



## Research Article

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# Folk Medicine in Bangladesh: Healing with Plants by a Practitioner in Kushtia District

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## Abstract

Folk medicine or treatment by individuals without any formal training, supervision or registration is a common form of medicinal practice in Bangladesh and is generally done with whole plants or plant parts. Folk medicinal practitioners (FMPs) are a common feature in rural Bangladesh with practically every village having one or more FMPs. The unique feature of the FMPs is their remarkable diversity in the selection of plants for treatment. Since folk medicinal practice has been going on in Bangladesh for centuries, it follows that this system of practice has to be found beneficial by the patients or otherwise it would have disappeared a long time ago. As such, the various plants used by FMPs need to be documented for they can serve as important sources of novel drug discoveries. The objective of this study was to document the plant-based remedies of a rural FMP in Kushtia district, Bangladesh. The FMP was found to use a total of 12 plants in his treatment. The plants were distributed in twelve families and were used for the treatment of rheumatic fever, pain, piles, hormone disorders in male, skin disorders, leprosy, hernia, and antidote to poisoning. The advantage with herbal medicine lies in the availability and affordability of medicinal plants. If the FMP's formulations prove to be scientifically sound, the plants can prove to be possibly a less expensive alternative to allopathic treatments. At the same time, these would create awareness and spur conservation of the plants, quite a few of which are rapidly becoming endangered in the wild.

**Keywords:** Folk medicine; Medicinal plants; Phytotherapy; Kushtia; Bangladesh

## Introduction

The connection between humans and plants definitely exist since the dawn of human beings. Not only humans (*Homo sapiens*) possibly evolved into a world teeming with plants in the African late middle Pleistocene period [1], they also from the very start had to use the plants as sources of daily diet and nutrition, and quite possibly for therapeutic purposes. That plants may have served to cure diseases in early humans is borne out by various types of fossil records [2]. There are manifold ways how ancient humans learnt the therapeutic values of plants, like trial and error, through watching the behavior of the great apes and other animal species, who instinctively partake of some plants for medicinal purposes [3], and also possibly on the basis of organoleptic properties [4]. Plants produce secondary metabolites having pharmacological activities, which can prove useful in treatment of diseases. Considering the possibly more than 250,000 species of plant that exist in the world at present, this represents a huge number of different secondary

metabolites with a huge potential for curing existing and emerging diseases.

Phytotherapy exists even in the present era in different forms and names in different parts of the world. In the Indian sub-continent countries some systems have become quite ritualized with their own definitive philosophy on causes, diagnosis and treatment of diseases. Modern or allopathic medicine has also benefitted from these traditional phytotherapeutic systems, and plants still play a major role in the discovery of new drugs. For instance, it has been reported that of the 877 new drug applications between 1981 and 2002, 49% were associated with plants [5]. Folk medicine, otherwise recognized as medicinal practice by non-registered and non-formally trained practitioners, is one of the ancient medicinal systems practiced throughout the world. In Bangladesh, folk medicinal practitioners (FMPs) possibly form the largest group of traditional medicinal practitioners. They mainly use plants for

treatment (phytotherapy), although the extremely diverse sort of practice by the FMPs may occasionally include zootherapy and use of amulets and incantations. Till fairly recent periods, most FMPs if not all, were decried by allopathic practitioners as frauds or quacks. However, in recent times, the focus has shifted on FMPs and their capabilities to form the first tier of treatment givers, more so in underdeveloped countries lacking adequate doctors, medical facilities, transport systems, and a literate population. Our previous studies have shown that FMPs can possess a remarkable and diverse knowledge of medicinal plants [6-27]. To gain more knowledge about folk medicinal practice, the objective of the present study was to document the medicinal plants used by a FMP in a village of Kushtia district, Bangladesh. Such studies, although gaining more attention, are still inadequate considering the quite large numbers of practicing FMPs within the country.

## Methods

The FMP was named Abdul Jalil, male, with age not disclosed. He practiced in the villages of Taragonia and Mothurapur in Daulatpur Upazila (sub-district) in Kushtia district, Bangladesh. The sub-district had a total number of 246 villages with an area of 468.76 square kilometer and a population density of 946 per square kilometer. Kushtia district is located in between 23°42' and 24°12' north latitudes and in between 88°42' and 89°22' east

**Table 1:**

Serial Number	Scientific Name	Family Name	Local Name	Parts Used	Ailments Treated
1	<i>Justica adhatoda</i> L.	Acanthaceae	Bashok, Har-Bakosh	Leaf	Rheumatic fever, joint pain and chronic pain in throat. Three to five leaves of <i>J. adhatoda</i> is taken orally in the morning for three consecutive days on an empty stomach.
2	<i>Allium sativum</i> L.	Amaryllidaceae	Roshun	Clove	See <i>Vitex negundo</i> .
3	<i>Chromolaena odorata</i> (L.) R.M. King & H.Rob	Asteraceae	Bon Pat	Whole plant	Piles. The whole plant with stem is macerated and is taken orally twice daily in tablet form.
4	<i>Brassica nigra</i> (L.) K.Koch	Brassicaceae	Sharisha	Oil	See <i>Vitex negundo</i> .
5	<i>Baliospermum montanum</i> (Willd.) Müll.Arg.	Euphorbiaceae	Prithula	Root, Bark	Pain. The root and bark of the <i>B. montanum</i> is macerated with the sap of <i>V. nilotica</i> to make ointment, which is topically applied to painful areas.
6	<i>Vachellia nilotica</i> (L.) P.J.H. Hurter & Mabb.	Fabaceae	Babla	Young top, sap	Hormone disorder (male). Ten to twelve young tops of <i>V. nilotica</i> are macerated and are taken once daily orally. See <i>Baliospermum montanum</i> .
7	<i>Vitex negundo</i> L.	Lamiaceae	Nishinda	Leaf, Stem	Skin disorders. The leaves and thin stems of <i>V. negundo</i> , equal amount of the leaves of <i>A. indica</i> , half amount cloves of <i>A. sativum</i> and seeds of <i>B. nigra</i> (black mustard) are macerated together and then cooked with black mustard oil. A few drops of <i>P. rhoeas</i> latex are then added to the cooked item. The mixture is applied topically for 15 to 20 days twice daily.
8	<i>Litsea monopetala</i> (Roxb.) Pers.	Lauraceae	Akhormali	Sap	Leprosy. The sap of <i>L. monopetala</i> is applied topically on the infected place(s) of the patient.
9	<i>Azadirachta indica</i> A. Juss.	Meliaceae	Neem	Leaf	See <i>Vitex negundo</i> .
10	<i>Papaver rhoeas</i> L.	Papaveraceae	Afeem	Latex	Antidote to poisoning. Small amount of <i>P. rhoeas</i> latex is taken. See <i>Vitex negundo</i> .
11	<i>Eleusine indica</i> (L.) Gaertn.	Poaceae	Chapra ghash	Leaf	Hernia. Leaves are macerated with double amount of dried and powdered rhizomes of <i>Zingiber officinale</i> . This mixture is taken orally once daily.
12	<i>Zingiber officinale</i> Roscoe	Zingiberaceae	Ada	Rhizome	See <i>Eleusine indica</i> .

longitudes with an area of 1621.15 sq km. Prior informed consent was initially obtained from the FMP. The FMP was informed the reason for 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 language being the mother tongue of both FMP, villagers and the interviewers. The interviews were conducted 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 to areas, where he collected medicinal plants for therapeutic purposes. The FMP showed the interviewers a number of plants and described their therapeutic uses. All plant specimens shown by him were collected on the spot, pressed, dried and brought back to Dhaka for identification by a competent botanist. Voucher specimens were deposited with the Medicinal Plant Collection Wing of the University of Development Alternative.

## Results and Discussion

The FMP was observed to use a total of 12 plants distributed into 12 families for treatment of various diseases. The plants were used for the treatment of rheumatic fever, pain, piles, and hormonal disorders in male, skin disorders, leprosy, hernia, and antidote to poisoning. The results are shown in (Table 1).

*Justicia adhatoda* is normally used in Bangladesh for respiratory disorders in folk medicinal systems [30]. Leaves are taken as tea or taken whole. So the use of leaves of this plant for treatment of rheumatic fever, joint pain and chronic pain in throat is not a common usage. A recent review on the pharmacological activities of the plant also do not mention about any analgesic properties of any part of the plant [31]. As such, the use of this plant by the FMP to treat pain opens up new possibilities of both acute and chronic pain treatment. This is important, because over the counter drugs for pain treatment like aspirin or paracetamol on prolonged taking or over-dosage leads to gastric ulceration and hepatotoxicity, respectively. The FMP used whole plant of *Chromolaena odorata* for treatment of piles. Treatment of piles by leaf extract has been reported from Nigeria [32]. Increased fiber intake is considered by doctors as an indirect treatment for piles (hemorrhoids) as such intake can soften stools [33]. The plant can be a source for fiber; however, ethanol extract of the plant has been shown to cause hepatotoxicity in Wistar rats [34]. The roots of *Baliospermum montanum* and sap of *Vachellia nilotica* were used by the FMP to alleviate pain. Analgesic activity of the roots of *B. montanum* has been reported [35]. The use of *V. nilotica*, on the other hand, seems to be the first report of its kind.

The leaves of *Vitex negundo* were used by the FMP for treating skin disorders. This use is supported by the Ayurvedic and Unani Pharmacopoeia of India [36]. The FMP furthermore used leaves of *Azadirachta indica*, half amount cloves of *Allium sativum* and seeds of *Brassica nigra* with *V. negundo*. *A. indica* and *A. sativum* are scientifically proven plants against various skin disorders [37]. The oil from *B. nigra* may have an enhancing effect on the absorption of phytochemicals in the skin. The Garo tribals use the plant *Litsea monopetala* for treatment of diabetes, diarrhea, dysentery, and arthritis [38]. The present FMP used the plant to treat leprosy. In Parsa district, Nepal, the plant is also used to treat diarrhea and dysentery [39]. Treatment of leprosy with this plant appears to be a new therapeutic way to use this plant. People affected by leprosy are looked down in Bangladesh and if the FMP's treatment can be scientifically validated, it may offer an easy method for curing this disease. The same applies to *Papaver rhoeas* and *Eleusine indica*, respectively used by the FMP as an antidote to poison and for treatment of hernia. Both treatment appears to be novel and described for the first time to our knowledge. *P. rhoeas* is used in North Khorasan Province of Iran as a sedative [40]. In Central Uganda various medicinal plants are used to treat hernia. The frequently used plants include *Cyphostemma adenocaula*, *Shirakiopsis elliptica*, *Citrullus colocynthis*, and *Ocimum americanum* [41].

## Conclusion

Overall, our findings suggest that the phytotherapeutic methods of the present FMP were quite novel. These distinctive therapeutic uses of plants by various FMPs make this profession interesting and offer scientists the opportunity to conduct research on new plant species in human being's perpetual quest for new and more effective drugs.

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## Conflict of Interest

The authors declare that there are no conflicts of interest.

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