

Ethno-medicinal use of plants for Menstrual-related disorders among the people of lower Assam, India

Research Article

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Abstract

Assam, including all of its districts, is one of the most diverse plant-rich areas globally, with thousands of medicinal plants. A survey of ethnomedicinal plants used in certain lower Assam districts in rural areas yielded valuable ethnomedicino-botanical data on plants used to treat menstrual-related disorders. There have been 25 medicinal plant species from 23 families documented in this study through personal interaction and consultations with traditional practitioners, village heads, and village women. Among the plant parts used, leaf (8 spp.) was used highest, followed by roots (5 spp.), whole plant (4 spp.), fruit (2 spp.), flower, rhizome, and bark, seed, and stem (1 spp). Among the plants, 8 numbers of plants used to treat irregular bleeding, 6 numbers of plants were used to treat heavy bleeding during menstruation, 4 numbers of plants used to get rid of painful menstruation, 5 numbers of plants used to treat menstrual discomfort and 2 numbers of plants used to treat scanty menstruation. People have used ethnobiology knowledge accumulated over generations to help them protect their nutrition and health, as well as manage their environments. It helps to make the connection between traditional knowledge, conservation, and economic development.

Key Words: Medicinal plants, Women, Menstruation, Disorders, Traditional practitioner, Assam.

Introduction

Ethnobotany is the study of local people's interactions with the natural environment, specifically how they classify, manage, and use the surrounding plants. Indigenous people have developed their localized knowledge of plant use, management, and conservation over centuries. Indigenous knowledge, also known as traditional knowledge, is a complex body of knowledge, beliefs, and practices that develops and changes over time and space as resources and culture change (1). India's north-eastern region is a biodiversity hotspot; it is home to a diverse range of flora with various chemical properties that are either directly or indirectly beneficial or harmful to society. This area is home to a variety of tribes representing multiple ethnic groups, each with its cultural heritage. These ethnic groups are now thought to be rich in plant knowledge. Their environment in remote forest areas without modern facilities has forced them to rely on

plants for primary health care. By doing so, they have been able to pass down this rich plant lore from generation to generation. In India, traditional medicines are used by 70% of the rural population to meet their medical needs (2). The rural community frequently relies on plant-based herbal medicine because it is less expensive, more readily available, and easier to use. Furthermore, they have no side effects and have developed resistance to protect human health (3). Various tribes and rural people in Assam use a variety of plants as folklore medicinal plants to treat a variety of diseases. Female health/gynecological problems are a major problem in Assamese rural societies, and these diseases are treated with folklore medicinal plants that are a part of their culture.

Menstruation is a monthly process in which the uterus sheds its old or matured uterine lining to make room for new ones. Menstruation is a difficult experience that women go through every 28 days. Every woman is expected to go through 400 menstrual cycles on average (4, 5). Menstrual pain syndromes such as excessive bleeding, painful menstruation, irregular menstruation, scanty menstruation, and absence of menstruation affect millions of women worldwide, both in rural and urban areas. Abdominal pains, mood swings, irritability, nervous tension, headaches, increased appetite, palpitations, weakness, dizziness, and fainting, weight gain, swollen hands and feet, breast

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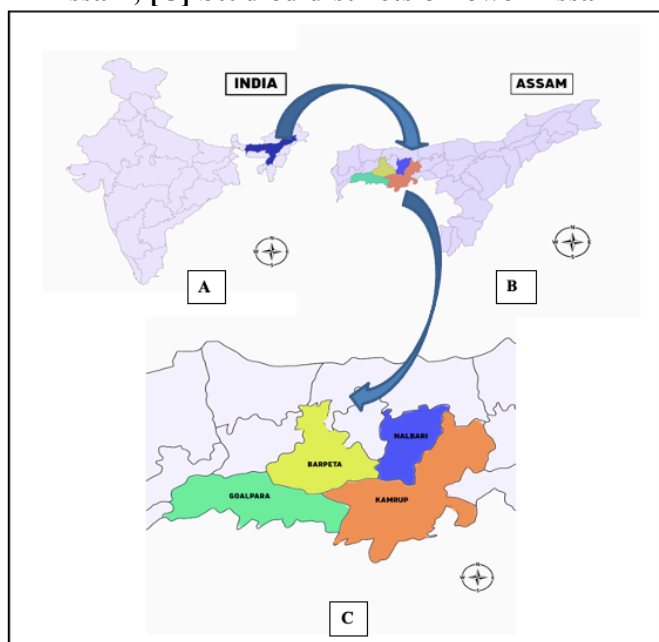
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swelling and sensitivity, swelling and abdominal bloating, depression, poor memory, and insomnia are among the most common symptoms (6,7,8,9). Although research in various low-income countries reveals that menstrual morbidity has a huge impact on women's health status, quality of life, social integration, and access to education, menstrual disorders are generally not perceived as major health concerns. They thus are not considered in global reproductive health programs (10,11). Again, traditional knowledge is at risk of disappearing before it can be documented due to livelihood and environmental degradation changes. As a result, an attempt has been made in this paper to establish the list of ethnomedicinal plants used to treat menstruation-related disorders.

Materials and methods

Figure 1: Geographical map of [A] India, [B] Assam, [C] Studied districts of lower Assam



A survey on the plants used for menstrual related disorders was carried out among the people in certain districts of lower Assam viz. Nalbari, Kamrup, Goalpara, Barpeta [Figure 1] during August 2021 to January 2022. Information about the different types of plants, their parts, mode of administration was collected from the family members of different villages by visiting door to door, who participated voluntarily. During a personal interactive session, primary data was collected on average from 2-3 members of each family, regardless of age group (young, adult, and elderly). The participation of at least one woman from each family was taken into account during the interactive data collection session. The interaction was also established with traditional medicine practitioners (Bej /Ojah) from various villages because people have faith in them and have received positive results from their treatment. Informed consent was obtained from the informants before the data collection. The study was further

preceded with literature review, collection of important medicinal plants, and the identification of the specimens that were collected.

Results and Discussion

The findings of this study show that rural (both tribal and non-tribal) people are well-versed in the natural world and its resources. These people rely on plant products to treat menstrual-related issues such as heavy bleeding, irregular menstruation, and menstrual discomfort. In the present study, 25 different plant species belonging to 23 different families have been used against menstruation related disorders. There were 2 species each from Poaceae and Apiaceae. The families Acoraceae, Piperaceae, Mimosaceae, Moringaceae, Plantaginaceae, Commelinaceae, Zingiberaceae, Musaceae, Phyllanthaceae, Caricaceae, Fabaceae, Solanaceae, Nelumbonaceae, Liliaceae, Rubiaceae, Malvaceae, Meliaceae, Crassulaceae, Euphorbiaceae, Annonaceae, Cucurbitaceae were represented by 1 species each. For each species, scientific names, family, local names, parts used, and mode of administration are presented in Table1. All the mentioned plants belong to different habit groups, including herbs, shrubs, trees and climbers. Among the plants, 8 numbers of plants used to treat irregular bleeding, 6 numbers of plants were used to treat heavy bleeding during menstruation, 4 numbers of plants used to get rid of painful menstruation, 5 numbers of plants used to treat menstrual discomfort and 2 numbers of plants used to treat scanty menstruation. Out of the plant parts used, leaf (8 spp.) was used highest mostly in the form of juice, followed by roots (5 spp.), whole plant (4 spp.), fruit (2 spp.), flower, rhizome, bark, seed, and stem (1 spp.) [Figure2]. The plants are consumed orally in different forms such as decoction, juice, paste, dried form, and directly raw fruit is taken. Sometimes they are also consumed by mixing with other materials such as jaggery, honey, and milk. It is critical to use a specific part of the plant when making herbal medicine because not all parts are equally helpful in curing a problem. Some parts may even be harmful rather than beneficial in treating the problem.

Figure 2: Percentage of plant parts used

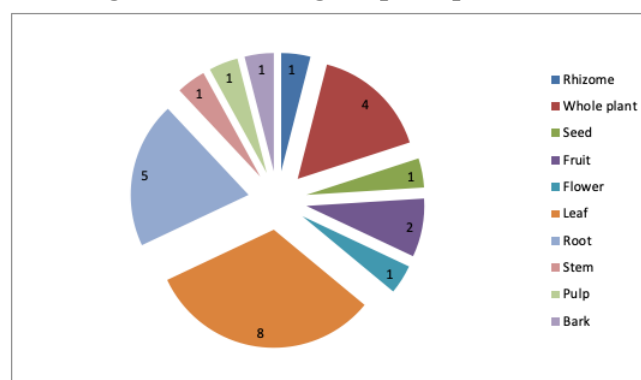
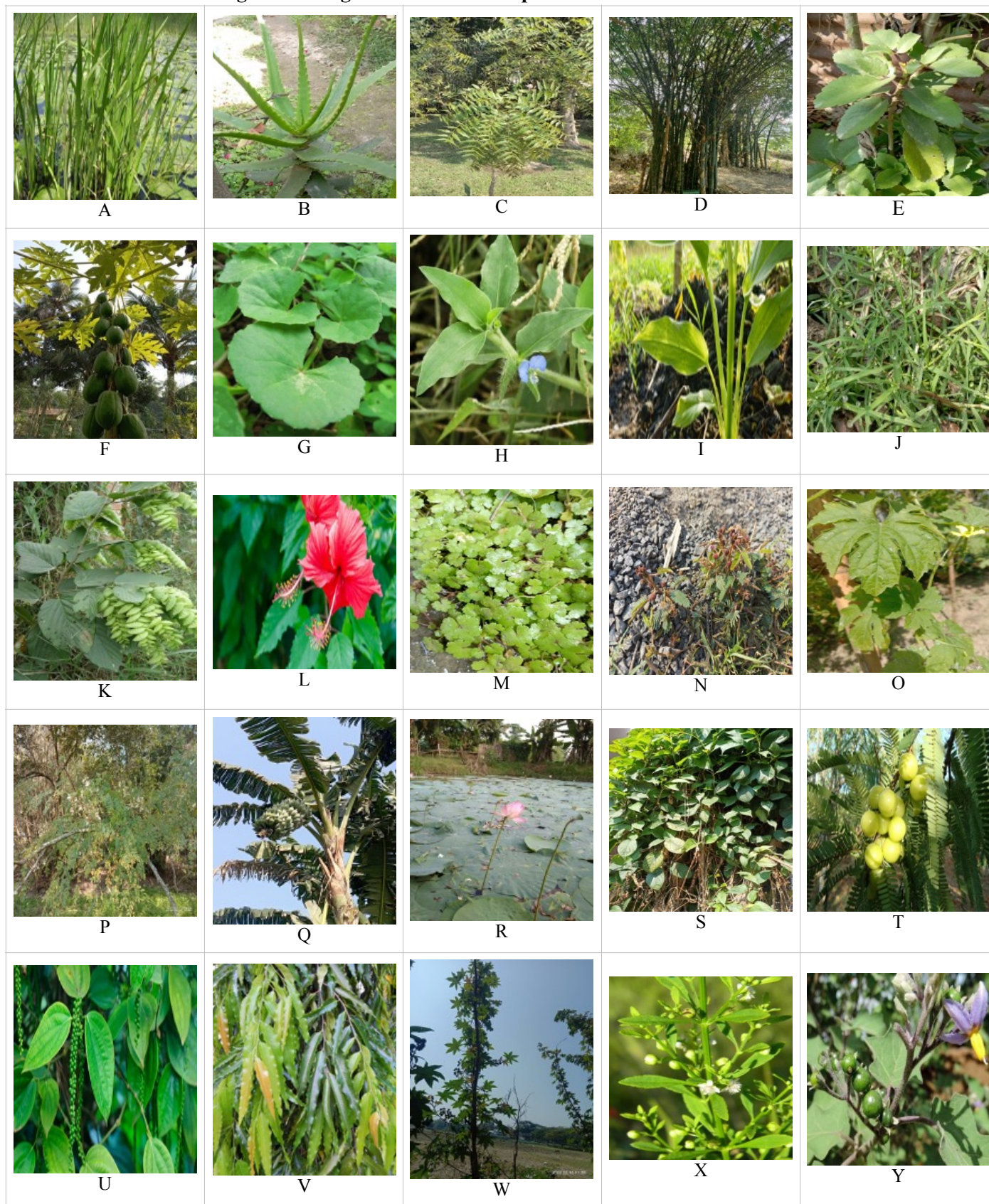


Table 1: Medicinal plants used in menstruation related disorders

Serial no	Scientific name	Family	Local name	Parts used	Treatment	Preparation
1	<i>Acorus calamus L.</i>	Acoraceae	Bos/Boch	Rhizome	Painful menstruation	Decoction of the rhizome was given daily during the menstruation period
2	<i>Aloe vera L.</i>	Liliaceae	salkuwori	Pulp	Scanty menstruation	Pulp juice is taken during the menstruation period
3	<i>Azadirachta indica L.</i>	Meliaceae	Neem	Leaf	Irregular menstruation	Fresh juice of leaf mixed with jaggery powder
4	<i>Bambusa balcoca Roxb.</i>	Poaceae	Bholuka bah	Stem and leaf	Painful menstruation	Paste taken with honey
5	<i>Bryophyllum pinnatum L.</i>	Crassulaceae	Pategoja	Leaf	Heavy menstrual bleeding	Fresh leaf juice is taken orally daily for a week
6	<i>Carica papaya L.</i>	Caricaceae	Omita	Fruit	Menstrual irregularities	Raw fruit is taken orally
7	<i>Centella asiatica Urban.</i>	Apiaceae	Bormani muni	Whole plant	Heavy prolonged bleeding	Juice is taken orally for 3 to 5 days
8	<i>Commeline benghalensis L.</i>	Commelinaceae	Kona simalu	Whole plant	Irregular menstruation	Fresh juice taken
9	<i>Curcuma longa L.</i>	Zingiberaceae	Haldhi	Rhizome	Menstrual discomfort	Decoction of the rhizome was taken daily during the menstruation period
10	<i>Cynodon dactylon L.</i>	Poaceae	Dubori bon	Whole plant	To stop excess bleeding during the menstruation period	Juice of the plant taken once daily during menstruation period
11	<i>Flemingia srobilifera L.</i>	Fabaceae	Makhioti	Root	Menstrual irregularities	Taken as root decoction
12	<i>Hibiscus rosa sinensis</i>	Malvaceae	Joba	Flower	Heavy menstrual bleeding	Flowers are dried in sunlight, and dried pieces are boiled in water to drink
13	<i>Hydrocotyle rotundifolia Roxb.</i>	Apiaceae	Harumani muni	Leaf, Root	Menstruation irregularities	Paste mixed with one glass of warm water and taken for 4-5 days daily
14	<i>Mimosa pudica L.</i>	Mimosaceae	Lajukilota	Root	Menstrual discomfort	The fresh root is ground to a paste form. The paste is mixed with a glass of milk and taken once daily for a week
15	<i>Momordica charantia L.</i>	Cucurbitaceae	Titakerela	Leaf	Irregular menstruation	Leaf juice is taken orally for 3 to 4 days
16	<i>Moringa oleifera L.</i>	Moringaceae	Sojina	Leaf	Menstruation pain	Fresh leaves juice taken for 5 days
17	<i>Musa balbisiana colla</i>	Musaceae	Bhimkol	Fruit	Menstruation irregularities	Fruit is taken orally with milk
18	<i>Nelumbo nucifera Gaertn.</i>	Nelumbonaceae	Podum	Root	Menstrual discomfort	Root decoction
19	<i>Paederia foetida L.</i>	Rubiaceae	Vedailota	Leaf	Heavy menstrual bleeding	Leaf juice is taken
20	<i>Phyllanthus emblica L.</i>	Phyllanthaceae	Amlokhi	Fruit	Scanty menstruation	Fresh fruit juice followed by a glass of water taken daily for a week
21	<i>Piper nigrum L.</i>	Piperaceae	Kola jaluk	Seed	To stop heavy and prolonged bleeding	Seed paste is taken along with jaggery
22	<i>Polyalthia longifolia var. pendula</i>	Annonaceae	Debodaru	Bark	Menstrual discomfort	The bark is ground to form a paste and taken orally for 3 days with warm water
23	<i>Ricinus communis L.</i>	Euphorbiaceae	Era	Leaf	Painful menstruation	Fresh juice of leaf with an equal amount of honey taken orally for 3 days
24	<i>Scoparia dulcis L.</i>	Plantaginaceae	Seni bon	Whole plant	Irregular menstruation	Fresh juice prepared mixed with honey and taken once daily for a week
25	<i>Solanum violaceum Ort.</i>	Solanaceae	Titavekuri	Root	Menstrual discomfort	Root paste mixed with warm water

Figure 3: Images of the medicinal plants in their natural habitat



[A] *Acorus calamus* L. [B] *Aloe vera* L. [C] *Azadirachta indica* L. [D] *Bambusa balcooca* Roxb. [E] *Bryophyllum pinnatum* L. [F] *Carica papaya* L. [G] *Centella asiatica* Urban. [H] *Commeline benghalensis* L. [I] *Curcuma longa* L. [J] *Cynodon dactylon* L. [K] *Flemingia srobilifera* L. [L] *Hibiscus rosa sinensis* . [M] *Hydrocotyle rotundifolia* Roxb. [N] *Mimosa pudica* L. [O] *Momordica charantia* L. [P] *Moringa oleifera* L. [Q] *Musa balbisiana* colla. [R] *Nelumbo nucifera* Gaertn. [S] *Paederia foetida* L. [T] *Phyllanthus emblica* L. [U] *Piper nigrum* L. [V] *Polyalthia longifolia* var. *pendula*. [W] *Ricinus communis* L. [X] *Scoparia dulcis* L. [Y] *Solanum violaceum* Ort.

Conclusion

Traditional plants that local healers use in their day-to-day lives have a variety of ethnomedicinal properties that can treat various ailments. Local healers prescribe many indigenous medicinal plants to treat various diseases, including menstrual-related diseases, but the plants themselves are typically consumed as food by the locals. Therefore, ethnomedicinal research is essential for discovering modern-day drugs from traditional medicinal sources. In this regard, information gathered from indigenous knowledge of both tribal and non-tribal people of lower Assam holds huge potential. As a result, additional research is needed to identify bioactive compounds in medicinal species that can develop novel drugs for human consumption. Scientific research on medicinal plants is also necessary for long-term development and conservation. Planting and conserving medicinal plants in the backyards of traditional healers will positively pass on knowledge to the next generation and contribute to conservation and biodiversity management.

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