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Using plants as medicines – practices of a female folk medicinal practitioner in Hatirdiya village, Bangladesh

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Abstract
Folk medicinal practices are the most common form of traditional medicinal practices in Bangladesh. Since folk medicinal practitioners (FMPs) do not need any formal training for their practices, anybody can start practicing as a FMP. Consequently, their practice methods and ingredients used for disease treatment are diverse. It is important to document such practices for a number of FMPs in Bangladesh have a large number of patients; among them are the literate and the wealthy, which groups for the most part shun FMPs. The objective of this study was to document the practices of a female FMP in Hatirdiya village in Bangladesh, who used plants in her formulations for disease treatment. The FMP was observed to use a total of 8 plants distributed into 6 families in her treatment. The plants were used to treat diabetes, cancer, cuts and wounds, pain, skin disorders, gastrointestinal complaints, epilepsy, fever, and genitourinary disorders. Scientific validation of the phytotherapeutic uses can provide affordable and locally available means for treatment of both common and several complicated ailments.

Keywords: Folk medicine, plants, Hatirdiya, Bangladesh

Introduction
Folk medicine is a popular term for describing the commonly used traditional medicines in a country [1]. Folk medicinal practitioners (FMPs) can be said to form the majority among various methods of traditional medicinal practitioners in Bangladesh. Since FMPs in Bangladesh do not need formal training or degrees, anybody can start folk medicine practice anywhere in the country. As such, although in theory the practice is open to quackery, in reality it is seldom so, for quacks are easily identified, and after one or two cases of maltreatment are driven away from their area of practice or handed over to legal authorities. Folk medicine exists even in the developed countries of the world [2].
Phytotherapy forms the *modus operandi* of most FMPs [3]. Most plants used for treatment are usually collected from the wild [4]. In Bangladesh, FMPs can use other items like animal products and minerals in conjunction with plants or by themselves alone [5, 6]. But even when using plants, a large extent of diversity exists between FMPs of different areas of Bangladesh or even the same village as to the selection of a plant for treatment of a given disease. It is therefore important to document the practices of as many FMPs as possible irrespective of their place of practice and the number of diseases treated. As such, we had been documenting home remedies along with folk and tribal medicinal remedies for a number of years [7-25]. The objective of the present study was to document the folk medicinal practices of a female FMP in Hatirdiya village in Narsinghdi district, Bangladesh.

Materials and Methods
Information was collected from Anwara Begum, a FMP practicing in Hatirdiya village, Narsinghdi district, Bangladesh. Interviews were conducted with the help of a semi-structured questionnaire and the guided field-walk method as described by Martin [26] and Maundu [27]. In this method, the FMP took the interviewers to locations from where she collected her medicinal plants, pointed out the plants, and described their uses along with providing the local names. All information was cross-checked with the FMP in later sessions. Plant specimens were collected, pressed and dried in the field and later identified at the Bangladesh National Herbarium in Dhaka. Informed Consent as to dissemination of any information

provided by the FMP including mentioning the FMP's name was obtained followed by interviews conducted in Bengali. Plant specimens were deposited with the Medicinal Plant Collection Wing of the University of Development Alternative.

Table 1: Medicinal plants used and disease(s) treated by the FMP of Hatirdiya village, Bangladesh.

Serial Number	Scientific Name	Family Name	Local Name	Parts used	Ailments treated
1	*Catharanthus roseus* G. Don	Apocynaceae	Nayan tara	Leaf, flower	Diabetes, cancer.
2	*Eclipta prostrata* L.	Asteraceae	Kalahuta, Kalokeshi	Leaf, root, whole plant	Bleeding from external cuts and wounds, skin infections, toothache.
3	*Ricinus communis* L.	Euphorbiaceae	Venna	Leaf, seed oil	Inflammation.
4	*Mimosa pudica* L.	Fabaceae	Lojjaboti	Root, leaf, sap	Weakness, to expedite delivery, skin disorders, piles.
5	*Cinnamomum camphora* (L.) J. Presl	Lauraceae	Korpur	Leaf	Constipation, paralysis, epilepsy, spasms.
6	*Cinnamomum verum* J. Presl	Lauraceae	Daruchini	Inner and outer bark, leaf	Digestive disorder, diarrhea, flatulence, nausea.
7	*Litsea glutinosa* (Lour.) C.B. Robinson	Lauraceae	Menda	Leaf, root bark	Fever, swelling, diarrhea.
8	*Santalum album* L.	Santalaceae	Shet-chandan	Wood	Genitourinary disorders, fever, sunstroke, digestive problems.

Results and Discussion

The FMP was observed to use a total of 8 plants distributed into 6 families in her treatment. The plants were used to treat diabetes, cancer, cuts and wounds, pain, skin disorders, gastrointestinal complaints, epilepsy, fever, and genitourinary disorders. The results are shown in Table 1. Although it has never been ascertained as to whether male or female FMPs are more knowledgeable in Bangladesh, our general impression during the course of our various surveys have been that female FMPs may use less plants but are more knowledgeable about the collection and uses of plant(s). In fact, it is a common sight in rural areas of Bangladesh to see elderly women going out very early in the morning and return several hours later with a collection of medicinal plants, which are then dried, stored and dispensed as needed. Most elderly women in Bangladesh have at least some knowledge on phytotherapeutic uses of plants.

Catharanthus roseus, which was used by the FMP for treatment of cancer and diabetes, is known for its anti-cancer phytochemical constituents, namely vincristine and vinblastine [28]. The two alkaloids are used for the treatment of various types of cancer such as Hodgkin's disease, breast cancer, skin cancer and lymphoblastic leukemia. Ethanolic extract of the plant has insulin mimetic effect [29], and so can be useful in diabetes treatment. It is a matter of surprise that a rural FMP with no formal training in medical sciences is treating cancer and diabetes, two very complicated disorders, with a plant which scientists are finding beneficial in the treatment of both disorders. A question may arise, as to how the FMP diagnosed the diseases. Usually diabetes is diagnosed by FMPs of Bangladesh through the sweet smell or taste of urine, and cancer is diagnosed by FMPs when a person progressively weakens without any known cause. But it seems from the FMP's answer to our question as to how she diagnosed these two diseases she relied on allopathic doctor's report for cancer and diabetes. In other words, the FMP treated the patient after the patient has gone and been checked by an allopathic doctor in a modern diagnostic laboratory and been diagnosed. The FMP had no idea about Type 1 and Type 2 diabetes or the various forms of cancer. Nevertheless, it is an interesting phenomenon to observe that these two complicated diseases were being treated by an illiterate FMP with a plant containing the right phytochemicals for treatment of cancer and diabetes.

Antiinflammatory activities of *Eclipta prostrata* ethanolic extract have been reported. The extract was found to contain wedelolactone as the main ingredient [30]. Among other uses, the FMP used the plant for skin infections. *Ricinus communis* was used by the FMP for treatment of inflammation. Antiinflammatory triterpenes have been reported from the plant [31]. *Mimosa pudica* was used by the FMP to treat weakness, to expedite delivery, skin disorders, and piles. Ayurvedic uses of the plant include use for treatment of leprosy, leucoderma, fatigue, vaginal and uterine complaints, and bleeding piles [32].

Although not all the plants have been analyzed as to their scientific validations of their traditional uses, the above discussion clearly shows that the phytotherapeutic treatment of the FMP merits further research towards discovery of lead compounds or novel drugs from the plants. Thus although a FMP may use only a limited number of plants in his or her phytotherapeutic treatments, still those treatment methods need to be documented so as any opportunity is not lost for new drug discovery through loss of traditional knowledge.

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