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TRADITIONAL HEALTH CARE PRACTICES AND TREATMENT OF SKIN DISORDERS: *SENNA OCCIDENTALIS L., SENNA OBTUSIFOLIA L. AND CHROMOLAENA ODORATA L.*

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ABSTRACT

Ethnopharmacology, an interdisciplinary field merging ethnobotany and pharmacology, investigates traditional healthcare systems that rely on natural products and indigenous knowledge. It plays a crucial role in preserving and understanding cultural methods for addressing various health concerns, including skin-related disorders. Conditions such as infections, inflammation, wounds, pigmentation issues, and age-related skin changes are prevalent healthcare challenges globally, particularly in underserved areas where traditional remedies are extensively utilized. Scientific investigations into traditional practices present opportunities for discovering innovative dermatological treatments. Nevertheless, incorporating these remedies into modern healthcare frameworks involves challenges such as ensuring product standardization, protecting indigenous intellectual property rights, and maintaining the sustainability of medicinal plant sources. Advances in phytochemistry and clinical trials are paving the way for integrating traditional remedies into contemporary dermatology and skincare solutions. By harmonizing traditional knowledge with modern scientific methodologies, ethnopharmacology expands our understanding of natural treatments for skin health while promoting cultural preservation and sustainable healthcare practices. This integrative approach has the potential to address unmet needs in dermatology, support biodiversity conservation, and encourage equitable benefit-sharing with indigenous communities. Future efforts should prioritize collaborative, interdisciplinary research to authenticate traditional treatments, protect cultural legacies, and create effective, accessible, and environmentally conscious skin health solutions.

KEYWORDS: Ethnomedicine, Skin disorders treatment, Medicinal plants, Traditional healthcare practices.

INTRODUCTION

Ethnopharmacology, an interdisciplinary science, investigates the traditional medicinal practices of communities, with a focus on the therapeutic application of natural products derived from plants, and other biological resources. This field provides critical insights into indigenous knowledge systems that have evolved over centuries to address health challenges, including those related to skin health. Skin disorders, inclusive infections, inflammation, wounds, pigmentation irregularities, and age-related changes, represent a significant burden on global health systems. Here, traditional healthcare practices offer a wealth of untapped therapeutic potential, rooted in the use of ethnomedicinal plants and natural remedies. The importance of documenting and scientifically validating the traditional uses of medicinal plants for treating skin ailments has been increasingly highlight (Renu et al., 2023). The utilization of ethnomedicinal plants in local communities depend on plant-based remedies for conditions like wounds, rashes, and microbial infections, and the traditional uses of medicinal and aromatic plants among tribal populations in India (Alam et al., 2022). Many plants are recognized for their antimicrobial, anti-inflammatory, and wound-healing properties, making them essential resources for addressing skin health challenges. In addition to traditional knowledge, advancements in computational and biological sciences

have provided innovative frameworks for analysing and understanding skin disorders. An evolutionary intelligent computing approach for analysing skin sores are demonstrating how technology can improve the understanding of traditional remedies and their applications. Such frameworks are used to bridge the gap between traditional knowledge systems and modern scientific research, providing new perspectives for addressing complex skin conditions (Muhammad et al., 2024). The interconnection of bodily systems, and the integration of ethnopharmacological insights with modern biomedical methods (Patel et al., 2022). (Brohem et al. 2011) Moreover, innovations in artificial skin and tissue engineering further highlight the relevance of traditional knowledge in modern contexts, concepts and applications of artificial skin, demonstrating the traditional remedies, with their bioactive compounds, can inspire the development of biocompatible materials and regenerative therapies. These advancements reflect the enduring influence of natural products in addressing modern dermatological challenges.

Ethnopharmacology not only contributes to the discovery of new treatments but also emphasizes the importance of cultural preservation and biodiversity conservation. Traditional healthcare practices often rely on locally available resources, promoting sustainability and reducing dependency on synthetic drugs. However, integrating these practices into contemporary healthcare systems poses challenges, including the standardization of natural products, intellectual property rights, and ethical considerations. Skin health through ethnomedicinal plants is rooted in centuries of traditional knowledge, where various cultures have relied on plants for treating a wide range of skin conditions. Ethnomedicinal plants are plants that have been used by indigenous and local communities for medicinal purposes, including the treatment of skin-related ailments such as wounds, infections, rashes, burns, and inflammatory disorders. These plants often possess bioactive compounds with antimicrobial, anti-inflammatory, antioxidant, and wound-healing properties, making them valuable in managing skin health. Research into ethnomedicinal plants has gained traction in recent years, with a growing interest in validating traditional remedies through modern scientific methods. This research highlights the need to document and preserve indigenous knowledge, while also exploring the mechanisms behind the medicinal effects of these plants. As a result, ethnomedicinal plants are increasingly being integrated into contemporary skincare treatments and pharmaceutical formulations, offering sustainable and accessible alternatives to synthetic chemicals for skin health management.

MATERIALS AND METHOD

Study area

Kandhamal district in Odisha is a scenic and culturally vibrant area, known for its diverse attractions. Its natural beauty, including dense forests, towering mountains, and tribal villages, makes it a captivating destination for travellers. Situated between 19°34' and 20°36' north latitude and 83°34' and 84°34' east longitude, the district spans an area of 7654 sq. km. The climate varies from hot and dry during the summer to cold in the winter, providing a comfortable environment. The socio-economic conditions of the region are shaped by its mountainous terrain and narrow valleys. A study conducted in this area sought to gather traditional knowledge and indigenous practices used to treat skin-related issues. The reliance on wild plants for medicinal purposes has been recognized, contributing to the depletion and endangerment of numerous medicinal plant species. The study also highlights the use of these plants by ethnic communities and folk healers.

Survey method

Field research was conducted to collect information from tribal medicine practitioners and community members knowledgeable about local plants. The study focused on their names, uses in herbal remedies, preparation methods, administration techniques, dosages, and applications for various health conditions. This ethnobotanical research specifically targeted the Kandha tribe in the Kandhamal region. We engaged traditional healers who consented to participate and interviewed 16 elderly individuals. Prior informed consent was obtained orally from each participant, and the interviews were conducted in the local language. Structured questionnaires were employed to gather data on medicinal plants, including their local names, associated ailments, and the plant parts used. And finally selected three unique plants such as *Senna occidentalis*, *Senna obtusifolia*, and *Chromolaena odorata*, which are used for skin disease treatment. Specimens of Three plants were collected and later identified at the Herbarium of the Department of Botany at the university, where plant identification was based on specimen vouchers stored in the Botany Department.

RESULTS AND DISCUSSION

The study highlights the ethnomedicinal significance and phytochemical profiles of *Senna occidentalis*, *Senna obtusifolia*, and *Chromolaena odorata*, traditionally used for the treatment of various skin ailments. Local communities in Odisha, India, utilize the roots of *Senna occidentalis* and *Senna obtusifolia* as well as the leaves of *Chromolaena odorata*, underscoring the deep-rooted cultural and therapeutic relevance of these plants (Xavier et al., 2015; Tabassum and Hamdani., 2014). The use of medicinal plants in treating skin diseases has a long-standing history in traditional medicine. The traditional application of these plants for skin conditions such as eczema, wounds, and infections correspond with ethnobotanical practices reported globally. The role of medicinal plants in sustainable development and healthcare integration (Hamilton., 2004) and (WHO., 2014-2023). Natural products and traditional medicines are increasingly recognized for treating and preventing

various diseases. Their use in managing common skin conditions is growing, as plant-based remedies offer efficacy, accessibility, safety, and cultural acceptance, making them valuable alternatives in dermatological care (Saising et al., 2022).

Table-1: List of medicinal plants used for skin disease treatment.

Sl. No.	Botanical name	Family	Common/ Odia name	Voucher No.
1	*Senna occidentalis L.*	Fabaceae	Coffee Senna/ Kola chakunda	KISS/BOT/CIST/015
2	*Senna obtusifolia L.*	Fabaceae	Sickelpod/Chakunda	KISS/BOT/CIST/047
3	*Chromolaena odorata L.*	Asteraceae	Siam weed/ Pokasungha	KISS/BOT/CIST/049

1. *Senna occidentalis*

2. *Senna obtusifolia*

3. *Chromolaena Odorata*

Senna occidentalis, known locally as Kala Chakunda in Odia, is a plant highly regarded for its medicinal properties. The root of this plant is traditionally used in the treatment of various skin ailments. The bioactive compounds in the root are known to exhibit antifungal and antibacterial properties, which make it effective in addressing skin conditions such as rashes, eczema, and fungal infections. In addition to its skin-healing properties, *Senna occidentalis* has been studied for its phytochemicals like tannins, flavonoids, and saponins, which contribute to its therapeutic potential. Its use is deeply embedded in traditional practices, particularly in regions where access to modern medicine is limited. Similar to its counterpart, *Senna obtusifolia* is a medicinal plant known as Chakunda in Odia. The root of this plant is also employed in skin disease treatment. Traditional healers have long utilized *Senna obtusifolia* for its ability to cleanse and heal wounds, alleviate itching, and soothe inflamed skin. Its application in folk medicine underscores its importance in managing skin conditions, particularly in rural and tribal communities. *Chromolaena odorata*, locally referred to as Pokasungha, is widely known for its wound-healing and anti-inflammatory properties. Unlike the other two plants, the leaves of *Chromolaena odorata* are used for skin disease treatment. The leaves contain phytochemicals like alkaloids, flavonoids, and essential oils, which contribute to its antibacterial and wound-healing effects. It is commonly applied as a poultice or in extracts to treat wounds, ulcers, and infections. This plant is often favoured for its rapid action in reducing inflammation and promoting tissue regeneration, making it a go-to remedy for minor skin injuries and conditions.

Traditional Significance and Modern Implications

The integration of these plants in traditional medicine highlights the rich ethnobotanical knowledge passed down through generations. The reliance on roots and leaves underscores the importance of specific plant parts in achieving desired therapeutic effects. These plants not only serve as remedies for skin diseases but also represent a sustainable and cost-effective alternative to synthetic drugs. Their use is particularly prevalent in communities with limited access to healthcare facilities.

According to Shyeed et al. (2023), Senna occidentalis L. has long been utilized in traditional dermatological treatments due to its anti-inflammatory and wound-healing qualities. Leaf extracts are applied topically to promote healing and lessen inflammation in cuts, abrasions, and wounds. Its ethnobotanical use in skin care and injury treatment is supported by recent pharmacological investigations that have validated its anti-inflammatory and wound-healing properties. Its effectiveness in reducing inflammation and encouraging re-epithelialization shows how conventional methods are consistent with scientific findings. *Senna obtusifolia L.* has also long been prized for its medicinal qualities, including as its antioxidant and wound-healing capabilities, which have been used in traditional medicine to treat skin conditions and injuries. The plant's ethnopharmacological relevance to skin health is reinforced by research published in 2025 that highlights the antioxidant and wound-healing capabilities of its floral extract, supporting its use in traditional settings for wound therapy (Bargah, et al., 2025). Another significant medicinal plant that has long been utilized for skin health is *Chromolaena odorata L.*, sometimes known as Siam

weed. This plant's leaves are frequently used to treat burns, wounds, and skin diseases. To halt bleeding and hasten tissue regeneration, fresh leaf extracts or crushed leaves are administered directly to wounds. The herb is widely prized in traditional medicine due to its potent antibacterial, anti-inflammatory, and wound-healing qualities (Akinmoladun, et al., 2007).

Analysis and observation of the plants

1. Botanical name: *Senna occidentalis*
Family: Fabaceae
Common name: Coffee Senna/ Bana Chakunda
Plant Description: An erect, annual or perennial shrub in the Fabaceae family, reaching a height of about 1-2 m. It has a smooth, purplish-green stem. The compound, paripinnate leaves have four to six pairs of leaflets, which emit an unpleasant odour when crushed. Medium-sized, yellow flowers are produced. The fruit is long, curved, flat, with many dark brown seeds. The plant, known for its medicinal properties, is commonly grown as a weed in fields, roadsides, and wastelands in tropical regions.
Plant parts used: Leaves
Medicinal uses: Ringworm, Eczema, Scabies, Itching
Mode of administration: Fresh leaves crushed into paste and applied over ringworm and eczema. Leaf juice applied directly on affected area.

2. Botanical name: *Senna obtusifolia*
Family: Fabaceae
Common name: sicklepod / Kola Chakunda
Plant Description: It is an annual herbaceous plant, growing up to 1-2 m tall. The stem is branched, smooth and green to purple in color. Two to three pairs of obovate to ovate leaves with rounded tips form a compound. The leaves are solitary or in pairs. Yellow flowers are produced. The fruit is a long, curved fruit with many brown seeds.
Plant parts used: Seed and Oil
Medicinal uses: Itching, Minor skin infections, Boils, Scabies, Eczema.
Mode of administration: Seed paste applied directly on eczema, itching and scabies. Leaf paste applied over Minor skin infections. Seed powder mixed with oil and applied externally on boils.

3. Botanical name: *Chromolaena Odorata*
Family: Asteraceae
Common name: Siam weed / Pokasungha
Plant Description: A perennial herb that grows quickly and can be erect or sprawling. It usually reaches a height of 1-2 m. The stems are hairy, widely branched and green to purple in color. The leaves are opposite, ovate to lanceolate and have a strong, fragrant scent. Small, pink to pale purple flowers are produced. The fruits are small with short hairs on the pappus.
Plant parts used: Leaves
Medicinal uses: Wounds, Bleeding wounds, Eczema
Mode of administration: Fresh crushed leaf paste applied directly on wounds to stop bleeding. Leaf juice squeezed over fresh cuts. Leaf paste applied on eczema patches and boils. Decoction used in infected skin.

CONCLUSION

Ethnopharmacology plays a pivotal role in preserving traditional health care practices and addressing various skin health disorders. Across diverse cultures, traditional remedies, often derived from plants, minerals, and animal products, embody centuries of accumulated knowledge passed down through generations. These treatments offer holistic solutions that address not only physical symptoms but also cultural and spiritual aspects of health, reflecting a profound connection between human beings and their natural environment. The therapeutic potential of traditional medicine for skin health lies in the bioactive compounds found in natural ingredients. These compounds exhibit properties such as antimicrobial, anti-inflammatory, antioxidant, and wound-healing effects, which are crucial for treating conditions like eczema, psoriasis, acne, and skin infections. Modern scientific investigations increasingly validate the efficacy of many traditional remedies, fostering a symbiotic relationship between traditional knowledge and contemporary pharmacological research. However, challenges persist in integrating ethnopharmacology into mainstream dermatological care. Issues such as lack of standardization, limited clinical trials, and concerns about safety and toxicity must be addressed. Additionally, the erosion of traditional knowledge due to globalization and the decline in biodiversity poses a threat to the preservation and continuation of these practices. Efforts to document, protect, and sustainably utilize ethnopharmacological knowledge are essential to ensure its survival and ethical application.

The resurgence of interest in natural and sustainable healthcare solutions underscores the relevance of ethnopharmacology in the modern era. It offers an alternative or complementary approach to synthetic drugs, especially in resource-limited settings where access to conventional medicine may be constrained. Moreover, the integration of traditional remedies into personalized and integrative medicine could provide innovative strategies for managing chronic and complex skin disorders. Ethnopharmacology serves as a bridge between ancient wisdom and modern science, enriching the field of dermatology with time-tested remedies and new therapeutic opportunities. A collaborative approach involving researchers, healthcare professionals, and traditional healers is vital to harnessing the full potential of this discipline. By embracing and preserving traditional health care practices, we not only honor cultural heritage but also unlock sustainable and effective pathways for treating skin health disorders, contributing to the well-being of individuals and communities worldwide.

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