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Research Article

Medicinal Plants Used to Heal Wound in Karandamalai of Dindigul District in Tamil Nadu, Southern India

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Abstract

Due to the presence of antibiotic or antiseptic nature's chemicals, plants are remarkable for the treatment of wounds. Having this fact as research theme, the present study was carried out to document the therapeutic uses of medicinal plants used to heal wound in Karandamalai of Dindigul district in Tamil Nadu. The frequent fieldwork was conducted from October 2019 to January 2020 for this study. The scientific name, family name, local name (in Tamil), part(s) used, mode of preparation, and mode of administration of medicine were recorded. A total of 24 medicinal remedies prepared from 24 plants were recorded. Further research on the phytochemistry and pharmacology of these medicinal plants should be conducted.

Keywords: Medicinal plants, Wound healing, Karandamalai, Dindigul district, Tamil Nadu.

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1. INTRODUCTION

Medicinal plants can perform a significant role in the prevention of pathogenic attacks in the body. Plants are a great source of primary health care due to the presence of certain chemical compounds. They have been reported to be very beneficial in wound care, promoting the rate of wound healing with minimal pain, discomfort, and scarring to the patient [1]. Skin is the largest organ of the human body, as such plants showing dermatological properties and the ability to stop bleeding, and to heal wounds and burns are of great significance to human health [2].

Research on the traditional knowledge related to plants used for wound healing still needs adequate attention. In this concern, the present study was carried out to document the therapeutic uses of medicinal plants existing in various locations of Karandamalai in Dindigul district of Tamil Nadu to heal wounds.

2. MATERIALS AND METHODS

2.1. Geographical profile of the study area – Karandamalai

Karandamalai is one of the reserved forests located in Dindigul district of Tamil Nadu. It is situated south of Malaiyur and southeast of Chengaimedu. Geographically, Karandamalai is lies between 19.2849º N latitude and 78.2169º E longitude. The altitude of the study area ranged from 180 to 780 m above mean sea level. The temperature of the study area is about 13 – 38º C and annual rainfall reaches 105 mm.

2.2. Methodology

Frequent field visits were made in different localities of Karandamalai from October 2019 to January 2020. Ethnomedicinal data on plants used to heal wounds were collected according to the methodology suggested by Jain [3]. The ethnomedcinal data (local name, mode of preparation, medicinal uses) were collected through questionnaire, interviews and discussions among the herbal practitioner in their local language. Totally 17 peoples were interviewed during this study and it includes 11 men and 6 women. The age of the informants was ranged from 34 – 62. The plants were botanically identified by using regional floras [4,5] and authenticated as per APG IV classification [6].

3. RESULTS AND DISCUSSION

3.1. Wound healing medicinal plants

A total of 24 medicinal plants used for the treatment of wounds were recorded by this present investigation. The 24 plant species were belongs to 18 families (Table 1). Asteraceae was found as dominant family with 3 species. It was followed by Asclepiadaceae, Euphorbiaceae, Fabaceae and Liliaceae (2 species each). The remaining 13 families were recorded with one species each (Table 2). According to the life form of the plants documented, herbs were found maximum (14 nos., 58.33%) than trees (5 nos., 20.83%), shrubs (3 nos., 12.50%) and climbers (2 nos., 8.33%) (Fig 1).

Table 1: List of wound healing plants recorded in the study area

Botanical name	Family	Local name	Habit	Medicinal uses
Acalypha indica L.	Euphorbiaceae	Kuppaimeni	Herb	Leaf is made into paste and applied externally
Aegle marmelos Corr.	Rutaceae	Vilvam	Tree	Leaf is made into paste and applied topically
Aloe vera (L.) Burm.f.	Liliaceae	Sotrukatralai	Herb	Leaf gel is applied externally
Aponogeton natans (L.) Engl. & K. Krause.	Aponogetonaceae	Parakelangu	Herb	Tuber is ground with water and the paste is applied topically
Aristolochia bracteata Retz.	Aristolochiaceae	Aduthinnapalai	Climber	Whole plant is made into paste and applied on affected area
Bauhinia purpurea L.	Fabaceae	Mandari	Tree	Dried stem bark powder is applied along with coconut oil
Calotropis procera (Alton). R. Br.	Asclepiadaceae	Vellaierruku	Shrub	Leaf extract with gingelly oil is applied on affected area
Celosia argentea L.	Amaranthaceae	Pannaikeerai	Herb	Leaf paste is applied externally
Cleome viscosa L.	Capparidaceae	Naikadugu	Herb	Leaf paste is externally applied
Commelina benghalensis L.	Commelinaceae	Kanomvazhai	Herb	Whole plant extract is used as wash
Curculigo orchioides Gaertn.	Amaryllidaceae	Nilappanai	Herb	Root is made into paste and applied externally
Dipteracanthus prostrata (Poiret) Nees.	Acanthaceae	Kiranthinayagam	Herb	Whole plant paste is applied externally
Heliotropium indicum L.	Boraginaceae	Thelkodukku	Herb	Leaf is ground with flower of *Cassia alata* and applied topically
Jatropha gossypifolia L.	Euphorbiaceae	KaruAthalai	Shrub	Stem latex is used to cure mouth wound
Launaea sarmentosa Willd.	Asteraceae	Ezhuthanipudu	Herb	Whole plant is made into paste along with leaf of *Jatropha glandulifera* and boiled with castor oil and this oil was applied
Lawsonia inermis L.	Lythraceae	Maruthantri	Tree	Leaf paste is applied
Mollugo nudicaulis Lam.	Aizoaceae	Parpatakam	Herb	Whole plant paste is applied
Oxystelma esculentum (L.f.) R.Br. ex Schultes	Asclepiadaceae	Oocipallai	Climber	Leaf paste is applied externally on the affected area
Phyla nodiflora (Willd.) Link.	Verbenaceae	Poduthalai	Herb	Leaf paste is applied topically
Pithecolobium dulce (Roxb.) Benth.	Cluciaceae	Kodukaipulli	Tree	Leaf paste is applied externally
Prosopis juliflora (SW.) DC.	Fabaceae	Vanni	Tree	Leaf paste with mustard oil, is applied
Tridax procumbens L.	Asteraceae	Vettukayapundu	Herb	Leaf paste is applied externally
Urginea indica (Roxb.) Kunth.	Liliaceae	KadduVankayam	Herb	Bulb paste is mixed with neem oil and applied
Xanthium indicum Koenig.	Asteraceae	Marul	Shrub	Leaf is roasted in castor oil and made into paste. This paste is applied externally

Table 2: Families with no. of species

Family	No. of species
Acanthaceae	1
Aizoaceae	1
Amaranthaceae	1
Amaryllidaceae	1
Aponogetonaceae	1
Aristolochiaceae	1
Asclepiadaceae	2
Asteraceae	3
Boraginaceae	1
Capparidaceae	1
Clusiaceae	1
Commelinaceae	1
Euphorbiaceae	2
Fabaceae	2
Liliaceae	2
Lythraceae	1
Rutaceae	1
Verbenaceae	1

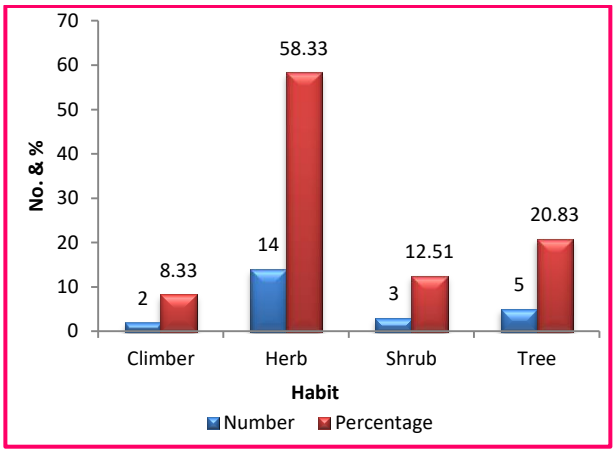

Figure 1: Number and Percentage of different habits

3.2. Plant parts used

The results of the present study also highlighted that leaves were used in 13 cases with 54.15% which was found as most preferable plant part used to cure wounds and whole plant was used in 5 cases (20.83%). The following parts were used in only one case with low use percentage (4.17% each): Bulb, Leaf gel, Root, Stem bark and Stem latex (Fig 2). Most of the earlier ethnobotanical studies conducted in various regions of Tamil Nadu confirmed that leaves are the preferable plant part used in the preparation of medicine [7-15].

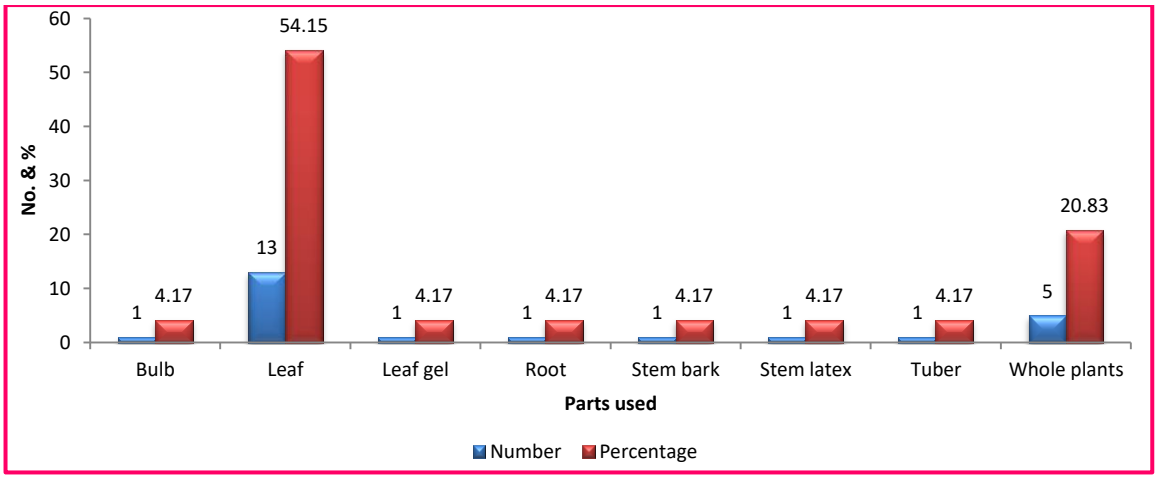

Figure 2: Number and Percentage of plant parts used

3.3. Mode of medicinal preparation and application

By this current research work, it was also found that the medicine were prepared mostly in the form of paste (87.50%), followed by extract (8.33%) and powder (4.17%) (Fig 3). In case of administration of medicine, in 23 cases (95.83%), it was applied topically and in one case (4.17%) it was used as wash to heal the wound (Fig 4). These results were concordance with other ethnobotanical surveys conducted in other districts of Tamil Nadu, by which it was confirmed that the use of medicines as paste was mostly used in the treatment of skin diseases including wounds [16-18].

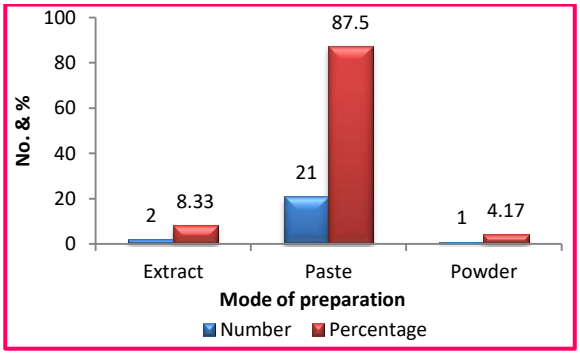

Figure 3: Number and Percentage of medicinal preparation

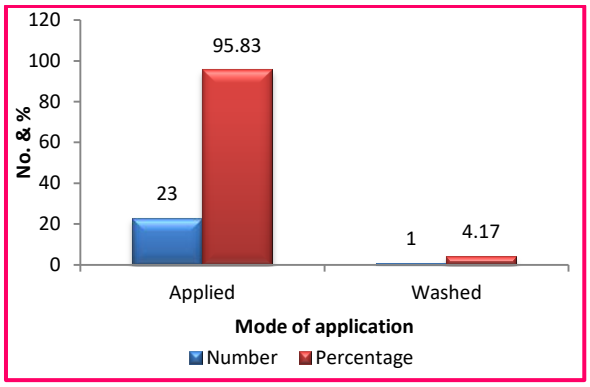

Figure 4: Number and Percentage of medicinal application

4. CONCLUSION

Phytochemical and pharmacological values of these plants should be tested and attention should also be made on proper exploitation and utilization of these plants; otherwise, there will be the possibility of extinction of particular species in the future.

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CONFLICT OF INTEREST

The author has declared that there is no conflict of interest.

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