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Review Article

Uses of Medicinal Plants Against Common Skin Problems in the Pokhara Valley

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ABSTRACT

*The present paper explores the different applications of medicinal plants to cure different skin diseases like boils, cuts, dandruff, eczema, herpes, inflammation, itching, leprosy, pimples, scabies, sores, syphilis, and wounds in rural wards in Pokhara Valley. Based on scientific studies and traditional knowledge, the present work identifies several potential medicinal plants, such as *Achyranthus aspera*, *Ageratum conyzoides*, *Aloe vera*, *Amaranthus spinosus*, *Artemisia indica*, *Berberis aristate*, *Calotropis gigantea*, *Cassia tora*, *Curcuma longa*, *Oxalis corniculata*, etc. The result of this execution is based on the user's experience when they are suffering from such skin problems and the use of medicinal plants against those problems. The paper also discusses the advantages of utilizing medicinal plants with their minimum side effects, cost-effectiveness, and sustainable use.*

Keywords: Indigenous knowledge, key informant, medicinal plants, Pokhara valley, rural wards, skin problems.

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INTRODUCTION

The skin is the human body's largest sensory organ, forming the body's outer covering. It protects against germs like bacteria, viruses, and fungi which cause different skin diseases like itching, acne, pimples, dermatitis, etc. (Sharma et al. 2010). Similarly, it protects internal organs, retains body fluids, helps to regulate body temperature, is sensitive to external stimuli, and enables touch sensations. It has two main parts; the epidermis, a protective covering with an external layer of dead cells, and the dermis, which contains living structures such as nerve endings. Skin performs many functions like protection from hazardous substances, thermal injury, reducing harmful effects of UV rays, insulation of body organs, synthesis of Vitamin D, etc. Skin problems are common for all age groups and people in developing countries are still facing skin-related issues (Sharif et al. 2018). Therefore, skin health is the most important aspect of human life, and medicinal plants play an essential role in this. Nowadays, skin problems affect millions, usually leading to discomfort, inflammation, itching, and rashes on the one hand and growing awareness of the side effects of synthetic treatment on the other hand. Herbal treatments are considered important among rural people as plants are an excellent source of bioactive compounds and can be a safer and more affordable way to treat skin problems (Renu et al. 2023). In this context, the paper tries to correlate natural remedies for skin problems with the application of medicinal plants.

DATA AND METHODS

This execution is based on field oral documentation of medicinal plants that have been used for skin diseases by residents of rural areas in Pokhara Valley. An oral questionnaire was set up before the field visit to collect the necessary data about herbal treatment for skin problems. The field visit was executed for three months in rural wards 16, 18, 21, 22, 23, 24, 30, 31, and 32. One group of local people was formed in each ward to collect pieces of information. Each group comprises three people headed by an experienced and elder respondent. Members, either male or female are mostly 45-55 years. The group was formed based on their interest in participation, knowledge, experience, and familiarity. An open discussion was carried out with the group head and members. The group head was a key informant, and the rest of the members were local users.

The area undertaken for this execution was rural wards of Pokhara Metropolitan City like 16, 18, 21, 22, 23, 24, 29, 30, 31, and 32. Among these, wards 21, 22, and 23 lie in southeastern, 16, 18, and 24 lie towards the northwest side, and 29, 30, 31, and 32 lie towards

the eastern side of the Pokhara Valley. The city is the largest metropolis of Nepal and the headquarters of Gandaki Province. The area receives high rainfall and has the richest vegetation of diverse types. The valley is also characterized by interference between aquatic and terrestrial ecosystems and respective floras.

RESULT AND DISCUSSIONS

The execution was conducted to document the indigenous knowledge of local people regarding their experience of herbal care methods for skin diseases. Studies revealed that residents of rural wards of the Pokhara Valley still believe in the plants growing around them for the treatment of minor skin injuries, cuts, wounds, allergies, ringworm, dandruff, and scabies. For example, the leaf paste of *Ageratum conizoides* is applied externally in case of instant cuts and wounds. In case of a burning sensation or skin burns they immediately use the gel of *Aloe vera*. In the case of scabies, they use the leaf paste of *Artemisia indica* externally on the affected skin part. Residents of those areas still use the leaf paste of *Azadiracta indica* to solve the problem of dandruff. The result shows their positive attitude towards medicinal plants for skin problems. A total of 68 plants were documented during this execution that have been used for skin problems. Uses of the plant parts were found that leaf contributes 38.23%, stem bark 25%, whole plant 19.11%, root 17.64%, seeds 13.23%, fruit 8.82%, milky latex 7.35%, resin 4.41%, rhizome 2.94%, and bulb and cotyledon 1.47% each. 43 plant families have been used as skin care plants. Out of 43 families, the maximum number is from Fabaceae (8 plants), followed by Moraceae (6 plants), Asteraceae (5 plants), Euphorbiaceae (5 plants), and the rest with two to one plant for each family.

Acacia catechu (L.F.) Wild.

Vernacular name: Khayar; English common name: Catechu tree; Family: Fabaceae

Parts used: Bark and resin.

Uses: The bark and resinous extract are used against different forms of leprosy and pruritus.

Achyranthus aspera Linn.

Vernacular name: Apamarga/ Datiwan; English common name: Chaff flower; Family: Amaranthaceae.

Parts used: Root and leaf.

Uses: The root and leaf paste treat syphilis, cuts, boils eczema, and wounds.

Acorus calamus Linn.

Vernacular name: Bojho; English common name: Sweet flag; Family: Acoraceae.

Parts used: Rhizome.

Uses: The paste of rhizome is used against scabies.

Aegle marmelos (L.) Correa.

Vernacular name: Bel; English common name: Bel; Family: Rutaceae.

Parts used: Leaf.

Uses: Leaf juice is useful to cure different skin problems.

Ageratum conyzoides Linn.

Vernacular name: Ganneghans; English common name: Goat weed; Family: Asteraceae.

Parts used: Leaf.

Uses: Leaf paste and leaf juice are taken against boils, sores, cuts, wounds, skin burns, and ruptured skin due to leprosy.

Albizia lebbek (L.) Benth.

Vernacular name: Siris; English common name: Siris tree; Family: Fabaceae. Parts used: Bark and leaf.

Uses: The bark juice is used to treat leprosy, boils, scabies, syphilis, and ringworm. The leaf juice is useful to treat boils.

Allium sativum Linn.

Vernacular name: Lahsun; English common name: Garlic; Family: Amaryllidaceae.

Parts used: Bulb.

Uses: The bulb paste is taken to cure leprosy.

Aloe vera (L.) Burm. F.

Vernacular name: Gheukumari; English common name: Indian aloe; Family: Liliaceae or Asphodelaceae.

Parts used: Leaf.

Uses: The leaf paste is helpful for skin burns, wrinkles, and various skin problems.

Alstonia scholaris (L.) R.Br.

Vernacular name: Chattiwan; English common name: Devil's Tree; Family: Apocynaceae.

Parts used: Milky latex, stem bark, and leaf.

Uses: Milky latex is useful to treat skin problems like cuts, wounds, and boils. The stem bark and leaf paste are used to treat infected areas on cuts, and wounds.

Amaranthus spinosus Linn.

Vernacular name: Lundejhar/Latte; English common name: Trailing Amaranthus; Family: Amaranthaceae.

Parts used: Root.

Uses: The root paste is used for different skin problems like eczema, boils, dandruff, ringworms, and burns.

Anagalis arvensis Linn.

Vernacular name: Nilkrishna; English common name: Pempernel; Family: Primulaceae.

Parts used: The whole plant.

Uses: Plant juice is useful for different skin diseases.

Amorphophallus campanulatus (Roxb.) Bl.

Vernacular name: Ole; English common name: Elephant yam, Family: Araceae.

Parts used: Root.

Uses: The root paste is applied to boils.

Artemisia indica Willd.

Vernacular name: Titepati; English common name: Indian Wormwood; Asteraceae.

Parts used: Root and leaf.

Uses: The root paste is used against boils and the leaf juice is for ringworm and itching skin.

Artocarpous lakoocha Roxb.

Vernacular name: Badahar; English common name: Monkey Jack; Family: Moraceae.

Parts used: Bark.

Uses: The bark infusion is applied to pimples and cracked skins.

A. heterophyllus Lam.

Vernacular name: Rukhkatahar; English common name: Jack fruit; Family: Moraceae.

Parts used: Leaf and bark.

Uses: The leaf paste is used to treat skin problems like cuts, wounds, and boils. The bark juice is helpful to treat boils, cuts, wounds, and pimples.

Azadirachta indica A. Juss.

Vernacular name: Nim; English common name: Margosa Tree; Family: Meliaceae.

Parts used: Leaf.

Uses: The leaf extract is taken against different infections of the skin.

Bauhinia purpurea Linn.

Vernacular name: Tanki; English common name: camel's foot; Family: Fabaceae.

Parts used: Leaf.

Uses: The leaf paste is used against different skin problems.

B. variegata Linn.

Vernacular name: Koiralo; English common name: Mountain ebony; Family: Fabaceae.

Parts used: Bark.

Uses: The paste of the bark is applied on cuts and wounds.

Berberis aristata DC.

Vernacular name: Chutro; English common name: Nepal's Barbery; Family: Berberidaceae.

Parts used: Rootbark.

Uses: The paste of the bark of the root is taken against wounds, skin inflammation, itches, pimples, and scabies.

Bombex ceiba Linn.

Vernacular name: Simal; English common name: Silk cotton Tree; Family: Bombacaceae.

Parts used: Bark.

Uses: The juice of bark is used to treat cuts and wounds.

Bryophyllum pinnatum (Lam.) Oken.

Vernacular name: Ajjambari; English common name: Sproutleaf Plant; Family: Crassulaceae.

Parts used: Leaf.

Uses: Decoction of the leaf is used in skin burns, boils, and wounds.

Callicarpa arborea Roxb. Ex C.B. Clarke.

Vernacular name: Daikamlo; English common name: Beautyberry Tree; Family: Verbinaceae.

Parts used: Root.

Uses: The root paste is taken to remove pimples.

Calotropis gigantea (Linn.) Dryand.

Vernacular name: Ank; English common name: Calotropis; Family: Asclepiadaceae.

Parts used: Root and milky latex.

Uses: The root paste is used in pimples, boils, pruritus, and wounds. The milky latex is taken to cure boils, pimples, leprosy, scabies, herpes, and syphilis.

Cannabis sativa Linn.

Vernacular name: Bhang; English common name: Hemp; Family: Cannabinaceae.

Parts used: Leaf.

Uses: Decoction of young shoots and leaf juice is used against cuts and wounds.

Cassia fistula Linn.

Vernacular name: Rajbrikshya; English common name: Golden shower Tree; Family: Fabaceae.

Parts used: Root and leaf.

Uses: The root and leaf juices treat skin problems like eczema, herpes, ringworms, scabies, and itching.

C. tora Linn.

Vernacular name: Tapre; English common name: Sickle senna; Family: Fabaceae.

Parts used: Root, leaf, and seeds.

Uses: The root paste is used in ringworm. A poultice of the leaf is taken for boils and ringworm.

The seed paste is used against itching tumors and leprosy.

Centella asiatica (L.) Urban.

Vernacular name: Ghondtapre; English common name: Indian pennywort; Family: Apiaceae.

Parts used: Entire plant.

Uses: The plant extract is applied for cuts, wounds, dandruff, ringworm, and the burning sensation of the skin.

Cinnamomum tamala (Buch. -Ham.) Nees et Eberm.

Vernacular name: Tejpat; English common name: Cinnamomum; Family: Lauraceae.

Parts used: Leaf.

Uses: The leaf paste is widely used for curing scabies.

Citrus limon (Linn.) Burm, F.

Vernacular name: Jyamir; English common name: Rough lemon; Family: Rutaceae.

Parts used: Fruit.

Uses: Fruit juice is used to cure pimples.

Commelina benghalensis Linn.

Vernacular name: Patpate; English common name: Commelina; Family: Commelinaceae.

Parts used: The Whole plant.

Uses: The plant extract is used for skin burns.

Curcuma longa Linn.

Vernacular name: Kalohaledo; English common name: Common Turmeric; Family: Zingiberaceae.

Parts used: Rhizome.

Uses: The rhizome pastes, and powder are widely used for ringworm, obstinate itching, eczema, bed sores, scabies, and other parasitic skin diseases.

Cuscuta reflexa Roxb.

Vernacular name: Akashbeli; English common name: Dodder; Family: Convolvulaceae.

Parts used: The whole plant.

Uses: Plant ash is useful for treating cuts and wounds.

Cynodon dactylon (L.) Pers.

Vernacular name: Dubo; English common name: Bermuda grass; Family: Gramineae.

Parts used: The whole plant.

Uses: Plant juice is used for fresh cuts and wounds.

Dalbergia sisoo Roxb.

Vernacular name: Sisau; English common name: Sissoo Tree; Family: Fabaceae.

Parts used: Bark and leaf.

Uses: Leaf and bark juice are used to cure cuts and wounds.

Datura metal Linn.

Vernacular name: Kalo Dhatura; English common name: Downey Datura; Family: Solanaceae.

Parts used: seed.

Uses: Seed paste is applied to boils, sores, and scabies.

Eclipta prostrata Linn.

Vernacular name: Bhringraj; English common name: false daisy; Family: Asteraceae.

Parts used: The whole plant.

Uses: The plant paste is applied to cuts, wounds, dandruff, and pimples.

Equisetum diffusum D. Don.

Vernacular name: Ankhle jhar; English common name: Horsetail; Family: Equisetaceae.

Parts used: Entire plant.

Uses: Ash of the plant is taken for skin burns and scabies.

Eugenia jambolina Linn.

Vernacular name: Jamuna; English common name: Blackberry; Family: Myrtaceae.

Parts used: Seed.

Uses: The seed paste is used to cure ringworms.

Euphorbia hirta Linn.

Vernacular name: Dudhejhar; English common name: Hairy Spurge; Family: Euphorbiaceae.

Parts used: Milky latex.

Uses: Latex is taken to cure cuts, wounds, and ringworms.

E. royalena Boiss.

Vernacular name: Shiundi; English common name: Royle's Spurge; Family: Euphorbiaceae.

Parts used: Leaf and Milky latex.

Uses: The milky latex is useful to cure boils, scabies, and pimples. The leaf paste is used for

cuts and wounds.

E. thymifolia Linn.

Vernacular name: Chhota dudhi; English common name: Family: Euphorbiaceae.

Parts used: The whole plant,

Uses: Plant juice is useful to cure ringworms.

Eupatorium adenophorum Spreng.

Vernacular name: Banmara; English common name: Mexican devil; Family: Asteraceae.

Parts used: The whole plant.

Uses: Plant juice is useful in cuts and wounds.

Ficus benghalensis Linn.

Vernacular name: Bar; English common name: Banyan Tree; Family: Moraceae.

Parts used: Milky latex.

Uses: Milky latex is used to treat sores and cracked soles of feet.

F. lacor Buch-Ham.

Vernacular name: Kavro; English common name: Java fig; Family: Moraceae.

Parts used: Seed.

Uses: Seed paste is useful to treat scabies and skin inflammation.

F. religiosa Linn.

Vernacular name: Peepal; English common name: Peepal Tree; Family: Moraceae.

Parts used: Stem bark and leaf.

Uses: The paste of the leaf is used to treat cuts and wounds while the bark paste is used for pruritus and scabies.

F. semicordata Buch-Ham ex J.E.Smith.

Vernacular name: Khanyu; English common name: Drooping fig; Family: Moraceae.

Parts used: Fruit and bark.

Uses: Paste of the bark of the stem and fruits are taken for the treatment of leprosy.

Jatropha curcas Linn.

Vernacular name: Sajiwan; English common name: Physic nut; Family: Euphorbiaceae.

Parts used: Root and seeds.

Uses: Root juice is useful for pimples and boils while seed oil is used in the treatment of eczema, itching skin, and boils. Seed paste is useful for skin burns.

Juglans regia Linn.

Vernacular name: Okhar; English common name: Walnut; Family: Juglandaceae.

Parts used: Bark and leaf.

Uses: Pastes of the bark and leaf are useful in the treatment of eczema and syphilis.

Maesa chisia Buch-Ham. ex.D.Don.

Vernacular name: Bilaune; English common name: Wildberry; Family: Sapotaceae.

Parts used: Root.

Uses: Root bark paste is useful for syphilis.

Mallotus philippinensis (Lam.) Muell. -Arg.

Vernacular name: Sindure; English common name: Kamala Tree; Family: Euphorbiaceae.

Parts used: Whole plant and fruit.

Uses: Plant paste is used in the treatment of ringworms and scabies. Fruits are used in the treatment of scabies.

Mangifera indica Linn.

Vernacular name: Anmp; English common name: Mango; Family: Anacardiaceae.

Parts used: Fruit and cotyledon.

Uses: Unripe fruit is useful to cure scabies and cutaneous affections. Paste of cotyledons is used to cure pruritus, scabies, and ringworms.

Mesua ferrea Linn.

Vernacular name: Nareswer; English common name: Ironwood Tree; Family: Guttiferae.

Parts used: Seed.

Uses: Seed oil is widely used for itching skin, sores, and scabies.

Mimosa pudica Linn.

Vernacular name: Lajjawati jhar; English common name: Touch me not plant; Family: Fabaceae.

Parts used: Root and leaf.

Uses: Root juice is used for cuts and wounds whereas leaf juice is useful for dermatitis, ringworms, and sores.

Momordica charantia Linn.

Vernacular name: Tite Karela; English common name: Bitter gourd; Family: Cucurbitaceae.

Parts used: Leaf and fruit.

Uses: Leaf extract is taken against scabies and itches. Fruit paste is used for scabies and leprosy.

Myrica esculenta Buch. – Ham. ex. D.Don.

Vernacular name: Kaphal; English common name: Box Myrtle; Family: Myricaceae.

Parts used: Seed.

Uses: Seed oil cures itches, scabies, and sores.

Ocimum tenuiflorum Linn.

Vernacular name: Tulsi; English common name: Holy basil; Family: Lamiaceae.

Parts used: Leaf.

Uses: Leaf juice is applied to ringworms, dermatitis, and pimples.

Oxalis corniculata Linn.

Vernacular name: Chariamilo; English common name: Wood sorrel; Family: Oxalidaceae.

Parts used: The whole plant.

Uses: Paste of shoot tip is used for boils, wounds, and eczema. The juice of the entire plant is taken against cuts, wounds, and pimples. Leaf juice is useful for removing warts and boils.

Pinus roxburghii Sarg.

Vernacular name: Sallo; English common name: Pine; Family: Pinaceae.

Parts used: Bark and resin.

Uses: Bark paste is used in skin burns. Paste of resin is useful for treating cuts and wounds.

Prunus cerasoides D.Don.

Vernacular name: Painyu; English common name: Himalayan cherry; Family: Rosaceae.

Parts used: Stem.

Uses: The stem is useful in the treatment of leprosy and skin burns.

P. persica Sieb. Et Zuce.

Vernacular name: Aru; English common name; Peachtree; Family: Rosaceae.

Parts used: Bark.

Uses: Bark paste is useful in the treatment of cuts, wounds, and boils.

Punica granatum Linn.

Vernacular name: Anar; English common name: Pomegranate; Family: Punicaceae.

Parts used: Seeds.

Uses: Seeds are used in scabies.

Reinwardtia indica Dum.

Vernacular name: Pyauli; English common name: Yellow Flax; Family: Linaceae.

Parts used: Whole plant.

Uses: The juice of the plant is used to treat cuts, wounds, and scabies.

Rhododendron arboreum Sm.

Vernacular name: Laligurans; English common name: Rhododendron; Family: Ericaceae.

Parts used: Young Leaf.

Uses: Leaf paste is useful for syphilis.

Ricinus communis Linn.

Vernacular name: Arind; English common name: Castor; Family: Euphorbiaceae.

Parts used: Leaf and seed.

Uses: Leaf is used as a poultice for boils. Seeds are used to treat boils and skin burns. A gel prepared from castor oil is used for eczema and dermatitis.

Shorea robusta Gaertn. F.

Vernacular name: Sal; English common name: The Sal Tree; Family: Dipterocarpaceae.

Parts used: Bark, leaf, and resin.

Uses: The resin is used to clean and heal wounds. Extract of the bark and the leaf is very useful in curing itches, wounds, and leprosy.

Solanum nigrum Linn.

Vernacular name: Kaligedi/jangali bihi; English common name: Black Nightshade; Family: Solanaceae.

Parts used: Leaf and fruit.

Uses: Paste of green leaves is taken to cure skin burns, eczema, and itches. Similarly, green fruits are used for ringworms.

Tagetes patula Linn.

Vernacular name: Sayapatri; English common name: Marigold; Family: Asteraceae.

Parts used: Entire plant.

Uses: The plant juice is taken to treat cuts and wounds.

Terminalia bellirica (Gaertn.) Roxb.

Vernacular name: Barro; English common name: Belleric Myrobalan; Family: Combretaceae.

Parts used: Bark.

Uses: Bark juice is taken for cuts and wounds.

CONCLUSION

The use of medicinal plants against common skin problems in the Pokhara Valley is the initial work for this region. The study helps to explore the importance of medicinal plants for curing various skin diseases. People in rural areas prefer herbal care for their skin health issues because of the availability of the source and low cost. Side by side, the use of medicinal plants is an integral part of the society and culture in the rural parts of Nepal. Altogether 68 different plants have been used to treat 17 different skin diseases. Among them, *Achyranthus aspera*,

Ageratum conizoides, *Albizia lebbbeck*, *Amaranthus spinosus*, *Artemisia indica*, *Bryophyllum pinnatum*, *Calotropis gigantea*, *cassia fistula*, *Centella asiatica*, *Curcuma longa*, *Jatropha curcus*, and *Oxalis corniculata* are frequently used and effective for the skin diseases.

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