in hilly rural areas, people mostly rely on traditional medicinal practices for treating skin ailments. Indigenous communities have long used herbal remedies, rooted in Ayurveda and local folk medicine, to manage various skin conditions. Ethnomedicinal plants are vital in the treatment of skin disorders, highlighting their significance in both traditional healing practices and modern medical research. The literature search shows that several studies on ethnomedicinal plants have been done in the other parts of Uttarakhand state (Kala, 2011; Sharma et al., 2012; Rana et al., 2013; Kumar & Dangwal, 2018; Dangwal and Uniyal, 2020). The Kumaun Himalayan region, with its diverse plant species, supports folk medicine, with over two-thirds of the local population dependent on natural resources for food, fuel, and herbal remedies (Kapkoti et al., 2014). Uttarkashi district is the northern most part of Uttarakhand state has been overlooked in this context. However, few ethnomedicinal studies were carried out in this region (Monika et al.,2020; Devi et al.,2023). But, still detailed studies on skin related problems in Chinyalisaur block of Uttarkashi district were not undertaken. Therefore, The present study aims to explore, document and analyse traditional knowledge on medicinal plants used in the treatment of dermatological issues in Chinyalisaur block of Uttarkashi district of Uttarakhand.

Materials and Methods

Study area

Uttarkashi district lies in upper Himalayan region, contain varied geographical environment, climatic condition and topographical conditions due to which diverse range of vegetation and wild life occur in this region. The present study conducted in the Chinyalisaur block of Uttarkashi district (Uttarakhand, India), located between latitude 30.5344° N to 30.6144 °N and 78.2877°E to 78.3677°E longitude. The elevation ranges from around 765m to 2210m asl. The temperature reaches approximate 42°C in summer and dropping below 0°C in winters. The average rainfall in the Chinyalisaur block ranges from 750mm to 1150mm which varies with the altitudinal variation.

The total area covered by Chinyalisaur block is 294 km², consisting of 103 villages. The total population is 49,641 with 24,289 male population and 25,353 female population (source: euttaranchal.com). The demographic structure reflects predominantly rural with limited presence of semi-urban settlement, most of population lives in village and engaged in agricultural practices, livestock rearing, art and craft practices, deeply rooted with cultural believes and traditional knowledge practices. The local inhabitants depend on traditional herbal medicinal practices for well-being.

Data collection

The fieldwork was conducted during the autumn of 2024 and summer of 2025. Ethnomedicinal data regarding the Skin ailments were collected through semi structured interviews and group discussion. Alongside, general discussions on Ethno-dermatology, detailed information regarding plants used in dermal care, including their local names, the parts of plants utilized, and the methods and modes of application, healing time period of each species to specific ailment and also from they carried this precious knowledge were recorded. The survey comprised several consecutive visits, aimed at obtaining the maximum possible information about plants used in dermatological treatments. Information was gathered from the local community, including elders, shepherds, local traditional healers (Vaidyas) and individuals associated with Ayurvedic practices. Plant specimens or parts used for addressing dermatological ailments were collected for accurate taxonomic identification. This methodical approach ensured a thorough compilation of knowledge on the use of plants in dermal care, derived from diverse sources within the community. The gathered data serves as a foundation for ethnobotanical quantitative data analysis.

Plant Identification

The collected plants were identified by taxonomists and this identification was subsequently cross-verified using the local floras (Gaur, 1999; Pusalkar & Srivastava, 2018). This rigorous process ensured the accuracy and reliability of the plant's identification.

Quantitative data Analysis

Fidelity level (FL)

The FL value is calculated to determine the importance of species for selected purpose. The high FL value indicate the plants species is most preferred for selected purpose. FL can be calculated by the following formula (Friedmen et al., 1986).

$$FL = (N_p/N) \times 100$$

N_p- The number of informants that mention the use of a species for a specific purpose.

N- The total number of informants interviewed for a particular purpose.

Frequency of citation (FC)

Frequency of citation (FC) of each medicinal plant species is calculated using formula (Belayneh & Bussa, 2014).

$$FC (\%) = \text{No. of informants who cites the species} / \text{Total no. of informants} \times 100$$

Relative frequency of citation (RFC)

RFC is calculated by dividing the number of informants who mentioned the use of species by the total number of informants participating in the Survey. RFC ranges between 0 to 1. '0' when nobody referred the plant useful and '1' when all the informants suggest the plant as useful (Tardio and Pardo-De-Santayana, 2008).

$$RFC = FC/N$$

FC = Number of people site

N = Total number of informants

Results and Discussion**Socio-Demographic profile of Surveyed Area**

In the study, a total of 140 participants were interviewed during the survey, which included 69.3% males and females constituting the remaining 30.7%. The highest number of informants (34.3%) were aged 45-60 years, which indicates that older people were more experienced and knowledgeable about indigenous plant-based treatment. Educational attainment varied among participants with approximately 88% being literate and around 12% being illiterate. Informant categories were divided between local people and traditional health practitioners. Most of local people were involved in agriculture and livestock rearing while some were involved in other occupations. The experience levels among traditional health practitioners varied, with 18.9% having less than 5 years of experience, 24.3% having 5–10 years, 35.1% having 10–20 years, and 21.6% possessing more than 20 years of experience. (Table 1).

Table 1. Demographic structure of interviewed people of Surveyed area

Variable	Characteristics	No. of person (total N=140)	Percentage (%)
Gender	Male	97	69.3%
	Female	43	30.7%
Age	Less than 30 years	13	9.3%
	30-45 years	20	14.3%
	45-60 years	37	26.4%
	60-75 years	48	34.3%
	More than 75 years	22	15.7%
Education	Illiterate	17	12.1%
	Secondary	36	25.7%
	Senior secondary	42	30%
	Graduation	29	20.7%
	Post Graduation	16	11.4%
Informant category	Local people	103	73.6%
	Traditional health practitioners	37	26.4%
Experience of Traditional health practitioners	Less than 5 years	7	18.9%
	5-10 years	9	24.3%
	10-20 years	13	35.1%
	More than 20 years	8	21.6%

Percentage Dermatological ailments in the study area

Among 140 respondents, 85 (60.7%) were suffering with different types of dermatological issue. The study analyses dermatological problems across different age groups (10- 25 years, 25-50 years, 50-75 years) where they were further divided based on gender into male and female categories. The study revealed that group 46% males and 54% females were affected in 10-25 years of age but in 25- 50 years age group large number of females (60%) were affected with dermatological issues as compared to males (40%) (**Table 2**). Major dermatological ailments found in surveyed study area were pimples, acne, skin itching and redness, black and white heads, dry skin, fungal infections, brown rough patches, pigmentation, inflammation, discoloration, wound and cuts, leprosy, rheumatism, leukorrhea and eczema (**Plate A**).

Table 2: Percentage of different dermatological problems in different age groups.

Variable	Age group		Gender		Age Group		Gender		Age group		Gender	
Categories	10 – 25 Years		Male	Female	25 – 50 Years		Male	Female	50 – 75 Years		Male	Female
Persons with dermatological issue	37		17	20	30		12	18	18		9	9
Percentages (%)	43.5%		46%	54%	35.2%		40%	60%	21.3%		50%	50%

Plants diversity recorded for the treatment of dermatological issue

The traditional knowledge of curing various human dermatological issues by the indigenous community of Chinyalisaur block of Uttarkashi district had been recorded and presented in this study. A total of 54 plants were documented belonging to 38 families. Among all these families, Asteraceae and Rosaceae are among the most dominant ones, four species from each are being used in ethno-dermatology, followed by Rutaceae and Solanaceae (three species each), Cucurbitaceae, Pinaceae, Poaceae, Polygonaceae, Ranunculaceae and Zingiberaceae (Two species each) demonstrating their importance in the treatment of dermatological ailments (**Figure 4**). The various life forms of medicinal plants utilized by the local population indicate 45% herbs, followed by Shrubs (24%), Trees (16%), climbers (7%) and creepers (2%) (**Figure 2**). The dominant families such as Asteraceae, Rosaceae, and Rutaceae reflect their strong ecological adaptability and high preference by indigenous communities for treating various human ailments, consistent with findings from previous studies in different regions of Uttarakhand (Pala et al., 2012; Rawat et al., 2013; Balakrishan et al., 2024, Durgapal et al., 2024., Khanduri & Kairwan, 2024).

Medicinal plant parts used for the dermatological issues

The local people used various plant parts of specific species against different dermatological issues i.e., leaves, bark, roots, bulb, flower, gum, resin, rhizome, seed and tuber in the preparation of different medicines in different proportions. The study shows significant dependency on leaves (≈30%) in the treatment of dermatological issues, followed by roots (≈18%) and bark (≈11%). Lesser the plant parts used in the treatment show higher efficacy toward specific issues (**Figure 1**). As compared to other parts of plant, leaves are easy to collect and require less efforts in the preparation of herbal remedies. Leaves removed from plant cause less damage as compared to other parts like root, stem and seed affect plant severely (Kadir et al., 2013). Similar kinds of other studies reported that leaves are most utilized plant parts in the preparation of herbal medicines (Kumar et al.,2021; Rehman, 2023; Hussain et al., 2023; Dangwal et al.,2025).

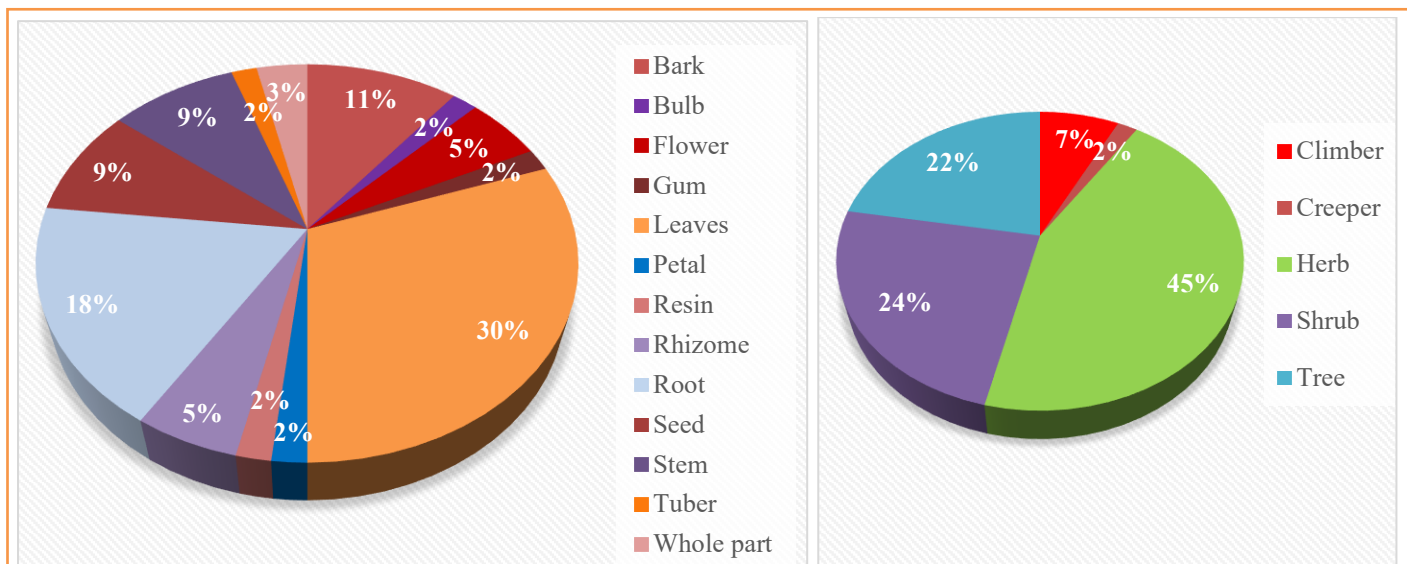


Figure 1: Proportion of different plant parts used in ethno-dermatology

Figure 2: Different life form used in ethno-dermatology

Mode of Utilization

During the survey, 54 medicinal plants were documented for treating various dermatological conditions. These plants were used in different forms, with paste being the most common mode of application (37%). Other frequently used forms included powder (22%), direct application (16%), decoction (11%), plant juice (9%), and steam from plant parts (5%) (Figure 3).

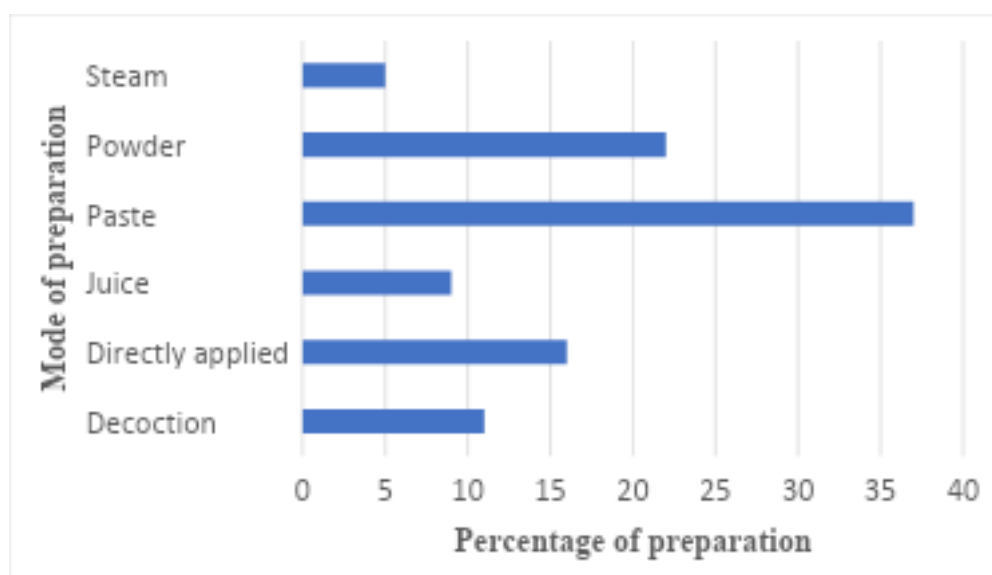


Figure 3: Percentage proportion of mode of application of medicinal plants in the study area

In the case of dermatological issues, most parts of plants were used externally such as paste, power steam from plant parts, while some were used internally in the mode of decoction and plant juice. The present study revealed that the preparation of paste from plant parts is most common and effective mode in which it is directly applied in the affected part of the skin, as also reported in other similar studies (Singh et al., 2017; Renu et al., 2023). Other studies have shown that decoction is the most preferred method for treating internal injuries and ailments (Bhatt et al., 2023; Rehman, 2023; Semwal et al., 2023; Durgpal et al., 2024).

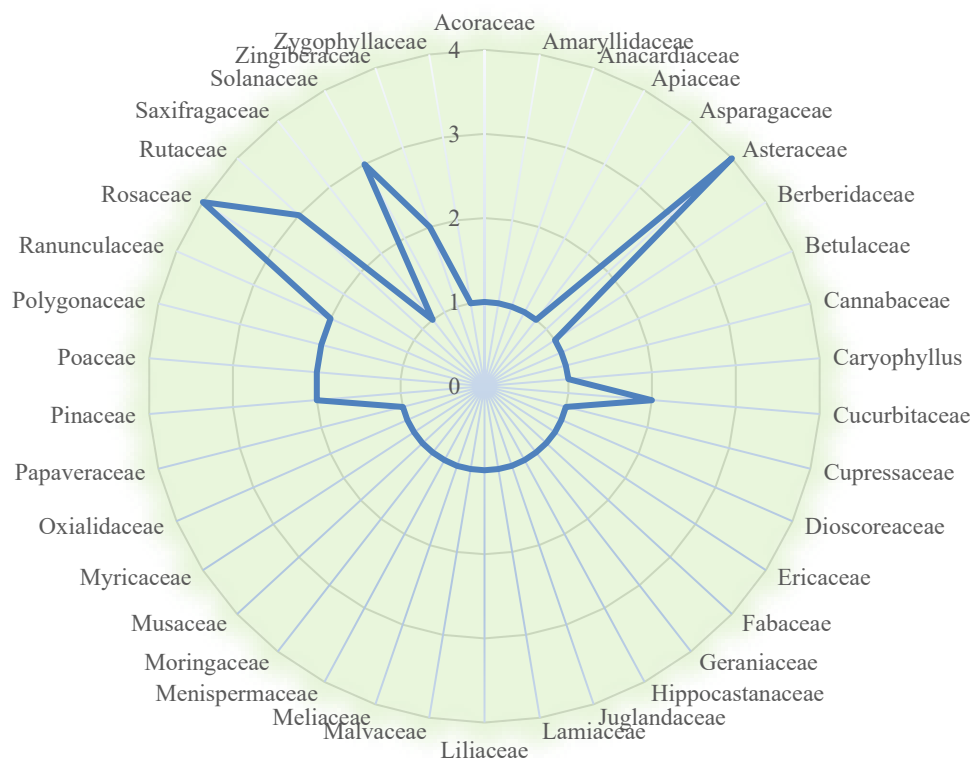


Figure 4: Number of ethno-dermatological plants from different families

Quantitative data

Fidelity level

The value of the fidelity level (FL) ranged from 100% to 40% (**Table 4**). A higher FL (Fidelity Level) value signifies greater usage and preference of a plant for treating skin ailments. FL values were classified into four classes. FL value for class one is 100% (Three species), Class two ranges from 99 to 80% (seventeen species), class three ranges from 79 to 60% (twenty-one species) and class four ranges from class 59 to 39% (thirteen species). In the present study, highest FL was represented by *Aloe barbadensis*, *Curcuma longa* and *Delphinium denudatum* (100%), and lowest value by *Argemone Mexicana* (39%). It indicates whether a plant is specifically used for a particular dermatological issue or is of lesser relevance in treating skin-related conditions.

Frequency Citation and Relative Frequency Citation

In the present study the value of frequency citation ranges from 112 to 29. *Aloe barbadensis* was cited by most of the informants (112) while *Solanum nigrum* by least informants (31). Relative frequency citation (RFC) ranged from 0.208 to 0.800. The recoded data further classified into 4 groups: RFC 0.200 to 0.350 (nine species); RFC 0.351 to 0.500 (twenty-four species); RFC 0.501 to 0.650 (10 species); RFC 0.651 to 0.800 (11 species) (**Table 4**). The highest RFC value recorded for *Aloe barbadensis* (0.800) finds its use in the treatment of dermal injuries, smoothing skin, glowing skin, pimples, wound healing, removing black and white heads. Whereas the lowest RFC value reported for *Solanum nigrum* is used in the treatment of psoriasis, dermatitis. The group shows higher RFC values indicating their great pharmacological and ethno-dermatological importance.

PLATE A: Some of the dermatological issues captured from study area (Photos by P. Kairwan)

Table 3: Plants used in Dermatological ailments by the indigenous people of the study area

S.No.	Botanical name	Local name	Family name	Part uses	Ethnobotanical uses for Dermatological ailments
1	<i>Aconitum balfourii</i> Stapf	Mitha vish	Ranunculaceae	Root	Rheumatism
2	<i>Acorus calamus</i> L.	Bach	Acoraceae	Rhizome	Improving rashes, detoxify skin
3	<i>Aesculus indica</i> Hook	Kanor	Hippocastanaceae	Seed	Rheumatism
4	<i>Ageratina adenophora</i> (Spreng) R.M. King & H. Rob.	Basya	Asteraceae	Leaves, stem	Filling cut and wounds, pimple and acne
5	<i>Allium cepa</i> L.	Piyaz	Amaryllidaceae	Bulb	Treatment of burn and dandruff
6	<i>Aloe barbadensis</i> Mill.	Ghratkumari, Aloe vera	Liliaceae	Leaves	Enhance the healing process of dermal injuries, smoothing skin, glowing skin, pimples, wound healing, removing black and white heads
7	<i>Argemone Mexicana</i> L.	Kandra	Papaveraceae	Leaves, Stem	Leprosy
8	<i>Asperagus adscendene</i> roxb.	Jhirna	Asparagaceae	Stem	Treatment of burn skin, providing moisturizer, improve body weight.
9	<i>Berberis aristata</i> DC.	Kingod	Berberidaceae	Root	Discoloration of skin
10	<i>Bergenia stracheyi</i> (Hook.f. & Thomson) Engl.	Pashnbhed	Saxifragaceae	Rhizome	Boils, wound filling, Anti-inflammatory
11	<i>Betula utilis</i> D.Don	Bhojpatra	Betulaceae	Bark, Stem	Wound filling
12	<i>Calendula officinalis</i> L.	Genda	Asteraceae	Flower	Wound healing, anti-aging, soothing, acne fighting benefit, Reducing hyperpigmentation
13	<i>Cannabis sativa</i> L.	Bhang	Cannabaceae	Leaves	Wound and cuts healing
14	<i>Cedrus deodara</i> (Roxb. Ex Lamb.) G.Don	Deodar	Pinaceae	Leaves, Bark, Root	Rheumatism (Muscle pain), inflammation
15	<i>Cirus sinansis</i> (L.) Osbeck	Santra, Malta	Rutaceae	Fruit	Prevent chronic disease, skin moisturizer and remove tanning, prevent fine lines
16	<i>Cucumis sativa</i> L.	Kakdi	Cucurbitaceae	Fruit	Applied on dry skin make moisturizer, cool and smooth skin, remove eye puffiness
17	<i>Curcuma longa</i> L.	Haldi	Zingiberaceae	Root	Provide glowing skin. Prevent whitening, remove acne, pimple
18	<i>Cynodon dactylon</i> (L.) Pers.	Doob	Poaceae	Leaves	Burning sensation
19	<i>Delphinium denudatum</i> Wall ex. Hook.f. & Thoms.	Nirvishi	Ranunculaceae	Root	Wound filling
20	<i>Dianthus caryophyllus</i> L.	Karnashan	Caryophyllus	Flower	Remove skin irritation, swelling problems
21	<i>Dioscorea bulbifera</i> L.	Banalu	Dioscoreaceae	Tuber	Wound and cuts healing
22	<i>Diplocyclos palmatus</i> (L.) Jeffery	Shivlingi	Cucurbitaceae	Leaves	Anti-inflammatory
23	<i>Geranium gerardiana</i> (Wall. ex D.Don) Royle	Ratanjot	Geraniaceae	Root, Leaves	Eczema and skin Itching
24	<i>Grewia optiva</i> J.R. Drumn. Ex Burret	Bhimal	Malvaceae	Stem	Use as a herbal shampoo to treat dandruff
25	<i>Hedychium spicatum</i> Ham. ex Sm.	Van Haldi	Zingiberaceae	Rhizome	Inflammation
26	<i>Juglans regia</i> L. Var. kumaonia DC.	Akhrot	Juglandaceae	Fruit	Improve skin health, Glowing skin, treat eczema, skin cancer
27	<i>Juniperus communis</i> L.	Hapsa	Cupressaceae	Bark, Leaves	Leucorrhoea
28	<i>Lycopersicon esculentum</i> Mill.	Tamater	Solanaceae	Fruit	Acne and pore close, skin brighten, relieve skin irritation, anti-aging skin
29	<i>Melia azadrarch</i> L.	Bakain	Meliaceae	Leaves	Antiseptic, eczema, scabies
30	<i>Metha longifolia</i> (L.) Huds.	Pudina	Lamiaceae	Leaves	Rheumatism, Treat acne, Brightening skin, slow ageing, clear skin, reduced dandruff
31	<i>Moringa oleifera</i> Lam.	Sahajn	Moringaceae	Leaves, Flower	Rheumatism, cuts
32	<i>Mucuna pruriens</i> L. DC.	Kamch	Fabaceae	Seed	Cuts, Wound treat

33	<i>Murraya koenigii</i> L.Spreng	Karipatta	Rutaceae	Leaves	Inflammation, Itching
34	<i>Musa paradisiaca</i> L.	Kela	Musaceae	Fruit, Leaves	Remove acne, skin brighten, close skin pores, use for botox treatment
35	<i>Myrica esculenta</i> Bach. Ham. ex D. Don	Kafal	Myricaceae	Fruit	Good for skin allergic reaction, reduce headache, use in medicinal properties
36	<i>Oryza sativa</i> L.	Chawal	Poaceae	Seeds	Anti-bacterial properties, use as a face scrubber, prevent sun damage
37	<i>Oxalis corniculata</i> L.	Bhilmoru	Oxialidaceae	Leaves	Skin Burn, cure skin infection, help soothe the skin
38	<i>Picea smithiana</i> Stewart ex Brandis	Rai	Pinaceae	Resin	Cuts healing
39	<i>Pistacia integerrima</i>	Cacrasinghi	Anacardiaceae	Leaves	Skin infection
40	<i>Prunus cerasoides</i> Buch. Ham ex D.Don	Paiyaan	Rosaceae	Bark	Leprosy, Leucoderma, skin burn
41	<i>Prinsepia utilis</i> Royle	Bhaikal	Rosaceae	Bark, Seed	Wounds healing, Cuts
42	<i>Rhododendron arboreum</i> Sm.	Burans	Ericaceae	Whole parts	Eczema (skin allergy), dry, itchy, bumpy skin, help in prevent ageing, restore skin glow, protect from UV rays, moisturizer skin, prevent dehydration
43	<i>Rosa ribiginosa</i> L.	Gulab	Rosaceae	Petals	Calm redness, acne, eczema, heals wound
44	<i>Rubus occidentalis</i> L.	Kala hisalu	Rosaceae	Fruit	Reduce hyperpigmentation, remove skin allergies, appearance fine lines, make skin even tone
45	<i>Rumex hastatus</i> D.Don	Amedu	Polygonaceae	Whole parts	Treat cuts, wounds and burns
46	<i>Rumex nepalensis</i> Spreng.	Jangali Palak	Polygonaceae	Root	Pimple treatment
47	<i>Salinum vaginatum</i> C.B Clarke.	Bhutkesh	Apiaceae	Root	Rheumatism, skin inflammation
48	<i>Saussurea costus</i> (Falc.) Lipsch	Kuth	Asteraceae	Root	Reducing inflammation, dermatitis and moisturising
49	<i>Solanum nigrum</i> L.	Makai	Solanaceae	Leaves	Treat psoriasis, dermatitis
50	<i>Tanacetum dolichophyllum</i> (Kitam.) Kitam.	Guggul	Asteraceae	Bark, Gum	Acne treatment
51	<i>Tinospora cordifolia</i> (Wild). Miers	Giloy	Menispermaceae	Stem, Root	Skin disease, skin allergy
52	<i>Tribulus terrestris</i> L.	Gokhru	Zygophyllaceae	Seed	Skin cracks
53	<i>Withania somnifera</i> (L.) Dunal	Ashwagandha	Solanaceae	Root	Reduce aging of skin, soothe irritation
54	<i>Zanthoxylum armatum</i> DC.	Timur	Rutaceae	Bark	Wounds healing

Table 4: Quantitative Data Analysis of Plants used in Dermatological Ailments

SN	Botanical name	Local name	Habit	Fidelity level (FL)	Frequency citation (FC)	Relative frequency citation (RFC)
1	<i>Aconitum balfourii</i> Stapf	Mitha vish	Herb	60%	68	0.485
2	<i>Acorus calamus</i> L.	Bach	Herb	50%	50	0.357
3	<i>Aesculus indica</i> Hook	Kanor	Tree	40%	31	0.222
4	<i>Ageratina adenophora</i> (Spreng) R.M. King & H. Rob.	Basya	Shrub	41%	33	0.236
5	<i>Allium cepa</i> L.	Piyaz	Herb	75%	86	0.614
6	<i>Aloe barbadensis</i> Mill.	Ghrithkumari, Aloe vera	Shrub	100%	112	0.800
7	<i>Argemone Mexicana</i> L.	Kandra	Herb	39%	32	0.228
8	<i>Asperagus adscendene</i> roxb.	Jhirna	Shrub	50%	52	0.371
9	<i>Berberis aristata</i> DC.	Kingod	Shrub	60%	66	0.471
10	<i>Bergenia stracheyi</i> (Hook.f. & Thomson) Engl.	Pashnbhed	Herb	70%	85	0.607
11	<i>Betula utilis</i> D.Don	Bhojpatra	Tree	40%	30	0.214
12	<i>Calendula officinalis</i> L.	Genda	Herb	50%	51	0.364
13	<i>Cannabis sativa</i> L.	Bhang	Herb	60%	67	0.478
14	<i>Cedrus deodara</i> (Roxb. Ex Lamb.) G.Don	Deodar	Tree	70%	84	0.600
15	<i>Cirus sinansis</i> (L.) Osbeck	Santra, Malta	Tree	98%	104	0.742
16	<i>Cucumis sativa</i> L.	Kakdi	Climber	40%	32	0.228
17	<i>Curcuma longa</i> L.	Haldi	Herb	100%	98	0.700
18	<i>Cynodon dactylon</i> (L.) Pers.	Doob	Creeping	60%	69	0.492
19	<i>Delphinium denudatum</i> Wall ex. Hook.f. & Thoms.	Nirvishi	Herb	100%	107	0.765
20	<i>Dianthus caryophyllus</i> L.	Karnashan	Herb	88%	100	0.714
21	<i>Dioscorea bulbifera</i> L.	Banalu	Herb	47%	39	0.279
22	<i>Diplocyclos palmatus</i> (L.) Jeffery	Shivlingi	Climber	79%	74	0.529
23	<i>Geranium gerardiana</i> (Wall. ex D.Don) Royle	Ratanjot	Herb	60%	62	0.442
24	<i>Grewia optiva</i> J.R. Drumn. Ex Burret	Bhimal	Tree	70%	82	0.585
25	<i>Hedychium spicatum</i> Ham. ex Sm.	Van Haldi	Herb	83%	104	0.742
26	<i>Juglans regia</i> L. Var. kumaonia DC.	Akhrot	Tree	40%	36	0.258
27	<i>Juniperus communis</i> L.	Hapsa	Shrub	52%	51	0.365
28	<i>Lycopersicon esculentum</i> Mill.	Tamater	Herb	60%	67	0.478
29	<i>Melia azadrarch</i> L.	Bakain	Tree	77%	74	0.529
30	<i>Metha longifolia</i> (L.) Huds.	Pudina	Herb	87%	109	0.779
31	<i>Moringa oleifera</i> Lam.	Sahajn	Tree	40%	33	0.236
32	<i>Mucuna pruriens</i> (L.) DC.	Kamch	Climber	59%	54	0.386
33	<i>Murraya koenigii</i> (L.) Spreng	Karipatta	Shrub	61%	68	0.485
34	<i>Musa paradisiaca</i> L.	Kela	Herb	72%	86	0.614
35	<i>Myrica esculenta</i> Bach. Ham. ex D. Don	Kafal	Tree	80%	103	0.735
36	<i>Oryza sativa</i> L.	Chawal	Herb	61%	67	0.479
37	<i>Oxalis corniculata</i> L.	Bhilmoru	Herb	65%	69	0.493
38	<i>Picea smithiana</i> Stewart ex Brandis	Rai	Tree	60%	55	0.392
39	<i>Pistacia integerrima</i>	Cacrasinghi	Tree	70%	68	0.485
40	<i>Prunus cerasoides</i> Buch. Ham ex D.Don	Paiyaan	Tree	80%	50	0.357
41	<i>Prinsepia utilis</i> Royle	Bhaikal	Shrub	82%	52	0.372
42	<i>Rhododendron arboreum</i> Sm.	Burans	Shrub	85%	74	0.529
43	<i>Rosa ribiginosa</i> L.	Gulab	Shrub	60%	87	0.622

44	<i>Rubus occidentalis</i> L.	Kala hisalu	Shrub	83%	104	0.742
45	<i>Rumex hastatus</i> D.Don	Amedu	Shrub	87%	107	0.765
46	<i>Rumex nepalensis</i> Spreng.	Jangali Palak	Herb	81%	52	0.371
47	<i>Salinum vaginatum</i> C.B Clarke.	Bhutkesh	Herb	80%	65	0.465
48	<i>Saussurea costus</i> (Falc.) Lipsch	Kuth	Herb	60%	85	0.607
49	<i>Solanum nigrum</i> L.	Makai	Herb	70%	29	0.208
50	<i>Tanacetum dolichophyllum</i> (Kitam.) Kitam.	Guggul	Herb	80%	51	0.364
51	<i>Tinospora cordifolia</i> (Willd). Miers ex Hook.f. & Thoms.	Giloy	Climber	73%	67	0.478
52	<i>Tribulus terrestris</i> L.	Gokhru	Herb	79%	84	0.600
53	<i>Withania somnifera</i> (L.) Dunal	Ashwagandha	Shrub	60%	104	0.742
54	<i>Zanthoxylum armatum</i> DC.	Timur	Shrub	61%	60	0.429

Conclusion

The present study explored, documented, and quantitatively analyzed ethnomedicinal data, providing information on the use of 54 plant species belonging to 38 families for the treatment of dermatological conditions in the Chinyalisaur block. Large group of inhabitants believes in herbal medicinal remedies for the treatment of skin related issues because of impressive results, cost-effectiveness, and with minimal side effects. The traditional knowledge of ethnomedicine have great potential to treat various kinds of dermatological issues. Proper documentation of such kind of knowledge and conservation of frequently used species are necessary to ensure the long- term availability. This study could also contribute to the development of plant-based medicinal drugs and cosmetic products.

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Conflict of Interest

The authors declare that they have no conflict of interest.

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