



FOLK MEDICINE CAN BE PRACTICED BY ANYBODY IN BANGLADESH: MEDICINAL PRACTICES OF A 'BAUL' SINGER IN SHERPUR DISTRICT

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ABSTRACT

Background: Folk medicine is widely practiced in Bangladesh and persons from various occupations practice it on a regular or part-time basis. Quite often, persons coming from diverse occupational backgrounds can be seen to possess a remarkable knowledge of medicinal plants and their uses. The objective of this study was to document the medicinal plants used by a 'baul' singer who also practiced folk medicine in Sherpur District, Bangladesh. **Methods:** Interview of the folk medicinal practitioner (FMP) was carried out with the help of a semi-structured questionnaire and the guided field-walk method. **Results:** The FMP interviewed used a total of 72 plants distributed into 47 families for treatment. The sheer number of plants used and the diversity of diseases treated suggested that the FMP, even though his main occupation was singing, possessed a quite remarkable

knowledge on the medicinal properties of plants. Also to be noted is that he used a number of plants in his treatment, which were quite unique. **Conclusion:** The medicinal plants used by the FMP included some plants, which were used for treatment of paralysis, liver disorders, and heart disorders, and so merit scientific attention.

KEYWORDS: Folk medicine, medicinal plants, baul, Sherpur, Bangladesh.

BACKGROUND

Folk medicine is widely practiced in Bangladesh and the folk medicinal practitioners (FMPs) far outnumber other practitioners of both allopathic and traditional medicines. People of diverse occupations may practice folk medicine including elderly housewives and general people including agricultural laborers, farmers, religious persons, or even persons not holding any jobs. While a number of such FMPs practice what is basically quackery, more often other FMPs can be seen with a remarkable knowledge of medicinal plants and their properties. The knowledge of medicinal plants may come from a variety of sources like books, gurus, dreams, or trial and error methods.

One of the objectives that we had been pursuing over the last six years is to document the folk and tribal medicinal practices prevalent within the country.^[1-25] Most such practitioners use medicinal plants in their treatment. Cumulatively, the knowledge possessed by these practitioners can open up new vistas for scientific research on plants and their medicinal uses. Moreover, documentation of this knowledge can be helpful not only in building up a data base on medicinal plants of Bangladesh, but can also help in the establishment of a folk medicinal formulary, which in turn can benefit the people in obtaining accessible and affordable treatment. As such, the objective of the present study was to document the medicinal plants used and diseases treated by a 'baul' (baul is a type of folk song) singer in Rangtia Pahar area in Sherpur District of Bangladesh.

METHODS

The FMP who was interviewed was named Md. Samidul Islam Bhandari, male, age 49 years, baul singer by profession, practicing for 26 years, education up to Grade 5, specialized in treatment of asthma, rheumatism, paralysis, weakness, and treated only human beings. His residence was in Rangtia Pahar area of Sherpur District, Bangladesh. Prior informed consent was initially obtained from the FMP. The FMP was informed as to the nature of our visit and consent obtained to disseminate any information provided including his name both nationally and internationally. Actual interviews were conducted in the Bengali language, which was spoken fluently by the FMP as well as the interviewers. The interviews were conducted with the help of a semi-structured questionnaire and the guided field-walk method of Martin.^[26] and Maundu.^[27] In this method the FMP took the interviewers on guided field-walks through areas from where he collected his medicinal plants or plant parts, pointed out the plants, and described their uses. All plant specimens were photographed and collected on the spot,

pressed, dried and brought back to Bangladesh National Herbarium at Dhaka for identification. Voucher specimens were deposited with the Medicinal Plant Collection Wing of the University of Development Alternative.

RESULTS

The FMP mentioned that he used a total of 72 plants, which were distributed into 47 families in his treatment of various diseases. The results are shown in Table 1. Although the FMP's main occupation was to sing baul songs (a type of folk songs mainly sung in rural areas and form a major cultural tradition in Bangladesh), he also treated human beings on the side. He obtained his medicinal plant knowledge mostly from his grandfather. Then he started practicing and enhanced his knowledge through his practices. As such, some plants were initially used by him as a testing ground to see whether these plants can cure the diseases treated. However, the basis for selection of these new plants was obscure; the FMP did not divulge the reasons for his selection of certain plants but not others. Either he did not deliberately mention his basis for selection of plants to maintain his trade secrets; otherwise, he did not know it himself. Irrespective of the actual reason, our experience is that other FMPs also selected medicinal plants for reasons that they do not choose to divulge. One reason for the selection may be anecdotal evidence or hearsay. Regardless of reason or absence of reason, the fact remains that anybody can practice folk medicine in Bangladesh provided he or she has the courage to practice and does not fear retribution if the treatment fails. What is surprising as our various surveys point out, that most of the FMPs interviewed by us, thus far had their selection of medicinal plants validated to some extent on the basis of available scientific reports.

The FMP, by his own admission specialized in the treatment of asthma, rheumatism, paralysis, and weakness, the latter denoting physical weakness. Asthma was treated with four different formulations, paralysis with one, and weakness with six different formulations. The FMP also treated liver and heart disorders with plants and which may prove interesting for further scientific inquiries. Both mono-herbal and poly-herbal formulations were used by the FMP. Some of the plants appeared unique in their selection and uses to this particular FMP. These plants are *Alangium salvifolium*, *Sagittaria sagittifolia*, *Celosia cristata*, *Sarcolobus globosus*, *Vernonia extensa*, *Melothria heterophylla*, *Drosera burmannii*, *Euphorbia griffithii*, *Leea aequata*, *Hymenodictyon excelsum*, *Zanthoxylum rhetsa*, and *Cestrum nocturnum*.

Table 1. Medicinal plants and formulations of the Rangtia Pahar FMP in Sherpur District, Bangladesh.

Serial Number	Scientific Name	Family Name	Local Name	Parts used	Ailments and mode of medicinal use
1	<i>Justicia adhatoda</i> L.	Acanthaceae	Bashok	Leaf	Cold, respiratory difficulties. Leaves of <i>Justicia adhatoda</i> and <i>Kalanchoe pinnata</i> are mixed with talmishri (crystalline sugar obtained from sap of <i>Borassus flabellifer</i>), warmed and taken orally thrice daily in the morning, afternoon and evening for 21 days.
2	<i>Alangium salvifolium</i> L. f.	Alangiaceae	Akor	Flower	Oral lesions, toothache. Flowers are kept inside the mouth for 7 days.
3	<i>Sagittaria sagittifolia</i> L.	Alismataceae	Mou mithali	Root bark	See <i>Smilax zeylanica</i> .
4	<i>Achyranthes aspera</i> L.	Amaranthaceae	Upoth langra	Leaf, stem	Polyps. Seeds of <i>Datura stramonium</i> (1 kg) are boiled in 250g cow milk and mixed with water and stem juice of <i>Cissus quadrangularis</i> and leaf and stem juice of <i>Achyranthes aspera</i> . The mixture is dried under the sun, powdered and pills prepared from the powder. One pill is taken thrice daily for 3 months. During this period cardamom should not be taken.
5	<i>Celosia cristata</i> L.	Amaranthaceae	Morog ful	Leaf, flower	Hypertension. One spoonful of leaf and flower juice is taken orally thrice daily in the morning, afternoon and evening.
6	<i>Lannea coromandelica</i> (Houtt.) Merr.	Anacardiaceae	Jiga gach	Bark	Stoppage of stool. Juice obtained from 50g bark is taken orally with coconut water (water inside fruits of <i>Cocos nucifera</i>) twice daily for 4 days.
7	<i>Mangifera indica</i> L.	Anacardiaceae	Aam	Bark, seed	Chronic dysentery. Bark juice is taken orally twice daily for 1 month. See <i>Syzygium cumini</i> .
8	<i>Annona squamosa</i> L.	Annonaceae	Ata	Seed	Asthma. Pea-sized pills prepared from

					crushed seeds are taken orally twice daily for 90 days.
9	<i>Alstonia scholaris</i> (L.) R.Br.	Apocynaceae	Chaitan	Leaf	Lack of milk in nursing mother. Equal amounts of leaves of <i>Alstonia scholaris</i> and stems of <i>Cuscuta reflexa</i> are cooked with the fish <i>Heteropneustes fossilis</i> and taken orally for 7 days.
10	<i>Calotropis gigantean</i> R.Br.	Apocynaceae	Akondo	Flower	Puerperal fever. Flowers are dried under the sun, powder4ed and taken orally with whole plants of <i>Piper peepuloides</i> and rock salt for 2-3 weeks.
11	<i>Holarrhena antidysenterica</i> (L.) Wall.	Apocynaceae	Indrajob	Seed	Burning sensations during urination. Seeds are crushed and soaked in water followed by drinking the water for 17 consecutive days.
12	<i>Borassus flabellifer</i> L.	Arecaceae	ˆTal	Sap	See <i>Vernonia patula</i> . See <i>Justicia adhatoda</i> .
13	<i>Cocos nucifera</i> L.	Arecaceae	Daab	Water inside fruit	See <i>Lannea coromandelica</i> .
14	<i>Sarcolobus globosus</i> Wall.	Asclepiadaceae	Harach	Seed	Dry cough. Pea-sized pill prepared from crushed seeds is taken orally thrice daily in the morning, afternoon and evening for 7 days.
15	<i>Artemisia vulgaris</i> L.	Asteraceae	Nagdana kanta	Whole plant	Helminthiasis. Soft portion inside the plant is taken orally with stem juice from <i>Ananas comosus</i> twice per week.
16	<i>Mikania cordata</i> (Burm. f.) B.L. Rob.	Asteraceae	Refugee lota	Leaf, stem	Jaundice. ½ poa (local measure, 4 poas approximate 1 kg) leaf and stem juice is taken orally twice daily for 90 days.
17	<i>Vernonia extensa</i> DC.	Asteraceae	Motmoti	Leaf, flower	Burns. Leaf and flower juice is topically applied to burnt area till cure.
18	<i>Vernonia patula</i> (Dryand.) Merr.	Asteraceae	Shial muturi	Leaf	Cold in small children. Leaf juice is mixed with crystalline sugar prepared from sap of

					<i>Borassus flabellifer</i> (talmishri), slightly warmed and 1 spoonful taken orally in the morning, afternoon and evening for 10 days.
19	<i>Heliotropium indicum</i> L.	Boraginaceae	Hatishur	Stem, root, leaf	Antidote to poisoning. Stem, root and leaf juice is orally taken.
20	<i>Ananas comosus</i> (L.) Merr.	Bromeliaceae	Anarosh	Stem	See <i>Artemisia vulgaris</i> .
21	<i>Opuntia dillenii</i> (Ker Gawl.) Haw.	Cactaceae	Foni monsha	Stem, leaf	Leucorrhoea. After picking off the thorns, leaves and stems are soaked in water overnight followed by drinking 50g of the water the following morning on an empty stomach. This is done for 2 weeks. During this time, sour and hot food, beef, hilsha (<i>Tenulosa ilisha</i>) fish, Malabar spinach, and pumpkin cannot be eaten.
22	<i>Carica papaya</i> L.	Caricaceae	Paypay	Fruit	Hepatic problem. Fruits are taken orally.
23	<i>Terminalia arjuna</i> Wight & Arn.	Combretaceae	Arjun	Bark	Heart disorders. Dried and powdered bark or alternately water in which bark has been soaked is taken orally thrice daily in the morning, afternoon and evening.
24	<i>Cuscuta reflexa</i> Roxb.	Convolvulaceae	Alok lota	Stem	Uterine problems. Stem juice is orally taken and also applied topically to scalp once daily for 3 months. See <i>Alstonia scholaris</i> .
25	<i>Costus speciosus</i> (Koen.) Sm.	Costaceae	Keowa	Root	See <i>Euphorbia griffithii</i> .
26	<i>Kalanchoe pinnata</i> (Lam.) Pers.	Crassulaceae	Pathorkuchi	Leaf	Kidney stone. Leaf juice is warmed and taken in the morning orally on an empty stomach once daily for a week. See <i>Justicia adhatoda</i> .
27	<i>Melothria heterophylla</i> (Lour.) Cogn.	Cucurbitaceae	Rakhal shosha	Root	Physical weakness. One spoonful of dried and powdered root is taken orally for 3 weeks.
28	<i>Drosera burmannii</i> Vahl	Droseraceae	Bhumi kushmanda	Flower	Physical weakness. Pills prepared from flower paste are taken thrice daily (one pill each)

					time) for 2 months.
29	<i>Euphorbia griffithii</i> Hook. f.	Euphorbiaceae	Laal ora	Leaf, stem	Irregular menstruation. 50g root of <i>Costus speciosus</i> , 50g root of <i>Valeriana jatamansi</i> and leaves and stems of <i>Euphorbia griffithii</i> are dried, powdered and pea-sized pills prepared from the powder. Three pills are taken daily for 7-9 days.
30	<i>Ricinus communis</i> L.	Euphorbiaceae	Venna	Seed	See <i>Datura stramonium</i> .
31	<i>Abrus precatorius</i> L.	Fabaceae	Josthi modhu	Bark, stem	Dry cough. Pills prepared from bark and stem, alternately bark and stem juice is taken orally (one pill each time) twice daily for 14 days.
32	<i>Cassia nodosa</i> Buch.-Ham. Ex Roxb.	Fabaceae	Sonalu	Fruit	Asthma. Pills made from pulp of fruit are taken thrice daily in the morning, afternoon and evening for 1 month.
33	<i>Mimosa pudica</i> L.	Fabaceae	Lojjaboti	Leaf, seed	Absence of menstruation. Pills prepared from leaf and seed of <i>Mimosa pudica</i> and leaf of <i>Pterocarpus santalinus</i> are taken 6 times daily orally for 7 days.
34	<i>Mucuna pruriens</i> Hook.	Fabaceae	Bilai archi	Root	Chicken pox. One spoonful of root juice is taken orally thrice daily in the morning, afternoon and evening for 7 days.
35	<i>Pterocarpus santalinus</i> L.	Fabaceae	Rokto chandan	Leaf	See <i>Mimosa pudica</i> .
36	<i>Tamarindus indica</i> L.	Fabaceae	Tetul	Seed	See <i>Syzygium cumini</i> .
37	<i>Hyptis suaveolens</i> (L.) Poit.	Lamiaceae	Tokma	Fruit	Burning sensations in the body. Fruits are soaked in water and taken orally twice daily for 7 days.
38	<i>Leucas aspera</i> (Willd.) L.	Lamiaceae	Dom kolosh	Leaf	Skin infections. Equal amounts of leaves from <i>Leucas aspera</i> , <i>Cynodon dactylon</i> and <i>Azadirachta indica</i> are made into a paste, warmed and topically applied.
39	<i>Ocimum sanctum</i> L.	Lamiaceae	Tulshi	Leaf	Weakness, cold, coughs. Leaf juice is taken orally for 7 days.

40	<i>Leea aequata</i> L.	Leeaceae	Kak jonga	Root	Heart problem. Pills prepared from root powder are taken orally thrice daily in the morning, afternoon and evening for 90 days.
41	<i>Lawsonia inermis</i> L.	Lythraceae	Mehedi	Leaf	Burning sensations in scalp. Leaf juice is mixed with coconut oil and applied topically to scalp twice weekly.
42	<i>Hibiscus rosa sinensis</i> L.	Malvaceae	Rokto joba	Flower, leaf, bark	Hypertension. Flowers, leaves and bark are soaked in water overnight followed by drinking the water the following morning. This is continued twice daily for 3 months.
43	<i>Sida acuta</i> Burm. f.	Malvaceae	Babor	Leaf, stem	Weakness. Leaves and stems are crushed in water followed by drinking the juice for 1 month in the morning.
44	<i>Aphanamixis polystachya</i> (Wall.) R.N. Parker	Meliaceae	Pithraj, Fithraj	Seed	Pain. Seed oil is massaged for 21 days.
45	<i>Azadirachta indica</i> A. Juss.	Meliaceae	Neem	Leaf	See <i>Leucas aspera</i> .
46	<i>Tinospora cordifolia</i> (Willd.) Miers.	Menispermaceae	Goloncha	Stem	Indigestion, loss of appetite. Stems are soaked in water overnight followed by drinking the water the next morning on an empty stomach.
47	<i>Artocarpus lakoocha</i> Roxb.	Moraceae	Dewa	Bark	Constipation. Bark juice is taken orally till cure.
48	<i>Moringa oleifera</i> Lam.	Moringaceae	Sajina	Leaf	Hypertension, diabetes. 50g leaf juice is taken twice daily on an empty stomach for 3 months.
49	<i>Syzygium cumini</i> (L.) Skeels	Myrtaceae	Jaam	Seed	Leucorrhoea. One spoonful of dried and powdered seeds of <i>Syzygium cumini</i> , <i>Mangifera indica</i> and <i>Tamarindus indica</i> is taken orally thrice daily in the morning, afternoon and evening for 14 days.
50	<i>Sesamum indicum</i> L.	Pedaliaceae	Til	Seed	See <i>Solanum torvum</i> .
51	<i>Phyllanthus emblica</i> L.	Phyllanthaceae	Amloki	Fruit	Weakness. One spoonful dried and powdered fruit is taken with water every night.

52	<i>Piper nigrum</i> L.	Piperaceae	Gol morich	Fruit	See <i>Citrus aurantium</i> .
53	<i>Piper peepuloides</i> L.	Piperaceae	Pipul	Whole plant	See <i>Calotropis 173igantean</i> .
54	<i>Cynodon dactylon</i> (L.) Pers.	Poaceae	Durba	Leaf	See <i>Leucas aspera</i> .
55	<i>Anthocephalus chinensis</i> (Lamk.) Rich. ex Walp	Rubiaceae	Boro kodom	Flower	See <i>Hymenodictyon excelsum</i> .
56	<i>Hymenodictyon excelsum</i> (Roxb.) Wall.	Rubiaceae	Bhui kodom	Flower	Acidity. Five flowers of <i>Hymenodictyon excelsum</i> and one flower of <i>Anthocephalus chinensis</i> is made in to a paste and the juice collected. The juice is taken orally for 4-5 days before meals.
57	<i>Paederia foetida</i> L.	Rubiaceae	Gandha vadal	Leaf	Rheumatism. Leaves are fried in ghee (clarified butter), powdered and taken orally twice daily for 14 days.
58	<i>Citrus aurantium</i> L.	Rutaceae	Komla	Skin of fruit	Asthma. Pills are prepared from skin of fruit of <i>Citrus aurantium</i> , fruits of <i>Piper nigrum</i> and a pinch of camphor. One pill is taken thrice daily orally in the morning, afternoon and evening after meals. If bloating is present during asthma, medications for bloating should be taken.
59	<i>Zanthoxylum rhetsa</i> (Roxb.) DC.	Rutaceae	Bajna gach	Seed	Pain. Seed oil is topically applied till cure.
60	<i>Scoparia dulcis</i> L.	Scrophulariaceae	Chinidana, Uchta	Leaf, stem	Jaundice. Leaf and stem juice is taken orally for 10-12 days.
61	<i>Smilax zeylanica</i> L.	Smilacaceae	Kumari lota	Leaf, stem	Stomach stone. Equal amounts of leaves and stems of <i>Smilax zeylanica</i> and root bark of <i>Sagittaria sagittifolia</i> are made into a paste. Pills prepared from the paste are taken orally for 22-23 days in the morning, afternoon and evening.
62	<i>Cestrum nocturnum</i> L.	Solanaceae	Hasna hena	Flower, leaf	Fever. One spoonful flower and leaf juice is taken orally thrice daily in the morning,

					afternoon and evening for 7 days.
63	<i>Datura stramonium</i> L.	Solanaceae	Kalo dhutura	Seed, flower, fruit, leaf	Paralysis. Juice from flowers, fruits and leaves of <i>Datura stramonium</i> is mixed with equal amounts of mustard oil and seed oil of <i>Ricinus communis</i> , boiled and then applied topically while still warm. See <i>Achyranthes aspera</i> .
64	<i>Solanum torvum</i> Sw.	Solanaceae	Bitti gota	Fruit	Allergy, chicken pox, skin infection. Fruits are fried in sesame oil (oil from seeds of <i>Sesamum indicum</i>) and orally taken for 7 days.
65	<i>Abroma augusta</i> L.	Sterculiaceae	Ulot kombol	Stem	Burning sensations during urination. Stems are soaked in water overnight followed by drinking the water the following morning on an empty stomach for 14 straight days.
66	<i>Centella asiatica</i> (L.) Urban	Umbelliferae	Thankuni	Whole plant	Dysentery. Whole plant juice or mashed whole plant is taken 2-3 times daily for 7-8 days.
67	<i>Valeriana jatamansi</i> D. Don.	Valerianaceae	Jatamansi	Root	See <i>Euphorbia griffithii</i> .
68	<i>Lantana camara</i> L.	Verbenaceae	Kutura	Seed, leaf	Asthma. Seed juice is orally taken; alternately, leaves are fried and eaten twice daily for 3 months.
69	<i>Cissus quadrangularis</i> L.	Vitaceae	Harjora, Charshira	Stem	Cold and coughs. Stem juice is taken orally for 7 days. See <i>Achyranthes aspera</i> .
70	<i>Vitis oxyphylla</i> A. Rich.	Vitaceae	Ganga shagor	Stem	Edema. Pea-sized pills are prepared from 1 hand-length of stem and taken orally thrice daily in the morning, afternoon and evening.
71	<i>Aloe vera</i> (L.) Burm. f.	Xanthorrhoeaceae	Ghritokumari	Leaf	Weakness. Juice obtained by crushing soft pulp within leaf is orally taken for 1 month.
72	<i>Curcuma zedoaria</i> Roscoe	Zingiberaceae	Ekangi	Rhizome	Headache. Juice from 4-5 rhizomes is taken orally twice daily.

DISCUSSION

Justicia adhatoda was used by the FMP for treatment of respiratory difficulties. The anti-tussive of herbal extract containing the plant has been reported.^[28] Analgesic and anti-inflammatory activities have been described for stem and leaf extract of *Alangium salvifolium*;^[29] the FMP used flowers of the plant to treat toothache and oral lesions. The use of *Sagittaria sagittifolia* and *Smilax zeylanica* in combination by the FMP to treat stomach stones has hitherto been unreported. However, *Sagittaria sagittifolia* is reportedly used by ethnic communities of Manipur, India to treat coughs and fever.^[30] *Smilax zeylanica* is used by the Mandai tribal people of Bangladesh for stomach ache and indigestion.^[31] The Teli tribe of Bangladesh uses the plant for treatment of gonorrhoea and diabetes.^[12]

Although there are not many scientific studies on the plants unique to this FMP like *Alangium salvifolium*, *Sagittaria sagittifolia*, *Celosia cristata*, *Sarcolobus globosus*, *Vernonia extensa*, *Melothria heterophylla*, *Drosera burmannii*, *Euphorbia griffithii*, *Leea aequata*, *Hymenodictyon excelsum*, *Zanthoxylum rhetsa*, and *Cestrum nocturnum*, a number of these plants have ethnomedicinal reports available from other regions of the world. For instance, flowers and seeds of *Celosia cristata* are used by the people residing in Pachalur Hills area in Dindigul district, Tamil Nadu State, India for treatment of diarrhea and dysentery.^[32] *Melothria heterophylla* is used in Arunachal Pradesh, India for treatment of jaundice.^[33] The Apatani tribe in Arunachal Pradesh, India uses the plant to treat fever, malarial fever, headache, and skin itches.^[34]

Drosera burmannii is used by tribal communities in North Bengal plain, India for treatment of gastrointestinal problems like blood dysentery.^[35] *Cestrum nocturnum* is usually considered poisonous,^[36] so its use by the FMP for treatment of fever is surprising. On the other hand, *Hymenodictyon excelsum* is used in Gujarat State, India to treat inflammation and dysentery.^[37] These various ethnomedicinal uses of the plants in various parts of the Indian subcontinent suggest that the plants used by the FMP have manifold ethnomedicinal uses, which can serve as pointers for further scientific studies.

CONCLUSION

The plants used by the FMP comprised of a diverse group of plants some of which are reported in their folk medicinal uses for the first time from Bangladesh. These plants as well as other plants, which were used by the FMP to treat liver disorders, heart disorders, paralysis and asthma, deserve scientific attention towards isolation of affordable newer drugs.

Conflicts of interest

The authors declare that there are no conflicts of interest.

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