

Original article

Ethno-medico-botanical Investigation of *Jenu Kuruba* Ethnic Group of Karnataka State, India

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Abstract

Background: The study of ethnobotany relating to any tribe is in itself a very intricate or convoluted process. This paper documents the traditional knowledge of medicinal plants that are in used by the *Jenu kuruba* ethnic group of Karnataka state (South India). **Methodology & Results:** The present study was done through structured questionnaires in consultations with the tribal practitioners, patients and has resulted in the documentation of 20 medicinal plant species belonging to 17 families and 25 genera. For curing diverse form of ailments, the use of aboveground plant parts was higher (66.59%) than the underground plant parts (21.41%). Of the aboveground plant parts, leaf was used in the majority of cases (9%), followed by fruit (4%). Different underground plant forms such as root, tuber, rhizome, bulb and pseudo-bulb were also found to be in use by the *Jenu kuruba* tribe as a medicine. Altogether, 21 types of ailments have been reported to be cured by using these 20 medicinal plants species. Perceived efficacy have given. **Conclusions:** The study thus underlines the potentials of the ethnobotanical research and the need for the documentation of traditional ecological knowledge pertaining to the medicinal plant utilization for the greater benefit of mankind. This paper is based on the field exploration conducted in Karnataka (South India).

Keywords: *Jenu kuruba*, Ethnic group, Medicinal plants, Diseases.

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Introduction

India is a rich land of traditional or indigenous knowledge. On average, about 85% of the traditional medicines used for primary healthcare are derived from plants in rural India¹. Herbal medicines have good values in treating various communicable and non-communicable diseases. Traditional medicine and ethnobotanical information play an important role in scientific research, predominantly when the literature and

fieldwork data have been properly evaluated. India is one of the twelve megabiodiversity countries of the Globe having rich vegetation with a wide variety of plants with medicinal value.

It is reported that there are more than 17209 different kind of plants out which more than 7918 plants have high medicinal values in India². However, study has proved that over 5796 ecosystem specific

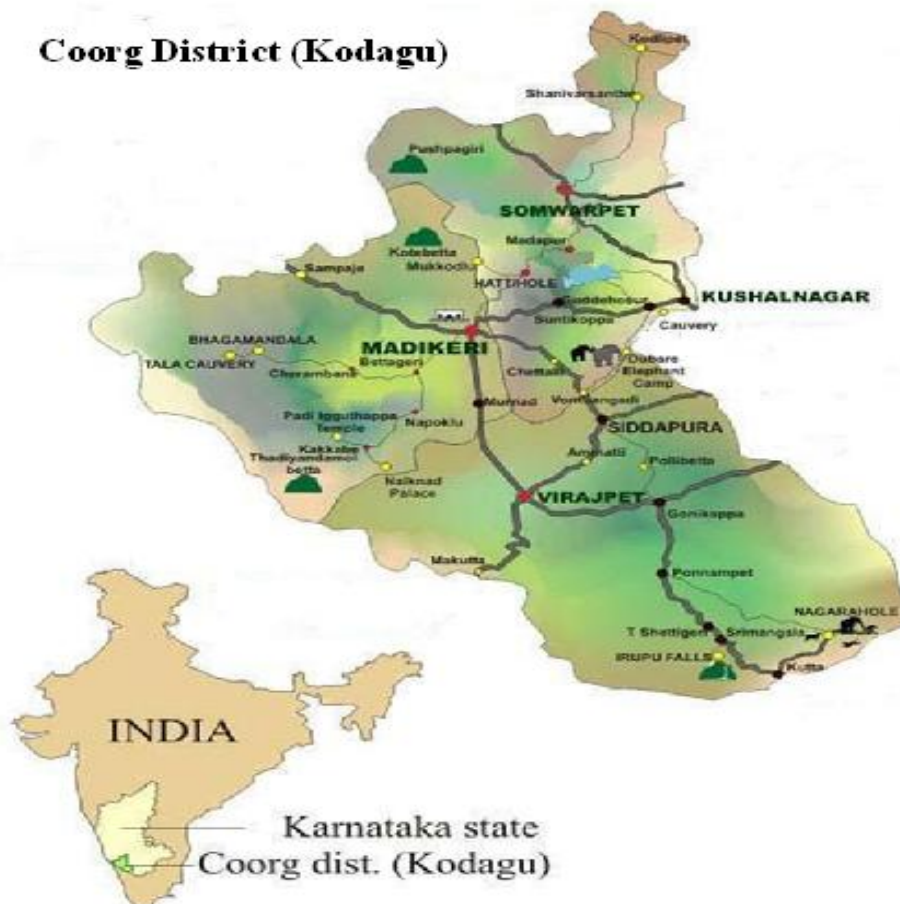
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species of plants are used by Indian ethnic communalities for healthcare, across the various ecosystems. A current study enumerates around 2400 unique species of plants that are fully documented in terms of their biological properties, actions and drug formulations for a range of health conditions³.

Even today, several local and aboriginal communities in the Asian countries meet their basic needs from the products they manufacture and sell based on their

traditional knowledge. Rural and ethnic people not only depend on wild plants as sources of food, medicine, fodder and fuel, but have also developed methods of resource management, which may be elementary to the conservation of some of the world's important habitats. Documenting the indigenous knowledge through ethnobotanical studies is imperative for the conservation of biological resources as well as their sustainable utilization⁴.

Location map of study area



Area of field work done

Figure 1

The rich and diversified flora of India provides a most priceless storehouse of medicinal plants. Given that Indian communities are traditionally rural in nature, an enormous deal of knowledge in

this field has been accumulated over the years. In addition, this indigenous knowledge is worth recording. There are no ancient manuscripts analogous to those mentioned above, but scientists are now

documenting the various ethno-botanical practices based on plant drugs⁵. The immediate objective of this study was to assess the richness of Ethno-medicinal plant species used by the Jenu kuruba ethnic group of Coorg district (Karnataka) of South India.

Historically, *Jenu Kuruba* ethnic community has survived on their traditional knowledge base regarding health problems. Traditional medicines are the primary healthcare resources for the *ethnic* group to shield their health. Tribal practitioners are the curators of the tribal society and they have a good knowledge of medicinal plants, diseases and treatment by means of plants only. Jenu kuruba is one of the major ethnic group in Karnataka state-South India. They are concentrated around Mysore Chamaraja nager Coorg, districts of the Karnataka state. In addition, they live in some patches in Kerala state. Nevertheless more than 40% of them are concentrated only in Coorg district of the Karnatka State. Total population of this group was 37654 in the 2001 Census. Habitually, they inhabit in deep forest areas. Few (11%) people of them are living in semi rural areas also. Only 3% of them are living in semi urban areas (Census, 2001). Literacy rate (2001 Census) is very low (24%). Habitually they are living in hamlets made out of bamboo and bark of the other plants. They practise their own judicial system. They believe in magic, sorcery and witchcraft. Neither polygamy nor polyandry is practiced. Besides working with Ratan and Bamboo, collection of minor forest products like herbs, honey, roots and fruits are their supplementary livelihood resources. Poverty exists more amongst this group. This group, depend on plant resources mainly for herbal medicines, food, forage, construction of dwellings, making household implements, sleeping mats, etc. Basket making is their key livelihood⁶.



Figure 2
Settlements of Tribes



Figure 3
Traditional Heeler Checking Plants



Figure 4
Gardenia turgida



Figure 5
Traditional healer



Figure 6
Zanthoxylum rhetsa

Methodology

Coorg or Kodagu district is located in the state of Karnataka- South India. The people of the Coorg are called Kodavas. It is a hilly and heavy rainfall area and habitat for more than seven different types of ethnic groups. The Altitude range from 220-2400 m above the sea level. The annual rainfall in the Coorg district will be

somewhere from 450 - 1230 mm and temperature range from 5 - 27 degrees Centigrade. Most parts of the district are covered with the dry deciduous tropical forest, resulting in subtropical to temperate areas alternating with the evergreen forests (Western Ghats). The area of investigation lies between 75°0' to 79°0' longitude and 21°0' 34' to 0° latitude's are found in the different elevations from 300 m - 2,200 MSL in Coorg districts. They survive only in the forest area, which is 10-15 Km away from the nearby main road. Temperature ranges from 18° - 25° during March – April in high hill ranges and averages between 20° during December and 28° during April – May of the year. Modern health care facility is still an outlandish in many parts of the district. Nevertheless Government has established few Primary Health Centres (Allopathic) they deficient in many elementary amenities including the Physicians. Our field investigation has made known that only 8.6% of the different ethnic groups have utilized these facilities so far in the studied area.

Ethnobotanical Survey

Fieldwork was conducted in the several hamlets exclusively as a part of the study. More than 250 individual members including common man, patents and traditional healers were interviewed in the studied area. During the stay, their daily activities were closely observed including curing sessions/techniques. The native plants used for the preparation of crude drugs and their administrations along with doses were recorded through 10 field trips by this researcher carried out in 40 days. All commonly used medicinal plants were collected and verified together with the informants during the study. Researchers got both oral and written consent and permission directly from the informants to publish the collected data for wider circulation. Researchers had an agreement with the concerned informants to share the possible benefits if, any new drug/s could discover from these medicinal plants. This

agreement was made with the help of a local NGO (Rural Organization for Appropriate Development Trust). Researchers had directly spoken to the tribal informants through their local language. Apart from the survey, we used Case study, Community Norm study and Institutional Ethnography method to elicit more information about their medical pluralism and health seeking behaviour emphasizing on usage of different types of herbal plants for both preventive and curative purposes in their daily life. Plants voucher specimens were matched, deposited⁷ in State Resource Center for Indigenous Knowledge Herbarium. Plants were identified by a Botanist and cross-verified by an Ayurvedic Physician using relevant floras^{8,9}. Data has initially been

recorded on cassette tapes (interviews and Focus with appropriate codes) and later transcribed and typed. Other field notes were recorded in notebooks with the due assistance from two Botanists and an Ayurvedic Physician for cross examination.

The medicinal plants are arranged alphabetically, giving information and correct botanical names, family, local name in *Kannada* (local language) and preparation of dosages, therapeutic uses, and rate of efficacy, and mode of administration. Data have been compared, cross verified using latest available knowledge and reported promptly in this paper to best of our knowledge for the best interest of the society.

List of herbal plants used by the for various ailments

Table 1

Family	Plant Name	Common Name	Part/s used	Specific Indications
Araceae	<i>Colocasia esculenta schott</i>	Chaembu	Leaves	Urinary tract problems
Acanthaceae	<i>Andrographis paniculata, Nees</i>	Nilavaembu	Leaf and roots	For poisoning snake bite
Bixaceae	<i>Bixa orellena Linn.</i>	Bixa plant	Roots	Kidney stone symptoms
Boraginaceae	<i>Heliotropium indicum, L.</i>	Hattajurie	Plant	Diabetic
Caesalpiniaceae)	<i>Cassia tora, L.</i>	Thakarai	Leaf	Stomach ulcer
Cruciferae	<i>Lepidium sativum, L.</i>	chaunsar	Plant	Anti bronchitis
Caricaceae	<i>Carica papaya Linn</i>	Paw-paw	Fruits, leaves and roots	Prevent spontaneous abortion
Dioscoriaceae	<i>Discorea alata Linn.</i>	Wayeter Yarm	Tuber	Symptoms of mouth cancer
Euphorbiaceae	<i>Alchornea cordifolia</i>	Christmas bush	Entire plant	Piles
Euphorbiaceae	<i>Jatropha curcas Linn</i>	Physic nut	Root latex from stem and leaves	Healing large wounds
Fabaceae	<i>Mucuna nigricans</i>	Atkri	Seed	Genital ulcer

Family	Plant Name	Common Name	Part/s used	Specific Indications
Graminae	<i>Pennisetum perpureum</i> Schum	Millet	Stem and leaves	abnormal blood flow after menstruation
Leguminosae	<i>Entanda africana</i> Gullian and Perrot	Monkey scandle	Bark	Symptoms of Chest pain
Lamiaceae	<i>Plectranthus</i> L.	Muddupattna	Leaves	Easy child birth
Myrtaceae	<i>Syzigium jambolanum</i> , D C.	Gulap-jat	Fruit	Joint pains
Rubiaceae	<i>Gardenia turgida</i> . Roxb.	Ghuruda	Seed	Food poisoning
Rutaceae	<i>Zanthoxylum rhetsa</i> , D C.	Morai	Seed and bark	Weakness after typhoid fever
Urticaceae	<i>Fleurya aestatuans</i> (L.) Gaud	Tropical nettle weed	Young fruits	Symptoms of Mental Depression
Verbenaceae	<i>Symphorema polyandrum</i> , W.	Badichand	Seeds and root	Snake bite
Verbenaceae	<i>Vitex trifolia</i> Linn.f.	Urikshibi	Shrub	Rheumatic swelling,

Table 2

Method of drug preparation	Administration	Contradictions	Number of patents cured, out of the total number of patents used plants	Perceived efficacy
Decoction	Orally	----	27 (out of 41 patents)	Moderate
Lotion	Paste on the bite spot	----	21 (out of 35 patents)	Moderate
Decoction	Orally	Only for empty stomach (early mornings)	23 (out of 25 patents)	High
Decoction	Orally (3 times in a day)	----	29 (out of 35 patents)	High
Infusion	Orally	Not safe for the children below 10 years of age	34 (out of 37 patents)	High
Infusion	Orally	----	31 (out of 34 patents)	High
Cold water maceration	Chew	Should not during menstruation period	23 (out of 31 patents)	Good
Decoction	Orally	Not safe for the	23 (out of 26	Excellent

Method of drug preparation	Administration	Contradictions	Number of patents cured, out of the total number of patents used plants	Perceived efficacy
		patients above 50 years of age		
Decoction	Orally	----	23 (out of 27 patients)	High
Lotion	Pate on the wounds	----	36 (out of 45 patents)	High
Decoction	Orally	Only after lunch and dinner	39 (out of 52 patients)	Moderate
Decoction	Orally	----	31 (out of 50 patients)	Moderate
Decoction	Orally	Only to the adults (18-70 years old)	44 (out of 67 patients)	seems good
Decoction	Orally	Should take 3 hours before delivery	39 (out of 55 patients)	Good
Infusion	Paste on the pain spot	----	13 (out of 35 patients)	Low
Infusion	Orally	Not safe for the patients above 50 years of age	28 (out of 35 patients)	Very good
Decoction	Orally	Only when stomach is full	36 (out of 53 patients)	Moderate
Decoction	Orally (3 times in a day)	----	37 (out of 45 patients)	High
Lotion	Paste on the bite spot	----	13 (out of 38 patients)	Low
Decoction	Orally	Not good for pregnant ladies	17 (out of 29 patients)	Good

Note: *Perceived efficacy has been mentioned based on the personnel documents of the Traditional Healers and their family members. Normally they will maintain detailed documents (like case history) about their effectively cured patients to maintain their reputation. Researchers personally could meet few successfully cured patients (without notice to the respective healers) to cross check the numbers given by the traditional healers. Almost all cases were found true.

Results and Discussion

Preliminary results on the evaluation of herbal preparations used for the management of some diseases including species *Colocasia esculenta*, *Symphorema polyandrum*, *Gardenia turgida* and *Andrographis paniculata* are recommended for the further study because they have shown encouraging results and

clinical conditions of patients treated with such herbal preparations after having few lab studies in various research institutes around the Globe^{10,11}. Further, our study has shown that *fleurya aestuans* (L.), *Carica papaya* Linn, and *Pennisetum purpureum* Schum plants have been frequently used and have high perceived efficacy. Plants *Zanthoxylum*

rhetsa, *D C.* and *Fleurya aestatuans (L.) Gaud* have shown a very high rate efficacy.

Like the tribal of other part of the India, Jenu kurubas of Karnataka sate, share a perspective on health and wellness that is also reflected in their culture. The tribals of Karnataka and their health scenario presents a kaleidoscopic mosaic of various communicable and non-communicable disease profile keeping in pace with their socio-economic development. Thus more study is needed to interventions for standardization of traditional herbal formulations/process development of therapeutically active phyto-constituents, isolation and characterization of new therapeutic agents, genomics, bioenhanser and metabolic engineering of these medicinal plants for the possible discovery of new drugs. Also it will be very helpful in the development of new low-cost medicine. A number of projects having multi-disciplinary approach should also be supported for development of new herbal drugs from leads already available in medicinal plants. Based on the locally available herbal wealth, there has colossal potentiality for commercial cultivation of some useful herbs and production of safe green medicines by establishing plant based industries in the tribal rich tract for the health improvement, and conservation of genetic diversity. Today, search for new drugs having prospective therapeutic compounds is of worldwide significance. The knowledge systems upon which policy

decisions are based must be both reactive and proactive, relying on indigenous experimentation and innovation, as well as technologies made accessible through external channels, to cope with and adapt to changes.

Conclusion

In the current study, the majority herbal users opined that herbs were efficacious, and in some instances, more efficacious than conventional allopathic medicines. On filed investigation supports our hypothesis that this discernment of efficacy is a major contributing aspect supporting the use of this indigenous healthcare system using medicinal plants only. The increasing body of evidence based research explorations in the form of randomized controlled clinical trials should direct the proper use of herbs and should continue to receive support to validate (or otherwise) efficacy and establish ment of safety. Regrettably, nearly all indigenous Indian medicinal herbs are not well scientifically researched and this points to the burning need for biomedical investigations to evaluate safety profile and efficacy of popular medicinal herbs from India. Further, The poly herbal heritage and wisdom of the tribals available in the tribal tracts provide an immense scope for establishing agro and forest based small cottage industries especially of herbal drug collection, processing and herbal medicine.

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