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Ethnomedicinal plants used to treat menstrual disorders by tribal people in Bellary district of Karnataka, India

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Abstract

An ethnobotanical survey of Bellary district, comprising seven *taluks* was conducted during May 2009 to July 2011. The main purpose of this survey was to document the traditional use of medicinal plants for the treatment of menstrual disorders of women in Bellary district. Twenty six species of folk drug plants belonging to 24 genera and 21 families were found to be used as a remedy for this problem by the tribal and rural women. The scientific name, family and local names of these medicinal plants along with habit, part used and mode of their administrations are provided.

Key-Words: Ethnomedicinal plants, menstrual disorders, tribal, Bellary, Karnataka

Introduction

Use of plants for the treatment of various human ailments is as old as human civilization. Even after the induction of 200 years of modern medicine, about 90% people in rural India take the help of local health practitioners for the treatment of various diseases[1]. At present about 65% of the Indian population is dependent on the traditional system of medicine[2]. Menstrual disorders are common in women of this region. This region is well developed by all means; still women of this district have a good deal of faith on local plants used for these problems. Many women do not approach doctors because of hesitation and lack of awareness. The traditional healers have a commendable knowledge of medicinal plants around them. Some of the common menstrual problems prevailing in the study area are Amenorrhoea (stoppage of menstrual flow), Dysmenorrhoea (painful menstruation), Leucorrhoea (white discharge), Menorrhagia (excessive menstrual flow), Menstrual cramps and Oligomenorrhoea (irregular periods). Hence an ethno-medicinal survey was undertaken to document the traditional use of folk drug plants for the treatment of menstrual disorders in women of Bellary district. Documenting the traditional knowledge is important for the conservation of medicinal plants as well as their sustainable utilization.

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Bellary, one of the districts in Karnataka state comprises seven *taluks* viz. Bellary, Hospet, Sandur, Siruguppa, Kudligi, Hadagali and Hagaribommnahalli. It is situated between 14° 30' and 15° 50' North latitude and 75° 40' and 77° 11' East longitude. The district is situated in the south zone. It is having partly sandy and black cotton with red loamy soil suitable for agricultural crops. The western part of the district is red loamy with hilly area having rich minerals like iron (65%) and manganese (40-48%). According to the 2011 census, Bellary district has a population of 25.32 lakhs. Tribal people living in the study area include *Medara*, *Lambanee, Korava*, *Budabudike* and *Adavichencharu*. The major occupation of this district is agriculture and 75% total labour force is dependent on agriculture for its livelihood. Bellary district has a geographical area of 8.13 lakhs hectares, out of which the forest area covers an extent of 1.057 lakhs hectares i.e. 13% of the total geographic area. The maximum temperature recorded was 45° C. and the minimum was 11° C. The average elevation is 478 m above sea level and the annual rainfall is 639 mm. The climatic conditions prevailing in the region provides an ideal habitat for the natural growth of variety of plants which provide raw materials for herbal drugs.

Methodology

Information on the plants used for menstrual disorders of folklore origin was obtained during the ethnobotanical survey of Bellary district. The surveys were conducted during May 2009 to July 2011 using Participatory Rural Appraisal (PRA) methods. For this

purpose, frequent field trips were made to 28 selected villages belonging to all 7 *taluks* of the district. Thirty herbal healers (26 men and 04 women) of age group between 45 and 86 years belonging to different communities and tribal people were interviewed and recorded the information in a standard questionnaire. Prior informed consent (PIC) was taken from all the ethnic and tribal communities, Data on local name of the folk drug plants, parts used, method of preparation and dosage were noted. Ethnic as well as the cultural importance of the drug plants were also recorded. All the medicinal plant species were photographed, collected and identified by referring to the Flora of Gulbarga district and three volumes of the Flora of Presidency of Madras[3-4]. Voucher specimens were deposited at the Herbarium centre, department of Post Graduate Studies and Research in Botany, Gulbarga University, Gulbarga.

Results and Discussion

Ethnobotanical survey carried out in Bellary district has brought into light the uses of 26 medicinal plants for menstrual disorders belonging to 21 families. The predominant families are Mimosaceae with 4 species, followed by Caesalpiniaceae and Moraceae with 2 species each. Data obtained from the survey is compiled in Table 1. All plant species are arranged in alphabetical order. For each species scientific name with voucher number, family, local name, habit, part used, method of drug preparation and dosage are provided. Different plant parts were used for the treatment of menstrual disorders. Among these leaves were the most used (26.93%) followed by fruits (19.23%), roots (11.53%), flowers (7. 69 %), whole plant (7. 69%), vegetative buds (7.69%) bark (7. 69%) seeds (7. 69%) and stem (3.84%) in decreasing order. The herbal preparations were in the form of juice, decoction, powder and paste. In all cases, the method of administration was oral. Available literature revealed that plants used by the tribal people of this area are not recommended in other areas for the same purpose[5-8]. However these plants were used for other human ailments. For instance, stem of *Tinospora cordifolia* Miers. used for Malaria in Shimoga distict[9]. Leaves of *Aegle marmelos* (L.) Corr. and *Tylophora indica* (Burm f.) Merr. were used for asthma in Andhra Pradesh[10], Stem bark paste of *Hibiscus rosa sinensis* L. is used as contraceptive in Orissa[11]. In Karnataka ethno-botanical studies on medicinal plants were conducted in Kodagu[12], Uttar Kannada[13], Chikmagalur[14], South Canara[15], Tumkur[16], Bidar[17], Shimoga[18] Chitradurga [19] and Gulbarga[20] districts. However ethnobotanical study in Bellary district has not been reported.

A lot of work has been done on medicinal plants of various districts of Karnataka state but no information is available on plants used for menstrual problems in Bellary district. Among the plants reported, *Achyranthes aspera* L. *Cynodon dactylon* (L.) Pers., *Hibiscus rosa-sinensis* L. and *Leucas aspera* (Willd.) Link. were the most effective species against the menstrual disorders of women as prescribed by 24 traditional healers (80%). The people of Bellary district are highly dependent on the traditional herbal medicine because of their poor socio-economic conditions and availability of effective drug plants. Hence, these plants can be taken up for further pharmacological and clinical studies.

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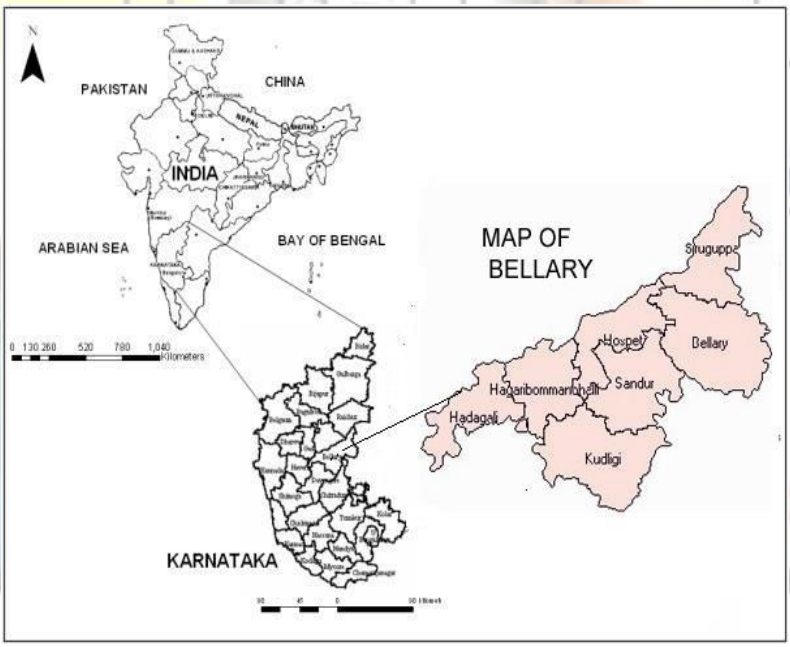

Fig.1: Map of the study area

Table 1: Medicinal plants used to treat menstrual disorders in women of Bellary district

Scientific name with voucher number	Family	Common name	Habit	Part used, method of preparation and dosage	Diseases
Acacia farnesiana (L.) Willd. HGUG-242.	Mimosaceae	*Kasturi jali*	Shrub	Few leaves ground with cold water and filtered. The filtrate is mixed with little sugar and given thrice a day for 1-2 weeks.	Leucorrhoea
Acacia ferruginea DC. HGUG-238.	Mimosaceae	*Banni mara*	Tree	30 g of bark is ground with 100 ml of cow milk and filtered. The filtrate is given for 1-2 weeks.	Leucorrhoea
Achyranthes aspera L. HGUG-6.	Amaranthaceae	*Uttarani*	Herb	Few flowers are ground with curd, mixed with little sugar and given twice a day for 1-2 weeks.	Leucorrhoea
Adhatoda zeylanica Medic. HGUG-793.	Acanthaceae	*Aadusoge*	Shrub	10-15ml of leaf juice with little sugar is given twice a day for 3-4 days.	Menorrhagia
Aegle marmelos (L.) Corr. HGUG-547.	Rutaceae	*Bilva mara*	Tree	About 10-15 g of fruit pulp is given 2-3 times a day for 3-4 days.	Menorrhagia
Asparagus racemosus Willd. HGUG-542.	Liliaceae	*Shatavari*	Herb	100 g of roots are boiled in 400 ml of water till it becomes 100 ml. It is cooled and filtered. The filtrate is given with goat milk twice a day for 10-14 days.	Menorrhagia and Leucorrhoea
Caesalpinia bonducella (L.) Flem. HGUG-208.	Caesalpiniaceae	*Gajjuga*	Shrub	Few leaves ground with pepper and garlic and made into small tablets of 2 g each. One tablet at a time is given with milk thrice a day for 3 days.	Dysmenorrhoea
Calotropis procera R.Br. HGUG-799.	Asclepiadaceae	*Ekke gida*	Shrub	Few vegetative buds ground with garlic, cloves and pepper and given with water twice a day during menstruation.	Dysmenorrhoea
Cassia italica (Mill.) Lam. HGUG-213	Caesalpiniaceae	*Nelaavare*	Herb	5 g of fresh leaves ground with equal amount of the vegetative buds of *Cassia auriculata* and *Tribulus terrestris*. The paste is given daily morning for 15 days.	Leucorrhoea
Coriandrum sativum L. HGUG-22.	Apiaceae	*Kotambri*	Herb	50 ml of leaves or seeds decoction is given thrice	Oligomenorrhoea

				a day for 3-4 days.	
Cynodon dactylon (L.) Pers. HGUG-660.	Poaceae	*Garike*	Herb	25 g of the whole plant is powdered and mixed with 10 g of sugar and given for 2-3 weeks.	Oligomenorrhoea
Dichrostachys cinerea (L.) Wt & Arn. HGUG-251.	Mimosaceae	*Vadavina gida*	Shrub	5 g of leaves ground with the equal amount of leaves of *Tribulus terrestris* and given with tender coconut water for 3 days.	Menorrhagia
Ficus recemosa L. HGUG-585	Moraceae	*Atti mara*	Tree	Ripened fruits are dried and powdered. 10 g of this powder is given with water twice a day during menstruation.	Menorrhagia
Ficus religiosa L. HGUG-587.	Moraceae	*Arali mara*	Tree	Fruits are dried and powdered. 5 g of this powder is given thrice a day for 3-4 weeks.	Oligomenorrhoea
Hibiscus rosa-sinensis L. HGUG-566.	Malvaceae	*Dasavala*	Shrub	Few flowers are dried, powdered and mixed with little sugar and ghee. The paste is given for 2-3 days.	Leucorrhoea
Leucas aspera (Willd.) Link. HGUG-530.	Lamiaceae	*Thumbe*	Herb	Whole plant is crushed and filtered. The filtrate is mixed with lemon juice and given twice a day during menstruation.	Dysmenorrhoea
Mangifera indica L. HGUG-15.	Anacardiaceae	*Mavina mara*	Tree	Decoction of the bark is given with 50 ml of water and10 ml of honey twice a day for 1-2 weeks.	All types of menstrual disorders.
Mimosa pudica L. HGUG-235.	Mimosaceae	*Muttidare muni*	Herb	Roots are dried in shade and powdered. 2 g of this powder is given with water for 4-5 days.	
Phyllanthus acidus (L.) Skeels. HGUG-110.	Euphorbiaceae	*Nellimara*	Tree	10 g of fresh fruits are ground and mixed with little sugar. The paste is given with cow milk thrice a day for one week.	Leucorrhoea
Punica granatum L. HGUG-121.	Punicaceae	*Dalimbe*	Shrub	Few vegetative buds ground with water and given for 2-3 weeks.	Leucorrhoea
Raphanus sativus L. HGUG-86.	Brassicaceae	*Mullangi*	Herb	2-3 g of seeds are powdered and given with a cup of butter milk for a week.	Oligomenorrhoea
Sesamum indicum L.	Pedaliaceae	*Yellu*	Herb	50 g of seeds are ground	Oligomenorrhoea

HGUG-616.				with jaggery, boiled and filtered. The filtrate is given for 4-5 days.	
Syzygium cumini (L.) Skeels. HGUG-596.	Myrtaceae	*Nerale mara*	Tree	30 g of young leaves are ground and given with water daily morning for a week.	All types of menstrual problems.
Terminalia chebula Retz. HGUG-954.	Combretaceae	*Alale mara*	Tree	2 g of dry fruit powder is mixed with little sugar or honey and given twice a day for 1-2 weeks.	Leucorrhoea
Tinospora cordifolia (Willd.) Miers. HGUG-578.	Menispermaceae	*Amrutaballi*	Climber	25 g of stem is ground and soaked in 200ml of water for a night. In the morning it is filtered and the filtrate is given for 2-3 weeks.	Dysmenorrhoea
Withania somnifera (L.) Dunal. HGUG-743.	Solanaceae	*Aswaganda*	Herb	Roots boiled in goat milk, dried in shade and powdered. 10 g of this powder is mixed with little sugar and given with cow milk twice a day for one week.	Menorrhagia