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Ethno medicinal uses of plants related to gynecological problem among the Mundas of Jajpur district of Odisha

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Abstract

The people of Munda community in Jajpur district of Odisha still depend to a large extent upon plants for gynecological ailments. The folk knowledge of plant medicine and its significance has been accumulated and transmitted through a process of experience over hundreds of years. In this paper a survey for documentation of medicinal plants used for gynecological disorder among Munda community has been conducted during May, 2014 to June, 2015. A total 25 species of medicinal plants belongs to 23 genera and 22 families were recorded as remedies for gynecological problem among them. On the basis of ethnographic fieldwork with the help of standard anthropological methods, it has been revealed that the Munda people uses the plant medicine commonly for smooth delivery, retention of pregnancy, menstrual disorder such as Leucorrhoea, Dysmenorrhoea, Menorrhagia, Oligomenorrhoea, Menstrual cramps, Lactation etc. Documentation of traditional knowledge on ethno-medicinal uses of these plants is essential for conservation efforts for the plant resources and new drug development.

Keywords: Conservation, ethno-medicine, medicinal plants, gynecological disorder, phyto-chemical, pharmacological

1. Introduction

Ethno medicines have been an integral part of traditional health care system in most part of the world. Medicinal plants constitute the base of health care systems in many rural and tribal societies. Globally, about 85% of primary health care are derived from plants [1]. According to an estimate of W.H.O., [2] as many as 80% of the world's populace depend on traditional medicine for their particular health care need. It means that most of the world population relies on traditional medicines for primary health care involve the use of plant extracts. Plants and plant medicaments are the basis of many of the modern pharmaceuticals we used today for our various ailments [3]. India is the tenth among the plant rich countries of the world and fourth among the Asian countries [4]. In rural India, 70% of the population is dependent on the traditional system of medicine. In India the people, especially the tribals, living in forest or its adjoining areas, since long past, maintaining their health with the help of their ethno-medicinal knowledge. Odisha ranks third among the states of India with 7 million tribal populations, which are 22.21 percent of the state's total population, divided into 62 tribal communities. As the health care facilities are not easily accessible to the interior part of the state, tribal people still depend on the medicinal plants which are less expensive, readily available and reliable and they are considered to have fewer side effects than modern medicines. The tribal people have been preparing medicines from the available species of plants which are used extensively to treat common diseases. The tribal people rely on medicinal plants because of their effectiveness, lack of modern health care alternatives and cultural preferences [5]. The plants used in traditional systems are mostly collected from the wild but they can also be easily grown or domesticated in the kitchen garden. Tribal communities have diverse knowledge of traditional medicines related to indigenous plants for basic health care [6]. In the state of Odisha, treatment with medicines from plants and their derived products forms an integral part of the culture of tribal communities and the information about the plants and their uses are passed from generation to generation through folklore primarily amongst the elderly; the natural retainers of traditional knowledge in their respective communities. Folklore research involves the study of all aspects of intellectual and material culture of indigenous or backward people [7].

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It outlined the prospects by some new or less known medicinal plant resources. The tribal women also pass considerable knowledge about various uses of plants available in their surroundings. Traditional systems of medicine in Odisha are repositories of a large reservoir of empirical knowledge. This ethnic knowledge is falling prey to the lure of modernization and therefore it was an urgent need to study and document this precious knowledge for prosperity. The collection, identifying and documentation of ethno medicinal data on biological resources are inevitable steps for bio-prospecting [8]. Further Schules [9] tried to bring the attention of scientists to ethno-botanical conservation. Right from the commencement of ethno-botany with special emphasis on the documentation of traditional medicinal knowledge of plants, has discovered/provided a number of key modern drugs [10, 11]. Much of this wealth of knowledge is totally becoming lost as traditional culture gradually disappears.

Ethno-gynecology is an emerging new branch that basically deals with the healing of ailments among tribal women, for example abortion, menstrual trouble, leucorrhoea, anti-fertility and delivery problems [12, 13]. Some ethno-medicinal studies have been conducted to study the role of phototherapy in women's health and reproductive health problems [14, 15].

Some common gynecological problem among the women which are treated by plant medicines are Amenorrhea or stoppage of menstrual flow, Dysmenorrheal or period pains, Oligomenorrhea or irregular menstrual flow, Leucorrhoea or excessive menstrual flow, fertility problem, problem of lactation etc. Yet no such documentation has been done extensively earlier. Although the floristic and ethno medicinal investigations have been done by various researchers like Ambasta [16]; Jain [17]; Majumdar [18], the information on plants used for gynecological disorders is meager in these studies.

Keeping this in view, the present study was initiated with an aim to identify medicinal plants resources and traditional knowledge of Munda community to treat gynecological disorders. An attempt has been made to highlight ethno medicinal uses of plants among the Munda community against gynecological problems in the Jajpur district which has not been studied earlier. The objectives of the present study were to identify, collect and document the medicinal plants used by the Munda community and their utilization for primary health care, specifically in treatment of different gynecological diseases. The present study would provide baseline information to phyto-chemists, pharmacologists and conservationists for further research. A synoptic account of plant species, parts used application and approximate doses in possible cases and ethno-medicinal values to cure gynecological disorders among the Mundas has been prepared in the present study.

2. Materials and Methods

The Jajpur district is located in the eastern region of Odisha. The district Jajpur extends from 85°40' east longitude to 86°44' east longitude and from 20°43' north latitude to 21°10' north latitude covering an area of 2887.69 sq. KM. The total forest area is 7711 hectares. The annual rainfall varies between 1200 mm to 1600 mm and the mean temperature ranges between 25 °C to 27.5 °C. The district is famous for rich minerals such as iron, chromites, granite and laterites.

The total tribal population is 1, 25,989 in number, out of which males are 64,198 and females are 61,719. The tribal people constitute 7.76 percent of the total population of the district. The tribal communities such as Shabar, Munda, Kolha, Ho, Bhumij, Bathudi, Juang, Kondh, Santal live in different parts of the district from time immemorial. The Mundas are 35,685, Shabars are 31,840 and Kolhas are 18,569 in number (Census, 2011). In this district four MADA pockets are operating for the development of tribal communities.

Mundas are concentrated in the districts of Sambalpur, Sundargarh, Keonjhar, Mayurbhanj and Jajpur in Odisha. Their language is Mundari which belongs to Munda sub-group of Austro-Asiatic language family. They are now agricultural cultivators although some of them are industrial laborers. The Munda word signifies generally as headman of the village. In Odisha the Munda tribe has a population of 5, 58,691 out of which 2, 79,211 males and 2, 79,480 are females (2011 census).

The study was conducted during May, 2014 to June, 2014 to collect data on different medicinal plant species which are used for health care among the Mundas of Jajpur district of Odisha. Both participant and non-participant observation with interview technique were followed by the investigators. Extensive field visits were made to the local medicine man for collection of information and for identification of places of occurrences of medicinal plants in the study area. The study was conducted with the help of informants from tribal communities who were familiar with the plants such as local name, parts used for the treatment, name of the disease for which plant is used, preparation and mode of administration, dosage etc. are provided by medicine man and elderly persons of the concerned villages. In addition to this 'Focused Group Discussions' (FGD) were conducted with different age-group of people of Munda community. Data has been collected from a total number of 175 respondents (110 males and 65 females) as a primary source and supplemented it by secondary sources. Plant specimens were identified following "Flora of Orissa" [19].

A synoptic account of a total 25 plant species, parts used, application and approximate doses to cure gynecological disorders among the Mundas has been listed and presented as reported by the tribal traditional healers and experienced persons of the locality.

Table 1: Plants used for gynaecological disorders by Munda tribe, district Jajpur, Odisha, India

Scientific Name and Family	Local Name	Parts Used	Ethno Medicinal uses
<i>Abrus precatorius</i> L. (Fabaceae)	Kaicho (O), Chirmit, Sonkanth (S, Beng)	White seeds	White seeds kept in un-boiled cow milk for the period of overnight and the milk absorbed and swelled seeds are given to women in the morning at the end of the menstruation cycle for preventing conception
<i>Annona squamosa</i> L. (Annonaceae)	Sitaphal (O), Ata (Beng), Monda (S)	Dried root powder	Dried root powder(5 gm) is taken once in the morning for five days by women for abortion of 3 to 4 months of pregnancy
<i>Annona reticulate</i> L. (Annonaceae)	Rajamaghua, Ramphala (O)	Seed Powder	A mixture of seed powder with black pepper powder (<i>Piper nigrum</i>) (about 3 gm) is prescribed for spoiling of pregnancy up to 3-4 months duration.
<i>Argemone mexicana</i> L. (Papaveraceae)	Daskeranda (O), Kantajati (O, Beng)	Leaf	Leaf juice is taken by women twice a day for 15 days as a cure for leucorrhoea

<i>Argyrea nervosa</i> (Burm. F) (Convolvulaceae)	Brudhadareka (O), Fudrimal (Kondh), Gaguli (Beng)		Leaves are placed on the earlobes of women to facilitate detaching of placenta after delivery
<i>Boerhavia diffusa</i> L. (Nyctaginaceae)	Puruni Saga (O)	Whole Plant	Decoction of plant(15 ml) is given once a day in the early morning for fifteen days for the treatment of Leucorrhoea
<i>Borassus flabellifer</i> L. (Arecaceae)	Tala(O)	Tree	Ash (after burning of male inflorescence) with powder of black pepper (<i>Piper longum</i>) & cow milk in the ratio 2:1:1 is prescribed women as contraceptive for few days.
<i>Borreria articularis</i> (L.f.) Williams (Rubiaceae)	Sanaghar podia, Jibkata (O), Pitu arak (Sa)	Whole plant	For the regulation of excessive menstrual flow, root paste (15 gm) with hot water is taken by women in empty stomach just after starting of their periods for 3 days.
<i>Bombax ceiba</i> L. (Bombacaceae)	Simili, Simal (O), Edel (s), Emal(H)	Fleshy roots	Pasty mass of fleshy roots of young plant (1 gm) mixed with un boiled cow milk (2 ml) is taken once a day in the early morning for a week by women to regulate irregular menstruation.
<i>Calotropis gigantea</i> R. Br. (Asclepiadaceae)	Arakha (O), Patladudha, Akaona (Sa), Mudha (H)	Root	Decoction of root (3 ml) with paste of <i>Piper longum</i> (1 gm) is given to women in empty stomach for ten days for treatment of leucorrhoea.
<i>Crateva nutela</i> Buch-Ham (Capparaceae)	Barun, Varuna, Pitmaiel (O)	Stem bark	Fresh juice of stem bark (3 ml) mixed with seed powder of <i>Piper nigrum</i> (1 gm) is taken by women in the 7 th day of the menstrual cycle as a contraceptive
<i>Dillenia aurea</i> Sm. (Dilleniaceae)	Rai (O, B), Korkotta (Sa)	Stem bark	Extract of stem bark (10 ml) is taken once a day for 2 weeks in empty stomach for restoration of health after child birth
<i>Dillenia pentagyna</i> Roxb. (Dilleniaceae)	Rai (O, B), Korkotta (Sa)	Stem bark	Midwives (Dhai) of ethnic group uses smashing tree gum for easy delivery purpose
<i>Ficus hispida</i> L.F. Suupl (Moraceae)	Buidimiri (O) Barmur (S), Katgulasia (H)	Fruit	Boiled green fruits given to lactating mothers for better milk secretion
<i>Heliotropium indicum</i> L. (Boraginaceae)	Hatisundha (O)	Root	Decoction of root(10 ml) with honey (2 ml) is taken for iron deficiency anemia during pregnancy period
<i>Hemidesmus indicus</i> (L)R. Br. (Asclepiadaceae)	Anantamul (O)	Root	Root paste (about 10 gm) is taken in empty stomach continuously seven days for the treatment of leucorrhoea.
<i>Hibiscus rosa-sinensis</i> L. (Malvaceae)	Mandar (O), Juva (Beng)	Stem bark	Stem bark paste (15 gm) is given to woman continuously for causing abortion and mixture of pasty mass of flower buds (3gm) with rust of iron (2 gm) and country liquor (2 ml) is taken by women at the days of menstruation as a contraceptive.
<i>Nelumbo nucifera</i> Gaertn (Nymphaeaceae)	Padama, Dhalapadam (O)	Rhizome	Decoction of rhizomes of white flowered plant (pundi-salukid), about 15 ml is taken by women in empty stomach for fifteen days to cure white discharge.
<i>Phyla nodiflora</i> (L.) Greene. (Verbenaceae)	Gosingi(O), Jalapipli (Sa)	Root	Decoction of root (3 ml) with un- boiled egg (2 mg) is given to women to promote sexual urge.
<i>Strychnos vomica</i> L. Sp (Loganiaceae)	Kuchiia (O), Gorumar (Sa)	Stem	Pasty mass stem (3 gm) with Kusum (<i>schleithereaoleosa</i>). oil (1 ml) is prescribed twice after food for ten days continuously for the treatment of leucorrhoea
<i>Woodfordia fruticosa</i> (L.) Kurz, J Asiat (Lythraceae)	Dhai, Dhatuki, Dhatki, Dhatuk, Icha, Ichak, Patakula (Sa)	Dried flowers	Dried flower powder (5 gm with honey is given to women once a day for the treatment of leucorrhoea
<i>Zizyphus mauritiana</i> Lam (Rhamnaceae)	Borokoli, Bodokoli, Bodori, Barakuli (O), Baer (H)	Stem bark	Stem bark paste is taken twice a day after food as a cure for abdominal pain during pregnancy.

3. Result and Discussion

The present study revealed that the Munda community of Jajpur district of Odisha uses 25 medicinal plants to treat the gynecological disorder of the women. The 25 medicinal plants belonging to 22 families were used by the Munda people. Out of 25 species, two each belongs to Annonaceae, Asclepiadaceae and Dilleniaceae family, one each belongs to Fabaceae, Convolvulaceae, Papaveraceae, Nyctaginaceae, Arecaceae, Rubiaceae, Bombacaceae, Capparaceae, Moraceae, Boraginaceae, Malvaceae, Nymphaeaceae, Verbenaceae, Loganiaceae, Lythraceae, Rhamnaceae, Acanthaceae, Caesalpiniaceae & Combretaceae family. Most of these plants grow wild in nature. Out of 25 plants, the majority of the species are trees (44%), followed by shrubs (24%), herbs (20%) and climbers (12%). The traditional healers of the Munda tribe mostly use the trees for treatment of gynecological disorder because trees are abundantly found in the district for which it could be collected easily. Further the high usage might also be related to its strong efficiency in

comparison to other types of plants. The mostly used medicines are derived from bark (32%), followed by root (28%), leaves (12%), seed (8%), flower (4%), stem (4%), fruit (4%). In only two ailments Leucorrhoea and menstrual disorder, the whole plant (8%) *Boerhavia diffusa* and *Borreria articularis* were used respectively as medicine (Table-1).

The method of preparation varies from person to person as the healers prepare the herbal medicine in a different way from each other although the plant parts and ailment remain constant. Among the Mundas in the Jajpur district, the plant parts mostly used for treatment of gynecological disorder are in smeared and mixed (52%), followed by grinded and crushed (28%), boiled (12%), smashed (8%). Preparation of remedies in study area involved single medicinal plants. It is evident that sometimes certain plants become more effective to certain ailments when administered in combination with some other plants. It is also believed that the potency of plant remedies could be enhanced when they are used in concoction form. The most common ways of administration of plant medicine was

oral were ten to fifteen days. The largest number of plants (24%) were used to treat leucorrhoea, 20% were used for contraceptive, 12% plants for menstrual disorder correction, 8% for abortion of pregnancy, 8% for conception (fertility) and 4% of plants each for promotion of sexual desire, abdominal pain during pregnancy, anemia during pregnancy, increase of lactation, detachment of placenta, easy delivery, gaining vitality after child birth.

It was evident from the present study that men had better knowledge regarding gynecological problems and its related remedies as compared to women. The reason might be due to the fact that men are mostly favored in shift of knowledge while women in the Munda culture are considered for family's care. Further it was found that the young generation had little knowledge about the traditional medicine while the elder people know much more about the traditional plant medicines to treat the gynecological disorders. The knowledge is passed on orally from generation to generation. The culture of the Munda community supports the efficacy of the remedies. The cost, inaccessibility and other problems like side effects of modern medicine encourage the Munda people to rely on traditional plant medicine which are based on local resources and strengths.

Among the Munda community, the prevalence of gynecological disorders is found in an increasing proportion due to change in the environmental condition caused by industrialization and changing life style thereof by the tribal people. Due to socio-cultural stigma the women do not usually disclose their gynecological disorders to others. They do not consult the modern medicine practitioners; rather they depend on herbal treatment as per the suggestions of old women or traditional healers. The tribal women have immense faith on local herbal healers who treat these diseases using the plants in a very low expense with no side effects and better patient's tolerance.

4. Conclusion

The Munda tribal communities in Jajpur district of Odisha have their traditional knowledge of plant medicine based system of curing many gynecological disorders. An appropriate dosage to prepare drug from different parts of the plant body like root, stem, leaves, flowers, fruits, barks, seeds, rhizomes are prescribed as a remedy to treat different kinds gynecological disorders. Unfortunately, information on the use of plants for medicine from this area is completely lacking. At the same time the traditional knowledge is rapidly degrading due to modernization of that area and the younger generation is not interested to learn from older generation. Thus, the documentation of ethno-medicinal plants to cure gynecological disorder is highly essential for future which will help both researchers and the tribal people. Ethno-medicinal plants and remedies documented have need photochemical and pharmacological screening for active principles and clinical trials for therapeutic action.

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