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Therapeutic uses of medicinal plants in Naogaon district, Bangladesh

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Abstract

Folk medicinal practitioners (FMPs) in Bangladesh are mostly plant-based medical practitioners who practice on their own without recourse to any formal medical education. The objective of this study was to document the therapeutic uses of plants by three FMPs in Naogaon district, Bangladesh. The FMPs were observed to use 14 plants distributed into 13 families. The major thing about the phytotherapeutic uses of the plants by the three FMPs was the mostly uncommon use of the plants. As such, the information provided by them adds significantly to the folk medicinal literature of Bangladesh and can aid the scientist to develop new lines of pharmacological research on the plants.

Keywords: phytotherapy, folk medicinal practitioner, naogaon, Bangladesh

Introduction

Discovery of drugs from plants is not a new concept. Human beings have used plants for medicinal purposes from time immemorial. Archaeological evidence suggests that traditional healers have used plants in all countries of the world for therapeutic purposes [1]. Information on the medicinal properties of plants used to be memorized and orally transmitted from generation to generation before the advent of writing and storage of written materials. The addition of modern medicine to traditional therapies is essentially the introduction of using the major therapeutic component or phytochemical of the plant in pure form to combat diseases. While the ‘one drug one therapy’ of allopathic medicine has successfully worked for over more than a hundred years, lately there has been a revival of interest in traditional medicines because of emergence of new diseases and rapid development of drug-resistance when a single drug is used.

To discover new medicines from plants, the foremost thing is to gather as much as possible, knowledge on the ethnic or traditional medicinal uses of plants. Such knowledge gives the researcher an idea where to start with, and devise appropriate methodology to experiment properly and isolate the responsible phytochemical(s) through say bioactivity guided fractionation or other relevant methods. Bangladesh is lagging far behind other countries in documentation of folk and tribal medicinal practices and there is a distinct possibility that such knowledge will become irretrievably lost. As such, we had been collecting traditional phytotherapeutic information for over ten years with mainstream folk medicinal practitioners (FMPs) and tribal medicinal practitioners (TMPs) as our primary informants [2-19]. The objective of the present study was to document the phytotherapeutic practices of three FMPs in Naogaon district, Bangladesh.

Materials and Methods

The documentation was carried out in 2017 with three FMPs in Naogaon district, Bangladesh. Details about the FMPs are given below.

- i) Sreedam Chandra Prang, 55 years, male, practicing for 27 years, Shinga village, Naogaon district, learned from guru Mahim Haldar.
- ii) Jasim Uddin, 83 years, male, practicing for unknown number of years, Kanchanpur village, Naogaon district, learned from guru Bashir Talukdar.
- iii) Md. Ashraful Haq, 32 years, male, practicing for 5 years, Ruddhamukha village, Naogaon district.

Prior Informed Consent was first obtained from the FMPs. They were told about the nature of our visit. Actual interviews were conducted in the Bengali language, which was spoken fluently by the FMPs 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 ^[20] and Maundu ^[21]. In this method the FMPs took the interviewers on guided field-walks through areas from where they collected their medicinal plants, 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 also deposited with the Medicinal Plant Collection Wing of the University of Development Alternative. Two points are to be noted here; the first is that the second FMP (Jasim Uddin) expired shortly after being interviewed, and the second point is that accession numbers of several plants were not obtained from the Bangladesh National Herbarium because of their common nature and being easily recognized.

Results and Discussion

The three FMPs between themselves were observed to use 14 plants distributed into 13 families. Considering that there

were three FMPs, the numbers of plants used by them were not much, considering most of our previous studies. The major thing about the phytotherapeutic uses of the plants by the three FMPs was the mostly uncommon therapeutic use of the plants. Thus although the plants were mostly known plants and previously reported to have been used by other FMPs within Bangladesh, the Naogaon FMPs for the most part used them for treatment of diseases other than previously described. The fourteen plants were used in mono and polyherbal formulations for treatment of liver cirrhosis, helminthiasis, fever, vomiting tendency in pregnant women, premature ejaculation, meho, diabetes, abdominal pain, waist pain, pain due to gas formation, and bone fractures.

At least three complicated diseases were treated by the FMPs, namely, liver cirrhosis, diabetes, and meho. Liver cirrhosis is a costly disorder to treat and can be caused by hepatitis B and C viruses. Viral hepatitis has become common in Bangladesh ^[22]. Diabetes cannot be cured with allopathic medicine. Although various plants are used in Bangladesh to treat diabetes, like allopathic drugs, these plants merely serve to reduce elevated blood glucose. Thus another plant is always welcome for diabetes treatment in view of its possible lesser toxicity and greater efficacy. Meho is similarly difficult to treat and is becoming a major problem in the world.

Table 1: Medicinal plants and formulations of the three FMPs of Naogaon district

Serial Number	Scientific Name (English name) Accession Number	Family Name	Local Name	Parts used	Ailments and mode of medicinal use
1	<i>Andrographis paniculata</i> (Burm.f.) (King of bitters) 43897	Acanthaceae	Kalomegh	Leaf, flower	Liver cirrhosis. Juice obtained from leaves or flowers is mixed with fruit of <i>Piper nigrum</i> , a slice of <i>Piper peepuloides</i> fruit, and dried rhizome of <i>Zingiber officinale</i> . Paste prepared from the mixture is orally taken on a daily basis. Helminthiasis. One spoonful of leaf juice is taken orally every morning.
2	<i>Achyranthes aspera</i> L. (Prickly chaff flower) 43905	Amaranthaceae	Dhan shisha	Stem	Fever. Half glass juice obtained from crushed stems is orally taken in the morning for 3-4 days. Vomiting tendency in pregnant women. Juice obtained from crushed stem is orally taken with juice obtained from crushed <i>Cynodon dactylon</i> leaves. Premature ejaculation. Juice obtained from young leaves of <i>Punica granatum</i> is mixed with stem juice of <i>Achyranthes aspera</i> and orally taken.
3	<i>Allium sativum</i> L.	Amaryllidaceae	Roshun	Clove	See <i>Paederia foetida</i> .
4	<i>Mangifera indica</i> L. (Mango) 43899	Anacardiaceae	Aam	Bark, Exudate	Meho (metabolic syndrome). Bark juice or exudates of bark is mixed with lime water (diluted solution of calcium hydroxide) and taken orally. One spoonful of juice or exudates is placed inside the mouth and 2-3 drops of lime water added and the mixture immediately swallowed. This is continued for 7 consecutive days.
5	<i>Rauwolfia serpentina</i> (L.) Benth. ex Kurz (Indian snakeroot) 43908	Apocynaceae	Sharpagandha	Whole plant, leaf	Diabetes. Every day either 200g whole plant is chewed and orally taken or dried and powdered whole plant is orally taken. This is done for a month. Abdominal pain (from any cause). Paste of leaves or whole plant and <i>Zingiber officinale</i> rhizomes is orally taken (1 spoonful every day for 2-3 days).
6	<i>Punica granatum</i> L. (Pomegranate)	Lythraceae	Dalim	Leaf	See <i>Achyranthes aspera</i> .
7	<i>Piper nigrum</i> L. (Black pepper)	Piperaceae	Kalo gol morich	Fruit	See <i>Rhynchosyilis retusa</i> .
8	<i>Cynodon dactylon</i> (L.) Pers. (Bermuda grass)	Poaceae	Durba	Leaf	See <i>Achyranthes aspera</i> .
9	<i>Paederia foetida</i> L. (Skunk vine) 43901	Rubiaceae	Gondho vadal	Leaf	Waist pain. Paste of one leaf and one clove of <i>Allium sativum</i> is taken orally each day.
10	<i>Datura metel</i> L. (Angel's Trumpet)	Solanaceae	Dhutura	Root	See <i>Rhynchosyilis retusa</i> .
11	<i>Datura stramonium</i> L. (Jimsonweed) 43898	Solanaceae	Kalo dhutura	Stem	Pain due to gas formation, bone fractures. Stems are made into a paste. Pills are prepared from the paste and then dried. One pill is taken orally after dinner each night. This alleviates pain and induces good sleep.

12	<i>Clerodendrum viscosum</i> Vent. (Glory Tree)	Verbenaceae	Veti	New leaf	Helminthiasis. 4-5 new leaves of the plant are made into a paste and the juice obtained is taken orally at least once daily in the morning on an empty stomach for two consecutive days.
13	<i>Cissus quadrangularis</i> L. (Veldt grape) 43906	Vitaceae	Harjor	Stem	Bone fracture. The stem is tied around the fracture. Pain. Stem paste is topically applied.
14	<i>Zingiber officinale</i> Roscoe	Zingiberaceae	Ada	Rhizome	See <i>Rauwolfia serpentina</i> .

Meho or meha is a difficult term to interpret. Ayurvedic practitioners have described meho as endocrinological disorders, diabetes, combination of diabetes with other disorders, and even gonorrhea [23]. Although meho is derived in Sanskrit from what appears to mean profuse watering (urination), a condition of diabetic patients, in Ayurveda diabetes is more known as madhumeha or sweet tasting urine. The leaves of *Andrographis paniculata* have previously been reported by us to be used in liver disorders and hepatitis B, but not the flowers [24]. Use of leaves to treat liver disorders and helminthiasis has also been reported [25]. However, the polyherbal formulation containing *Andrographis paniculata*, *Piper nigrum*, *Piper peepuloides*, and *Zingiber officinale* for treatment of liver cirrhosis, is to our knowledge, the first of its kind. Roots of *Achyranthes aspera* have been reported by us for treatment of pain by FMPs [26], which use and the part of the plant used is different from the presently reported uses. With the exception of *Cissus quadrangularis* to treat bone fracture, the therapeutic uses and mode of use of the other plants by the FMPs are mostly new to our knowledge. Thus these plants merit potential for scientific studies towards discovery of more efficacious therapeutic agents.

References

- Khan H. Medicinal plants in light of history: Recognized therapeutic modality. *J Evid-Based Complement Alternat Med.* 2014; 19(3):216-219.
- Rahmatullah M, Ferdausi D, Mollik MAH, Jahan R, Chowdhury MH, Haque WM. A Survey of Medicinal Plants used by Kavirajes of Chalna area, Khulna District, Bangladesh. *Afr J Tradit Complement Alternat Med.* 2010; 7(2):91-97.
- Rahmatullah M, Khatun MA, Morshed N, Neogi PK, Khan SUA, Hossan MS *et al.* A randomized survey of medicinal plants used by folk medicinal healers of Sylhet Division, Bangladesh. *Adv Nat Appl Sci.* 2010; 4(1):52-62.
- Rahmatullah M, Kabir AABT, Rahman MM, Hossan MS, Khatun Z, Khatun MA *et al.* Ethnomedicinal practices among a minority group of Christians residing in Mirzapur village of Dinajpur District, Bangladesh. *Adv Nat Appl Sci.* 2010; 4(1):45-51.
- Rahmatullah M, Momen MA, Rahman MM, Nasrin D, Hossain MS, Khatun Z *et al.* A randomized survey of medicinal plants used by folk medicinal practitioners in Daudkandi sub-district of Comilla district, Bangladesh. *Adv Nat Appl Sci.* 2010; 4(2):99-104.
- Rahmatullah M, Mollik MAH, Ahmed MN, Bhuiyan MZA, Hossain MM, Azam MNK *et al.* A survey of medicinal plants used by folk medicinal practitioners in two villages of Tangail district, Bangladesh. *Am.-Eur J Sustain Agric.* 2010; 4(3):357-362.
- Rahmatullah M, Mollik MAH, Islam MK, Islam MR, Jahan FI, Khatun Z *et al.* A survey of medicinal and functional food plants used by the folk medicinal practitioners of three villages in Sreepur Upazilla, Magura district, Bangladesh. *Am.-Eur J Sustain Agric.* 2010; 4(3):363-373.
- Rahmatullah M, Jahan R, Khatun MA, Jahan FI, Azad AK, Bashar ABMA *et al.* A pharmacological evaluation of medicinal plants used by folk medicinal practitioners of Station Purbo Para Village of Jamalpur Sadar Upazila in Jamalpur district, Bangladesh. *Am.-Eur J Sustain Agric.* 2010; 4(2):170-195.
- Rahmatullah M, Ishika T, Rahman M, Swarna A, Khan T, Monalisa MN *et al.* Plants prescribed for both preventive and therapeutic purposes by the traditional healers of the Bede community residing by the Turag River, Dhaka district. *Am.-Eur J Sustain Agric.* 2011; 5(3):325-331.
- Rahmatullah M, Azam MNK, Rahman MM, Seraj S, Mahal MJ, Mou SM *et al.* A survey of medicinal plants used by Garo and non-Garo traditional medicinal practitioners in two villages of Tangail district, Bangladesh. *Am.-Eur J Sustain Agric.* 2011; 5(3):350-357.
- Rahmatullah M, Biswas KR. Traditional medicinal practices of a Sardar healer of the Sardar (Dhangor) community of Bangladesh. *J Altern Complement Med.* 2012; 18(1):10-19.
- Rahmatullah M, Hasan A, Parvin W, Moniruzzaman M, Khatun Z, Jahan FI *et al.* Medicinal plants and formulations used by the Soren clan of the Santal tribe in Rajshahi district, Bangladesh for treatment of various ailments. *Afr J Tradit Complement Alternat Med.* 2012; 9(3):350-359.
- Rahmatullah M, Khatun Z, Hasan A, Parvin W, Moniruzzaman M, Khatun A *et al.* Survey and scientific evaluation of medicinal plants used by the Pahan and Teli tribal communities of Natore district, Bangladesh. *Afr J Tradit Complement Alternat Med.* 2012; 9(3):366-373.
- Rahmatullah M, Azam MNK, Khatun Z, Seraj S, Islam F, Rahman MA *et al.* Medicinal plants used for treatment of diabetes by the Marakh sect of the Garo tribe living in Mymensingh district, Bangladesh. *Afr J Tradit Complement Alternat Med.* 2012; 9(3):380-385.
- Rahmatullah M, Khatun Z, Barua D, Alam MU, Jahan S, Jahan R. Medicinal plants used by traditional practitioners of the Kole and Rai tribes of Bangladesh. *J Altern Complement Med.* 2013; 19(6):483-491.
- Rahmatullah M, Pk SR, Al-Imran M, Jahan R. The Khasia tribe of Sylhet district, Bangladesh, and their fast-disappearing knowledge of medicinal plants. *J Altern Complement Med.* 2013; 19(7):599-606.
- Mahmud MR, Parvin A, Anny IP, Akter F, Tarannom SR, Moury SI, Joy SK, Akter S, Chowdhury SY, Chakraborty A, Azad AK, Rahmatullah M. Home remedies of village people in six villages of Dinajpur and Rangpur Districts, Bangladesh. *World J Pharm Pharm Sci.* 2015; 4(2):63-73.
- Nahar S, Rahmatullah M. Plants, animals, birds, insects, minerals – all are medicines to a folk medicinal practitioner in Nilphamari district, Bangladesh. *World J Pharm Pharm Sci.* 2016; 5(4):2422-2439.
- Akhter J, Khatun R, Akter S, Akter S, Munni TT, Malek I, Rahmatullah M. Ethnomedicinal practices in Natore

- district, Bangladesh. *World J Pharm Pharm Sci.* 2016; 5(8):212-222.
20. Martin GJ. *Ethnobotany: a 'People and Plants' Conservation Manual.* Chapman and Hall, London, 1995, pp268.
 21. Maundu P. Methodology for collecting and sharing indigenous knowledge: a case study. *Indigenous Knowledge and Development Monitor.* 1995; 3(2):3-5.
 22. Parvin MN, Uddin R, Chowdhury SA. Hepatitis in Bangladesh: Pattern and treatment options. *J Appl Pharm Sci.* 2011; 1(6):118-121.
 23. Khan SI, Hudson-Rodd N, Saggars S, Bhuiyan MI, Bhuiya A, Karim SA, Rauyajin O. 'Semen contains vitality and heredity, not germs': seminal discourse in the AIDS era. *J Health Popul Nutr.* 2006; 24(4):426-437.
 24. Afrin M, Rukaiya U, Sharmin S, Jannat K, Akter M, Islam MT, Das PR, Rahmatullah M. Ethnomedicinal plants of three folk medicinal practitioners in two villages of Khulna district, Bangladesh. *J Chem Pharm Res.* 2015; 7(8):220-225.
 25. Rahmatullah M, Nuruzzaman M, Hossan MS, Khatun MA, Rahman MM, Jamal F, Harun-Or-Rashid M, Nasrin D, Seraj S, Jahan R. An ethnomedicinal survey of folk medicinal practitioners of Shitol Para village, Jhalokati district, Bangladesh. *Adv Nat Appl Sci.* 2010; 4(1):85-92.
 26. Sultana T, Akter MN, Papri A, Rahman MA, Shahneowaj AHM, Ashiq AR, Sultana R, Ara I, Islam MT, Das PR, Rahmatullah M. Medicinal plant knowledge of a folk medicinal practitioner of Kishoreganj district, Bangladesh. *J Chem Pharm Res.* 2015; 7(9):732-736.