Ethnomedicinal plants used by traditional healers for the treatment of skin diseases in Jajpur district of Odisha, India

KT Kumar Goura Ranjan Mohanty, Gyanesh Dash, Diptiman Sahoo, *Gyanranjan Mahalik and Sagarika Parida

Department of Botany, School of Applied Sciences, Centurion University of Technology and Management, Odisha, India

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Abstract

Ethnobotany is the investigation of an area's plants and their functional uses through the conventional information of a nearby culture and individuals. Plants have been utilized from the early human advancement onwards as a medication for a wide range of diseases. Disregarding the improvement in the health science and creation of modern, plants still involve an essential part in the modern and traditional system in everywhere throughout the world. Skin is the largest organ of human body. It plays a very critical role for protection from the external environment and microbes. Skin illnesses are available in exclusive forms, basically classified as non-contagious and contagious diseases, the primary which can be microorganism, fungi, viral and parasites diseases. These diseases occur all over the globe and also are widely wide-spread within the rural and tropical areas. The study turned into geared toward surveying the ethnomedical medicinal plants used traditionally to treatment skin diseases in Jarka area of Jajpur district. Primary data was collected based on administration of structured questionnaires / interview. Herb sellers, traditional medicine practitioners, farmers and elderly people had been the respondents. Plant species have been collected, photographed, locally identified and scientifically identified. In this paper 20 medicinal plants species were documented against different skin diseases consisting of eczema, rashes, boils, acne, etc. The preliminary result reveals that natural remedies are extra powerful and inexpensive compared to the synthetic medicine. Medicinal plant used in this place form a rich source of indigenous knowledge which could function for therapeutic functions.

Keywords: Dermatological, Eczema, Ethnobotany, Medicinal, Microorganism.

Introduction

Ailments and other related ailments are unsurprising throughout everyday life and have driven man to ascertain ways by which they could be treated. Plants have dependably been a fruitful asset of treatment from nature. Such practice is as old as human presence and structures a necessary piece of conventional prescription. The term medicinal is applied to a plant demonstrates that it has a substance or substances which adjust usefully the physiology of sick mammals and that it has been used by man for that purpose (1). In many countries such as India and China, where thousands of tribal communities still use folklore medicinal plants today to cure sicknesses. In recent year, there has been an amazing
increasing in interest within the medicinal plants particularly those employed in the ayurveda and different ancient systems of medicines (2). In the rural communities, wound arising from bruises, cuts and scratches, amongst others are generally untreated at the initial stages. In most cases such wounds become septic and inflamed before they are delivered to the patients; World Health Organization may then treat such wounds during ancient manner using plant materials or request the advice of herbal healers (3).

Skin is body’s outer covering, that protects from heat and light, injury and infection. Skin regulates body temperature, stores water, fat, including vitamin D. The skin, which measures up to 6 pounds is the body’s largest organ. It is made up of two main layers: the epidermis (outer layer) and the dermis (inner layer). The epidermis is generally made up of flat, scale-like cells called squamous cells. Squamous cells are round cells called basal cells. The innermost part of the epidermis contains cells that produce melanin (melanocytes), which gives the skin colour. The dermis contains blood as well as lymph vessels, hair follicles, and glands that produce sweat, which helps regulate body (4).

In most recent couple of decades there has been an expanding enthusiasm for the investigation of therapeutic plants and their conventional uses in various pieces of India. In the ongoing years number of reports on the utilization of plants in conventional mending by either inborn individuals or indigenous networks of India is expanding (5-9).

Traditional medicinal properties, especially plants, have been found to play a most important role in administration dermatological conditions (10-11). Many traditional skin care remedies still need to be documented and their efficacies validated. The present study was initiated with an aim to identify knowledgeable resource persons among the traditional healers in Jarak area of Jajpur district of Odisha, India and quantitatively analyze their indigenous ethnomedicinal knowledge through various ethnobotanical tools on the utilization of commonly used medicinal plants for the treatment of skin diseases.

**Materials and methods**

**Study area**

Jajpur district is situated between 26.9124 °N, 75.7873 °E, with an area of 2,888 square kilometres (1,115 sq mi) in area, of which 202 square kilometers (78 sq mi) is forested. The population is 1, 622,868. Present study was carried out in Jarak area of Jajpur district, Odisha. Annual rainfall is 1,771.8 millimeters (69.76 in). The temperature remains 38 °C in summer and 12 °C in winter.
Field Survey

Various tribal rich area and different ayurvedic hospitals situated in this area were surveyed. Folklore claims and data were documented along with voucher specimens (1).

Data Recording

The complete information regarding the plants, dosages, duration, process of preparation, mode of administration, protection to be taken etc. was recorded in standard questionnaires (fig.2). Then Ayurvedic doctors and local healers were counseled who utilized herbs in treatment of skin diseases. During study interviewed or consulted about numerous doctors and traditional healers in the Jaraka area of Jajpur from which 39 accepted to give a response during survey. The following questions were asked to different ayurvedic doctors and local healers (12).

Plant collection and identification

The supportive plant specimens of various skin diseases claims were collected, processed, critically studied, identified and preserved in the Herbarium. Different Herbaria of Bhubaneswar that held the specimens of earlier workers were visited and checked their identity. Voucher specimens were identified by referring standard local floras (13-14).
Fig. 2: Ethnobotanical questionnaire

Result and Discussion

The study revealed the use of 20 medicinal plant species belonging to 18 families which were widely used by most of the traditional healers, ayurvedic doctors and local people for the
treatment of skin diseases. The most dominated family was found to be Rutaceae. The botanical name, vernacular names and mode of uses were provided for each reported species.

The leaves are the foremost parts of plants used for the treatment of the skin diseases. Nearly 45% of the parts of the plant species utilized in the management of skin disorder are made up of leaf extracts followed by the bulb, latex, root and stem severally. Extracts are principally taken orally or externally. The Information on the mode of uses of medicinal plants against treatment of skin diseases were collected from the traditional healers and were described below:

1. *Azadirachta indica* A. Juss. (Family: Meliaceae)

**Vernacular Name:** Odia: Nemba, Hindi: Neem, Sanskrit: Nimbaka, English: Neem

**Mode of use:** Powder of *A. indica* leaves (50 gm) along with turmeric powder (30 gm) are mixed and make a paste with some water. The ready paste is applied affected region before taking bath. This is often applied to cure skin infections, scabies and eczema.

2. *Allium cepa* L. (Family: Liliaceae)

**Vernacular Name:** Odia: Piyaja, Hindi: Pyaj, Sanskrit: Palandu, English: Onion

**Mode of use:** First pure juice ready from 2 bulb of onion and mixed it with turmeric powder (20 gm) and it's dole out rigorously in such a way that no water sources are available in contact with it. The ready paste is applied on the skin affected portion twice a day (morning and evening) for 15 days.

3. *Magnifera indica* L. (Family: Anacardiaceae)

**Vernacular Name:** Odia: Amba, Hindi: Aam, Sanskrit: Amram, English: Mango

**Mode of use:** Few of the dried bark are pounded and turn into powder form. Then the paste is prepared by combining the prepared powder with shear butter. The prepared paste is outwardly applied two times daily to treat skin disorder and inflammations.

4. *Brassica napus* L. (Family: Brassicaceae)

**Vernacular Name:** Odia: Sorisa, Hindi: Sarson, Sanskrit: Sarsapa, English: Mustard

**Mode of use:** The 40 gm of *B. napus* seeds crushed and combined with water to make the paste. The paste is applied domestically to cure skin diseases. The paste applied just once daily on the affected body portion.

5. *Aegle marmelos* (L.) Correa (Family: Rutaceae)

**Vernacular Name:** Odia: Bela, Hindi: Bel, Sanskrit: Tripatra, English: Wood apple
**Mode of use:** Paste ready from leaf (25-30 number of leaves) by grinding the leaves while not combine it with the water. Then the ready leaf paste is applied on the affected skin to treat skin diseases.


**Vernacular Name:** Odia: Golmoricha, Hindi: Kali mirch, Sanskrit: Marich, English: Black pepper

**Mode of use:** Leaf is turned to powder form. Then the paste is ready by combining the ready powder (50 gm) with vegetable oil (20 ml). Leaf paste is outwardly applied twice a day to treat skin diseases including ringworm.


**Vernacular Name:** Odia: Pita saga, Hindi: Jima, Sanskrit: Phanija, Kapitthapatra; English: Bitter leaf

**Mode of use:** Whole plant is employed either in raw or deep-fried and take orally to cure various type of diseases like scabies, itches etc. *G. oppositifolius* whole plant paste is additionally used externally to cure skin diseases.


**Vernacular Name:** Odia: Siiju, Hindi: Tridhara, Sanskrit: Snuhu, English: Triangular spruge

**Mode of use:** Latex of *E. antiquorum* was collected and applied on warts, swelling areas and also on boils to get rid from these ailments.


**Vernacular Name:** Odia: Kalara, Hindi: Karela, Sanskrit: Kaarvellakh, English: Bitter gourd

**Mode of use:** The juice (60 ml) is prepared by the combination of bitter melon mixed with lemon. Then it is applied daily one time before 15 minutes of the bath for 2 months to cure skin diseases.


**Vernacular Name:** Odia: Aato, Hindi: Sitaphal, Sanskrit: Atripya, English: Custard Apple

**Mode of use:** 20-30 leaves were collected and turned into powder and also combines with 25 ml of water to prepare the paste. Then the leaf paste is gently warmed and applied against boils.

11. *Allium sativum* L. **(Family: Liliaceae)**

**Vernacular Name:** Odia: Rasuna, Hindi: Lahsun, Sanskrit: Lasuna, English: Garlic

**Mode of use:** 15-20 pieces of *A. sativum* boiled and then gridding those boiled pieces of *A. sativum* to prepare the paste. The paste is used to cure urticaria.

Vernacular Name: Odia: Kochila, Hindi: Bailewa, Sanskrit: Kapilu, English: Poison nut

Mode of use: Stem are collected and kept for drying and then the powder form of the stem prepared. The powder combines with S. oleosa seed oil in the ratio of 6:4 for making the paste and used to cure leucoderma.

13. Tridax procumbens L.  (Family: Asteraceae)

Vernacular Name: Odia: Bisalyakarani, Hindi: Khal-muriya, Sanskrit: Jayanti-Veda, English: Coat buttons

Mode of use: The fresh leaves of T. procumbens collected and prepared a paste. The paste is applied in affected area for 4 to 5 days to cure wounds, scabies and itching.

14. Curcuma longa L.  (Family: Zinziberaceae)

Vernacular Name: Odia: Haladi, Hindi: Haldi, Sanskrit: Haridra, English: Turmeric

Mode of use: Rhizome are put in the water for 10-15 minutes and then used for preparing the paste. Paste is employed outwardly for septic and itching portions. It also very effective for wounds.

15. Psidium guajava L.  (Family: Myrtaceae)

Vernacular Name: Odia: Pijuli, Hindi: Amroot, Sanskrit: Bahubi, English: Guava

Mode of use: Fresh 10-15 gm leaves of P. guajava extract mixed with water. The extract kept for 5-7 minutes after being prepared. Then it is taken orally thrice daily to treat skin infection

16. Ocimum sanctum L.  (Family: Lamiaceae)

Vernacular Name: Odia: Tulasi, Hindi: Tulsi, Sanskrit: Brinda, English: Holy Basil

Mode of use: Crush leaves or squeeze fresh leaves and rub on affected part for boils with mustard oil to cure boils.

17. Citrus lemon (L.) Osbeck  (Family: Rutaceae)

Vernacular Name: Odia: Lembu, Hindi: Nimbu, Sanskrit: Bijadhya, English: Lemon

Mode of use: The lemon juice (2 no.) is squeezed out and mixed with honey (1 spoon) to prepare the traditional sample of medicine which is then applied for treatment of acne.

18. Calotropis gigantean L.  (Family: Apocynaceae)

Vernacular Name: Odia: Arakha, Hindi: Safed Aak, Sanskrit: Alarka, English: Rubber Bush

Mode of use: Leaf latex is used to cure wounds and other skin diseases.

19. Mimosa pudica L.  (Family: Fabaceae)
Vernacular Name: Odia: Lajakuliata, Hindi: Chuimui, Sanskrit: Lajjalu, English: Touch Me Not

Mode of use: Fresh leaves (10-15gm) of M. pudica collected at the morning time and then gridding to prepare the leaf paste. The leaf paste is used to cure eczema.

20. Solanum lycopersicon L. (Family: Solanaceae)

Vernacular name: Odia: Bilati baigana, Hindi: Tamater, Sanskrit: Raktaphala, English: Tomato

Mode of use: Two to three medium size tomatoes are being taken to make a paste or juice of it (50 mg/ml). Then add 15 ml of olive oil with the paste and used two times daily at morning and evening for 5 weeks to treat itching including scabies.

Conclusion

Due to skin diseases people not only disturbed physically and mentally but also expand lot of money to cure at sever stage. If the diseases will be treated at initial stage then unnecessary expenses could be managed. In the present study 20 medicinal plant species used by local healer and tribals in Jaraka area of Jajpur district had been identified to cure skin diseases including eczema. It was also noticed that most of the plants used by the healers belong to Rutaceae family might be because of their abundance in this area. Different types of administration including both external application as well as oral consumption of different plant parts and whole plant were documented. This study will provide information regarding different plants used for treatment of skin diseases and also will be helpful to find the different bioactive compounds responsible in healing wounds and restoring normal skin conditions. Further scientific research should focused on modification of these compounds at nano level to develop effective drugs against skin diseases, so that a minimum of plant materials will be used resulting in restoration and conservation of important medicinal plants.

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Reference


*Corresponding author: Dr. Gyanranjan Mahalik
Email: gyanranjan.mahalik@cutm.ac.in