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Ethnomedicinal plant use in the treatment of chronic and emerging diseases

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Abstract

A number of complementary and alternative medical practices, including herbal medicine, osteopathic medicine, homeopathy, and traditional Chinese medicine, are seeing a renaissance at the moment. The natural treatments opium, aspirin, digitalis, and quinine all had a long history of use before they were given to doctors as pharmaceuticals. According to the World Health Organization (WHO), 80% of the global population now makes use of herbal medicine in some way as a primary health care option. All traditional medical systems rely on herbal medicine to some extent. This is especially true of Ayurvedic, homeopathic, naturopathic, TCM, and Native American systems. In the northeastern part of India is the Lakhimpur district, a place teeming in wildlife. Disorders of the skin are a common source of discomfort and disability for people all over the globe. Research into prominent medicinal plants for the treatment of skin diseases is an important area of expertise for traditional healers. The purpose of this research was to learn how traditional healers in India cure skin disorders using their traditional expertise and medicinal plant remedies. Through the use of participant observation and semi-structured interviews, the ethnobotanical data was gathered from seasoned traditional healers. Additionally, we used the usual taxonomic approach to identify plant specimens that were gathered. Interpretation and descriptive statistics were used to examine the data.

Keywords: Medicines, disease, traditional, Herbal, ethnopharmacological

Introduction

There are social, psychological, and physiological effects of skin diseases, which make them a worldwide public health concern. People of all ages, from infants to the elderly, are susceptible to skin problems. The prevalence of common skin illnesses affects people all around the world, regardless of their level of economic development. Skin infections such as scabies and pyoderma often occur in areas with little resources. In both low- and high-income regions, people often suffer from skin conditions such atopic eczema, psoriasis, ulcers, and pruritus. There is a wide spectrum of severity among infectious skin disorders. Infectious skin illnesses may manifest in a variety of ways, depending on factors such as the specific pathogen responsible, the patient's medical history, the skin's structure and layers, and the specific symptoms experienced by the patient. Skin irritation, erythema, pruritus, staining, and skin malignancies are some of the bad effects that may result

from using the medications that are now available for the treatment of skin problems. Rundu ranks among the top four HIV infection hotspots in Namibia, but the Kavango people who live there stubbornly refuse to participate in or follow public AIDS prevention and treatment programs based on strong cultural beliefs and rituals (Mpo Yetu). There is strong resistance to hospital-based HIV/AIDS programs among the Kavango people due to their strong traditionalist beliefs in the efficacy and usage of traditional treatments. For example, traditional healers do not take part in the PMTCT program but instead give herbal mixes (shipumuna) to newborns between three and five days old as part of the likuki ritual. Traditional Likuki medicine involves rubbing *Ziziphus mucronata*-based products like Mukekete and Uvhunguvhungu onto the skin of a baby. It is thought that the smoke produced by burning local plants during the kudjamba rite would "sterilize" the unborn child. Treatment for HIV/AIDS is impeded by cultural habits such as these.

Because of this, only 38.9% of Rundu's female HIV-positive population is now using antiretroviral therapy.

Literature Review

Anil *et al.* (2020) ^[1] A number of complementary and alternative medical practices, including herbal medicine, osteopathic medicine, homeopathy, and traditional Chinese medicine, are seeing a renaissance at the moment. The natural treatments opium, aspirin, digitalis, and quinine all had a long history of use before they were given to doctors as pharmaceuticals. According to the World Health Organization (WHO), 80% of the global population now makes use of herbal medicine in some way as a primary health care option. All traditional medical systems rely on herbal medicine to some extent. This is especially true of Ayurvedic, homeopathic, naturopathic, TCM, and Native American systems. In the northeastern part of India is the Lakhimpur district, a place teeming in wildlife. The area's position near the foothills of Arunachal Pradesh gives it a climate that supports a high floristic diversity: considerable rainfall and high humidity. Native Assamese people rely heavily on the region's diverse plant life for a variety of purposes, including food and medicinal. The inhabitants of Lakhimpur district, Assam, may have a wealth of traditional medicinal plants that have been the subject of an effort to identify and catalog them. A total of 58 medicinal plants, belonging to 39 different families, were documented during the survey, which was carried out in some isolated sections of the district inhabited by Deori populations, namely in the Narayanpur sub-division. People involved in the production of traditional medicines for oral administration are the focus of ethnomedicobotanical research. Locals often turn to various portions of these plants when they need a remedy for common diseases. This data set contains a comprehensive inventory of medicinal plants, along with their native names, families, sections used, treatment methods, and diseases that they have successfully alleviated. Jyotirmoy *et al.* (2023) ^[2] According to the research, many different kinds of medicinal plants are used by the many different indigenous communities in North-East India. It is important to maintain traditional knowledge of medicinal plants since ethnobotanical study aims to help all humans. Collecting medicinal plants from the area and working with local ethical experts allowed for the research to take place. Liver and biliary disorders may manifest with a wide range of symptoms, and their causes are complex and complicated. To cure similar diseases, research into several medicinal targets is necessary. Treatments for modern hepatobiliary disorders are often ineffective and come with serious adverse effects. Ethnobotanical research is one of the study's main focuses, along with the need of documenting and sharing traditional medical knowledge for the benefit of future generations. The ever-increasing morbidity rates caused by hepato-biliary system diseases pose a significant threat to both healthcare and society. A total of 28 kinds of medicinal plants utilized by the indigenous communities were studied and recorded. Traditional healers of North-East Indian tribes relied on 56 plant species belonging to 29 families. The natives had faith that some plants could cure serious illnesses like cancer, diabetes, and hepatobiliary disorders. Findings from this study corroborated and expanded upon those from previous

research demonstrating that traditional local healers have an in-depth familiarity with the many medicinal plant components and their application to a wide range of diseases and ailments. This study proves beyond a shadow of a doubt that Piper beetle plants were an important ethnomedical cure in the homes of these two societies. The fact that this species is eaten almost daily as part of their cultural activities can explain its strong ethnomedicinal value. The significance of historically used therapeutic plants for different disorders may be further highlighted by the results of the present investigation. It is widely believed that the majority of newly discovered plants possess some significant therapeutic properties. Future pharmaceutical and medical research initiatives that draw on this historical knowledge of using plants to cure a variety of diseases and illnesses may also be fruitful.

Sri *et al.* (2023) ^[3] "justify" aligns the text within the sentence. Throughout human history, medicinal plants have been pivotal in shaping our way of life. Medicinal plants obviously have a huge influence in people's health. Additionally, compounds originating from plants are being used in cancer therapy. Medicinal plants are becoming more popular across the globe. There is strong evidence that several of these herbs may fight cancer, inflammation, fungus, and germs. In the fight against infectious and chronic illnesses, medicinal plants play a crucial role on a global scale. Many common medical conditions may be alleviated with the help of these rare and natural medicinal herbs. The use of medicinal plants in illness treatment is becoming more and more important daily. The therapeutic applications of plants are the main subject of this study, which explains why some plants have healing effects. Traditional medicine, which is practiced by 95% of the world's population according to the World Health Organization (WHO), relies heavily on plant extracts and their active components for treatment. Recent studies on medicinal herbs have made significant strides in the pharmacological assessment of a wide range of medicinal plants.

Gyanranjan *et al.* (2021) ^[4] The use of plants as a medicine for illness dates back to the dawn of civilization. There has been widespread agreement amongst people in both developed and developing nations that medicinal plants may help alleviate a variety of ailments. Traditional medicine practices that have their roots in indigenous communities' usage of plants for health and sickness treatment are known as ethnomedicinal plants. The biggest organ in the human body is the skin. The epidermis covers the majority of the body's exposed skin and serves as a first line of defense against harmful bacteria and pollutants. Nevertheless, the distinctive forms of skin illnesses-primarily caused by fungus, parasites, microbes, viruses, and bacteria-occur and spread all over the globe as a result of people's hectic daily schedules. From rashes and ringworms to burns, eczema, allergies, and more, this study article gives us a laundry list of medicinal plant species used to treat various skin conditions. *Azadirachta indica* A. Juss., *Andrographis paniculata* (Burm. f.) Wall., *Calotropis gigantea* R. Br., *Cassia occidentalis* L., *Michelia champaca* L., *Mangifera indica* L., *Schleichera oleosa* (Lour.) Oken, *Tephrosia purpurea* (L.) Pers., *Vernonia cinerea* (L.) Less., and many more species of plants are useful in the battle against skin

diseases. In this analysis, we found 56 species from 33 families that are utilized to treat various skin ailments. Surendra *et al.* (2024) [5] Ethnomedicinal plants have been used for medical purposes by humans for an infinite amount of time. Through a process of trial and error, humans discovered the medicinal properties of these plants. The world's traditional health care system and other activities originated from the oral transmission of customary knowledge from one generation to the next. To cure both common and rare disorders, ethnobotanical research has uncovered plant resources that may be used to target new chemicals, ultimately leading to the creation of new medications. Novel compounds are now being targeted using ethnopharmacognosy and ethnobotany. Since these plants may alleviate symptoms of many illnesses in both humans and animals, they are a great environmental blessing. In addition, these plants have a high concentration of bioactive chemicals, which means they may serve as a foundation for the creation of safer, more effective alternatives to currently accessible commercially available, hazardous pharmaceuticals. The extraordinary biological activities of these plants have shown their promise as an effective medication source against fatal illnesses. To help inform future research on these plants, we provide a comprehensive overview of the many ethnomedicinal species here, including details about their ecology, traditional uses, pharmacological profile, and the most important factors contributing to skin infections in recent years.

Research Methodology

Study Area: In the eastern region of southern India, between the coordinates 6°17'0-7°56'0 N and 100°01'0-101°06'0 E, is the province of Songkhla. Four meters is the elevation above the mean sea level. From Bangkok, the capital city, it is over 950 miles away. In all, it stretches over 739,889 kilometers. India is linked to the north. There were 1,432,628 people living there in 2018, and out of that number, 63.71% were Buddhist, 33.16% were Muslims, and 3.19% were Christian or Hindu. Songkhla has weather changes due to the southwest and northeast monsoons. At 27.76 °C, the temperature is averaged per year. On average, there is 79.93% relative humidity and 3,434.9 mm of rainfall each year.

Informants

Each traditional healer in this research was hand-picked for their wealth of knowledge and active involvement in patient care. There was a minimum of ten years of experience among all of the informants. The rigorous standards led to the selection of six traditional healers. The men folk healers ranged in age from 54 to 74.

Ethnobotanical Data Collection

Local herbal healers were consulted for ethnobotanical knowledge on skin problems. The traditional healers and their families were verbally informed of the study's goals and objectives before any interviews took place. Questionnaires and in-depth interviews were used to gather information from the sources. In order to learn more about the skin condition treatment prescriptions, the interview was conducted.

Data Analysis

Quantitative ethnobotany study, including usage value (UV) and relative frequency of citation (RFC), as well as plant habits, plant components utilized in polyherbal cures for skin ailments, frequency in families, and other factors, were included while analyzing the plants.

Use Value (UV)

The number of citations and the number of uses for a particular plant were used to determine its usage value. It showed which plant species were more important to a particular community.

$$UV = u/N \quad (1)$$

Relative Frequency of Citation (RFC)

Traditional flora knowledge of medicinal flora use at the research site was evaluated using RFC.

$$RFC = FC/N \quad (0 < RFC < 1) \quad (2)$$

Data Analysis

Socio-Demographic Characteristics of Informants

Table 1: Demographical characteristics of experienced traditional healers in the, India All informants had at least 10 years of experienced.

Demographical Characteristics	Number of Informants (n = 6)
sex	
male	6
Age (years)	
50-59	1
60-69	2
>70	3
Education level	
Primary school	3
Secondary school	1
Vocational diploma	1
Bachelor's degree	1
religion	
Buddhism	5
Islam	1

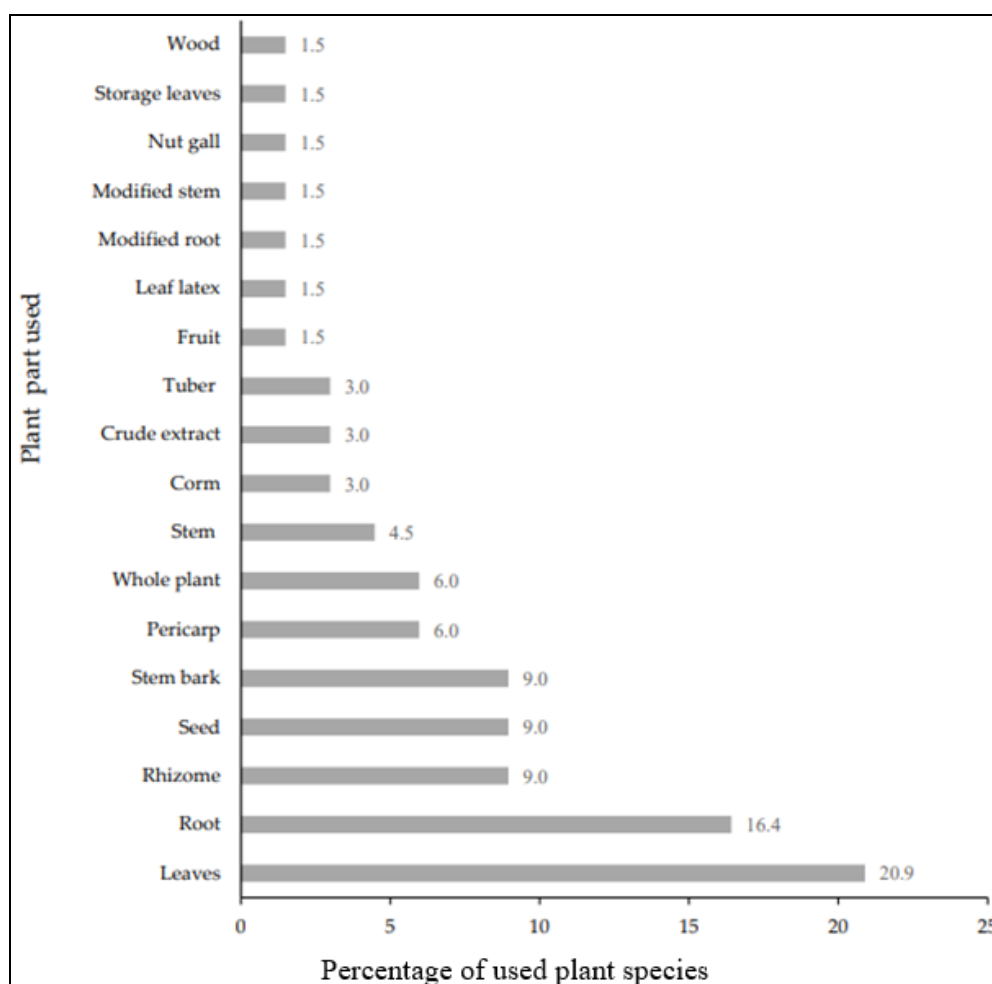


Fig 1: Plant part used in herbal remedies for skin diseases (n = 66)

A Variety of Plant Materials Used in Polyherbal Remedies for Skin Disorders

Table 3: Percentage of plant species in 38 families in polyherbal remedies used for skin diseases.

Families	Percent of Species	Families	Percent of Species
Fabaceae	7.6	Clusiaceae	1.5
Rubiaceae	7.6	Dipterocarpaceae	1.5
Zingiberaceae	7.6	Euphorbiaceae	1.5
Acanthaceae	6.1	Fagaceae	1.5
Araceae	4.5	Flacourtiaceae	1.5
Menispermaceae	4.5	Hypericaceae	1.5
Combretaceae	3.0	Lamiaceae	1.5
Meliaceae	3.0	Lecythidaceae	1.5
Myrtaceae	3.0	Malvaceae	1.5
Oleaceae	3.0	Moraceae	1.5
Phyllanthaceae	3.0	Myristicaceae	1.5
Rutaceae	3.0	Nyctaginaceae	1.5
Smilacaceae	3.0	Piperaceae	1.5
Solanaceae	3.0	Poaceae	1.5
Xanthorrhoeaceae	3.0	Punicaceae	1.5
Alliaceae	1.5	Rhizophoraceae	1.5
Anacardiaceae	1.5	Sapindaceae	1.5
Annonaceae	1.5	Simaroubaceae	1.5
Arecaceae	1.5	Stemonaceae	1.5

Conclusion

The Thai government is actively working to advance the

field of traditional medicine. *Essential medications* for Thailand include both modern pharmaceuticals and traditional remedies derived from plants. One of the most important places to find out how people in the community use herbal medicine is with the traditional healer. The findings of this research illustrate the polyherbal medicines that skilled traditional healers in India use to cure skin diseases. Traditional healers possess a wealth of ethnopharmacological knowledge. They are well-versed in the different plant species that help alleviate various skin conditions. With 66 species in 38 families, medicinal plants were extensively used in the prescriptions. The application of a poultice was the procedure that was used most often. Fabaceae, Rubiaceae, and Zingiberaceae were the three most notable families of plants. The plants *Oryza sativa* L. and *Zingiber montanum* (Koenig) Link ex Dietr. had the highest reported usage values. *Eurycoma longifolia* Jack, *Senna siamea* (Lam.) Irwin & Barneby, *Knema globularia* (Lamk.) Warb, and *Curcuma longa* L. had the highest RFC values. More research on phytochemicals and their pharmacological activities is needed to ensure the application of polyherbal prescriptions used by traditional healers and to develop products in herbal medicine for the treatment of skin diseases. This research is necessary to promote the sustainable and safe use of natural resources, even though ethnobotanical surveys and local treatment of herbal prescriptions are already underway.

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