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Ethnomedicinal plants of the Karbi ethnic group in Assam state (India) for management of gynaecological disorders

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Abstract

The Karbis gives immense importance related to woman health including gynaecological disorders. Though man and woman have equal knowledge about medicinal plants and its usage, excepted knowledge of woman health pertaining to gynaecology are acquainted only by woman. Ethno-gynaecological practices of the Karbis and plant medicines used have not received the attention of researchers; so in this paper emphasized has been given on uses of plants, plants products and gender aspect of gynaecological knowledge. Karbi ethnic tribe and their ethnomedicines are materials for the present study. Field study was undertaken during the period of 2011-2014, following survey and unstructured methods. Twenty eight (28) medicinal plants are being used by the Karbis for various gynaecological problems. These plants are found in diverse habit and habitat and the local folk are competent enough to select and identify the useful medicinal plants for the purpose. The study suggests that herbal remedies constitute an important and effective component of the healthcare system among Karbis whose use needs to be encouraged and promoted. Further pharmacological investigation would aids in proving efficacy of the medicines and evidence for tribal claimed in efficiency of the ethnomedicines.

Key-Words: Ethnogynaecology, Karbi women, Plants, Healthcare

Introduction

Medicinal plants have made significant contribution towards women healthcare. Tribals around the world exploit plant resources to manage all ailments, including gynaecological problems and knowledge of such folk medicines is transmitted through word of mouth from one generation to another. The use of plant ethnomedicines is more prevalent in tribal societies for being cheap, easy access and adaptation with local cultures. Long usage of such medicines has developed into a local healing system and folks have become natural custodians of many plant medicines. Gynaecological disorder is one of the most serious issues concerning every human society. Modern medicines do not reach many interior tribal pockets or many resource poor families cannot afford costly medicines; some such medicines are not practiced by many household on social and religious ground. Traditional medicines are still prevalent as primary healthcare in most tribal cultures living in different geographical areas.

Many cultures have been practicing ethnomedicines and indigenous wisdom with precision to cure and manage gynaecological disorders. Contributions of plants in women's health related conditions such as female fertility, menorrhoea, birth control, pregnancy, birth (parturition), postpartum (puerperium) and lactation, including infant care, have been documented for various ethnic groups of India.¹⁻¹⁴

Ethno-gynaecological practices and plant medicines of the Karbis, a prominent ethnic tribe in Assam, Northeast India have been scarcely studied. Karbis gives immense importance to woman health, gynaecological disorders being of priority concern. Till today, gynaecological problems are managed through cultural practices that involve rituals, taboos and avoidances.¹⁵ Some women elders possess immense knowledge to manage these problems and such group of women constitutes birth attendants in the society. Besides socio-religious practices, use of plant-based ethnomedicines are indispensable for maintenance of women reproductive health. The aim of this paper is to study the traditional knowledge and use of plant resources for managing gynaecological disorders practiced among the Karbi ethnic group of Assam. Due to lack of written history, not much is known about the origin of the Karbis but they are believed to have migrated from the Kuki-Chin area in and around the

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Chindwin river valley in Western Myanmar.^{16, 17} In this article, we used the definition of Ethnogaecology provided by Tarafder which refers to 'the study of various diseases among women in tribal societies, related to sterility, conception, abortion etc. and the use of abortifacients'.¹⁸ The present study will contribute towards documentation of traditional knowledge and ethnogaecological medicines of the Karbis and the role of birth attendants.

Material and Methods

Karbi ethnic tribe and their ethnomedicines for gynaecological problems are materials for the present study. Field study was undertaken during the period from January 2011 to March 2014 in 5 remote Karbi settlements (*Koilamati, Langrik, Tharve suti, Chekso Anglong* and *Borthol*) in Karbi Anglong district, Assam. Data was collected through semi-structured interview of elders (both men and women) followed by focus group interview of birth attendants. Elders were engaged in group discussions relating to etiology and management of gynaecological disorders to comprehend folk perceptions of the problems. We interviewed thirty eight Birth Attendants (their selection is endorsed by folk elders) and recorded traditional practices and plant medicines for managing gynaecological problems. Birth Attendants generally include elderly menopause women. They were asked to answer a few specific questions relating to gynaecological problems like "symptoms of conception", "dos and don'ts during pregnancy", "risk involved in their profession", "gynaecological disorders" and "ethnomedicines prescribed". Information on the preparation of ethno-herbal recipes along with dosage were recorded in field diary for enumeration. The medicinal plants were collected with the assistance of elders and medicine men and the specimens were identified and preserved in the Department of Life Science and Bioinformatics, Assam University Diphu Campus.¹⁹⁻²³

Results and Discussion

Plant-based traditional medicines are indispensable for primary healthcare among the Karbis. Major gynaecological problems recognized among the tribes were labor pain, delivery, postpartum vaginal wounds, postpartum abdominal pain and prolapse genitals, while problems like menstrual disorder, general weakness after delivery and vaginal itches are considered minor by the folk. These problems are managed partly through socio-religious practices and partly through use of ethnomedicines. Knowledge of these two forms of practices is transmitted through word of mouth from one generation to another. Dependence on plants over long years for healthcare

has led to development of local pharmacopeia for treatment of ailments including gynaecological problems. Twenty eight plants (28 species under 20 families) used by the Karbi ethnic tribe during pregnancy, labor pain, delivery, menstrual problem, post partum disease, venereal disease and abortifacient is presented here (Table 1). Gynaecologically important plants traditionally used among Karbi women, with local name in Karbi dialect, along with preparation and administration are enumerated. Three (3) plants are used for abortion, five (5) for complicacy during delivery/labor, three (3) for postpartum abdominal pain, one (1) species are used for curing prolapsed genitals, three (3) for curing Postpartum vaginal wound; one (1) for vaginal itches, one (1) for menstrual disorder, six (6) plants for permanent sterility and six (6) plants are used for curing postpartum weakness. The doses of these ethnomedicines however, are not standardized; it is generally taken as advised by medicine men or women. The common forms of prescriptions are decoction, maceration, powder, raw juice, baking, etc. Some medicinal plants are prescribed alone while some are prescribe along with other plants. Additionally many plants (Table 1) have multiple uses as food and/or fodder.

Medicinal plants used in common gynaecological problems

Achyranthes aspera L. (Poaceae); Local name: *Nunthe parlin*

A. aspera is an erect or subscandent annual herb growing up to 1m high. Tender twigs are grounded, mixed with water and the juice is taken orally to reduce the complicacy of labour. About half glass of the juice is taken thrice daily consecutively for three days. Similar usage has been reported from Uttar Pradesh state of India where the ethnic tribe used roots of the plant for reducing labor pain.²⁴

Acorus calamus L. (Araceae); Local name: *Lang abap*
It is an aromatic marshy herb with creeping rootstock. Tubers of *Acorus calamus* are grounded and mixed with water and the mixture is taken orally during labour pain. Very often the mixture is blended with grain *Oryza sativa* and twigs of *Achyranthes aspera* for better results.

Azadirachta indica A. Juss (Meliaceae); Local Name: *Neem keho*

It is a tall tree of popular antifertility agent among Karbi women. Grounded root juice is taken orally for the same.

Bambusa sp. (Poaceae); Local name: *Kepho*

The genus *Bambusa* is an arborescent grass of great height. The ashes (*phelo*) of young culms (*Arjang*) are

popular abortifacients used among the Karbi women. The ashes are collected and filtered using sieve called *Phelo bisir*, a craft made from bamboo splits. The highly concentrated filtrate (approx. 5ml) is consumed by many unwed mother to abort the womb.

Chloranthus officinalis Blume (Chloranthaceae); Local name: *Hanthening*

Decoction of the leaves, about 50-100ml is taken as a tonic to reduce complicity during child delivery. Leaves are boiled with water and regularly taken as vegetable for at least one month before expected date of delivery.

Clerodendrum hastatum Lindl. (Verbenaceae); Local Name: *Mahar alosam*

Large shrub; usually found in forest along stream and in forest edge. The leaves are baked and then cooled; vagina is massaged with the baked leaves for treatment of vaginal itches. It is massaged twice daily till the condition is controlled. In case of intense itches the warm baked leaves are placed around the vagina and wrapped with clean cloth; it is applied twice a day till the condition is cured. Besides, there is a common belief among the folk that such practices satisfy temporary sexual arousal among girls.

Clerodendrum viscosum Vent. (Verbenaceae); Local name: *Phlek-ik*

Large shrub with quadrangular branchlets and strong aroma; commonly found in secondary forest, forest edges, road side and other disturbed habitats. A few tender twigs (about 10-15 twigs) are boiled in water and decoction is taken orally to reduce complicity of menstruation. Half a glass (about 10-15ml) is taken 2-3 times a day till recovery from the complicity. Leaves are also used as vegetable and as substrate in preparation of rice starter cake for fermentation of rice.

Crataeva nurvala Buch. Ham. (Capparaceae); Local name: *Mir sak-su*

Crataeva nurvala is taken as a tonic for general weakness and is given to women after child birth.²⁵ Tender shoots are taken as vegetable after boiling.

Croton joufra Roxb. (Euphorbiaceae); Local Name: *Marthu*

It is a tree with broad, simple leaves and unisexual flowers. Leaves are warm gently and massage over the abdomen to relieve from acute stomach pain soon after delivery. It is repeated many times daily till the pain subsides.

Dioscorea alata L. (Dioscoreaceae); Local Name: *Ruichin*

Boiled tubers are given to mother for general weakness after delivery. Women interviewed reported, regular consumption give energy and better immunity to the body.

Elsholtzia strobilifera Benth. (Lamiaceae); Local Name: *Nempi*

It is an aromatic herb commonly found in the hill areas. Tender twigs and leaves are warm gently and massage over the abdomen to relieve acute abdominal pain after delivery.

Erythralium vagum Mast. (Olacaceae); Local Name: *Lojangthu*

Leaves are used in prolapsed genitals (characterised by protruding genitals after delivery). Mustard oil is applied on leaf and the protruding genital is pushed gently with the oiled leaf. Many mothers, especially from the hilly remote areas still practice this traditional medication. Apart from this ethnomedicine, Traditional Birth Attendant (TBA) would advise mother to sit in such a position that the heels always touch the vagina and repeated till the wound is healed.

Eupatorium odoratum L. (Asteraceae); Local name: *Bap bongnai phulok*

E. odoratum is an aromatic shrub covered with fine grey hairs; stems rounded with pale mauve or violet flowers. Tender twigs are used to cure vaginal wound after delivery. Twigs are warmed and massaged gently on vaginal wound; otherwise baked leaves are spread over banana leaf and the mother would sit over it in such a position that the wound touched the baked leaves. This is repeated till the wound is cured.

Houttuynia cordata Thunb. (Saururaceae); Local name: *Han kumphi*

Houttuynia cordata is an herbaceous perennial growing a height between 20-80 cm; the stem trails on the ground and produces adventitious roots at the node. Leaves are boiled and mixed with boiled tubers of *Solanum tuberosum* and taken orally in general weakness after delivery; it is taken 2-3 times daily till the mother regains strength.

Inula cappa (D. Don) DC. (Asteraceae); Local Name: *Chulumpui*

It is a common herb found in *Jhum* fields and secondary forest. Crushed leaf juice is applied with a quill on vaginal wound caused due to delivery. This is reported to give effective result by drying the wound within a short period.

Lablab purpureus (L.) Sweet (Fabaceae); Local Name: *Thepak*

It is a cultivated twining herbaceous annual or short-lived perennial plant. Matures root of usually a year old, along with root of *Mimosa pudica* and grains of *Oryza sativa* are grounded and the juice is taken orally as a measure for permanent sterility. Since it is a seasonal plant, the roots are collected and after cutting fine roots it is dried, made into bundle and stored in earthen pot for future use.

Micromelum integerrimum (Roxb.) Wt. Et Arn. Ex Roem. (Rutaceae); Local name: *Thenghanso*

It is a small tree about 8m tall with mild aroma; young parts are rust-colored, pubescent. Water extract of the stem is given to women to hasten the process of delivery. Or tender shoots are cooked and given at least one day before expected date of delivery for initiation of delivery. Earlier study also showed the plant being used to hasten labour among the Karbis.²⁶

Mikania scandens (L.) Willd. (Asteraceae); Local name: *Bapbongnai arikang*

It is a perennial herb which grows as a branching vine with leaves oppositely arranged at swollen nodes on the stem. Tender shoots of the twinning herbs are baked and applied thrice daily on the vaginal wound after delivery. It is repeated till the wounds are healed.

Mimosa pudica L. (Mimosaceae); Local Name: *Bap therak*

Mimosa pudica is a prostrate herb with bipinnate leaves. Roots of the plant are used for undergoing permanent sterility. Roots are grounded and its juice after blending with other ethnomedicines (root juice of *Lablab purpureus* and soaked grain of *Oryza sativa*) is taken orally for the same. Root of this plant is also reported to be used as a temporary birth control medicine.²⁶

Musa paradisiaca L. (Musaceae); Local Name: *Lothe*

A large perennial herb. The filtrate of fresh ashes of sheath is taken many times a day as abortifacient. To make more effective, sometimes the filtrate is mixed with gun powder and taken but this is said to cause permanent sterility. Some ignorant mothers take gun powder alone as abortion measures but this is reported to have complicity.

Oryza sativa L. (Poaceae); Local name: *Sok*

Water extract of grains are taken during labour to relieve pain. It is reported to be more effective when mixed with other medicinal plants like *Achyranthes aspera* and *Acorus calamus*.

Piper nigrum L. (Piperaceae); Local Name: *Ahom abirik*

Seeds are grounded and boiled with chicken and the soup is given to mother for quick recovery from weakness after delivery. Soup of chicken is commonly used to regain energy but when taken with piper seeds is said to be more effective.

Plumbago zeylanica L. (Plumbaginaceae); Local name: *Samlok*

Commonly known as Ceylon Leadwort, it is an herbaceous plant with glabrous and erect stem. It is an important abortifacient known among Karbis folk. Stem of *P. zeylanica* is tied around the thigh region with a long thread and then inserted in the vagina to

initiate abortion. It is kept for a day or two, till blood oozes out. However, this practice was said to be used at an early stage of pregnancy. There is a cultural belief about selection of the stem that the stem resembling the shape and size of penis is more effective. In a report from Gujarat, tribals apply paste of the root in vagina for abortion and increase menses.²⁷ Juice of ground root mixed with little sugar and taken orally is also reported to be effective for permanent sterility.

Pogostemon parviflorus Benth. (Lamiaceae); Local name: *Han bipo*

A perennial herb with pungent smell. Baked leaves or paste of it is applied on vaginal wounds after delivery. Juice of leaves is also said to cure acute abdominal pain after delivery. Leaves are eaten cooked as vegetable on regular basis.

Saccharum sp. (Poaceae); Local Name: *Tarsing*

A few twigs (5-10) are grounded into paste, mixed with water and the juice is taken orally for sterility.

Solanum tuberosum L. (Solanaceae); Local name: *Phurui athe*

Boiled tubers are mixed with leaves of *Hottuynia cordata* Thunb. (Saururaceae) and taken by mother to recover from general weakness soon after delivery. Usually it is taken for three days or till the mother regains strength.

Thysanolaena maxima (Roxb.) O. Ktze (Poaceae); Local Name: *Arphek*

Commonly called broom grass, the plant reaches 1.5 to 3m in height. Juice of grounded young twigs is popular among Karbi women to affect permanent sterility. Juices, approx 5-10ml are taken orally once a day for about a week.

Zingiber officinale Rosc. (Zingiberaceae); Local Name: *Hanso*

It is an aromatic herb with thick, creeping, horizontal, jointed, tuberous branched rhizome. Rhizomes or leaves are mixed with boiled chicken to make soup and given to mother to recover from post partum weakness. Inflorescences are eaten boiled as vegetable.

Gender perspective of ethnogynaecological knowledge:

The Karbi traditional gynaecologists are not well defined or not well known as they are not professional, the only defining feature is their age and ability to manage gynaecological problems. But they are always elderly menopause women who have acquired vast knowledge of pregnancy and women-related ailments or conditions. Such learned women are locally called as *Sarpi* (old woman) and form recognised Birth Attendants (BAs) in Karbi society. Due to the lack of medical facilities in their immediate vicinity, the pregnant woman, for any complicity, has to depend on

elderly women to manage their problems. These *Sarpis* are present during labor pain and parturition and provide mental support and advice to the pregnant woman during the entire process. These *Sarpis* prescribe medicines for menstrual pain, delivery complicity, abortifacient, venereal disease, sterility, postpartum disease, painful breast swelling, increase lactation etc. *Sarpis* or birth attendants do not charge cash or kinds for their service but consider helping women and pregnant mothers as a solemn duty to the community in particular and mankind in general. Birth attendants remain the only option for many Karbi women residing in remote areas. Birth attendants are strictly women and entry for men is prohibited. During field study the authors of this paper found both men and women have equal knowledge for treatment various ailments but ethnogynaecological knowledge is particularly confined to women and the knowledge is transmitted strictly through female members. Men assist the *Sarpis* in collection of medicinal plants from the forest vicinity. During field study we observed most mothers possess basic knowledge about gynaecological problems partly by virtue of inheritance from parents and experiences over time but not all women volunteer as birth attendants, the reason provided for this being cultural restrictions. Rural Karbis till today rely on the experience of birth attendants to deliver babies. In addition to attending deliveries, *Sarpis* assist the women with initiating breastfeeding and provide suggestions on reproductive health, nutrition and child healthcare and cultural practices relating to gynaecological disorders.

Conclusion

The study suggests that herbal remedies constitute an important and effective component of the healthcare system among the ethnic Karbis; the same is true for other cultures. Services of *Sarpis* or birth attendants are indispensable for management of gynaecological disorders and for smooth delivery of baby among rural Karbis. Society needs to acknowledge and support their services particularly when transmission of ethnogynaecological knowledge is women specific. However, more in depth phytochemical and pharmacological studies are necessary to support the use of the plants documented in this study. From Table 1 it gives ample evidence that medicinal plants used in gynaecological disorders are also consumed as food and for fodder. It can thus, be stated that women have benefited from the botanicals directly as food and via consumption of animal products. Integration of modern medical practices with the knowledge and experiences of birth attendants could be useful for delivery of primary healthcare in remote areas.

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Table: 1 Multiple usage of plants and its ecological status (+ indicate known; - indicate not known)

Sl. No.	Plants [Families]	Medicines	Food	Fodder	Ecological status
1	<i>Achyranthes aspera</i> L. [Poaceae]	+	-	+	Seasonal, along roadsides
2	<i>Acorus calamus</i> L. [Araceae]	+	+	+	Wild, Marshy
3	<i>Azadirachta indica</i> A. Juss [Meliaceae]	+	+	-	Homegarden
4	<i>Bambusa</i> sp. [Poaceae]	+	+	-	Wild, cultivated
5	<i>Chloranthus officinalis</i> Blume [Chloranthaceae]	+	+	-	Secondary forest
6	<i>Clerodendrum hastatum</i> Lindl. [Verbenaceae]	+	+	+	Valley, moist place, waste land
7	<i>Clerodendrum viscosum</i> Vent. [Verbenaceae]	+	+	-	Waste land, roadside, disturbed area
8	<i>Crataeva nurvala</i> Buch. Ham.	+	+	-	wild

	[Capparaceae]				
9	<i>Croton joufra</i> Roxb. [Euphorbiaceae]	+	+	-	Home garden
10	<i>Dioscorea alata</i> L. [Dioscoreaceae]	+	+	+	Wild, hilly
11	<i>Elsholtzia strobilifera</i> Benth. [Lamiaceae]	+	+	-	Hilly areas, usually jhum site, cultivated
12	<i>Erythralium vagum</i> Mast. [Olacaceae]	+	-	+	wild
13	<i>Eupatorium odoratum</i> L. [Asteraceae]	+	-	-	Weeds, roadside
14	<i>Hottuynia cordata</i> Thunb. [Saururaceae]	+	-	-	Wild, home garden, valley
15	<i>Inula cappa</i> (D.Don) DC. [Asteraceae]	+	+	+	Valley
16	<i>Lablab purpureus</i> (L.) Sweet [Fabaceae]	+	+	+	Cultivated
17	<i>Micromelum integerrimum</i> (Roxb.) Wt. Et Arn. Ex Roem. [Rutaceae]	+	+	-	Forest
18	<i>Mikania scandens</i> (L.) Willd. [Asteraceae]	+	-	-	Twinning weeds, roadside
19	<i>Mimosa pudica</i> L. [Mimosaceae]	+	-	-	Roadsides
20	<i>Musa paradisiaca</i> L. [Musaceae]	+	+	+	Cultivated
21	<i>Oryza sativa</i> L. [Poaceae]	+	+	+	Cultivated
22	<i>Piper nigrum</i> L. [Piperaceae]	+	+	-	Cultivated
23	<i>Plumbago zeylanica</i> L. [Plumbaginaceae]	+	-	-	Wild, home garden
24	<i>Pogostemon parviflorus</i> Benth. [Lamiaceae]	+	+	+	Wild, home garden
25	<i>Saccharum</i> sp. [Poaceae]	+	-	+	Cultivated
26	<i>Solanum tuberosum</i> L. [Solanaceae]	+	+	+	Cultivated
27	<i>Thysanolaena maxima</i> (Roxb.) O. Ktze [Poaceae]	+	-	-	Wild and cultivated
28	<i>Zingiber officinale</i> Rosc. [Zingiberaceae]	+	+	-	Cultivated

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