Indigenous Traditional Knowledge of the Women's of Kaibartta Community of Assam about the application of Phytoremedies in primary health care

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Abstract:
The northeastern region of India is blessed with a great variety of natural vegetation, some of which are used in traditional medicine to cure various sicknesses and diseases. It is an established fact that different ethnic communities of Assam possessed remarkably accurate knowledge about the medicinal use of the plants around them. An Ethnobotanical study was carried out in order to document the indigenous traditional knowledge about the application of ethnomedicinal plants by the women of the Kaibartta community of Sivasagar, Assam through questionnaires and direct field observation and has resulted in the documentation of various uses of the ethnomedicinal plants around them for curing several ailments of their family members. A total of 35 medicinal plants belonging to 28 families were recorded which are used by the women of the Kaibartta community of Assam, India against 17 different frequently occurring ailments. Biological activities of these recorded plants were also reported from available literature and found a positive correlation between the traditional knowledge and biological activities of the recorded plants, which validates the ITK of the women of the Kaibartta community of Assam about the application of phytoremedy against frequently occurring ailments of their family members.
Keywords : *ITK, Kaibartta, Ethnomedicinal plants, Assam.*

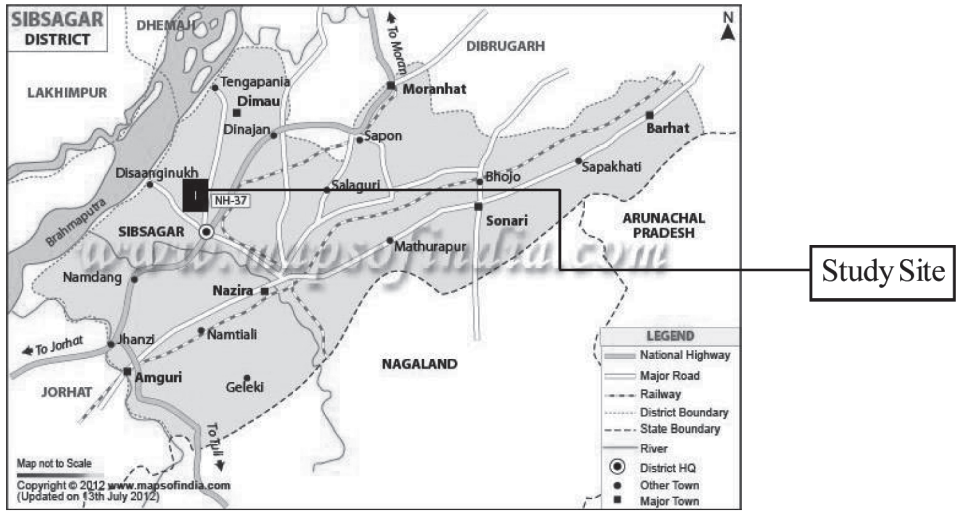
Introduction:

Women are considered as the promoters of overall family health. They play an important and vital role in maintaining overall family health as well as community health. The health habit of a family is strongly relying on the knowledge and contributions of women because they mostly plan and prepare the food for the family. Thus, their awareness of nutritious food and knowledge about the application of bioresources around them in primary health care can ensure the health and happiness of the family, especially in the developing countries, where a large section of people depends on traditional medicine for their primary healthcare in spite of having tremendous advancement in modern health care facilities and allopathic medicines.

The northeastern region of India is blessed with a great variety of natural vegetation, some of which are used in traditional medicine to cure various sicknesses and diseases. Ethnic women of Assam are very much aware of the application of plant resources in and around them as ethnomedicine for their family health care. They possessed remarkably accurate knowledge about the medicinal use of the plants around them. The Kaibarttas of Assam is one of the notable aboriginal Hindu inhabitants of Assam, traditionally engaged with fishing and cultivation. They are one of the sixteen Scheduled Castes of the state as per Constitution (Scheduled Castes) Order, 1950.[1] Like all other ethnic tribes of Assam, the Kaibartta's has also long history and tradition of using their individual ethnomedicinal practice. They have tremendous faith, belief, and empathy for traditional herbs and have rich traditional knowledge about the application of Phyto remedies. In the present study women of the Kaibartta community from five villages of Sivasagar district of Assam have been taken into consideration in order to evaluate their indigenous knowledge content regarding the application of Phyto remedies in family health management.

About the Study Area and Location:

The study was carried out in four villages of Sivasagar district of Assam viz. Akhoiphutia, Bambari, Kaibartta doloni, Charagua and Chaulkora gaon. Historic Sivasagar district of Assam is located at the southern bank of the Brahmaputra River and under the Upper Brahmaputra Valley agroclimatic zone of Assam, which is extended between 26.40° and 27.25° N latitudes and 94.25° and 95.25° E longitudes[2]. It has an elevation of 86.6 mtrs. The average annual rainfall is 108.44 cm and temperature vary between 15°-35°C[2]. Soil is alluvial and suitable for cultivation. The vegetation type of the study site is semi evergreen-deciduous forest and grassland. The main food crops cultivated are rice, wheat, mustard, pulses, potato, etc. and the main cash crops cultivated are jute, oilseeds, sugarcane cotton, etc.



Map showing study site (©https://www.mapsofindia.com. retrieved on 24th September, 2021)

Materials and Methods :

Evaluation and documentation of the indigenous traditional knowledge of the women of the Kaibartta community of Assam about the application of locally available ethnomedicinal plants against different frequently occurring diseases of family members was the principal aim of this study. The study was based on data collected in the course of fieldwork undertaken in five nos. of villages of Sivasagar District, Assam. The data were collected between February 2020 to July, 2021. Information on different ethnomedicinal plants used against common and frequent diseases was collected and documented. In order to collect direct information on the indigenous traditional knowledge about the application of phytoremedy against various diseases informal interview with the selected respondents of the target group was carried out with a semi-structured bilingual questionnaire in Assamese and English. The plant species used by the women of kaibartta community in various diseases were collected from the field and preserved in the form of herbarium sheets [3] . The herbarium sheets were identified following Flora of Assam [4–5] and comparing them with the herbarium of the Department of Botany, J.B. College (Autonomous), Jorhat. A total of 91 women of 18 - 73years old were interviewed, of which 02 were key informants as they were traditional medical practitioners or herbalists locally known as Bezini or Kabiraj and the rest 89 were general informants. Respondents were selected purposively by using random sampling techniques.

Biological activities of the recorded plants have been recorded from available phytochemical, pharmaceutical and pharmacological literature.

Result and Discussion :

All total 35 medicinal plants belonging to 28 families used by the women of Kaibartta community of Assam, in 17 different frequently occurring ailments of their family members were recorded and documented. Plants used by the women of the Kaibartta community of the study site as phytomedicine are enumerated and arranged in an order having the botanical name, family name, local name in Assamese language, method of preparation of medicines with doses. Experimental data available on the biological activity of the plants are also mentioned immediately after each enumeration.

Cough, Cold, and Flu :

1. *Ocimum tenuiflorum* L, Lamiaceae, Kola Tulshi, about 25 – 30 leaves are mixed with a small quantity of ginger and grounded. Juice obtained is mixed with a spoonful of honey and half cup of lukewarm water and administered daily twice for 2 – 3 days: analgesic, antibacterial [6]
2. *Zingiber officinale* Roscoe, Zingiberaceae, Ada, Fresh rhizome juice mixed with a spoonful of honey and a half cup of lukewarm water and administered daily twice for 2-3 days: antioxidant, antimicrobial[7]
3. *Acorus calamus* L, Araceae, Boch, Fresh pieces of the rhizome is given to put on the neck of babies in form of the string so that they can inhale the aroma: antimicrobial[8]

Fever :

1. *Aloe vera* (L.) Burm.f. Miller, Liliaceae, Chalkuwari, Crushed leaf paste is applied on the forehead: anti-inflammatory, antiviral, antibacterial and antifungal[9]
2. *Azadirachta indica* A.Juss, Meliaceae, Mohaneem, Fresh leaves are boiled with water and water is given for the bath: antibacterial[10], antifungal[11]
3. *Curcuma caesia* Roxb, Zingiberaceae, Kola haldi, Rhizome decoction is given to consumed twice for 1-2 days: antioxidant and antimicrobial[12]
4. *Hibiscus rosa-sinensis* L, Malvaceae, Jobaphul, Fresh leaves are crushed and applied on the forehead: antioxidant, antimicrobial, antiinflamatory[13]

Asthma :

1. *Justicia adhatoda* L, Acanthaceae, Titabahak, about 5 ml of leaves decoction is given for 2-3 days: bronchodilator and antiallergic activity[14]
2. *Acorus calamus* L, Araceae, *Boch*, about 5 ml juice of fresh rhizome is given with water for 3-5 days: antibacterial[15], neuroprotective, antioxidant[16]
3. *Solanum indicum* L, *Solanaceae*, Tita bhekuri, about 5 ml of roots juice are given to eat once daily until cure: anti-hypersensitive[17], anti-inflammatory[18].

Skin diseases :

1. *Senna tora* (L.) Roxb, Leguminasae, Bon medelwa, Leaves paste is used externally on the affected areas of ringworm and eczema: antifungal[19]
2. *Azadirachta indica* A.Juss , Meliaceae, Mohaneem, the crude extract of the leaves is applied locally for 4-5 days to cure skin infections: antibacterial[10], antifungal[11]
3. *Flemingia strobilifera* (L.) W.T.Aiton, Dighloti, Fabaceae, Shrub, Leaf and flower paste is applied over the infected areas of ringworm infection: Antimicrobial[20]
4. *Moringa oleifera* Lam., Moringaceae, Sajina, raw leaves paste is applied externally on wounds and infections: antifungal[21]

Measles and chickenpox :

1. *Azadirachta indica* A.Juss , Meliaceae, Neem, Leaves are put in the rooms in which child remains and also upon the doors, it is believed that they act as antiseptic and freshen the air which prevents infection of measles and chickenpox: antiviral[22]
2. *Bambusa tulda* Roxb, Poaceae, Banh, processed bamboo shoot (Kharisha) fried with fish species *Clarius batratus (*Magur) and given to eat for wound healing due to measles: Bamboo shoot has healing capacity[23], The nutrient content in *Clarius batratus* has wound healing capacity[24]
3. *Cajanus cajan* L, Leguminosae, Arhar, Leaves are crushed and used in the infected areas of Measles: antiviral[25]

Cough :

1. *Zingiber officinale* Roscoe, Zingiberaceae, Ada, the fresh rhizome is crushed with sugarcane molasses and given orally: antiinflammatory and antinociceptive activities, muscle relaxant[26]
2. *Ocimun sanctum* Linn, Lamiaceae, Tulsi, the crude extract of leaf is mixed with honey and given 3-4 times until cure: antibacterial[27]

3. *Allium sativum* L, Liliaceae, bulbs are crushed and heated with mustard oil and is applied to chest, neck, back etc as a message to get relief from congestion of lungs: antimicrobial[28]

Diarrohea :

1. *Oxalis corniculate* L, Oxalidaceae, Sorutengesi. 5- 10 ml of the extracts of the whole plant is given twice daily for 7 days: antibacterial[29]
2. *Carica papaya* L, Caricaceae, Amita, Unripe fruits are boiled and given; amoebicide [30] antiviral[31]
3. *Houttuynia cordata* Thunb., Saururaceae, Machandari, Decoction of the entire plant is given once daily for 2-3 days: anti Diarrheal[32]

Dysentery :

1. *Psidium guajava* L, Myrtaceae, Madhuri-aam, 5-10 ml of fresh leaf juice mixed with equal amount of water and a small amount of rock candy or sugar candy is given 2-3 times daily for a week: antimicrobial[33]
2. *Citrus medica* L, Rutaceae, Gul Nemu , 10 ml of fruit juice mixed with water and sugar is given 2-3 times daily until cured or a small amount of dried peel is also given to consume directly: antibacterial[34]

Worm Infection :

1. *Carica papaya* L, Caricaceae, Amita, ripe fruits are given to eat: anthelmintic[35]
2. *Annonas cosmos* Mill, Annonaceae, Matikothal , fresh fruits, and sometimes immature leaves are given to eat: anthelmintic[36]

Jaundice :

1. *Musa paradisica* L, Musaceae, Athia kal, Ripened fruit of *Musa paradisica* are deep in water overnight with *Cicer arietinum* (bootmah) and mixed with jiggery, and a cup of this juice is given for 5-7 days or until cure: antibacterial, antioxidant[37]
2. *Cajanus cajan* (L.) Millsp, Fabaceae, Arhar dal, 5-10 ml leaf juice has given daily until cured: antibacterial[38] anti-inflammatory[39]
3. *Kalanchoe pinnata,* (Lam.) Pers., Crassulaceae, Dupor tenga, 10 - 20 ml leaf juice are given daily two to three times for 6 - 7 days: anti-cancer, anti-inflammatory, diuretic and anti-microbial[40]
4. *Phyllanthus niruri* L, Phyllanthaceae, Bhuiamlakhi, about 10 ml whole plant juice is administrated orally once daily for 3 days: antihapatitis[41]

High Blood Pressure :

1. *Melastoma malabathricum* (L) Smith, Melastomataceae, Phutkola, a decoction of leaves is used to reduce hypertension: antihypersensitive[42]
2. *Andrographis paniculate* (Burm.f.) Nees,, Acanthaceae, Kalmegh, a small amount of leaves decoction are used to treat hypertension: antihypersensitive[43]

Diabetes :

1. *Momordica charantia* L , Cucubitaceae, Kerela, About 10-20 ml fruit juice is given early morning in empty stomach until cure : antidiabetic[44]
2. *Syzygium cumini* (L.) Skeels , Myrtaceae, Jamu. Seed powder about 1 teaspoonful is taken with water in the morning in an empty stomach and also in the evening before meals: antidiabetic[45]
3. *Catharanthus roseus* (L.) G.Don , Apocynaceae, Nayantora, 10 – 20 ml leaf, and

flower juice are given orally in the empty stomach: antidiabetic[46]

4. *Andrographis paniculate* (Burm.f.) Nees, Acanthaceae, Kalmegh, a small amount of leaves decoction is used to treat diabetes: antidiabetic[47]

Tonsilitis :

1. *Leucas aspera* (Willd.) Link, Lamiaceae, 4-5 drops of the leaf juice are administered in nostrils: antioxidant and antibacterial[48]

Enhance Fertility and Lactation in women :

1. *Asperagus racemosus* Willd, Liliaceae, Satmul, root decoction is given to women: hormonal and tonic like effect[49]

Menstrual disorders :

1. *Curcuma longa* Linn., Zingiberaceae, Haldi, 5 gm of haldi powder are taken with lukewarm water after menses for 5-7 days: antioxidant, antibacterial[50]
2. *Mimosa pudica* L, Mimosac*eae,* Lajuki bon*,* three spoonfuls of leaf juice is administrated thrice daily for 2-3 days: antimicrobial[51]

Anemia :

1. *Spinacia oleracea* L, Amaranthaceae, Paleng, Leaves are cooked and consumed: antianeimic[52]
2. *Colocasia esculenta* (L.) Schott, Araceae, Kala kachu, young leaves with leaf base are taken as curry: antianeimic[53]

Conclusion*:*

During the present study, a total of 35 indigenous medicinal plants of 28 families were recorded and documented used against 17 commonly occurring ailments by the women of Kaibartta community of Assam. Nineteen of the recorded plants were herbs; seven were shrubs, six trees, and three climbers. The present study clearly indicates that the women of the Kaibartta community of Assam possess remarkable accurate indigenous knowledge about the application of ethnomedicinal plants around them against different common and frequently occurring ailments of their family members. Their Indigenous Traditional Knowledge (ITK) about the application of locally available ethnomedicinal plants in maintaining family health is also supported by available phytochemical and pharmacological literature, which clearly validates the rich traditional knowledge content of the women belonging to this community.

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