



Research Article

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Phytotherapeutic practices of a rural female folk medicinal practitioner in Bangladesh

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ABSTRACT

The medicinal plants used by a female folk medicinal practitioner (FMP) practicing in Kumartek village in Narsingdi district, Bangladesh was documented since the FMP claimed that folk medicinal practice runs in her family for generations and that she learned medicinal uses of plants from her father. The FMP was observed to use a total of 21 plants distributed into 17 families for therapeutic purposes. The various diseases treated included helminthiasis, bone fracture, gastrointestinal disorders, pain, rheumatic fever, respiratory tract disorders, diabetes, jaundice, and dizziness. Both monoherbal and polyherbal formulations were used by the FMP. The plants used by the FMP offer opportunities to researchers for further studies leading to better and more affordable drugs.

Key words: Folk medicine, Kumartek, Narsingdi, Bangladesh

INTRODUCTION

Folk medicine is the most common form of traditional medicinal practice in Bangladesh other than home remedies. Folk medicinal practitioners (FMPs) do not need to obtain any formal training, are not registered, and can practice without any forms of certification documenting their medicinal knowledge. Most FMPs claim to have gained their knowledge from generation-wise practice. It is quite possible that a good deal of malpractice or quackery exists within FMPs, but on the whole our surveys of the last few years suggest that FMPs in general are quite knowledgeable about the medicinal properties of plants [1-30].

Plants are a source of many chemical compounds (phytochemicals), which compounds because of their different useful pharmacological properties have been used as drugs for many years. In recent years, scientists have been placing more emphasis on plant research, because of the urgency of finding new drugs to combat emerging diseases and drug-resistant diseases or vectors. Towards such research, a necessary objective is to document the knowledge of traditional practitioners (including FMPs), who uses plants as their most important therapeutic items. Since the FMPs can provide valuable knowledge on plants, which may be useful in focusing research, it was the objective of the present study to document the phytotherapeutic practices of a rural female FMP in Narsingdi district, Bangladesh.

EXPERIMENTAL SECTION

The survey was conducted in Kumartek village situated in Narsingdi district, Bangladesh. Prior Informed Consent was obtained from the female FMP (Golapi Begum, age 60 years), for the survey and who resided in KUMartek village. She claimed to have obtained her medicinal plant knowledge from her father. Actual interviews were carried out with the help of a semi-structured questionnaire and the guided field-walk method of Martin [31] and Maundu [32]. In this method, the FMP took the interviewers on guided field-walks through areas from where she collected her 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 21 plants distributed into 17 families for therapeutic purposes. The results are shown in Table 1. The various diseases treated included helminthiasis, bone fracture, gastrointestinal disorders, pain, rheumatic fever, respiratory tract disorders, diabetes, jaundice, and dizziness. It was of interest to observe that the FMP used both monoherbal (that is a single plant) as well as polyherbal (multiple plants) in her treatment. The usual mode of treatment consisted of plant part or parts, that is, leaves, stems, or roots. The usual formulation consisted of juice, which was obtained through crushing the plant part used and which was usually taken orally.

Table 1. Medicinal plants and formulations of the female FMP from Kumartek village in Narsingdi district

Serial Number	Scientific Name	Family Name	Local Name	Parts used	Ailments and mode of medicinal use
1	<i>Andrographis paniculata</i> Wall	Acanthaceae	Kalomegh	Leaf	See <i>Justicia adhatoda</i> .
2	<i>Justicia adhatoda</i> L.	Acanthaceae	Bashok gach	Leaf	Helminthiasis. Juice obtained from crushed leaves of <i>Justicia adhatoda</i> and <i>Andrographis paniculata</i> is taken orally. See <i>Ocimum sanctum</i> .
3	<i>Pancreatium verecundum</i> Aiton	Amaryllidaceae	Kumaira	Stem	Bone fracture. Stems of <i>Pancreatium verecundum</i> and <i>Stephania japonica</i> are tied around the fractured area.
4	<i>Mangifera indica</i> L.	Anacardiaceae	Aam	Seed	Dysentery. Seeds are dried and powdered. Powder is mixed with juice obtained from crushed roots of <i>Musa paradisiaca</i> and taken orally.
5	<i>Finlaysonia obovata</i> Wall.	Apocynaceae	Baid	Root	Headache. Roots of <i>Finlaysonia obovata</i> and <i>Tamarindus indica</i> and roots that sprout along the nodes of <i>Bambusa vulgaris</i> are put in a bag following drying and tied to the head. See <i>Phyllanthus reticulata</i> .
6	<i>Ananas comosus</i> (L.) Merr.	Bromeliaceae	Anarosh	Leaf	Helminthiasis. Leaf juice is orally taken.
7	<i>Coccinia cordifolia</i> (L.) Cogn.	Cucurbitaceae	Telakochu	Leaf	See <i>Setaria italica</i> .
8	<i>Cuscuta reflexa</i> Roxb.	Cuscutaceae	Shorno lota	Stem	Rheumatic fever. Juice obtained from crushed stems of <i>Cuscuta reflexa</i> and roots of <i>Mimosa pudica</i> is taken orally.
9	<i>Mimosa pudica</i> L.	Fabaceae	Lojjaboti	Root	See <i>Cuscuta reflexa</i> .
10	<i>Tamarindus indica</i> L.	Fabaceae	Tetul	Root	See <i>Finlaysonia obovata</i> .
11	<i>Ocimum sanctum</i> L.	Lamiaceae	Tulshi gach	Leaf	Coughs, cold. Juice obtained from crushed leaves of <i>Ocimum sanctum</i> and <i>Justicia adhatoda</i> and rhizomes of <i>Zingiber officinale</i> is taken orally.
12	<i>Asparagus racemosus</i> Willd.	Liliaceae	Shotomul	Root	Diabetes. Root juice is taken orally.
13	<i>Stephania japonica</i> (Thunb.) Miers.	Menispermaceae	Muchi pata	Stem	See <i>Pancreatium verecundum</i> .
14	<i>Musa paradisiaca</i> L.	Musaceae	Aida kola	Root	See <i>Mangifera indica</i> . See <i>Phyllanthus reticulata</i> .
15	<i>Phyllanthus acidus</i> (L.) Skeels	Phyllanthaceae	Orboroi	Leaf	Jaundice. Juice is obtained from leaves of <i>Phyllanthus acidus</i> , <i>Centella asiatica</i> and <i>Solanum verbascifolium</i> . Lime (calcium hydroxide) is soaked in water overnight, followed by taking the clear water from the top the following morning, which is mixed with the juice and taken orally.
16	<i>Phyllanthus reticulata</i> Poir.	Phyllanthaceae	Sitki	Root	Diarrhea in children. Juice obtained from crushed and combined roots of <i>Phyllanthus reticulata</i> , <i>Musa paradisiaca</i> , and <i>Finlaysonia obovata</i> is taken orally.
17	<i>Bambusa vulgaris</i> Schrad. ex J.C. Wendl.	Poaceae	Bansh	Root	See <i>Finlaysonia obovata</i> .
18	<i>Setaria italica</i> (L.) Beauv.	Poaceae	Kaon	Leaf	Dizziness. Juices obtained from crushed leaves of <i>Setaria italica</i> , <i>Coccinia cordifolia</i> , and <i>Centella asiatica</i> are mixed together and taken orally.
19	<i>Glycosmis arborea</i> (Roxb.) DC.	Rutaceae	Motkila	Leaf, root	Piles. Juice obtained from crushed leaves and roots is taken orally.
20	<i>Solanum verbascifolium</i> L.	Solanaceae	Arosh	Leaf	See <i>Phyllanthus acidus</i> .
21	<i>Centella asiatica</i> (L.) Urb.	Umbelliferae	Khudro manic	Leaf	See <i>Phyllanthus acidus</i> . See <i>Setaria italica</i> .

There were two unusual treatments by the FMP. In the first, for treatment of bone fracture, stems of *Pancreatium verecundum* and *Stephania japonica* were tied around the fractured area. In the second, for treatment of headache, roots of *Finlaysonia obovata* and *Tamarindus indica* and roots that sprout along the nodes of *Bambusa vulgaris* were put in a bag following drying and tied to the head. It is not clear how simple attachment of plant parts to a section of the body can cure any disorder present in that particular body part, but the practice is not uncommon among the FMPs of Bangladesh. Incidentally, to our knowledge this is the first report of the use of the two plants *Pancreatium verecundum* and *Stephania japonica* for treatment of bone fracture.

Two other plants appear to be reported here for the first time in folk medicinal studies within Bangladesh. These are *Finlaysonia obovata* and *Solanum verbascifolium*. Thus along with *Pancreatium verecundum*, the three plants can form suitable plants for research purposes by scientists, who not only wish to validate the FMP's use of the plants but also to find out other therapeutic uses of these plants. *Finlaysonia obovata* has been shown to be effective against fish pathogens and as such demonstrate antibacterial activity [33]. Antibacterial activity has also been reported for *Solanum verbascifolium* [34]. Since *Finlaysonia obovata* was used in polyherbal formulations by the FMP to treat headache and diarrhea in children, and *Solanum verbascifolium* was used in a polyherbal formulation by the FMP for treatment of jaundice, these treatments can open up new lines of research for the two plants.

Although there appears to be no scientific reports on the efficacy of *Justicia adhatoda* for treatment of helminthiasis, *in vitro* anthelmintic activity of *Andrographis paniculata* has been demonstrated [35]. Notably, the FMP used both plants in combination for treatment of helminthiasis. As such, new studies can be conducted not only on the efficacy of *Justicia adhatoda* in treatment of helminthiasis, but also whether the plant can provide synergistic anthelmintic effect with *Andrographis paniculata*. On the other hand, the FMP's use of *Ocimum sanctum*, *Justicia adhatoda*, and *Zingiber officinale* to treat coughs and cold is common among other FMPs of Bangladesh. In scientific studies, *Ocimum sanctum* and *Justicia adhatoda* has been shown to be effective against coughs [36, 37]; *Zingiber officinale* has been reported to be effective against respiratory tract pathogens [38], suggesting that the FMPs use of these three plants is scientifically validated. Thus there is strong indication that some of the plants used by the FMP have scientific validations, while the other plants need to be studied scientifically to validate the FMP's uses of them.

CONCLUSION

The plants used by the FMP for treatment deserve scientific attention towards possible discovery of newer drugs.

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