



Research Article

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Medicinal plant knowledge of a folk medicinal practitioner of Kishoreganj district, Bangladesh

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ABSTRACT

Documentation of the medicinal practices of a folk medicinal practitioner (FMP) was carried out in Kishoreganj town in Kishoreganj district, Bangladesh. The FMP was observed to use a total of 35 plants distributed into 26 families in his medicinal practice. Whole plants or various parts of these plants were used to treat ailments like gastrointestinal disorders, helminthiasis, asthma, gonorrhoea, pain, snake bite, leucorrhoea, spermatorrhea, skin disorders, bleeding from external cuts and wounds, testicular tumor, liver problems, excessive menstruation, hair loss, and diabetes. The plants used to treat testicular tumor and diabetes are of special interest for they can lead to new drug discoveries for treatment of these diseases.

Key words: Folk medicine, Kishoreganj, medicinal plants, Bangladesh

INTRODUCTION

Kishoreganj district is slightly to the north of Dhaka, the capital city of Bangladesh. The district is not very well developed and the main town, Kishoreganj, can be considered rather a small town than a city. The district overall has a rural atmosphere, which is reflected also in the various medicinal systems existing within the district like allopathic medicine co-existing with folk medicine, Ayurveda and Unani systems of traditional medicines.

Towards a thorough documentation of the medicinal plants used in the country, we had been conducting surveys among the folk and tribal medicinal practitioners for a number of years [1-27]. Although Ayurveda and Unani systems of traditional medicines also use medicinal plants in their formulations, folk and tribal medicinal practitioners almost exclusively depend on medicinal plants for treatment of diseases. As such, the objective of this study was to document the medicinal plants and formulations of a folk medicinal practitioner (FMP) of Kishoreganj town, Bangladesh.

EXPERIMENTAL SECTION

Prior Informed Consent was obtained from the FMP (Nepal Das, male, age 48 years, by religion Sonaton Hindu, academic qualifications – up to Grade 8), Tanti Para, Kishoreganj town for the survey. Actual interviews were carried out with the help of a semi-structured questionnaire and the guided field-walk method of Martin [28] and Maundu [29]. In this method, the FMP took the interviewers on guided field-walks through areas from where he

collected his medicinal plants, pointed out the plants, and described their uses. Interviews were carried out in the Bengali language, which was spoken alike by the FMP and the interviewers. Plant specimens were photographed, collected, pressed and dried and identified at the Bangladesh National Herbarium.

RESULTS AND DISCUSSION

The FMP was observed to use a total of 35 plants distributed into 26 families in his medicinal formulations for treatment of various ailments. The ailments treated included gastrointestinal disorders, helminthiasis, asthma, gonorrhoea, pain, snake bite, leucorrhoea, spermatorrhea, skin disorders, bleeding from external cuts and wounds, testicular tumor, liver problems, excessive menstruation, hair loss, and diabetes. The various medicinal plants or plant parts used with their botanical names and mode of use are shown in Table 1.

Like most FMPs of Bangladesh, the formulations used by the present FMP were fairly simple. In most cases, various plant parts were used singly for treatment of ailments and administered either orally or topically. A few formulations consisted of more than one plant or plant part. For instance, testicular tumor was treated with seven leaves of *Crataeva nurvala*, one fruit of *Capsicum frutescens*, ½ bulb of *Allium cepa*, and a little amount of table salt, which were made into a paste and taken with rice for 3 days. In this case, according to the FMP, rice did not play any part in the healing process, but was used so that the rest of the formulation can be easily taken orally. In several formulations, sugar or molasses prepared from sugarcane juice was used. In some formulations (both oral and topically administered formulations), table salt was also used.

It is of interest that the FMP treated testicular tumor as well as diabetes, the rest of the formulations being used to treat more common problems. Diabetes was treated with a combination of leaves of *Streblus asper* and *Coccinia grandis* or with bark of *Abroma augusta* alone. Interestingly, extract of stem bark of *Streblus asper* has been shown to normalize blood glucose level in streptozotocin-induced diabetic rats [30]. The blood glucose lowering effect of *Coccinia grandis* and *Abroma augusta* has also been reported [31, 32].

A combination of *Crataeva nurvala*, *Capsicum frutescens*, and *Allium cepa* was used to treat testicular tumor. The modulatory effects of *Crataeva nurvala* bark against testosterone and N-methyl-N-nitrosourea-induced oxidative damage in prostate of male albino rats has been noted [33]. Capsaicin, a component of *Capsicum frutescens* fruits, has been shown to retard tumor regardless of whether the tumor was at an early or late stage [34]. The cancer prevention properties of *Allium cepa* has also been reviewed [35]. Thus taken together, the three plant parts in combination used by the FMP to treat testicular tumor may be really an effective agent for treatment and cure.

Table 1. Medicinal plants and formulations of the FMP in Kishoreganj district, Bangladesh

Serial Number	Scientific Name	Family Name	Local Name	Parts used	Ailments and mode of medicinal use
1	<i>Andrographis paniculata</i> Burm.f.	Acanthaceae	Kalomegha	Flower	Snake bite. Flowers are taken orally.
2	<i>Achyranthes aspera</i> (L.)	Amaranthaceae	Uhut lengra	Root	Pain. Tablets are prepared from roots of <i>Achyranthes aspera</i> and one fruit of <i>Piper nigrum</i> . Five tablets are taken orally daily for 15 consecutive days.
3	<i>Aerva sanguinolenta</i> (L.) Blume	Amaranthaceae	Lal pata gach	Leaf, whole plant	To stop bleeding from external cuts and wounds. Leaf juice is topically applied to cuts and wounds. Skin infections. Whole plant is rubbed between the palms and applied to infected areas till cure. Note that during this time, the area must not touch water.
4	<i>Amaranthus spinosus</i> L.	Amaranthaceae	Kanta khuria	Root	Abscess. Paste of root and a grain of table salt are applied topically to abscess daily till pus oozes out.
5	<i>Mangifera indica</i> L.	Anacardiaceae	Aam gach	Bark	Asthma. About 8 inch long and 5 inch wide bark from a large tree is crushed to obtain juice, which is taken orally for 7 consecutive days or till cure.
6	<i>Colocasia</i> sp.	Araceae	Buno kochu	Stem	Headache. Swollen portion of the stem is tied to the head tightly till pain subsides.
7	<i>Calendula officinalis</i> L.	Asteraceae	Ganda phool	Leaf	To stop bleeding from external cuts and wounds. Paste of leaf is topically applied to area of bleeding.
8	<i>Eclipta alba</i> (L.) Hassk.	Asteraceae	Kalokeshari	Leaf, whole plant	Waist pain. Paste of 1-4 leaves along with a grain of table salt is applied to painful area daily till cure. Head infection. Whole plant juice is topically applied to infected area.
9	<i>Spilanthes calva</i> DC.	Asteraceae	Nakful gach	Flower	Tooth ache. Paste of leaves is applied daily to base of aching tooth daily till cure.
10	<i>Ananas comosus</i> (L.) Merr.	Bromeliaceae	Anarosh	Young leaf	Helminthiasis. One cup of leaf juice is taken orally in the morning for 1 week.
11	<i>Crataeva nurvala</i> (Buch.-Ham.)	Capparidaceae	Borun	Leaf	Testicular tumor. Seven leaves of <i>Crataeva nurvala</i> , one fruit of <i>Capsicum frutescens</i> , ½ bulb of <i>Allium cepa</i> , and a little amount of table salt is made into a paste and taken with rice for 3 days.
12	<i>Carica papaya</i> L.	Caricaceae	Papay gach	Fruit	Gastric and liver problems. 2-3 fruit slices are taken orally in the morning daily on an empty stomach.
13	<i>Kalanchoe pinnata</i> (Lam.) Pers.	Crassulaceae	Pathorkuchi	Leaf	Stomach pain. One cup of leaf juice is taken orally once daily for a month.
14	<i>Coccinia grandis</i> (L.) Voigt	Cucurbitaceae	Telkuchi	Root	Gonorrhoea. One cup of root juice is taken orally daily on an empty stomach for 1 week. Blood dysentery. Crushed roots are fried with egg and taken orally with warm rice daily till cure. See <i>Streblus asper</i> .
15	<i>Acalypha indica</i> L.	Euphorbiaceae	Muktajhuri, Denari	Leaf	Excessive menstruation. Leaves of <i>Acalypha indica</i> are fried with clove of <i>Allium sativum</i> and taken twice daily on an empty stomach.
16	<i>Phyllanthus emblica</i> L.	Euphorbiaceae	Amloki	Fruit	Hair loss, premature graying of hair. Fruit juice is boiled with coconut oil and applied to scalp once weekly.
17	<i>Dalbergia sissoo</i> Roxb. ex DC.	Fabaceae	Shishu gach	Leaf	Gastric problem. Leaves are squeezed in 1 kg water followed by drinking the water once daily on an empty stomach for 7 consecutive days.
18	<i>Mimosa pudica</i> L.	Fabaceae	Lojjaboti	Leaf	Spermatorrhea. Young leaves are chewed and orally taken in the morning on an empty stomach.
19	<i>Allium cepa</i> L.	Liliaceae	Peyaj	Bulb	See <i>Crataeva nurvala</i> . See <i>Moringa oleifera</i> .
20	<i>Allium sativum</i> L.	Liliaceae	Roshun	Clove	See <i>Acalypha indica</i> .
21	<i>Hibiscus rosa sinensis</i> L.	Malvaceae	Joba	Leaf	Leucorrhoea. 8-10 leaves are soaked in 250g water overnight. The following morning, the leaves are squeezed in water and the water along with leaf juice is taken orally on an empty stomach. This is done once daily for a week.
22	<i>Sida acuta</i> Burm.f.	Malvaceae	Beril	Young stem	Ulcer. Young stems are made into a paste along with sugar, slight amount of opium and sugarcane molasses and pills prepared from the paste. One pill is taken daily in the morning on an empty stomach.
23	<i>Azadirachta indica</i> A. Juss.	Meliaceae	Neem	Leaf	Skin eruptions. Paste of leaves of <i>Azadirachta indica</i> and rhizome of <i>Curcuma longa</i> is applied topically for 1 week.
24	<i>Streblus asper</i> Lour.	Moraceae	Sheora	Leaf	Diabetes. 150g each of leaf juice of <i>Streblus asper</i> and <i>Coccinia grandis</i> is taken orally daily on an empty stomach.
25	<i>Moringa oleifera</i> Lam.	Moringaceae	Sojne gach	Bark	Body pain. Paste of bark of <i>Moringa oleifera</i> , ½ bulb of <i>Allium cepa</i> and ½ fruit of <i>Capsicum frutescens</i> is taken orally for 1 week.
26	<i>Psidium guajava</i> L.	Myrtaceae	Peyara	Young leaf	Tooth ache. 3-4 leaves are boiled in ½ kg water till the volume reaches 1 cup. Following boiling, when the water is still lukewarm, it is used for gargling. This is done daily till cure.
27	<i>Piper nigrum</i> L.	Piperaceae	Gol morich	Fruit	See <i>Achyranthes aspera</i> .
28	<i>Cynodon dactylon</i> (L.) Pers.	Poaceae	Durba ghash	Whole plant	Excessive menstruation. One cup of whole plant juice is mixed with 10g sugarcane molasses and taken once daily on an empty stomach.
29	<i>Pyrrhosia flocculosa</i> (D. Don) Ching	Polypodiaceae	Porgacha	Root	To keep head cool. Paste of root is topically applied to scalp for 15 consecutive days.
30	<i>Aegle marmelos</i> (L.) Corr.	Rutaceae	Bael gach	Leaf	Heightened sexual appetite. Leaf juice is taken orally for 1 week.
31	<i>Murraya exotica</i> L.	Rutaceae	Kamini	Leaf	Tooth ache. Two and a half gram of leaves is boiled with 20g table salt in 1 kg water. After boiling, when the water becomes lukewarm, it is used for gargling. This is done daily till cure.
32	<i>Scoparia dulcis</i> L.	Scrophulariaceae	Mirchi dana gach	Young leaf	To increase strength. Young leaves are taken orally with a grain of salt followed by drinking water.
33	<i>Capsicum frutescens</i> L.	Solanaceae	Morich	Fruit	See <i>Crataeva nurvala</i> . See <i>Moringa oleifera</i> .
34	<i>Abroma augusta</i> L.	Sterculiaceae	Ulot kombol	Root, bark	Leucorrhoea. Roots are cut into small pieces and the pieces soaked in water overnight. The following morning, the water is taken orally on an empty stomach. This is done for 15 consecutive days. Diabetes. Bark is soaked in water along with sugar. The water is taken orally in the morning on an empty stomach.
35	<i>Curcuma longa</i> L.	Zingiberaceae	Holud	Rhizome	See <i>Azadirachta indica</i> .

CONCLUSION

The folk medicinal practitioner of the present survey used a number of simple formulations to treat common as well as generally difficult to treat diseases like diabetes and testicular tumor. These formulations merit further scientific consideration towards discovery of new medicines.

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