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A STUDY ON THE INDIGENOUS MEDICINAL PLANTS AND HEALING PRACTICES OF MURONG TRIBE IN KHAGRACHARI DISTRICT (BANGLADESH)

Tasmiatul Kabir [*1] and Subrata Saha [2]

Department of Pharmacy [1], University of Asia Pacific, Dhanmondi, Dhaka, Bangladesh.
Department of Pharmacy [2], University of Development Alternative, Dhanmondi, Dhaka, Bangladesh.

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Correspondence to Author:
Tasmiatul Kabir

Department of Pharmacy,
University of Asia Pacific,
Dhanmondi, Dhaka, Bangladesh.

E-mail: tasmiatul.kabir@gmail.com

ABSTRACT: An ethnomedicinal survey was carried out during August 2008 to October 2008 among tribal medicinal practitioners of the Murong tribes. Various Murong tribal practitioners practiced in their localities for treating different kinds of disease of Ramgarh Upazila, Khagrachari districts of Chittagong Hill Tracts Region in Bangladesh. We observed to use 40 plants species belonging to 29 families in the various treatment of disease. This diversity only adds to the uniqueness of the traditional medicinal practices and opens up scientific possibilities of discovering different drugs from different medicinal plants to treat any given ailment. These tribal medicinal plants were mostly used for the treatment of constipation, cough, fever, diarrhoea, dysentery, diuretic, diabetes, eczema, itches, jaundice, skin disease, vomiting, wound, joint pain and worm. The plants were collected and identified botanically along with their scientific name, local name, family name, habit, parts used and medicinal uses. This detailed information will be helpful for the pharmacognosist, botanist and pharmacologist for the collection and identification of the plant for their research work.

INTRODUCTION: Over the past decade, there has been a dramatic increase in the demand for medicinal plants for use in traditional medicine and contemporary and alternative medicine in both developing and developed countries [1]; thus, a large number of people habitually use such medication because herbal treatment is, in some cases, considered relatively cheap [2]. However, its popularity also stems from the efficacy of the treatment in most cases and relative safety, with few or no side effects. Herbal medicines, because of their decentralized nature, are generally easily and quickly available [3].

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Now, both developed and developing countries are involved in plant-based herbal medicine system, as modern pharmaceuticals are not accessible for all [4]. The Chittagong Hill Tracts region is a hilly forested region in the South-eastern part of Bangladesh. Besides being a hotspot within Bangladesh regarding the diversity of various floral species (including medicinal plants), the area is also inhabited by a large number of tribes as well as mainstream Bengali-speaking people.

The various tribes have their traditional medicinal practitioners (TMPs), while folk medicinal practitioners, otherwise known as Kavirajes, cater to the medical needs of the non-tribal mainstream population. This diversity of floral species and traditional medicinal practices have made Khagrachari districts (which fall within the Chittagong Hill Tracts region) interesting spots for conducting ethnomedicinal studies. Thus, scientists are presented with a wide variety of plants with

each plant having their unique phytochemical constituents, and which constituents, following further scientific trials, open up the possibilities of discovery of a wide variety of drugs, each drug being efficacious in treatment of either the full disease or efficacious in the treatment of any particular symptom of the disease.

MATERIALS AND METHODS:

Study Area: Ramgarh is an Upazila of Khagrachari District in the Division of Chittagong, Bangladesh. Ramgarh is located at 22.9667°N 91.7000°E. Ramgarh Upazila with an area of 207.69 sq km, is bounded by Indian State of Tripura and Matiranga upazila on the north, Manikchhari and Lakshmichhari upazilas on the south, Mahalchhari upazila on the East and Fatikchhari upazila on the West. Forests, hills, and tiles cover a substantial portion out of the upazila. Ramgarh (Town) consists of two mouzas. It has an area of 64.75 sq km. The town has a population of 23856; male 53.42% and female 46.58%; population density per sq km 368. Literacy rate among the town people is 36%. The town has three dak bungalow. Ramgarh thana was established in 1905 and was turned into an upazila in 1983. The upazila consists of 3 union parishads/wards, 11 mouzas / mahallas, and 82 villages. It has 9304 units of house hold and total area 240.87 km².

Study Method: The survey was conducted the Murong tribes who reside in the districts Khagrachari districts in the Chittagong Hill Tracts region, which falls in the South-eastern part of Bangladesh. Informed consent was obtained from the TMPs of the tribe before the commencement of the survey. The TMPs were informed in detail as to the nature and the purpose of the survey and consent obtained as to the dissemination of survey results in national or international publications. Interviews were conducted with the help of a semi-structured questionnaire and the guided field-walk method as described by Martin (1995) and Maundu (1995).

In this method, the TMPs took the interviewers to spots from where they collected their medicinal plants and pointed out the plants, along with providing their local names and a description of their uses. All information was given by Kalanka Kabiraj, who usually was the healer of the tribe and was fluent in both the tribal language as well as Bangla. Plant specimens were collected and dried in the field, and later brought back to Bangladesh National Herbarium at Dhaka for complete identification.

RESULTS AND DISCUSSION: A total of 40 ethnomedicinal plant species including herb, shrub, tree, and vine distributed across 29 families were documented in the study to be used by the tribal community for curing different ailments **Table 1**.

For the utilization frequency of the plant species, Acanthaceae and Combretaceae appear as the most prominent families (3 species each), followed by Amaranthaceae Asteraceae, Euphorbiaceae, Cucurbitaceae, Lauraceae, Meliaceae & Piperaceae (2 species each) and Apocynaceae , Araceae, Bignoniaceae, Dilleniaceae, Fabaceae, Gesneriaceae, Lamiaceae, Lecythidaceae, Liliaceae, Malvaceae, Menispermaceae, Oleaceae, Punicaceae, Ranunculaceae, Rubiaceae, Rutaceae, Solanaceae, Sterculiaceae, Tiliaceae, Verbenaceae have one seapaces each **Table 1**.

TABLE 1: MEDICINAL PLANTS USED BY TRADITIONAL HEALERS OF MURONG TRIBE IN DIFFERENT AILMENTS

S. no.	Botanical Name	Habit	Family	Local Name	Part Used	Ailment
1	*Achyranthes aspera*	Herb	Amaranthaceae	Uvod lenga	Root, Flower	Abdominal pain, urine related problems
2	*Alstonia scholaris*	Tree	Apocynaceae	Sayis Sani	Bark	Diarrhea, malaria, bleeding from nostrils, leaf used in beriberi
3	*Dillenia indica*	Tree	Dilleniaceae	Thabru	Fruit	Dysentery
4	*Datura metel*	Herb	Solanaceae	Dhutura	Leaf, Flower, Bark	Joint pain, muscle pain, spinal cord pain
5	*Oroxylum indicum*	Tree	Bignoniaceae	Thona	Bark	Jaundice
6	*Jatropha gossypifolia*	Shrub	Euphorbiaceae	Veron	Seed, Stem	Bleeding and pain of tooth
7	*Sterculia villosa*	Tree	Sterculiaceae	Utal	Stem of leaf	Abdominal pain
8	*Terminalia arjuna*	Tree	Combretaceae	Arjun	Bark	Hipertension
9	*Amaranthus spinosus*	Herb	Amaranthaceae	Katamaira	Root	Bloody dysentery
10	*Momordica charantia*	Vine	Cucurbitaceae	Tit Korolla	Leaf	Diabetes

11	*Grewia microcos*	Tree	Tiliaceae	Ashat	Leaf	Bone fracture and pain
12	*Naravelia zeylanica*	Shrub	Ranunculaceae	Toilakti	Leaf	Bone fracture and pain
13	*Barringtonia racemosa*	Tree	Lecythidaceae	Dedaowi	Leaf	Bone fracture and pain
14	*Terminalia bellirica*	Tree	Combretaceae	Bora gach	Fruit & Seed	Loss of appetite, indigestion, acidity. Seed used in Intestinal worms
15	*Terminalia Chebula*	Tree	Combretaceae	Oittal	Leaf	Loss of appetite, indigestion, acidity.
16	*Rhynchotechum ellipticum*	Shrub	Gesneriaceae	Sattari	Leaf	To stop bleeding in cutting wound
17	*Litsea glutinosa*	Tree	Lauraceae	Mendis	Leaf & Bark	Bone fracture and pain
18	*Vitex peduncularis*	Tree	Verbenaceae	Sadhupang	Leaf	Bone fracture and pain
19	*Morinda Angustifolia*	Tree	Rubiaceae	Muli	Leaf	Bone fracture and pain
20	*Coccinia cordifolia*	Vine	Cucurbitaceae	Telakuchila	Leaf	Diarrhea, blood dysentery
21	*Phyllanthus emblica*	Tree	Euphorbiaceae	Khulu	Fruit	Loss of appetite, indigestion, acidity
22	*Tinospora cordifolia*	Vine	Menispermaceae	Dusa sandari	Root	Malaria
23	*Mikania cordata*	Vine	Asteraceae	Chibidi Lata	Leaf	To stop bleeding in cutting wound
24	*Justicia gendarussa*	Herb	Acanthaceae	Oli	Leaf	Bone fracture and pain
25	*Swietenia macrophylla*	Tree	Meliaceae	Mehegni	Seed	Diabetes
26	*Piper longum*	Herb	Piperaceae	Vutsan	Root, seed	A cough, bronchitis, asthma, and indigestion
27	*Punica granatum*	Shrub	Punicaceae	Dalim	Leaf	Dysentery
28	*Piper nigrum*	Vine	Piperaceae	Kalimarich	Dried unripe fruit	Constipation, diarrhoea, cholera,
29	*Litsea lancifolia*	Tree	Lauraceae	Menda	Leaf & Bark	Diarrhoea
30	*Hibiscus rosa- sinensis*	Shrub	Malvaceae	Rokto joba	Leaf & flower	Female menstrual problem
31	*Colocasia esculenta*	Herb	Araceae	Maan Kochu	Root	Boils
32	*Nyctanthes arbortristis*	Tree	Oleaceae	Shinguri	Leaf	Fever, cough, and cold
33	*Cassia tora*	Shrub	Fabaceae	Chakunda	Leaf	Flatulance, abdominal pain from intestinal worms
34	*Aegle marmelos*	Tree	Rutaceae	Shephalbupaong	Unripe fruit	Indigestion
35	*Anisomeles indica*	Herb	Lamiaceae	Kukurmuta	Fruits	Impotence
36	*Adhatoda vasica Nees*	Shrub	Acanthaceae	Sada Bashok	Bark	Abdominal pain
37	*Asparagus racemosus*	Herb	Liliaceae	Mimong tamache	Root	Joint pain
38	*Azadarichta indica*	Tree	Meliaceae	Tamakha	Bark, Seed, Leaf	Relieves fatigue, fever, cough and boils
39	*Synedrella nodiflora*	Herb	Asteraceae	Atha-safang	Leaf	Hemorrhoids and diarrhea, Itch, eczema, scabies
40	*Justicia procumbens*	Herb	Acanthaceae	Madan	Leaf	Diuretic

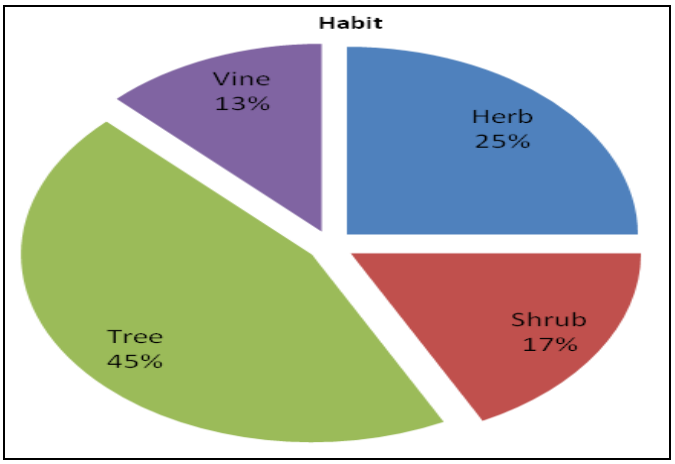

FIG 1: PERCENTAGE OF USING MEDICINAL PLANTS OF DIFFERENT HABITS BY THE HEALER

Various researchers across the country, for example, Combretaceae, Liliaceae, and Rutaceae [5], Fabaceae [6, 7], Euphorbiaceae and Lamiaceae [8], Solanaceae, and Sterculiaceae [9], Fabaceae and Solanaceae [10] also recorded that the species under these families were frequently used as medicinal plants in tribal area Bangladesh. Among the recorded plants, trees were the most frequently used in by the healer to treat different ailment which is about 45% **Fig. 1**, followed by herbs 25%, shrubs 17.5%, and vine 12.5% **Table 2**.

TABLE 2: USING MEDICINAL PLANTS OF DIFFERENT HABITS BY THE HEALER

Habit	Number Plant species used in the treatment	The percentage used (%)
Herb	10	25
Shrub	7	17.5
Tree	18	45
Vine	5	12.5

A similar trend was also observed that trees were the most used growth form of medicinal plants in

Bangladesh [11, 5, 12–17,] but with a few exceptions [18, 19] where they found that herbs were mainly used as medicinal plants.

Indigenous Ethnobotanical Knowledge, Pattern, and Ailments: The survey revealed that tribal people used various parts of the plants as medicine. The diverse pattern of various parts of medicinal plants **Table 1** reflected greater possession of IK regarding their health care practices by the people. Most of the medicinal plant parts are consumed after macerating, squeezing, grinding, blending, soaking, or boiling, and some are taken raw. Some are applied externally to different body parts for cuts and wounds, boils, joint pain, skin diseases, and so forth. Nine species like *Datura metel*, *Grewia microcos*, *Naravelia zeylanica*, *Barringtonia racemosa*, *Litsea glutinosa*, *Vitex peduncularis*, *Morinda angustifolia*, *Justicia gendarussa*, *Asparagus racemosus*, were used against ailments like pain, joint pain, bone fracture. Five species like *Terminalia bellirica*, *Terminalia Chebula*, *Phyllanthus Emblica* L., *Piper longum*, *Aegle marmelos* were used against indigestion and loss of appetite **Table 3**.

TABLE 3: DIFFERENT PLANT SPECIES USED TO TREAT SINGLE AILMENT

Ailments	Plant species used
Diarrhea	*Alstonia scholaris, Coccinia cordifolia, Piper nigrum, Litsea lancifolia*
Dysentery	*Dillenia indica, Amaranthus spinosus, Coccinia cordifolia, Punica granatum*
Abdominal Pain	*Achyranthes aspera, Sterculia villosa, Cassia tora* L., *Adhatoda vasica Nees*
Indigestion and loss of appetite	*Terminalia bellirica, Terminalia Chebula, Phyllanthus emblica* L., *Piper longum, Aegle marmelos*
Pain, Joint pain, bone fracture	*Datura metel, Grewia microcos, Naravelia zeylanica, Barringtonia racemosa, Litsea glutinosa, Vitex peduncularis, Morinda angustifolia, Justicia gendarussa, Asparagus racemosus,*
Cough, Fever	*Azadarichta indica, Nyctanthes arbortristis, Piper longum*
Diabetes	*Momordica charantia, Swietenia macrophylla*
Malaria	*Tinospora cordifolia, Alstonia scholaris*
Boils	*Colocasia esculenta, Azadarichta indica*
Hypertension	*Terminalia arjuna*
Female Menstrual problem	*Hibiscus rosa- sinensis*
Impotence	*Anisomeles indica*

Medicinal plants are generally used to treat diarrhea, dysentery & abdominal pain where four species of each ailment were used **Table 3**. Cold ailments, cough, and fever are treated with three species; diabetes, malaria, and boils, are treated with two species each. In some cases, a mixture of several species is also used for treating one disease. In most cases, the juice from leaves, root, rhizome, and bark is used as medicine, while fruits are eaten raw. Moreover different parts of medicinal plants are used to treat different ailments **Table 4**.

Leaves (45%) are the most common part by which local tribal healers treat the ailments **Fig. 2**. Followed by bark (17%), fruit (12%), root (12%), seed (8%) and stem (6%). The above discussion suggests that the ethnomedicinal wisdom of the Murong healers seems to be in line with other studies elsewhere. In this, most of the plants used by the healers have been validated in their respective uses through scientific studies on bio-active chemicals and pharmacological activity.

TABLE 4: FREQUENCY OF USING DIFFERENT PART OF PLANT SPECIES

Part used to treat the ailment	Number of plant species	Percentage
Bark	8	17%
Leaf	22	45%
Root	6	12%
Seed	4	8%
Stem	3	6%
Fruit	6	12%

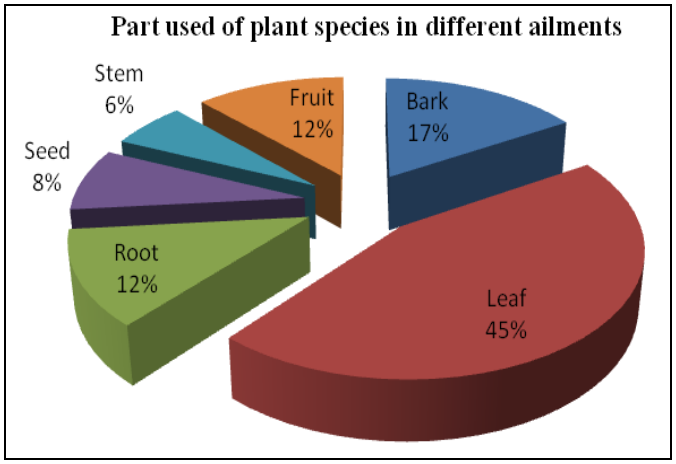

FIG. 2: PERCENT OF USING MEDICINAL PLANTS PART IN DIFFERENT AILMENT

CONCLUSION: The importance of any ethnomedicinal survey lies in the potential discovery of plants, which may through proper scientific investigations yield novel compounds to treat both old and emerging diseases. From that point of view, the plants obtained from the Murong tribe in Ramgarh, Khagrachari district are important, more so, because the indigenous uses of some plants for specific ailments have been validated by scientific studies.

Other plants, for which uses have not been validated, need to be studied quickly for the forest region inhabited by the Murong is dwindling fast with consequence loss or endangerment of plant species. Also, the traditional medicinal knowledge of the Murong is being lost with every passing day, as the Murong lose their ethnic customs and become more assimilated into the general population.

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CONFLICT OF INTEREST: Nil

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