Research article Available online www.ijsrr.org ISSN: 2279–0543

International Journal of Scientific Research and Reviews

Medicinal Plants Used for Fertility and Menstrual Disorders by the Women Belonging to the Nilgiris Tribe Community of Southern India

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ABSTRACT

Menstrual disorders and reproductive health issues related to women is a natural, physiological process and part of the active life of young women around the world and most women of reproductive age experience it. Improving menstrual health requires access to safe and efficient therapy, but women who belong to the Nilgiri tribal community prefer traditional medicine over recent remedies which may sometimes cause physical symptoms associated with fertility loss. These disorders have differential diagnosis and therefore different diagnostic and therapeutic procedures are practised depending on their age group. Attempts were made to study the medicinal plants used to treat such women-related disorders. Effectiveness of the herbal drug was connected to nature of the disease and dose response. Doses differ from patient to patient from time based on the cause and effectiveness of the drugs. Traditional knowledge of herbal remedy to treat human diseases is fast declining in many parts of the world, including India. Even today, tribal's and certain local communities in India still practice herbal medicine to cure a variety of diseases and disorders. They collect and preserve locally available, wild and cultivated plant species.

KEYWORDS: Women-related disorders, menstrual disorders, reproductive health Ethnobotany, Medicinal herbs

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INTRODUCTION

Complications associatedwith the reproductive health for women of childbearing age remain a leading source of morbidity and mortality globally. Nevertheless, menstrual disorders are normally not perceived as major health concern, and hence not considered in global reproductive health programs.[1]Herbal remedies are considered as the oldest forms of health care 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.[2,3] Traditionally, this treasure of knowledge has been passed on orally from generation to generation without any written document[4] and is still retained by various indigenous groups around the world. Traditional folk medicine uses the knowledge, skills and practices based on the theories, beliefs and experiences indigenous to its cultures for maintenance of health.

Several ethnobotanical studies have overlooked the significance of traditional plant use for women's health, and either omit plants used for women's health[5,6] or group all uses under single generic terms, such as 'reproductive disorders',[7] 'gynaecological diseases',[8] or 'postpartum remedy'.[9]

MATERIALS AND METHODS

Study Area

The Nilgirihills areabout 80 km North-west of Coimbatore in the western part of Tamil Nadu, on the interstate boundaries with Karnataka and Kerela states in Southern India. It is situated between 11°25′N and 76°41′E which comprises about an area of 2,565 km^2. The Nilgiris includes the Mudumalai Wildlife Sanctuary (321 km^2),the Bandipur National Park (874 km^2), Wynad Wildlife Sanctuary (344 km^2), Sigur and Singara reserve forests.[10]Its topography is extremely varied and comprises of hills, valleys, ravines, water courses and swamps. It is also called as Blue Mountains due to the presence of widespread blue Strobilanthes flower or the smoky haze enveloping the area. This area was long occupied by the indigenous tribal peoples of the Toda, Kota, Kurumba and Irula.[11,12]The Todas and Kota, who are similar in culture, language and genetic ancestry, were settled across much of the Nilgiri plateau.[10]

Methods

In this study, intensive field surveys were made in the Nilgiri hills to explore the floristic inventory of plant taxa in and around the tribal settlements. The information on ethnomedicinal plants resources used by tribals were documented by following the methods of Jain.[13]The questionnaires were used to obtain information on medicinal plants with their local names, parts used

as medicine, mode of medicine preparation and dosage of medicine administration. The species mentioned by the tribal's were taxonomically identified. The plants were botanically confirmed by using various regional Flora[14,15,16]for identification while the Flora of Tamil Nadu[17,18] were used to refer the correct botanical names.

Traditional Healing

There is abundant undocumented traditional knowledge of herbal remedies used to treat diseases in most cultures. Different traditional healing practices worldwide are designed for either therapeutic or prophylactic use in human or animal diseases.[19] Several studies carried out in Africa, Asia, Europe, Latin America and North America show that plants are routinely used as remedy for animal diseases.[20,21,22,23,24,25,26] Antidotes for insect and animal bite like wasp sting, dog bite, scorpion sting and snake bite were prepared using herbal medicine by the tribal people. Respiratory problems like cough, cold, bronchitis and asthma also used medicinal plants swellings, leucorrhoea, skin problems, joint pains, urinary diseases, diuretic, bleeding piles, fever, diabetes treatment of boils, paralysis, nervous system, sores, throat problem, parasitic worm, earache, teeth ache and menstrual problems also treated by herbal medicines by the tribal peoples in the study area.

Effectiveness of the herbal drug was connected to nature of the disease and dose response. Doses are differing from patient to patient from time based on the cause and effectiveness of the drugs. Traditional knowledge of herbal remedy to treat human diseases is fast declining in many parts of the world, including India. Even today, tribal and certain local communities in India still practice herbal medicine to cure a variety of diseases and disorders. They collect and preserve locally available, wild and cultivated plant species. Traditional knowledge of medicinal uses is a suitable tool for both botanical and conservational purposes for economic and threatened plant species.[27]

RESULTS AND DISCUSSION

The mechanisms of these plants on this problem are not clear. Women-related disorders are very diverse, such as dysmenorrhoea, amenorrhea, increasing amount or timing of menstrual bleeding or decreasing menstrual cycle length, etc. These may occur at any age and for any reason and cause anxiety among women and young girls because they set the alarm for the existence of a problem in the body. These problems are caused for various reasons, including infection, IUD, stress, ovarian cysts, malnutrition, cancer, hormonal disorders, drug use and pregnancy and a number of other causes. Medicinal plants usually alleviate the estrogens level which seems to control such disorders.Medicinal plants may alleviate one or some symptoms or increase the possibility of controlling the disorders. Women-related disorders are also associated with increase in oxidative stress.[28]

Most of the plants presented in this article have antioxidant activities.[29] Hence these plants might have beneficial effects on women-related disorders by decreasing the oxidative stress. There are a lot of plants which have phenolic compound.[30,31] These plants, especially the ones with flavonoid compounds usually have antioxidant activities.[32,33,34]These plants can scavenge free radicals and reduce oxidative stress.[35,36,37] Therefore, the plants with these properties may also be effective in menstruation and reduction of menopausal syndrome. These plants have also other beneficial effects which patient may benefit.[38,39,40]The complete record of plants are listed in Table 1.

Table 1. Plants Recorded from Nilgiri Tribes used for Female Health Issues

Family	Binomial	Local name	Parts used	Uses
Piperaceae	*Peperomiatetraphylla* (G.Forst.) Hook. &Arn.	Koththchedi	Whole plant	Urinary disorders
Myristicaceae	*Myristicadactyloides*Gaertn.	Katujathika	Leaves	Cough, urinary tract infections
			Seeds	White discharge
Menispermaceae	*Cycleapeltata* (Lam.) Hook.f. & Thomson	Padathaali	Leaves	Easy delivery during child birth
Amaranthaceae	*Alternantherasessilis* (L.) R.Br. ex DC.	Ponnankanni	Whole plant	Eye problems, reduces body heat, secretion of milk during stomach disorder and irritation of bowels
Nyctaginaceae	*Boerhaviadiffusa* L.	Saranaichedi	Leaves	Healing wounds, stomach pain, white discharge
Euphorbiaceae	*Ricinuscommunis* L.	Aamanakku	Leaves	Secretion of more milk
Phyllanthaceae	*Brideliaretusa* (L.) A.Juss.	Kaduga	Stem bark	Blood purification, regularize the menstruation cycle for Women, any heart related problems
Leguminosae	*Crotalariaverrucosa* L.	Kilukiluppa	Leaves	Stomach pain during menstruation
Leguminosae	*Indigoferatinctoria* L.	Avuri	Leaves	Jaundice white discharge
Capparaceae	*Cratevareligiosa*G.Forst.	Maralingam	Leaves	Reduce pain during delivery
Caricaceae	*Caricapapaya* L.	Pappaali	Fruits	Eye related diseases, clean uterus and abortion
Malvaceae	*Helicteresisora* L.	Idamburi	Fruits	White discharge and other menstrual disorders
			Leaves	Stomach pain
Malvaceae	*Hibiscusrosa-sinensis* L.	Semparuthi	Flowers	White discharge
Rutaceae	*Atalantiamonophylla* DC.	Kaatelumichai	Leaves	Bleeding during menstruation
Rutaceae	*Chloroxylonswietenia* DC.	Purasu	Leaves	Prevent excessive bleeding during menstruation
Sapindaceae	*Cardiospermumhalicacabum* L.	Mudakaththaa n	Leaves	Stomach pain during menstruation, body pain constipation, Ear pain
Boraginaceae	*Cynoglossumzeylanicum* (Vahl) Brand	Pisinottarai	Leaves	Induce fertility
Apocynaceae	*Alstoniascholaris* (L.) R. Br.	Palai	Stem	Increase lactation
Rubiaceae	*Benkaramalabarica* (Lam.) Tirveng.	Papparamullu	Fruits	Impotency
			Stem bark	Uterus related problems, syphilis
Rubiaceae	*Psydraxumbellata* (Wight) Bridson	Nallamandhara m	Whole plant	Easy delivery, uterus related problems
Acanthaceae	*Justiciaadhatoda* L.	Adatodai	Roots	Easy childbirth
Lamiaceae	*Ocimumbasilicum* L.	Tirunirupachai	Leaves	Labor pain during child birth

				Pimples
Pedaliaceae	*Pedaliummurex* L.	Yaanainerunji	Leaves	White discharge giddiness, vomitting sensation
Compositae	*Blumealacera* (Burm.f.) DC.	Aaththuchedi	Leaves	Relieve pain in penis for men, vaginal irritation during menstruation period and white discharge for women

CONCLUSIONS AND RECOMMENDATIONS

The present observations revealed that the tribes of Nilgirisparticularly those living in remote and high altitude areas are largely dependent upon the surrounding plant resources to meet their day-to-day requirements. In addition to the above mentioned species, the local people also use many other plants. These plants form an integral form of their lifestyle and hence have always been revered. Traditional knowledge on medicinal plants documented in the present study provide a new arena to bring out the cultural heritage and indigenous medicinal knowledge of Nilgiri hills tribes before it vanished with the modern culture. This indigenous knowledge of the tribes should be passed properly, documented and preserved so that their knowledge is passed on to the next generations.

However due to recent developmental activities and market inclination, a decline in traditional knowledge has been observed. Therefore, greater efforts are required to document traditional knowledge of the local people so as to prepare a comprehensive account of it, which will open new vistas in plant research.The government should encourage the tribes for the cultivation of medicinal plants in their localities instead of collecting them from the wild. The results of the present study provide evidence that medicinal plants continue to play an important role in the healthcare system of this tribal community. Hence this study will be a milestone for conservation of important rare and endangered species in their natural habitat. In conclusion the tribal peoples of Nilgiri hills, a part of Western Ghats of Tamil Nadu, India has much knowledge using plants as a medicine and there is a need to document all information's about the uses of medicinal plants. Hence this present study shows the treasure of indigenous knowledge on medicinal resources which would be very helpful for the development of plant based drugs for health security.

ACKNOWLEDGEMENTS

The forest officials and the local people those helped during the field work are remembered here with thanks.This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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