



ETHNOMEDICINAL PLANTS AND HEALTH CARE PRACTICES AMONG THE PEOPLE OF YADAGIRI DISTRICT, KARNAKATA, INDIA

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ABSTRACT

Ethnomedicines play an important role in the health-care practices of the Traditional Knowledge holder of Yadagiri district of Karnataka. The ethno-botanical exploration was conducted at nearby villages of forests to document and identify potential plant species for phytochemical and pharmacological studies. About 75 species of all life form belonging to 40 genera and 40 families were documented. In most of the cases, single plant was useful in curing two to three diseases such as leucorrhoea, fever, jaundice, rheumatic pains, menstrual disorders, cuts and wounds. A good number of claims have also been recorded. The parts used and the method of herbal preparation was discussed along with the local names. The most of the medical claims made here are new to the field of ethnomedicine. Those plants which received high citation frequency may prove helpful for further studies. In this article, the effort which made to identify the persons with proven knowledge of local biodiversity; and document. A special attention has given to the elderly persons who can also provide information on the biodiversity which was available in the past but no longer seen at present.

Keywords: Ethnomedicine, Health Care, Traditional Knowledge Holder, Phytochemical, Pharmacological, Yadagiri

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Introduction

Ethnobotany can be defined as the study of relationships between people and plants. It has been defined also as the scientific study deciphering interactions between human cultures and plants. Beginning in the 20th century, the field of ethnobotany experienced a shift from the raw compilation of data to a greater methodological and conceptual reorientation. This is also the beginning of academic ethnobotany. The scope of ethnobotany includes the study and documentation of plants used for various ailments of human and animals. According to Convention on Biological Diversity (CBD), "traditional knowledge (TK) to discuss about the knowledge, innovations and indigenous practices and local communities around the world especially in relation to plants. The Medical-ethnobotany is a significant wing of ethnobotany; mainly it encompasses the contributions that are made to the field of modern medicine through the scientific discussions and documentation of the plants being used by traditional societies (Soejarto et al 2009). Studies in the ethnobotanical aspects in the cultural groups mainly rely on the oral tradition to pass on their traditional phyto-medicinal knowledge from generation to generation, in addition to a great wealth of knowledge about medicinally useful plants, many traditional and cultural groups also have an extensive knowledge of commercially useful plants and the conventional methods to manage, harvest, and conserve those plant species. Studies have also revealed that many traditional groups possess an intimate knowledge of their environment and are keen observers of subtle changes across the landscape, including changes in weather and availability of medicinal plant resources in different climatic seasons of the year (Dabhadkar and Borul, 2013; Ong et al 2018). This extensive oral tradition also includes knowledge of illnesses, remedies, treatments and healing techniques, learned through an apprenticeship with an experienced healer, in addition to experience in evaluating symptoms and diagnosing the illness, collecting, preparing and treating illness using medicinal plant

remedies, as well as providing follow-up patient care and evaluating the patient's progress. Furthermore, in recent studies medical ethnobotany has shown that non-literate cultural groups having immense knowledge of traditional medicine are equal to the literate societies (Maheshwari et al., 2018).

Ethnobotanical studies generally focus on urban communities often in economically wealthy countries. Kleinman (1980) estimates that in the U.S. and in Taiwan common people choose self-treatment in about 80% of illness episodes. An example from South America is Haak's work (1988) looking at treatment choices in two villages in rural Bahia, Brazil. About 40% of his sample self-prescribed pharmaceuticals (Giovannini et al., (2011) on the use of medicinal plants and pharmaceuticals). The WHO recognizes the importance of self-treatment with its policy on primary healthcare (PHC), which emphasizes the significance of self-reliance in developing countries (WHO, 2021; Gish, 1979). Interest in the medical knowledge of laypeople has been fostered by the cross-cultural observation that self-treatment is usually the first therapeutic choice in both urban and rural areas. (Kleinman, 1980; Hogg and Williamson, 2001; Dolenc et al., 2021; Giovannini 2009).

Hence an illustrative work has been carried out to document the traditional knowledge of one of the remote and economically backward districts.

Materials and Methods

Study area

Yadagiri is a district located on north eastern sector of the Karnataka state, it lies between North latitude of 16° 46' and 16° 77' and East longitudes 77° 13' and 77° 13'. The most conspicuous area of very high and very low in the district is located at 688 to 338 meters of contour lines above the mean sea level respectively; covering a total geographical area of 5270 sq km. The district is surrounded by Gulbarga on the north, Vijayapura on the west and Raichur on the south. On the east it is bounded by Andhra Pradesh.

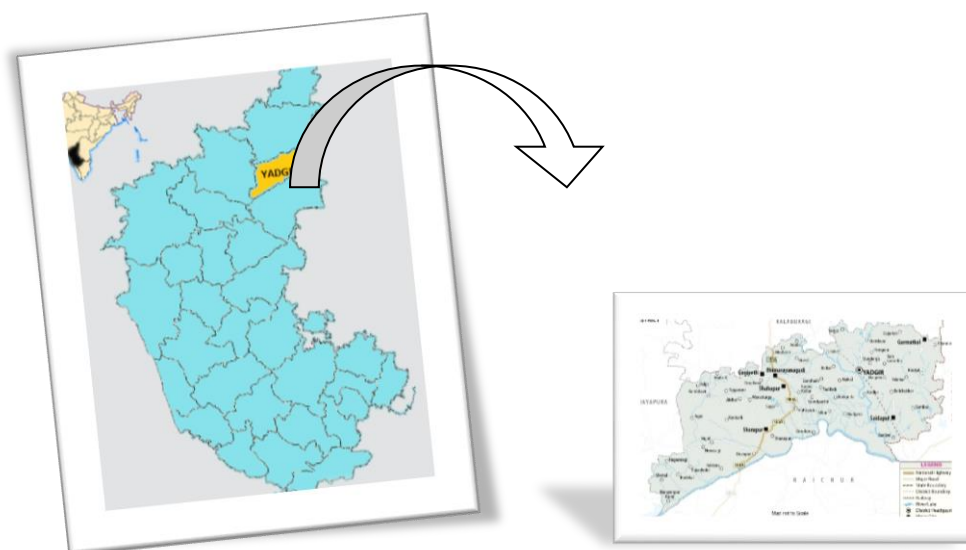


Figure 1: Study area Yadagiri is a district located on north eastern sector of the Karnataka state, India, it lies between North latitude of 16° 46' and 16° 77' and East longitudes 77° 13' and 77° 13' Field visit and data collection

The data was collected for three years during three seasons of each year and the visit was done frequently to cover most of the villages. A detailed format has prepared (as per Karnataka Biodiversity Board, for the preparation of People's Biodiversity Register) to collect necessary data to document scientifically, the format/ questionnaire (Annexure-1) consists of Name, Age, Gender, Address, Area of Specialization etc., during the visit and photograph of the respective person and biological resource (plant, part used, dosage etc.) were also taken as evidences. The visit broadly contains three aspects i.e.,

1. Survey of Traditional Practitioners in the villages adjacent to forest
2. By Personal Interview and Interaction Methods
3. Drug used and methods of Preparation by practitioners

Results and Discussion

The study reveals crucial contributions of traditional knowledge holders of Yadagiri district comprising the data of three talukas viz., Yadagiri, Shahapur and Surpur. A total of 75 plant species (including combined species) used as ethnomedicine for the treatment of various ailments are documented and enumerated in (Table 1). The plants in present study representing 40 families with the most prominent family being Caesalpiniaceae (06 species) followed by Asteraceae (05 species), Papilionaceae (05 species), Rutaceae and Poaceae (4 species species). The 90 different ailments reported from

three different talukas of Yadagiri district were grouped into many viz., digestive system, dermatological, rheumatism, cold and fever reproductive issues, eye & ear troubles, urinary system and toxins, microbial infections and injury or wound. Tawseef Ahmad Mir et al 2021 explored and documented 71 plant species from Bandipora district of the Kashmir Himalaya, Jammu and Kashmir which are belonging to 43 families, with the predominance of Asteraceae and Lamiaceae were used in traditional medicine by the tribal communities in the area. Local communities used these plants for treating constipation, digestive disorders, fever, diarrhea, joint pain and as tonic.

Among the three broad habit groups of plants, herbs were the primary source of medicinal plants. Leaves and roots were the most effectively used plant parts for the treatment of many ailments in the district by the traditional healers. Similar studies were carried out by Patel, (2014) documented a total of 55 Traditional useful Medicinal Plants from the villages Bilaspur of Chhattisgarh State of India, mentioned various parts of plants used for healing. In which 32 herbs 11 shrubs and 12 trees were found to be effective for Boil, Burn and for Wounds. As used plant parts maximum leaf part is recorded for the above ~~During~~ the course present survey interestingly, it has been recorded that some traditional healers spread among the three taluka's uses single plant for treating different ailments eg., *Calotropis procera*. Which is used for many illnesses. Many scientific groups viz., Prakash et al., (2010) and they worked on the folk medicine of NR Pura taluk in Chikmagalur

district of Karnataka and reported total of 59 plant species belonging to 53 genera and 34 families were reported for different therapeutic uses which include about 31 wild plant species, 18 cultivated species and 10 were both wild and cultivated species. Mahishi et al. (2003) reported on survey on medicinal plant wealth among the practitioner of Shimoga district, Karnataka and revealed the utilization of 47 species of plants belonging to 46 genera in 28 families to treat 9 infectious and 16 non-infectious diseases. Kariyajjanavar et al., (2016) on traditional health care knowledge of Sedam Taluk of Gulbarga district and documented ethno-botanical uses of 33 medicinal plants belonging to 28 families were employed for various human ailments and reported Euphorbiaceae, Asclepiadaceae and Apocyanaceae (2 species each) and most were herbs (30 species) and leaves contributed mainly to the plant part used for medicine preparation (24 ailments) followed by seed, roots and fruits.

Similarly, Bhat et al., (2012) reported 106 wound healing plants species from belonging to 55 families and 86 formulations to treat different types of wounds. Information collected from about 44 people. The highest number of species belonged to Apocynaceae and Rubiaceae (6 species each). Trees are used more often (35.84%), followed by herbs (28.30%), shrubs (23.58%), climbers (11.32) and parasites (0.80%). Leaves are the major part of the plants used in the formulations (28.57%). The highest use value is for *Calycopteris floribunda* (1.80), followed by *Rauvolfia serpentina* and *Achyranthes aspera* (1.67).

Further observed things are and sources mode of plant collection, part, used preparation of raw drugs, dosage and time drug advice, combination of many plants, application methods are quite interesting and matter of critical concern, which is creating interest in further elaborative study and scientific validation. During the exploration it has been noticed that almost practitioners used fresh preparations for every ailment.

Table 1: Enumeration of plant species used in ethnomedicines by Tradition Knowledge Holders of Yadgir district, Karnataka, India

S l N o	Name of the Plant	Family	Local Name	Uses	Preparatory methods/part used/dosage
01	<i>Moringa olifera</i>	Moringaceae	Nugge	For fever	Infusion: Preparation: 10 g leaves boiled in water till it reduced to half add 5 ml of lemon juice + and 5 gm of Salt (NaCl) and drunk hot 3 times/day
02	<i>Hemidesmus indicus</i>	Asclepiadaceae	Sogadeberu	For mild fever	About 3-4 cm raw root is boiled in a glass of water for about 15 min on a mild flame. The decoction is given twice a to cure fever in rainy days
03	<i>Tamarindus indicus</i>	Meliaceae	Kahibeve	Inflammations	Leaves are crushed and prepare a juice applied on inflammation

					caused to injury
04	<i>Mangifera indica</i>	Anacardaceae	Mavu	Sore eye & inflammation	Leaf latex (Yellow) is used to cure sore of eye lid.
05	<i>Aloe vera</i>	Liliaceae	Lolesara	Inflammation/boil/swelling	Mucus of leaf mixed with <i>Curcuma longa</i> powder applied to swelling/inflammation of legs caused due to injury.
06	<i>Allium sativum</i>	Liliaceae	Bellulli	To cure Ring Worm on face	Garlic paste mixed with Lime by adding required amount of water (Calcium carbonate) applied to the ring worm on face
07	<i>Cinnamomom zeylanicum</i>	Lauraceae	Leaf	Skin infection/itching	Bark powder mixed with honey, (Two equal parts) applied to body itching/allergy in summer
08	<i>Allium sativum</i>	Liliaceae	Ullagaddi	Hair loss due to Fungal infection	Garlic paste prepared in Copper sulphate is applied to hair loss due to microbial infection
09	<i>Thea sinensis</i>	Theaceae	Cha powder	Kidney disorder/Uric acid depositions/removal of body toxins	One tea spoon full of tea powder is boiled glass of till it get reduced to half and sieved with fine white muslin cloth and squeezed till last drop. Use to drink warm twice a day to remove toxins from body also for kidney stones.
10	<i>Tridax procumben</i>	Asteraceae	Gayimaris oppu	Removal of	Two spoon leaf juice given empty

	<i>s</i>			Kidney stones	stomach early in the morning for a month to remove kidney stones
11	<i>Citrus vulgaris</i>	Cucurbitaceae	Booduku mbalakayi	Removal of body toxins	Raw juice given empty stomach to remove toxins from the body twice in a day
12	<i>Ricinus communis</i> + <i>Ferula asafoetida</i>	Euphorbiaceae	Oudala/hingu	Constipation	2 tea-spoon full of castor oil is mixed with 2 pinches of <i>Ferula asafoetida</i> (hingu) in a glass of hot water given at bed time after eating two bananas to get relieved from severe constipation
13	<i>Basella alba</i>	Basellaceae	Kempu Basale	For Piles Basellaceae	About 50 g of stem and leaves make into a paste and eaten raw for piles twice for a day to minimize severity.
14	<i>Brassica capitata</i>	Brassicaceae	Cabbage		A leaf of 25g in a cup of curd soaked for whole night. Crushed using pestle and mortar, making paste is eaten empty stomach early in the morning.
15	<i>Cuminum cyminum</i>	Apiaceae/ Umibilliferae	Jeerige	Hyperacidity/Coolant	(Cumin seeds) Take 10 g Cumin seeds fried for 5-10 min on a pan then boiled it taking a glass of water and add a 5g of salt and drink warm sip by sip to cool body in the summer
16	<i>Occimum sanctum</i>	Lamiaceae	Tulasi	Eye disorder	Leaf juice prepared in water and sieved mixed with equal part of

					honey used to cure eye disorder
17	<i>Ocimum basilicum</i>	Lamiaceae	Kamakasturi	Ear ache/and ear disorder	Leave juice of the plant is used to cure ear ache and other problems related to ear.
18	<i>Acacia nilotica</i>	Mimosae	Kari jali	Aphrodisiac	10 gm of raw seeds crushed and prepare juice add 10 g of Jaggary used as aphrodisiac and to increase sperm count
19	<i>Citrus limon</i>	Rutaceae	Nimbehanu	Cleansing/Face bleaching	Fresh fruit juice is mixed with equal part of honey used to face wash and face bleaching.
20	<i>Limonia acidissima</i>	Rutaceae	BaluvalaKayi	Immunity and strength of muscle	The fruit pulp mixed with Jaggary eaten seasonally to increase immune system and body weight
21	<i>Cajanus cajan</i>	Papilionaceae	Togari	Burning urination	10 g of dried root boiled in 200 ml of water and boiled and the decoction is given Thrice in a day to overcome from burning urination in male and female
22	<i>Citrus limon</i>	Rutaceae	Limbe	To control Excess urination	Fresh juice 2 tea spoon is mixed with 5gm of rock sugar and taken twice daily to control excess urination
23	<i>Emblica officinalis</i>	Euphorbiaceae	BettadaNelli	Purifying water	4 fruits cut into pieces soaked in one liter of water for overnight and use for drinking to avoid microbial contamination as well as coolant.

24	<i>Achyrenthes aspera</i>	Amarenthaceae	Uttaranikaddi	Abortifacient	The spike is used to abort up to 3 months by inserting in vagina
25	<i>Cissus quadrangularis</i>	Vitaceae		Rheumatism	A piece having 3-4 cm length of stem a climber taken crushed in 200ml of goat milk and sieved and given chronic rheumatism and related disorder. OR same is mixed with 20g of Jaggary and make paste eaten thrice a day for one month
26	<i>Aegle marmelos</i>	Rutaceae	Bilva	Dysentery/Diarrhea	Fruit pulp is eaten raw thrice a day to cure all type of dysenteries
27	<i>Punica granatum</i>	Punicaceae	Dalimbe	Dysentery/Diarrhea	Pulp of the fruit is removed and taken 20g in to a bowl containing 200ml of water and boiled till it get reduced to half, then mix a 5gm of salt and 2 spoon of honey taken lukewarm to cure Diarrhea also fever caused due to diarrhea
28	<i>Plumbago zelaynica</i>	Plumbaginaceae		Antidote for Snake bite	Whole plant of <i>Plumbago zelaynica</i> consumed raw by squeezing to minimize venom effects as a first aid.
29	<i>Cyprus rotundus</i>	Cyperaceae	Jekinagadde	Antidote for Snake bite	Tuber of the grass is crushed in water and allowed to chew slowly and swallow as slow as in snake bite...it is to be continued for

					every 2 hours of interval
30	<i>Allium cepa</i>	Liliaceae	Kadullagaddi/	Scorpion sting	Onion bulb (wild)/white onion bulb raw juice (1 spoon mixed in 1 spoon kerosene oil) applied on sting area, to minimize venom effects and bring into normal
31	<i>Tamarindus indicus</i>	Caesalpiniaceae	Hunase	Paralytic/stroke	Bark is used in the treatment of paralysis,
32	<i>Zizyphus jujuba</i>	Rhamnaceae	Baarekayi	Acidity	2-4 Fresh leaves are eaten before and after food to control acidity
33	<i>Gingiber officinale</i>	Gingiberaceae	Shunti/alla	Gastritis	5 g Raw rhizome is crushed and boiled in a water add a 5 gm of Jaggary and given to cure hyper acidity and gastritis.
34	<i>Datura alba</i>	Solanaceae		Wound healing	Leaf of the plant and wrapped on sore (fresh wound) to heal fresh wounds
35	<i>Calotropis gigantea</i>	Asclepiadaceae	Yakka	Removal of foreign material from wounds	Latex of the plant is used to heal wound
36	<i>Murayya koengü</i>	Rutaceae	Karibevu	Obesity	Leaves crushed and mixed in butter milk given empty stomach, continuous practice reduces obesity.
37	<i>Cymbopogon martini</i>	Poaceae/Graminae	Majjigehull	For Joint pains	Fresh leaves are collected and immersed in a mud pot containing water, boil it, till water

					to get reduced to half. Then cotton cloth dipped and make wet then tied on joints.
38	<i>Mangifera indica</i> +	Anacardiaceae	Mavu	Veterinary	Pickle prepared (old) is used to cure mouth ulcers in cattle by rubbing on tongue and jaws of cattle
39	<i>Spilanthes sp</i>	Asteraceae	-	Mouth Ulcers /Mouth fresher	2-5 Inflorescence are collected fresh and eaten raw chewed and keeping for few minutes. Twice a day for 3 days
40	<i>Fumaria indica</i>	Fumariaceae	Kallusabassige	Jaundice	Make juice of Whole plant is taken
41	<i>Calotropis gigantia</i>	Asclepiadaceae		Spine's remover	Latex is mixed with flour of cow pea
42	<i>Ipomea sps</i>	Convolvulaceae	Kurutyaginattappalu	Old wound	Latex is used to cure wound/lumps
43	<i>Ficus benghalensis</i>	Moraceae	Audumbara/Attimara	Mumps	Fresh latex is applied on mumps for overnight and washed with warm water for one week
44	<i>Vitex negundo</i>	Verbinaceae	Lakki	Swelling	Fresh leaves are applied and tied over by using white cotton cloth on the swelling area to
45	<i>Pavonia zeylanica</i>	Malvaceae	-	Wound healing	Twig of the herb is crushed and make juice applied on wound

Note: gm/g mentioned in the above dosage is approximate estimation



PLATE-1:Discussion with Traditional Knowledge Holders during Ethnobotanical Survey



PLATE-2: Discussion with Traditional Knowledge Holders during Ethnobotanical Survey and drug application.

CONCLUSION

Ethnomedicinal, folklore and veterinary practices have immense contemporary relevance. Few ethnomedicinal remedies have been tested clinically. Information about the largest number of remedies was obtained from the 'beda' tribe ethnic community who have reside adjacent to forest. To get the true picture of efficacy, it is important that, such studies follow as closely as possible the local way of preparation and application as practitioners used to advices to take afresh preparations for every ailment. These findings may encourage actions that will contribute to preserve traditional knowledge while sustaining the means of people livelihood. Actions should involve socio-cultural groups according to their knowledge and preferential uses. Documentation and standardization of traditional knowledge is important context of Intellectual Property Rights; therefore, efforts should be made to retain the valuable information for scientific validation.

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