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Traditional knowledge on folk medicine by rural women in Chikkanayakanahalli Taluk, Tumkur district, Karnataka

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Abstract

Ethno medicinal knowledge is the ancient herbal plant knowledge transmitted over a period of time explaining the relationship between plants and traditional people for mutual care and benefit. Moreover, women are the knowledge carriers but still their knowledge is going unrecognized. The present studies have revealed 32 plant species belonging to 23 families that are used for various purposes by traditional healers. Leaves were found most frequently used part for primary healthcare by rural women including other various parts. Therefore, the maximum use of leaves medicinal purpose indicates either these plants are easily availability or they may have strong medicinal properties. The analysis of habits of plants documented, showed that herbs share the largest proportion with 14 species (44%) followed by trees with 11 species (34%), shrubs with 6 species (19%) and climbers with 1 species (3%) and also plant parts used in study area for traditional practices. Documentation of primary health care by rural women and their participation in traditional practices is very important to our society. It will not only help in purpose of plant conservation and economical utilization of folk plants but would also lead development of employment generation among the local people.

Keywords: Chikkanayakanahalli Taluk, folk medicinal plants, rural women, traditional knowledge

1. Introduction

Globally, about 85% of the traditional medicines used for primary healthcare derived from plants ^[1]. Over 7500 plant species are used by 4635 communities for human and veterinary healthcare. It is estimated that of 20,000 species of agricultural form in India alone, about 9,500 species are of ethno-botanical importance. World Health Organization has listed over 21,000 plant species used around the world for medicinal purposes. In India, about 2,500 plant species belonging to more than 1,000 genera are being used in Indigenous system of medicine. India is tenth among the plant rich countries of the world and fourth among the Asian countries ^[2].

Of the 1.3 billion people who live in absolute poverty world over. 70 per cent are women. Poverty for them is just not scarcity of basic needs but also rights denied, opportunities curtailed and voices silenced. Alarmingly, women own only 1 per cent of world's property. Women lack freedom of movement and are treated as a weaker part of the family and society. She is accorded to low status in health, education, political and financial matters. Gender inequality is a grave problem world over but its effects are more pronounced in developing countries especially in the rural area where woman is socially suppressed. Despite critical and pathetic position in society, her significant participation in almost every field is admirable ^[3].

The whole set of information is lying scattered in bits and segments (especially in rural India) without any organization. Ethno medicinal knowledge is the ancient herbal plant knowledge transmitted over a period of time explaining the relationship between plants and traditional people for mutual care and benefit. Moreover, women are the knowledge carriers but still their knowledge is going unrecognized. During ancient times, people used to rely on the local plant resources for both short term and long term treatment of ailments. But in advanced world today, interest is shifting towards allopathy and other modern medicare options. In India, a wide spectrum of herbal biodiversity exists and plants are integrated with our cultural heritage through cultural beliefs, rituals and festivals and as special offerings to Gods and ancestors ^[4]. This role is also indirectly taken up by women at large and the responsibility of transfer of traditional knowledge from generation to generation is women's domain ^[5].

Traditional medicine (also known as indigenous or folk medicine) comprises knowledge systems that developed over generations within various societies before the era of modern medicine. The World Health Organization ^[6] defines traditional medicine as "the sum total of the knowledge, skills, and practices based on the theories, beliefs, and experiences

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indigenous to different cultures, whether explicable or not, used in the maintenance of health as well as in the prevention, diagnosis, improvement or treatment of physical and mental illness”.

The traditional knowledge of indigenous people is severely endangered as younger generation is no longer interested to acquire and transmit it further. Rural woman has already qualified in varied socially and environmentally threatened areas such as prevention of deforestation, Chipko Movement, Silent Valley Project and Water Conservation strategies in desert areas. Among the natural resources the traditional knowledge on medicinal plants is considered as important sources of medicine, the diversity of medicinal plants and their rich therapeutic wisdom in Chikkanayakanahalli taluk made us to think over the utility of this nature’s gift for the benefit of society. Since early times, man has used plants for medicine, fuel, timber and food. The ethnic knowledge on the use of plants as medicine is well documented [7-9]. Indigenous remedies have originated directly or indirectly from folklore’s rituals and superstitions [10].

Herbal remedies are considered the oldest forms of healthcare known to mankind on this earth. Prior to the development of modern medicine, the traditional systems of medicine that have evolved over the centuries within various communities, are still maintained as a great traditional knowledge base in herbal medicines [11]. Traditionally, this treasure of knowledge has been passed on orally from generation to generation without any written document [12] and is still retained by various indigenous groups around the world.

Therefore conservation of ethnomedicinal knowledge with due participation of women can also be foreseen as a success landmark. Ethnomedicinal knowledge reveals that how different ethnic groups living within the same landscape interact with the resources. Today, there is growing ambition to unravel the role of traditional medicinal plants studies in trapping the centuries elder conventional folk knowledge as well as in searching new plants resources of food, drugs, shelter etc. [13].

2. Materials and methods

- The present study is the outcome of exhaustive field survey undertaken during year of 2016 (From February 2016 to April 2016).

2.1 Study area

Chikkanayakanahalli is a town (Taluk headquarters) in Tumkur district of Karnataka state, India. It is 67 km away from Tumkur. (Fig. 1)

- Geography: It lies in 13°42’ N latitude and 76°62’ E longitude with an average elevation of 804 metres (2637 feet).
- Mean annual rainfall ranges from 670 mm to 680 mm. About 40% of the rainfall is received during the month of September during monsoon season.
- Temperature range from 26 °C to 38 °C with relative humidity of dry month and monsoon month were less than 22% and 65%.

2.2 Collection of plant material

- Some of the folk medicinal plants were collected from the local rural women in Chikkanayakanahalli taluk.
- The field survey was performed by interview model in their local language and in accordance to the WHO questionnaire. The responses included details about the common and local name of the plant prescribed, part of the plant used, mode of preparation (paste, powder or

juice), dosage and duration. Of the total rural informants, 07 were women, whose age ranged from 40-80 years. The responses were confirmed through discussions with respondents who practiced the use of the documented plants for medicinal uses.

2.3 Identification of Plants

- Diagnostic features of all the specimens were studied and relevant field notes were made on known plant materials.

About Thirty two plants have been studied and documented in the present study. The voucher specimens were collected and identified with the help of standard flora [14, 15] in laboratory and prepared herbaria submitted to Department of Botany, Davangere University, Davangere.

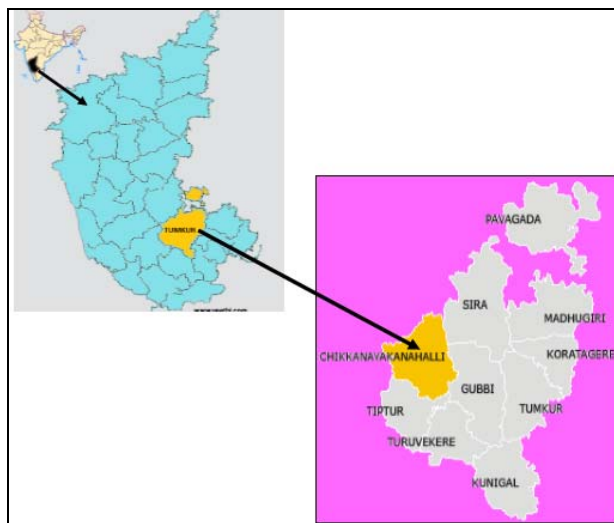
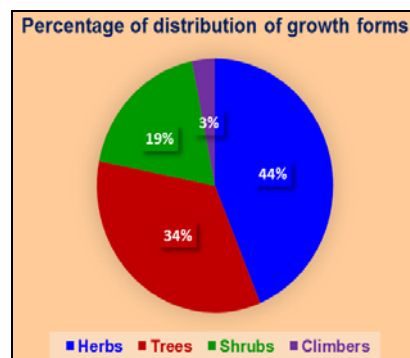


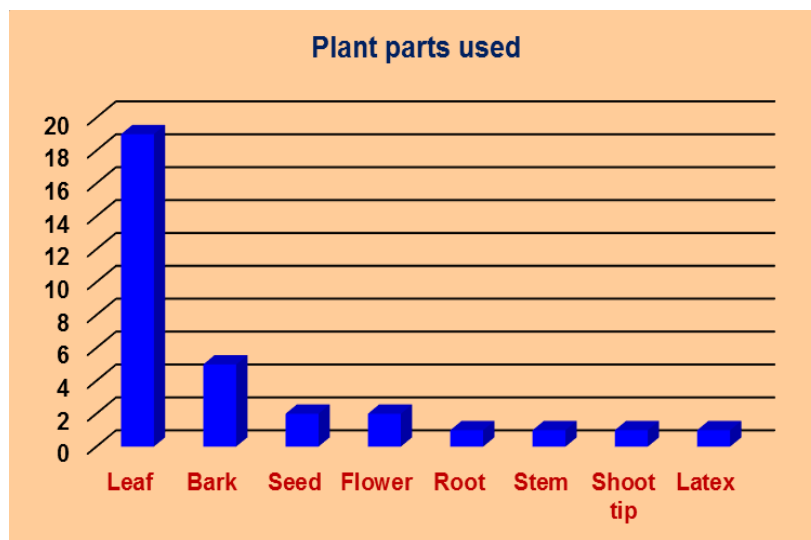
Fig 1: Location map of study area

3. Results

The present study have revealed that, about 32 plant species belonging to 23 families that are used for various purposes by traditional healers (Table 1). Leaves were found most frequently used part for primary health care by rural women including other various parts. Therefore, the maximum use of leaves medicinal purpose indicates either these plants are easily availability or they may have strong medicinal properties. The analysis of habits of plants documented, showed that herbs share the largest proportion with 14 species (44%) followed by trees with 11 species (34%), shrubs with 6 species (19%) and climbers with 1 species (3%) in Graph 1 and also plant parts used in study area for traditional practices in Graph 2.



Graph 1: Graph showing percentage of distribution of habit/growth forms of folk medicinal plants.



Graph 2: Graph showing plant parts used for traditional practices

Table 1: List of Folk medicinal plants used by rural women of Chikkanayakanahalli taluk for various ailments

Sl. No.	Botanical name	Family	Common name	Habit	Parts used	Ailment Treated	Mode of Preparation
1	<i>Achyranthes aspera</i> L.	Amaranthaceae	Uttarani	Herb	Shoot tip	Infertility	Powder of shoot tips mixed with buffalo milk.
2	<i>Aegle marmelos</i> (L.) Corrêa.	Rutaceae	Bilvapatre	Tree	Leaf	Diarrhea	Crushed leaves mixed with honey take daily.
3	<i>Albizia procera</i> (Roxb.) Benth.	Mimosaceae	Baagi mara	Tree	Leaf	Infertility	Crushed leaves mixed with the milk.
4	<i>Allium cepa</i> L.	Amaryllidaceae	Irulli	Herb	Leaf	Ear pain	Crushed Bulb or leaf made in to paste then slightly boiled and applied in ear.
5	<i>Bauhinia variegata</i> L.	Fabaceae	Basavana paada	Tree	Leaf	Diabetes	Leaf juice take daily.
6	<i>Breynia vitis-idaea</i> (Burm F.) C.E.C.Fischer	Euphorbiaceae	Karesuli	Shrub	Leaf	Gulma-Uterine fibroids	Cup of crushed leaves ground with few pepper seed and garlic take with milk.
7	<i>Canthium parviflorum</i> Lam.	Rubiaceae	Thampinagida	Shrub	Leaf	Swelling of neck or leg	Leaf powder mixed with cow milk and make into paste then applied over the wound or swelling part.
8	<i>Cassia auriculata</i> L.	Fabaceae	Tangadike	Tree	Bark	Gastric	Bark made into powder, mixed in a water and take for 48 days.
9	<i>Citrullus colocynthis</i> (L.) Schrad.	Cucurbitaceae	Kaadu kavade	Climber	Leaf	Heat	Crush the leaves and made in to paste then ground with the rock sugar, date palms, cashew nuts, grapes with milk.
10	<i>Cynodon dactylon</i> (L.) Pers.	Poaceae	Garike	Grass	Leaf	Cancer	Crush the leaf and mixed with the milk take daily at morning time.
11	<i>Datura metel</i> L.	Solanaceae	Handi mullu	Herb	Leaf	Swelling cheeks	Crush the leaf and apply over the swelling cheeks.
12	<i>Erythroxylum monogynum</i> Roxb.	Erythroxylaceae	Devadari	Tree	Bark	Stomachic and wounds	Ground the Bark with leaf, bark of <i>Moringa oleifera</i> and made into paste then applied over the wounds, swollen parts.
13	<i>Euphorbia hirta</i> L.	Euphorbiaceae	Nargulli gida	Herb	Latex	Pimples	Latex is applied over the pimples for 8 days.
14	<i>Evolvulus alsinoides</i> (L.)L.	Convolvulaceae	Usiruballi	Shrub	Stem	Breathing and Mums	Crushed stem juice applied over near the nose and swollen part.
15	<i>Ficus religiosa</i> L.	Moraceae	Arali	Tree	Bark	Monthly period stomach pain	Crush the bark then mixed with sugar and cardamom then take in period time for 4-5 days.
16	<i>Gossypium arboreum</i> L.	Malvaceae	Karehatti	Shrub	Leaf	White bleeding in women	Crush the leaf and take with the milk.
17	<i>Hemidesmus indicus</i> (L.) R.Br.	Apocynaceae	Kaimasku	Herb	Leaf	Jaundice	Crush and mix the equal ratio of leaf, jaggery and cardamom powder in water and made into tablets given orally to empty stomach in

							the early morning.
18	<i>Leucas aspera</i> (Willd.) L.	Lamiaceae	Thumbe	Herb	Flower	Cancer	Crush the leaf and take with the honey.
19	<i>Melia azedarach</i> L.	Meliaceae	Bevu	Tree	Bark	Typhoid	Ground the bark in rock sugar keep it for one day and take next day in the early morning to empty stomach.
20	<i>Mimosa pudica</i> L.	Mimosaceae	Muttidare muni	Herb	Leaf	Infertility	Leaf powder mixed with sugar, cardamom in milk and take for 15 days.
21	<i>Moringa oleifera</i> Lam.	Moringaceae	Nugge	Tree	Leaf	Headache	Crush the leaf in hand and apply opposite ear of the pain.
22	<i>Musa paradisiaca</i> L.	Musaceae	Baale	Tree	Flower	Monthly period stomach pain	Crush the flower and mix in to rock sugar and cardamom take at period time.
23	<i>Ocimum americanum</i> L.	Lamiaceae	Naayitulasi	Herb	Leaf	Urine clot	Crush the leaf take in one glass of water with the jaggery
24	<i>Ocimum sanctum</i> L.	Lamiaceae	Tulasi	Herb	Leaf	Ear pain	Onion and leaf crush made in to liquid form and apply over the pain.
25	<i>Pedaliium murex</i> L.	Pedaliaceae	Neggilu gida	Herb	Leaf	Pimples	Ground the leaf powder take with milk or honey.
26	<i>Plectranthus amboinicus</i> (Lour.) Spreng.	Lamiaceae	Doddapatre	Herb	Leaf	Children disease	Take leaf daily.
27	<i>Prosopis juliflora</i> (Sw.) DC.	Fabaceae	Jaali	Shrub	Leaf	Ulcer, gastric	Crush the leaf and ground with the cardamom and sugar, take with the milk or butter milk.
28	<i>Solanum xanthocarpum</i> Schrad & Wendl.	Solanaceae	Gulukayi	Herb	Seed	Tooth decay	Slightly roast the seeds and pass through the papaya stem pipe in to mouth to remove the worms from infected teeth.
29	<i>Syzygium cumini</i> (L.) Skeels.	Myrtaceae	Nerale	Tree	Bark	Diabetes	Crush the barks and made into juice by mixing sugar and water and take for 48 days.
30	<i>Tamarindus indica</i> L.	Fabaceae	Hunase	Tree	Seed	Scorpion bite	Roast the seeds and applied over the spot of bite.
31	<i>Tylophora indica</i> (Burm F.) Merrill.	Asclepiadaceae	Aadumuttada soppu	Herb	Root	Stomach pain	The root powder mixed with honey.
32	<i>Vitex negundo</i> L.	Verbenaceae	Lakke soppu	Shrub	Leaf	Fractured bone	Leaf paste mixed with goat milk then applied over the fractured part.

4. Discussion

Survey of available literature and found that many of the usage and documentation of such knowledge plays an important role in farming health policies for the people and so that rural women in the same or in other regions can make use of it.

Apart from the above, the usage of some important medicinal plants used to treat jaundice, stomach ache, snakebite and herpes are some the very new finding that were not referred in any of the early works. Traditional herbal culture is now under assault everywhere in world under the impact of industrialization and they are fast declining^[14]. Disruption of forest covers is another reason for the degeneration of the herbal folk culture. The cause of forest destruction may be several but it is affecting the local people. It is necessary that the indigenous ethnic communities of world, who have provided so much for sustainable ecological agriculture, must also get the right as they have played a critical role in acquainting such knowledge^[16]. Other factors contributing to un-sustainability include lack of sufficient data on wild plant populations, marketing and trading, inadequate regulation and legal protection and poor access to appropriate technology for sound harvesting and plantation development. Further local communities need support and encouragement to protect their knowledge and resources^[20].

Altogether an integrated strategy needs to be followed for both saving the species and meeting the increasing demand of the medicinal plants. The study in Chikkanayakanahalli taluk,

Karnataka has gathered tremendous information on the traditional knowledge of folklore medicines by local rural women and it has been first time documented among women of Chikkanayakanahalli taluk. The documentation of such knowledge play an important role in framing the health policies for the people. Women in rural areas either use a single plant to treat diseases or a combination of plants form or specific ailments in regular practices. However among the folk medicinal plants parts about 60% leaf part can be frequently used to cure the disease in the form of direct orally or mixed with other medicinal plants parts in Chikkanayakanahalli taluk for traditional practices. In Chikkanayakanahalli taluk, small villages viz. Kengalapur, Jogihhatti, Handanakere, Ramaghatta and Matthighatta still now no detailed study not highlighted on folk medicinal plants used by rural women for traditional practices is reported.

Therefore, leaf juice *Achyranthes aspera* is used in control to dysentery^[17]. Leaf paste of *Achyranthes aspera* is applied on ringworm affected area till it cure and also leaf juice and bark paste of *Aegle marmelos* applied on the affected ringworm area daily twice for a week, then leaf and bark paste of *Azadirachta indica* applied on all the types of skin diseases daily once till cures^[18]. Leaf of *Canthium parviflorum* used in Septic wounds and *Tylophora indica* lack of appetite^[19]. Leaf paste of *Leucas aspera* is applied on forehead and leaf extract with honey is taken orally twice. Powdered dried leaves of *Aegle marmelos* mixed with a cup of cow's milk is taken

orally. Leaf paste of *Cynodon dactylon* with milk is applied on affected part and also leaf decoction of *Hemidesmus indicus* is taken orally to cure the jaundice, Bark decoction of *Syzygium cumini* mixed with cow's milk and taken orally and leaf extracts of *Mimosa pudica* mixed with lemon juice is taken orally in empty stomach to cure the stomach disorders, Fruit infusion of *Tamarindus indica* with seeds of *Cuminum cyminum* and honey is taken orally to cure the Jaundice [20]. Leaves of *Ocimum sanctum* are eaten raw to treat fever and for weakness for trice a day. Soft twig of *Vitex negundo* used as tooth brush for bad breath and arthritis in Renlagadda Thanda, Kodangal mandal, Mahabubnagar Dist, Telangana, India [21]. In this same way, various areal part used to cure the disease. Such as, seed, bark of *Albizia lebbek* used to control leprosy, erysipelas, wounds, cough, antidote for snake-bite, stomatitis, thirst, leucorrhoea, dental diseases, roots of *Achryanthes aspera* used inscorpionsting, *Canthium parviflorum* in Snake bite and *Datura metel* used to treat dog bite [22]. Leaves of *Breynia vitis-idaea* applied as a poultice to hastensupuration. Leaf juice given after parturition to prevent haemorrhage. The whole plant of *Euphorbia hirta*, Urinary disorders, worm infestation, sterility, purgative, aphrodisiac, leucorrhoea, constipation, polyuria, genitourinary tract diseases and *Evolvulus alsinoides* to anorexia, stomatitis, piles, abdominal disorders, sterility in female, epilepsy, psychosis skin diseases, carminative, rejuvenator, fever, cough [23]. The whole bulb (*Allium cepa*) is used to treat anthelmintic, anti-inflammatory, antiseptic, antispasmodic, carminative, diuretic, expectorant, febrifuge, hypoglycaemic, hypotensive, lithotropic, stomachic and tonic [24]. The root bark decoction of *Bauhinia variegata* L. about 15 ml per day for reducing obesity, leucoderma and powder of flower buds with paste of black peppers (5: 3 w/w) to women to regulate vaginal discharge [25]. The Extract of fresh flowers of *Cassia auriculata* is taken internally as a cure against diabetes [26]. In the same way, dried fruit powder of *Citrullus colocynthis* mixed with salt is orally to treat constipation, decoction of *Pedaliium murex* fruits is used for continuance of urine and seed powder of *Ocimum americanum* for skin disease and taken orally to cool the body, root powder of *Vitex negundo* along with milk is given daily to control menstrual disorders [27]. Stem bark of *Erythroxylum monogynum* ground and boiled the decoction given orally at morning time an empty stomach for four weeks to treat itches [28]. Barks and Fruits of *Ficus religiosa* peculiarly useful for the asthma, improves the body strength and boosting the immune system. The bark is soaked in water in water up to 24 hours and filtered extract is daily consumed orally by means eliminates the skin diseases. Fruit churnas boiled with milk and that rasayan daily taken orally one spoon morning and evenings then it strengthen the heart [29]. Root powder of *Gossypium arboretum* is given in menstrual problems, leaf juice is to cure the ear pain and suppressed urination and Leaf decoction of *Melia azedarach* is given to cure cold, cough and fruit decoction to relieve the piles [30]. Root powder of *Solanum xanthocarpum* is taken to treat malaria and fruit or seeds boiled in water are used for gargling to cure toothache and mixture of fresh leaf juice of *Leucas aspera* and onion juice is used as nasal drops for nasal block and headache, jaundice, fresh leaf juice is taken orally and whole plant decoction is given to treat fever [31]. Bark decoction of *Moringa oleifera* daily taken orally to cure the typhoid [32].

The flowers and leaves of *Musa paradisiacal* used in bronchitis and dysentery, ulcers and skin affliction and cooked flowers are given to diabetics and seed mucilage is given in cases of diarrhea [33]. The leaves juice of *Plectranthus*

amboinicus mixed with sugar acts as a powerful aromatic carminative, given in colic and dyspepsia. Crushed leaves are used as a local application to the head in headache and to relieve the pain [34] and Bark extract of *Prosopis juliflora* is used as an antiseptic on wounds and gum is used to treat eye infections [35].

5. Conclusion

The present report successfully completed ground level documentation of selected small study area. This is the basic report from the Chikkanayakanahalli taluk possess genuine folk medicinal efficacy and the formulation usage knowledge also newly reported. This will be foundation for auxiliary phytochemical, pharmacological studies and in drug design. Hence, the rural women of this taluk practices traditional medicinal system for the treatment of various diseases. Therefore, to save this traditional knowledge of older generations is necessary for the sustainable development of younger generation on natural resources. From these point of view, 32 species belonging to 23 families were made during this survey. Agriculture and animal husbandry is the primary occupation of majority of rural women in present population. Documentation of primary health care by rural women and their participation in traditional practices is very important to our society. It will not only help in purpose of plant conservation and economical utilization of folk plants but would also lead to development of employment generation among the local people. It provides raw material for production of pharmaceutical products as well. Further survey and research focusing on the medicinal plants documented in this study might give information regarding the hunt for bioactive compounds and the discovery of new drugs to fight diseases in an effective manner. The documentation of such knowledge play an important role in framing the health policies for the people and also for the extraction and characterization of the bioactive compounds so that people in the other regions can make use of it. Phytochemical investigations with suitable clinical trials are required to validate scientifically and obtain biological active compounds against snakes, scorpion, insects, wasps, dog bites/stings and food poisoning. It is also an attempt to limelight the properties of medicinal plants and secrets of rural women hidden knowledge.

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