



ISSN (E): 2320-3862
ISSN (P): 2394-0530
NAAS Rating 2017: 3.53
JMPS 2017; 5(2): 180-182
© 2017 JMPS
Received: 23-01-2017
Accepted: 24-02-2017

Prof. Dr. Mohammed Rahmatullah
Dean, Faculty of Life Sciences,
University of Development Alternative,
Lalmatia, Dhaka-1207, Bangladesh

Muspika Rahman Mou
Department of Pharmacy,
University of Development Alternative,
Lalmatia, Dhaka-1207, Bangladesh

Deepanker Lodh
Department of Pharmacy,
University of Development Alternative,
Lalmatia, Dhaka-1207, Bangladesh

Md. Shamim Bappy
Department of Pharmacy,
University of Development Alternative,
Lalmatia, Dhaka-1207, Bangladesh

Sabrina Irin
Department of Pharmacy,
University of Development Alternative,
Lalmatia, Dhaka-1207, Bangladesh

Md. Reazul Hasan
Department of Pharmacy,
University of Development Alternative,
Lalmatia, Dhaka-1207, Bangladesh

Taharima Jasmin
Department of Pharmacy,
University of Development Alternative,
Lalmatia, Dhaka-1207, Bangladesh

Dipankar Chandra Roy
Department of Pharmacy,
University of Development Alternative,
Lalmatia, Dhaka-1207, Bangladesh

Zubair Rahman
Department of Pharmacy,
University of Development Alternative,
Lalmatia, Dhaka-1207, Bangladesh

Tasnim Sultana
Department of Pharmacy,
University of Development Alternative,
Lalmatia, Dhaka-1207, Bangladesh

Syeda Seraj
Department of Pharmacy,
University of Development Alternative,
Lalmatia, Dhaka-1207, Bangladesh

Correspondence

Prof. Dr. Mohammed Rahmatullah
Dean, Faculty of Life Sciences,
University of Development Alternative,
Lalmatia, Dhaka-1207, Bangladesh

Some medicinal plants of the Rema-Kalenga Wildlife Sanctuary in Habiganj District, Bangladesh

Prof. Dr. Mohammed Rahmatullah, Muspika Rahman Mou, Deepanker Lodh, Md. Shamim Bappy, Sabrina Irin, Md. Reazul Hasan, Taharima Jasmin, Dipankar Chandra Roy, Zubair Rahman, Tasnim Sultana and Syeda Seraj

Abstract

Rema-Kalenga Wildlife Sanctuary is located at Chunarughat of Habiganj district, Bangladesh. The sanctuary is noted for its availability of rare floral species. An ethnomedicinal survey conducted among the local population residing in areas adjoining the Sanctuary area revealed the presence of three folk medicinal practitioners (FMPs) who used plants from inside and adjoining areas of the sanctuary to treat ailments. The FMPs practiced folk medicine essentially on a part-time basis and information on only ten medicinal plants distributed into ten families were obtained from them. However, these plants contained rare species with no known ethnomedicinal reports on them, at least from Bangladesh. It is expected that the plants not only will add to the list of medicinal plants in Bangladesh but also prove to be a rich source of scientific research and possible drug discovery.

Keywords: Ethnomedicine, folk medicine, Rema-Kalenga, Bangladesh

1. Introduction

Rema-Kalenga Wildlife Sanctuary is located at Chunarughat in Habiganj district, Bangladesh. It occupies an area of 1795.54 hectares and is among the very few undisturbed places of the country where the primary vegetation and floral species has not been disturbed. The Sanctuary is said to contain a number of rare or endangered plant species. We had been documenting the medicinal plants of Bangladesh as used by folk medicinal practitioners (FMPs) and tribal medicinal practitioners (TMPs) on a systematic basis [1-18], since such documentations has so far been largely absent in the country. FMPs and TMPs are among the ancient traditional medicinal practitioners of Bangladesh and scientists can be enriched with knowledge of their traditional phytotherapeutic practices. As such, the objective of the present study was to conduct an ethnomedicinal survey among the FMPs practicing in adjoining areas of the Rema-Kalenga Sanctuary.

2. Materials and Methods

The survey was conducted in the latter part of 2016 in three villages, which falls around the southeastern part of the Sanctuary. The three villages had three folk medicinal practitioners (FMPs), namely Mohammad Moin Uddin, Mohammad Babul Mia, and Mohammad Rafiq Mia. All three FMPs were male and practiced folk medicine on a part-time basis and used plants collected from within and outside the Sanctuary for treatment.

Prior Informed Consent was first obtained from the FMPs. They were thoroughly apprised as to the nature of our visit and consent obtained to disseminate any information both nationally and internationally. 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 [19] and Maundu [20]. 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, deposition, and obtaining accession numbers.

Voucher specimens were also deposited with the Medicinal Plant Collection Wing of the University of Development Alternative.

3. Results and Discussion

The FMPs between themselves were observed to use a total of thirteen plants in their phytotherapeutic practices. Three plants will be described in a later report and ten plants will be presented in this report. The ten plants were distributed into ten families, the families being Araceae, Asparagaceae, Asteraceae, Lauraceae, Menispermaceae, Myrsinaceae, Orchidaceae, Polygoniaceae, Polypodiaceae, and Rutaceae. The plants were used to treat ailments like jaundice, bleeding from external cuts and wounds, gastrointestinal disorders, fever, skin disorders, decreased sexual strength, jaundice, coughs, and rheumatic fever. One plant each was used as snake repellent and mosquito repellent.

The FMPs used very simple formulations. Usually, juice obtained from single plant or plant part was orally or topically administered. A single plant part may be used for treatment of single or multiple diseases. For instance, roots of *Drynaria quercifolia* were used to treat jaundice, coughs, and rheumatic fever. It was interesting that within these ten plants used by the FMPs, four were used for treatment of jaundice. Although no survey was done in the area regarding prevalence of

jaundice, the number of plants used to treat jaundice probably indicates that jaundice may be fairly prevalent in areas around the Rema-Kalenga Sanctuary. The four plants that were used to treat jaundice were *Amorphophallus bulbifer*, *Persicaria serrulata*, *Drynaria quercifolia*, and *Micromelum minutum*. With the exception of *D. quercifolia* and *M. minutum*, to our knowledge, any ethnomedicinal uses of the other two plants are reported from Bangladesh for the first time, not only to treat jaundice but to treat any disease. Also, the hepatoprotective effect of only *D. quercifolia* and has been described in the scientific literature [21], which validates the use of this plant by the FMPs to treat jaundice.

In reported ethnomedicinal uses reported from outside Bangladesh, *A. bulbifer* is used for treatment of rheumatic muscular or joint pain by the *Tripuri* and *Reang* tribes of Tripura, India [22]. Roots of the plant are used to treat severe pain by the Mog community of Tripura State, India [23]. *P. serrulata* has no reported ethnomedicinal uses. *M. minutum* has been reported as a medicinal plant from Bangladesh, but no specific ethnomedicinal uses have been reported for the plant [24]. In another study, the plant has been reported to be used against fever by tribal people in Chittagong Hill Tracts region of Bangladesh, but no mention has been made of the tribes who use the plant, nor any formulations given as to mode of use or any other particulars [25].

Table 1: Medicinal plants and formulations of the FMPs from Rema-Kalenga.

Serial Number	Scientific Name (Accession Number)	Family Name	Local Name	Parts used	Ailments and mode of medicinal use
1	<i>Amorphophallus bulbifer</i> (Roxb.) Blume. (43827)	Araceae	Dakduma	Tuber	Jaundice. Tubers are cooked and eaten.
2	<i>Sansevieria trifasciata</i> Prain	Asparagaceae	Dudhraj	Leaf	Snake repellent. Leaves are kept inside homes.
3	<i>Mikania cordata</i> (Burm.f.) B.L. Rob. (43777)	Asteraceae	Refugee lota	Leaf	To stop bleeding from external cuts and wounds. Leaf juice is topically applied.
4	<i>Litsea monopetala</i> (Roxb.) Pers. (43767)	Lauraceae	Menda	Leaf, bark	Dysentery. Leaf juice is orally taken. Mosquito repellent. Bark is burnt to create smoke, which repels mosquitoes
5	<i>Tinospora cordifolia</i> (Willd.) Miers. (43770)	Menispermaceae	Poddo guruj	Stem with leaf	Chronic fever. Juice obtained from crushed stems and leaves is orally taken.
6	<i>Ardisia colorata</i> Roxb. (43826)	Myrsinaceae	Daud	Leaf	Eczema. Leaf paste is topically applied.
7	<i>Bulbophyllum neilgherrense</i> Wight (43775)	Orchidaceae	Ek pata ek fol	Fruit	To increase sexual strength, gastric disorders, to lessen anger. Fruits are taken orally.
8	<i>Persicaria serrulata</i> (Lag.) Webb & Moq. (43766)	Polygonaceae	Bish katali	Whole plant, leaf	Jaundice. Juice obtained from crushed whole plant/leaves is orally taken.
9	<i>Drynaria quercifolia</i> (L.) J.Sm. (43768)	Polypodiaceae	Bandar mul	Root	Jaundice, cough, rheumatic fever. Root juice is orally taken.
10	<i>Micromelum minutum</i> (G. Forster) Wight & Arn. (43828)	Rutaceae	Chagol ledi	Leaf	Jaundice. Leaf juice is orally taken till cure.

5. References

- Rahmatullah M, Ferdousi 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, Hossain 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, Hossain 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.
7. Rahmatullah M, Jahan R, Khatun MA, Jahan FI, Azad AK, Bashir 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.
 8. 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.
 9. 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.
 10. 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.
 11. 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.
 12. 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.
 13. 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.
 14. 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.
 15. 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.
 16. Mahmud MR, Parvin A, Anny IP, Akter F, Tarannom SR, Moury SI *et al.* Home remedies of village people in six villages of Dinajpur and Rangpur Districts, Bangladesh. *World J Pharm Pharmaceut Sci.* 2015; 4(2):63-73.
 17. Nahar S, Rahmatullah M. Plants, animals, birds, insects, minerals – all are medicines to a folk medicinal practitioner in Nilphamari district, Bangladesh. *World J Pharm Pharmaceut Sci.* 2016; 5(4):2422-2439.
 18. Akhter J, Khatun R, Akter S, Akter S, Munni TT, Malek I *et al.* Ethnomedicinal practices in Natore district, Bangladesh. *World J Pharm Pharmaceut Sci.* 2016; 5(8):212-222.
 19. Martin GJ. *Ethnobotany: a 'People and Plants' Conservation Manual.* Chapman and Hall, London, 1995, 268.
 20. Maundu P. Methodology for collecting and sharing indigenous knowledge: a case study. *Indigenous Knowledge and Development Monitor* 1995; 3(2):3-5.
 21. Kamboj P, Kalia AN. Hepatoprotective effect of *Drynaria quercifolia* fronds hydroalcoholic extract and isolated constituent against CCl₄-induced hepatocellular damage. *Br J Pharmaceut Res.* 2013; 3(4):563-578.
 22. Das HB, Majumdar K, Datta BK, Ray D. Ethnobotanical uses of some plants by *Tripuri* and *Reang* tribes of Tripura. *Nat Prod Radiance.* 2009; 8(2):172-180.
 23. Bhowmik S, Datta BK, Mandal NC. Traditional usage of medicinal plants among the Mog community people and their chemical justification. *Acta Biologica Indica.* 2013; 2(1):361-366.
 24. Sarwar AKMG. Medicinal plant genetic resources of Bangladesh – genera represented by single species and their conservation needs. *J Med Plants Stud.* 2015; 3(2):65-74.
 25. Kawsar MH, Raihana R, Sohel MD, Nath AK, Hossain MA. Medicinal plants biodiversity and ethno-medicinal plants use by the tribal community in Chittagong Hill Tracts, Bangladesh. *Unique J Ayurvedic and Herbal Med.* 2013; 1(2):45-50.