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A Search for the Ethnomedical Knowledge among Malaipandaram Tribe in Kerala

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Abstract

Traditional knowledge in most cases, is an undocumented treasure protected by indigenous communities worldwide. India has a rich diversity of tribal populations, and they usually transmit their unique practices in agriculture, health, and environmental management orally from generation to generation. Lack of documentation of the knowledge dwelled with indigenous communities' led to the erosion of the traditional knowledge wealth of India. An evident decline in the percentage of oral transmission of traditional knowledge is seen as the young generation from many tribal communities is entering higher education and other job sectors apart from their traditional occupations. The present study was an attempt to document the conventional remedies practiced by Malai Pandaram, a nomadic tribal community in Kerala, India. They relied mainly on forest resources for their daily income. They have a rich knowledge of medicinal plants and their usage. Data was collected from individuals residing at the Manjathode tribal settlement, a place under the Ranni forest division of the Pathanamthitta district. The study could document 24 medicinal plant species mainly used for stomach and skin diseases, postpartum care and as antivenom. Most documented plants were unusual in the village and mainly located in the deeper forest regions. The study pointed out the need to take the initiative to conduct a detailed exploration of traditional knowledge of the Malai Pandaram tribe before the knowledge vanishes. The plants they use need to be conserved and thoroughly studied for development. They need to be conserved and thoroughly checked to develop natural alternatives to synthetic medicines for various ailments.

Keywords: Malai Pandaram Tribe, Traditional knowledge, Medicinal plants

Introduction

Ethnobotany is the study of interactions between humans and plants. It studies the interactions of human beings with flora in a particular area. It broadly deals with the investigations, observations, and identification of botanical diversity used to prevent and treat human and livestock ailments and livelihood (Balick and Cox ,1996). It can be used to confront human problems in the future. The field also contributes to conservation of biodiversity, especially with regard to the

documentation and maintenance of indigenous and local knowledge of plants. Ethnobotany has played a role in the development of new drugs for many centuries. Numerous ethnobotanical studies aimed at identifying new pharmaceutical products have recently been initiated.

Ethnomedicine is a branch that deals with the study of traditional uses of plant compounds by various ethnic groups. Ethnomedical studies are highly significant for traditional medicine research and can contribute information for drug discovery. Traditional medicines based on herbal remedies have always played a key role in the health systems of many countries. In India the native people are exploiting a variety of herbals for effective curing of various ailments. The plant part used, preparations used, and administration of drugs vary from one place to another. However, the knowledge of herbal medicines is gradually perishing, although some traditional communities still practice the art of healing effectively. Many viral diseases are still fatal or not curable, although some can be controlled with expensive life–prolonging drugs. Hence safe,effective and inexpensive antivirals are the top global drug development priorities.

Tribals are socially, economically, and literally the least advanced, but they harbor a lot of knowledge of medicinal plants. There are about 35 tribal communities in Kerala. Tribal medicines offer a vast scope for medical research. The Malai Pandaram are a scheduled Tribe of Kerala who live in deep forests of Ranni, Periyar and Achenkovil in Pathanamthitta district. Malai Pandaram usually lead a nomadic life and the main livelihood activities for Malai Pandaram are hunting and collection of minor forest resources. They mainly sell Ponnampoovu, Bilimbi, Ginger, Wild pepper, Cardamom, and honey (Manjusha and Muhammad, 2017). Even though studies have been undertaken to document the traditional knowledge of Malai Pandaram tribes, the data on the tribe's novel phytotherapy practices is lacking. The present work was aimed to develop a database of novel ethnomedicinal knowledge of Malai Pandaram tribe and evaluate unique traditional medicinal practices of the tribe by comparing with the other tribal communities.

Materials and Methods

The study was conducted in Manjathodu tribal colony ($9^0$22'N, $76^0$54'E) near Rajampara forest station, Laha, Perunnad, Pathanamthitta, Kerala. The study area comes under the Ranni forest division.Field visits were conducted to Manjathodu colony during February and March 2023. Interviews with the informers were conducted in the presence of the officers of the Rajampara forest station. Raju, 'Oorumoopan' of the colony, was the main informer. In addition to him data was recorded from 9 other members. Information was collected on the local name of plant species, parts useful for therapy, drug predation methods, and usage guidance.

The information collected was analyzed to find out the family-wise distribution statistic of plants, major phytotherapy uses and the most treated illness/ health conditions, and comparative statistics of parts used. The unique phytotherapy uses of the tribe were identified by comparing data with the published information of other tribal communities of Kerala. Kani, Kadar, Kurichyas, and Malamalasar tribal populations of Kerala were selected for the comparison study in the present study.

Results

A total of 24 plants with various medicinal uses were recorded in the study.Information on medicinal plants with their local names, parts used, and purpose of use is presented in Table 1. Plants belonging to 19 different families are included in the list. Among them five were monocots and others were dicots. The Combretaceae family included the greatest number of plants from the list (three plants).The plants were used for 16 different medical purposes. One plant was recorded for more than one use. The other uses of the plants is presented in Table 2. Most of the listed plants were used for postpartum care, stomach related problems and skin diseases.

To analyze the unique practices of Malai Pandaram tribes, the tribe's phytotherapy use was compared with available literature regarding that of other tribes in Kerala. The consolidated result of the analysis is presented in picture chart (Fig1).

Table 1
Plants used by the Malai Pandaram Tribal Community

Plant name	Plant name used by the tribe	Family	Use	Part used
Aporosa cardiosperma (Gaertn.) Merr.	Vetti	Phyllanthaceae	Fatigue, Stomachache	Fruit
Asparagus racemosus Willd.	Shathavari	Asparagaceae	Diabetes, Urinary disorders and Post-partum care	Tuber
Borassus flabellifer L.	Pana	Arecaceae	Post-partum care	Fruit
Calycopteris floribunda Roxb.	Pullanji	Combretaceae	Fatigue, Stomachache	Water from stem cutting
Careya arborea Roxb	Pezhu	Combretaceae	Skin diseases	Leaves and fruits
Cinnamomum verum J. Presl	Edana	Lauraceae	Post-partum care	Leaves
Curcuma aromatica Salisb.	Kasthurimanjal	Zingiberaceae	Remove scars	Rhizome
Elaeocarpus tuberculates Roxb.	Bhadraksham	Eleocarpaceae	Headache	Seed
Emilia sonchifolia (L) DC.	Muyalcheviyan	Astraea	Dizziness	Leaves
Ensete superbum (Roxb.) Cheesman	Kattu vazha	Musaceae	Hernia	Fruit
Helicteres isora L.	Idampiri valampiri	Malvaceae	Stomachache	Fruit
Mimosa pudica (Duchass. & Walp.) Griseb.	Kattu thottavadi	Mimosaceae	Dizziness	Whole plant
Myristica malabarica Lam.	Ponnambu	Myristicaceae	Diabetes, post-partum care and Stomachache	Flower and bark
Naravelia zeylanica DC.	Vathakodi	Ranunculaceae	Cough and cold	Whole plant
Pergalaria daemia (Forsk.) Chiov	Veliparuthi	Apocynaceae	Fever	Leaves
Persea macrantha (Nees) Wight	Kulamavu	Lauraceae	Post-partum care	Bark
Sida cordifolia L.	Kurumthotti	Malvaceae	Fatigue	Whole plant

Table 2
Different uses of plants recorded in the study

Use	Plants used
Cough and cold	*Naravelia zeylanica*
Dandruff	*Wrightia tinctoria*
Diabetes	*Asparagus racemosus, Myristica malabarica*
Dizziness	*Emilia sonchifolia, Mimosa pudica*
Fatigue	*Aporosa cardiosperma, Calycopteris floribunda, Spondias pinnata*
Fever	*Pergalaria daemia*
Headache	*Elaeocarpus tuberculates*

Hernia	*Ensete superbum*
Poison treatment	*Thottea siliquosa*
Postpartum care	*Borassus flabellifer, Cinnamomum verum, Persea macrantha, Asparagus racemosus, Myristica malabarica*
Remove scars	*Curcuma aromatica*
Skin diseases	*Solanum anguivi, Terminalia bellirica, Ziziphus oenopolia, Smilax zeylanica, Caraya arborea*
Stomach-ache	*Aporosa cardiosperma, Calycopteris floribunda, Myristica malabarica, Spondias pinnata*
Tooth ache	*Wrightia tinctoria*
Urinary disorders	*Asparagus racemosus*

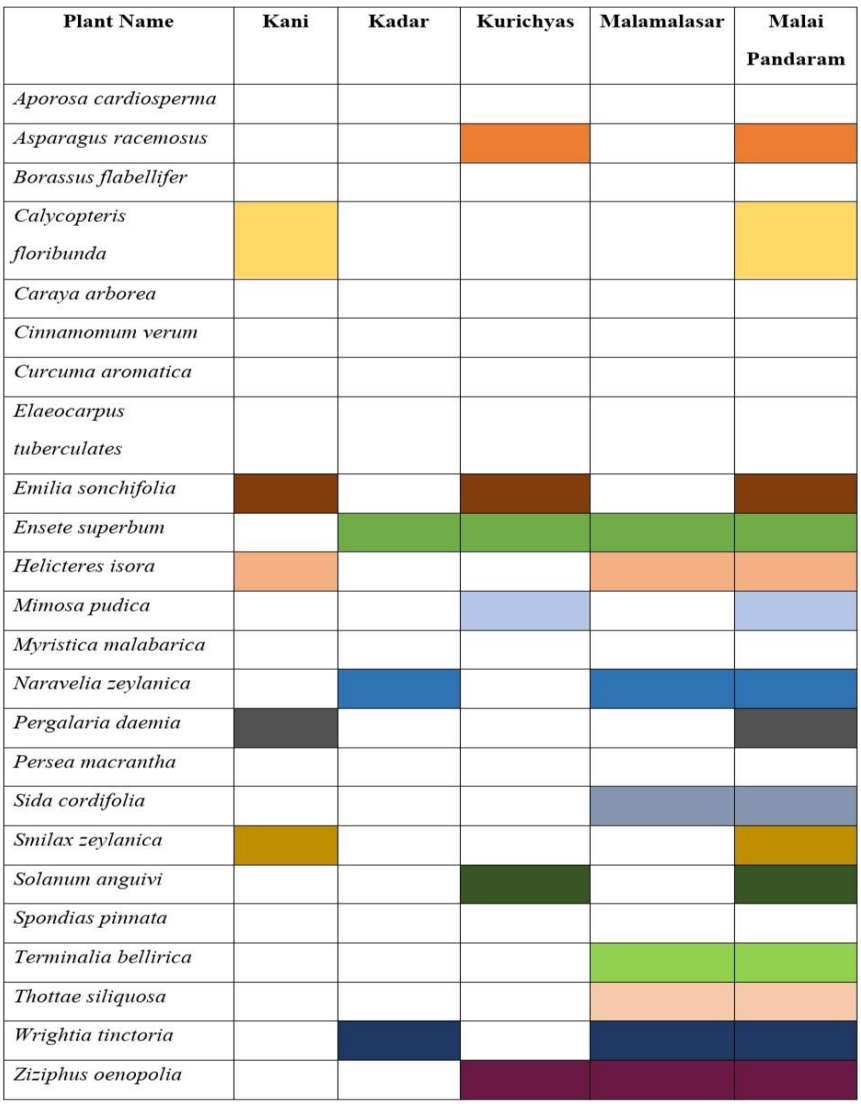

Fig 1
Colour chart showing comparative ethnomedical usages of plants by different tribes in Kerala

Discussion

The present study investigated the unique ethnomedicinal knowledge owned by the Malai Pandaram tribe residing at the Manjathodu tribal settlement of the Pathanamthitta district. Information on plants with vernacular names, uses, and part of the plant used were gathered from the tribals. They have their own traditional practices. When compared with the Kani, Kurichyar, Kadar and Malamalasar tribal populations, the collected data revealed that only 4 plants recorded from Malai Pandaram were used by other tribes for the same purpose. Other plants were used by the studied tribes, but the uses were different. Among the compared tribes, Malamalasar and Malai Pandaram used the most significant number of plants in common (8). The usage similarity is higher between Kadar and Malai Pandaram.

Kani population and Malai Pandaram tribe of the study area commonly use four medicinal plants. Both the groups used the plants for different ailments. Malai Pandaram use S. *zeylanica* for treatment of skin rashes while Kani tribe use it for treatment of kidney stone. Malai Pandaram use *P. daemia*for relieving fever while Kani tribe use it for blood clotting. Malai Pandaram use *C.floribunda* for relieving stomach related ailments,but Kani tribe uses it for the treatment of Malarial fever. The use of *H.isora* by Malai Pandaram is to reduce fever and preparation of oils while Kani uses it for cold, cough and cancer treatment. The Kani tirbe use *E.sonchifolia* to heal wounds and treat chest pain while the Malai Pandaram use it for dizziness(Prakash *et al.,*2008).

Kadar poulation and Malai Pandaram use *Naravalia zeylanica* and *Wrightia tinctoria* (Udayan*et al.,* 2005*).* Both groups use the plants for the same purpose. They inhale crushed plant of *N. zeylanica* for treating cough.

Kurichyas of Kerala use *M.pudica* for wound healing, Malai Pandaram use the plant to treat dizziness (Purushothaman and Irfana., 2020). Kurichyas tribe and Malai Pandaram use *A.racemosus* for treatment of urinary disorders. Malai Pandaram use *E. sonchifolia* for relieving dizziness while Kurichyas use it to cure worm infection. Both the groups use *S. anguivi* for treatment of skin diseases and stomach-related ailments. Kurichyas use Z. *oenopolia* for treating ulcers and wounds while the Malai Pandaram use it for skin rashes. Kurichyas tribe use *E. superbum* to treat urinary disorders and kidney stones while Malai Pandaram use it to treat hernia.

Malamalasar tribe use *H. isora* fruit oil for treating earache, *N. zeylanica* leaf paste to heal wounds, *S. cordifolia* leaf paste as hair oil, *T.bellirica* bark as diuretic, *T.siliquosa* root and leaves as sedative to treat snake bite, W.*tinctoria* bark paste to expel worms and *Z. oenopolia* bark decoction to promote healing of fresh wounds. The therapeutic usages of these plants by Malai Pandaram tribe are different except for the use of *S. cordifolia*.

The study identified nine novel medicinal plants used by Malai Pandaram tribe of Manjathodu colony, Pathanamthitta district. The unique plants used by the tribe include *Aporosa cardiosperma, Borassus flabellifer, Caraya arborea, Cinnamomum verum, Curcuma aromatica, Elaeocarpus tuberculates, Persea macrantha, Myristica malabarica* and *Spondias pinnata*. Also, the study identified plants of conservation importance under use.

Conclusion

In the present study, the ethnomedicinal practices of Malai Pandaram tribe were investigated in comparison with the Kani, Kadar, Kurichyar and Malamalasar tribes of Kerala. The study recorded uses of 24 different plants by the tribe Malai Pandaram for treating 16 different ailments. Literature review revealed the fact that many of the ethnomedicinal uses of the tribe need through scientific evaluation. Many plants under use were evaluated scientifically by different researchers all over the world to understand their phytochemical uses, but some of the uses recorded in the current study is novel and it needs further scientific evaluation. Nine plants recorded in the study were not even used for ailments by any of the compared tribes- Kani, Kadar, Kurichyar and Malamalasar. The difference in the recorded uses may be due to the difference in culture and geographical distribution of the tribes. *Borassus flabellifer*, *Aporosa cardiosperma, Myristica malabarica* and *Ensete superbum* recorded in the study are Red listed species. So extensive surveys of these plants in the forests of Pathanamthitta should be conducted to analyze the species abundance and richness of the listed plants. Proper conversation measures need to be taken. A single plant was found to have different uses among different tribal populations. This indicated the immense medicinal value of the recorded herbs and therefore the study recommended detailed scientific studies on the recorded phytotherapy uses to identify the hidden medicinal principles in these plants for drug development. The ethnomedicinal knowledge of the Malai Pandaram tribe needs to be protected

and steps need to be taken to propagate the knowledge to the descendants of the tribe.

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