



Research Article

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Tribal Medicinal Plants: Documentation of Medicinal Plants Used by a Mogh Tribal Healer in Bandarban District, Bangladesh

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Abstract

Chittagong Hill Tracts region in the southeast portion of Bangladesh is considered a hotspot for medicinal plants. This hilly forested region is inhabited by a number of tribal communities, both large and small, and who still rely on their age-old traditional medicinal practitioners (TMPs) and their mainly phytotherapeutic practices for treatment and cure of various diseases. Since many important allopathic drugs have been discovered through documentation and studies of medicinal plants used by indigenous and tribal people, it was the objective of the present study to document the medicinal plants used by a Mogh (also called Marma) TMP, who claimed his original arrival in Bangladesh from Myanmar several decades ago. Information on ten plants was obtained from the TMP. The plants were distributed into ten families. The TMP used the plants to treat various disorders like tumor, gastrointestinal disorders, paralysis, pain, fever, convulsions, leucorrhoea, and antidote to poisoning and as a muscle relaxant. Tumor, paralysis and convulsions (the latter may be due to epilepsy) are serious disorders. Gastrointestinal disorders can be chronic in Bangladesh and so needs effective treatment, which is also affordable. The medicinal plants used by the TMP merit scientific attention because further research can lead to discovery of lead compounds and new drugs.

Keywords: Mogh; Tribal healer; Medicinal plants; Chittagong hill tracts; Phytotherapy

Introduction

Plants have possibly been used as drugs by human beings since their very advent. For one, plants are plentiful and were easily available to early hominids; they may have discovered the therapeutic efficacy of plants through trial and error or through watching the behavior of the great apes and monkeys. For instance, wild chimpanzees in Uganda have been reported to ingest plants with bioactive properties including effectiveness against skin infections and intestinal parasites [1]. The same phenomenon has been observed with woolly spider monkeys inhabiting Intervales State Park in Brazil [2]. Many phytochemicals are currently being used as drugs in modern medicine and others are waiting for approval [3]. Some of these phytochemicals are taxol, vinblastine, vincristine, quinine, artemisinin, curcumin, silibinin, ellagic acid, and withaferin A. Traditional medicines can be utilized in the

discovery of allopathic drugs. In one study, out of 122 modern drugs, 80% were found to be related to folk medicine and these compounds originated from 94 plant species [4]. However, to learn from traditional medicinal systems one has to visit practitioners of those systems for there are many variants of traditional medicinal systems in various countries. Even in a small country (in area) like Bangladesh, a number of forms of traditional medicinal systems exist, the three most predominant ones being Ayurveda, Unani and homeopathy. Two other forms of traditional medicinal systems also exist in Bangladesh, namely folk medicine and tribal medicine. Although both medicinal systems use plants as their main sources of therapy, selection of plants for any given disease varies widely between individual folk medicinal practitioners (FMPs) and individual tribal medicinal practitioners (TMPs). It is therefore

important to document the practices of as many FMPs and TMPs as possible, because neither FMPs nor TMPs follow any fixed text books or manuals and do not need any formal training to practice.

Documentation of tribal medicinal practices requires ethnomedicinal survey of TMPs. The same applies to FMPs. Such surveys can not only lead to new drug discoveries, but also aids in the documentation and conservation of medicinal plants. We had been conducting such surveys for a number of years [5-26]. Although work has been done among various tribes of Bangladesh, much still remains to be completed. The Moghs (also known as Marmas) are the second largest tribal community inhabiting various areas of three districts of the Chittagong Hill Tracts (CHT) region in the southeast part of Bangladesh. They reside mainly in hilly forested parts of Bandarban, Khagrachari and Rangamati districts. They are descendants of the Arakanese people who lived in the Arakan region of neighboring Myanmar and settled in Tripura State of India and CHT possibly in the 16th century. The objective of the present survey was to document the phytotherapeutic practices of a Mogh TMP.

Methods

The Mogh tribal healer named Ong Thoai Ching practiced among the Mogh tribal community residing in Bandarban town of Bandarban district and adjoining areas, Bangladesh. Bandarban district is located in between in between 21°11' and 22°22' north latitudes and in between 92°04' and 92°41' east longitudes with an area of 4479.03 sq km. The TMP was male, around 50 years of age (estimated, he did not mention his age) and practicing by his own admission for over 20 years. The TMP claimed to have arrived

in Bangladesh from Myanmar about 30 years ago and decided to settle on the outskirts of Bandarban town where it appeared he was quite well known among both Marma (Mogh) and Bawm tribal communities. Contact was initiated with the TMP through three Mogh and one Bawm community member known to one of the authors (AH). Prior informed consent was initially obtained from the TMP. The TMP was informed as to the nature of our visit and consent obtained to disseminate any information provided including their names both nationally and internationally. Actual interviews were conducted in the Bengali language, which was spoken fluently by the TMP (however with a heavy accent) 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 [27] and Maundu [28]. In this method the TMP took the interviewers to his home garden, where he cultivated a substantial number of medicinal plants for therapeutic purposes. The TMP 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 TMP showed the authors ten plants, which he used frequently. The plants were distributed into ten families. The TMP used the plants to treat various disorders like tumor, gastrointestinal disorders, paralysis, pain, fever, convulsions, leucorrhea, and antidote to poisoning and as a muscle relaxant. The results are shown in Table 1.

Table 1: Plants and formulations of the Mogh TMP.

Serial Number	Scientific Name	Family Name	Local Name	Parts Used	Ailments Treated
1	<i>Colocasia esculenta</i> (L.) Schott	Araceae	Kochu	Tuber	Heals tumor. Mixture of tuber of <i>Colocasia esculenta</i> and ripe fruit of <i>Musa sapientum</i> (wild variety) is orally taken.
2	<i>Diospyros peregrina</i> (Gaertn.) Gurke	Ebenaceae	Choto Gab	Root	Abdominal pain, diarrhea. Root of the plant is macerated and orally taken with rice washed water.
3	<i>Bauhinia purpurea</i> L.	Fabaceae	Moha kanchon	Leaf	Stimulant, increasing strength. Leaves of the plant are orally taken as leafy vegetable.
4	<i>Cissampelos hexandra</i> Roxb.	Menispermaceae	Tongrao	Whole plant	Relief from acidity, abdominal pain. Juice obtained from crushed whole plant is taken orally.
5	<i>Moringa oleifera</i> Lam.	Moringaceae	Sajna	Leaf	Paralysis. Leaves of <i>Moringa oleifera</i> are orally taken as vegetable; fried leaves are also orally taken. Leaves of <i>Moringa oleifera</i> and fruits of <i>Piper nigrum</i> are macerated together to obtain juice. The juice is orally taken 3-4 times per day. Alternatively, the juice is made into chutney (sauce) and orally taken.
6	<i>Musa sapientum</i> L.	Musaceae	Kola	Ripe fruit	See <i>Colocasia esculenta</i> .
7	<i>Piper nigrum</i> L.	Piperaceae	Golmorich	Fruit	See <i>Moringa oleifera</i> .
8	<i>Prunus amygdalus</i> Batsch.	Rosaceae	Badam	Root, Bark	Muscle relaxant, fever. Juice obtained from root is rubbed as muscle relaxant. Juice is orally taken to cure fever. Waist pain, leucorrhea, and convulsion. Bark is boiled in water and the water is orally taken.

9	<i>Mitragyna parvifolia</i> (Roxb.) Korth	Rubiaceae	Thei	Root	Fever, body ache. Roots are boiled in water to obtain juice. For excessive fever the juice is orally taken and for body ache juice is rubbed over the whole body.
10	<i>Datura metel</i> L.	Solanaceae	Kalo dhutura	Seed	Neutralizing poison. Seeds are warmed and orally taken.

Of the various plants, three plants namely *Cissampelos hexandra*, *Prunus amygdalus*, and *Mitragyna parvifolia* appears to be plants rarely used in ethnomedical practices of Bangladesh. *C. hexandra* is a synonym of *Stephania hernandiifolia* (Willd.) Walp. Tribals in Jalpaiguri district, West Bengal, India use the roots of the plant to treat urinary diseases [29]; the TMP used the plant for acidity and abdominal pain. Fruits of *P. amygdalus* are considered in Unani medicine to be memory enhancer and nervine stimulant [30]; the TMP used root and bark as muscle relaxant and to treat fever. The plant is not a common plant in Bangladesh; the TMP might have grown the plant especially in his home garden. The Tharu tribe of India use leaves of *M. parvifolia* in hemorrhoids, colic, flatulence, dyspepsia, myalgia, fever, skin diseases, wounds and ulcers; bark and roots in fever, colic, muscular pains, burning sensations in the stomach, coughs, edema and blood disorders [31]. The TMP used the roots of this plant for fever and body ache. Anti-inflammatory and anti-nociceptive properties of ethanolic extract of dried leaves of the plant have been reported [32].

Interestingly, the tubers of *Colocasia esculenta* were claimed by the TMP to heal tumors. A tumor was defined by the TMP to be abnormal swelling without pain in the external surface of the body. Anti-metastatic effects and anti-cancer effects on colonic adenocarcinoma cells in vitro have been reported [33, 34]. Leaves of *Moringa oleifera* were used by the TMP to treat paralysis. Hemispheric cerebral ischemia due to the occlusion of middle cerebral artery develops contralateral paralysis and sensory loss, leaf extract of the plant has been reported to give cerebroprotective effect [35].

Conclusion

Although the number of plants provided by the TMP was limited, the plants appear to merit considerable potential for further scientific research as to their pharmacological activities and phytochemical(s) identification, which in turn can lead to discovery of lead compounds and efficacious drugs.

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Conflict of Interest

The authors declare that there are no conflicts of interest.

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