Ethnomedicinal wisdom of a Tonchongya tribal healer practicing in Rangamati district, Bangladesh

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ABSTRACT

Bangladesh has over a hundred indigenous communities or tribal groups. A number of tribal communities are present in the southeastern portion of Bangladesh, which is known as the Chittagong Hill Tracts region. These communities include the Chaks, Chakmas, Marmas, Murongs, Rakhains, Tripuras, Pankhos, Bawms, Tonchongyas, and the Mros, to name only a few. Although these tribal communities and their various clans have their own tribal medicinal practitioners, sometimes tribal medicinal practitioners from a particular tribe may practice among communities of a different tribe. The objective of this study was to document the medicinal plants and formulations of a Tonchongya tribal medicinal practitioner who practiced among communities of Chakma and Pankho tribal groups in Bilaichari sub-district of Rangamati district, which falls within the Chittagong Hill Tracts region. The practitioner was observed to use a total of 24 plants in his formulations, which plant species were distributed into 14 families. The various plant species were used for treatment of ailments like respiratory disorders, urinary problems, snake or insect bite, excessive bleeding during menstruation, gastrointestinal disorders, high blood pressure, abscess, pain, measles, allergy, cataract, rheumatic fever, and chicken pox. The forests of Chittagong Hill Tracts region are yet to be thoroughly explored regarding the plant species present in the region, and the Tonchongya healer used a number of plants not used by the mainstream folk medicinal practitioners of Bangladesh. The plant species used by the Tonchongya healer deserves scientific attention with regard to their potential for new drug discoveries from these plants.

Key words: Medicinal plants, tribal medicine, Tonchongya, Bangladesh

Introduction

More than a hundred indigenous communities or tribal groups are present in Bangladesh. Many of these groups with their clans and sub-clans are present in the southeastern portion of the country known as the Chittagong Hill Tracts region. The region is a hilly forested area and is considered a hot spot within the country regarding variety of plant species found there, many of them being considered as medicinal plants, and used as such by the tribal communities. The various tribes inhabiting the region include the Chaks, Chakmas, Marmas, Murongs, Rakhains, Tripuras, Pankhos, Bawms, Tonchongyas, and the Mros, to name only a few. Although each of these tribal groups have their own tribal medicinal practitioners (TMPs) and the TMPs have their own medicinal plant formulations, such use of medicinal plants remain largely undocumented as of present. Observations of indigenous medicinal practices and especially their use of medicinal plants have led to discovery of many important modern drugs (Balick and Cox, 1996; Cotton, 1996; Gilani and Rahman, 2005). It is therefore always of interest to document the use of medicinal plants or other items used by these indigenous communities and documenting them in details, so that proper scientific studies may be conducted on them.

Medicinal plants, in any country, form a valuable resource. Not only such plants may possess among the various phytochemicals present within any given plant, valuable drugs to combat any old or emerging disease(s), but also form a cheap source of treatment and so save a country and its inhabitants from costly health-care. The recognition that any given plant species is a valuable medicinal plant also spurs conservation effort on the plant species concerned. Towards building up a comprehensive data base of the medicinal plants of Bangladesh, we had been conducting ethnomedicinal surveys among various mainstream traditional medicinal practitioners (particularly folk medicinal practitioners) and TMPs over the last few years (Nawaz et al., 2009; Rahmatullah et al., 2009a-c; Chowdhury et al., 2010; Hasan et al., 2010; Hossan et al., 2010; Mollik et al., 2010a,b; Rahmatullah et al., 2010a-g; Akber et al., 2011; Biswas et al., 2011a-c; Haque et al., 2011; Islam et al., 2011; Jahan et al., 2011; Rahmatullah et al., 2011a,b; Sarker et al., 2011; Shaheen et al., 2011; Das et al., 2012; Hasan et al., 2012; Hossan et al., 2012; Khan et al., 2012; Rahmatullah et al., 2012a-d; Sarker et al., 2012). The objective of this present survey was to document the ethnomedicinal practices of a Tonchongya tribal healer, who very unusually, practiced among Chakma and Pankho tribal communities in Bilaichari sub-
district, which falls within Rangamati district of Bangladesh. Notably, Rangamati district is within the Chittagong Hill Tracts. The Tonchongyas are a separate tribal community and have their own tribal healers. However, this TMP mainly practiced in the town of Rangamati, and his patients, according to him, came mostly from the Chakma and Pankho communities residing in the town of Rangamati.

Materials and Methods

Informed consent was initially obtained from the TMP, Shompun Tonchongya, who was 79 years in age, and Buddhist by religion. The TMP practiced among the Chakma and Pankho communities who reside in Bilaichari sub-district of Rangamati, but his main practice center was the town of Rangamati. The town has a number of tribal community members in residence, and the patients of the TMP, according to him, came usually from the Chakma and the Pankho tribal communities, the Chakma community being the largest tribal group residing in Rangamati. The TMP was apprised of the nature of our visit and consent obtained to disseminate any information obtained both nationally and internationally. Rangamati town also has a large group of mainstream Bengali-speaking residents, and the Kaviraj could speak fluent Bengali, which was also the language of the interviewers.

Interviews were conducted with the help of a semi-structured questionnaire and the guided field-walk method of Martin (1995) and Maundu (1995). In this method, the TMP took the interviewers on guided field-walks through areas from where he collected his medicinal plants, pointed out the plants, and described their uses. Plant specimens were collected on the spot, photographed, and dried. Following drying, the specimens were brought to Dhaka to be identified by Mr. Manjur-Ul-Kadir Mia, ex-Curator and Principal Scientific Officer of the Bangladesh National Herbarium. Voucher specimens were deposited with the Medicinal Plant Collection Wing of the University of Development Alternative.

Results and Discussion

The Tonchongya TMP was observed to use a total of 24 plant species in his treatment of various ailments. These plant species were distributed into 14 families. The various ailments treated included respiratory disorders, urinary problems, snake or insect bite, excessive bleeding during menstruation, gastrointestinal disorders, high blood pressure, abscess, pain, measles, allergy, cataract, rheumatic fever, and chicken pox. One plant species, namely *Vernonia cinerea*, was used for treatment of patients, who believed or the TMP diagnosed as being possessed by ‘genies’ or ‘ghosts’. The results are shown in Table 1.

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<th>Table 1: Medicinal plants and formulations of the Tonchongya healer of Rangamati district, Bangladesh.</th>
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The formulations of the Tonchongya healer were quite simple. Usually one plant was used for treatment of a single ailment, like the use of *Acorus calamus* for treatment of asthma. However, sometimes the TMP used the same plant species to treat more than one ailment, like use of *Ocimum basilicum* for treatment of both asthma as well as refusal of an infant to take milk from the nursing mother. In most cases, juice of a particular plant part was obtained by crushing the plant part followed by topical or oral administration of the juice. In some cases, a plant part was directly administered, like the oral administration of seeds of *Cassia fistula* with milk for treatment of constipation in children. An unusual feature of the TMP was the use of iron rod to heat or warm juice obtained from various plant parts prior to administration. For instance, leaves of a *Combretum* species were touched with a red-hot iron rod prior to boiling the leaves followed by oral administration of the boiled leaves. For treatment of asthma, juice obtained from crushed leaves of *Ocimum basilicum* were heated with a
red-hot iron rod followed by oral administration of the juice. It is possible that the hotness of the iron piece was utilized to render the preparation aseptic. On the other hand, it is quite possible that insertion of a heated iron piece within the plant juice may lead to formation of complexes with different phytochemicals present within the juice, and these herbo-metallic complexes were the real agents for cure. It is to be noted that many plants contain gallic acid as a constituent, and iron-gallic acid complex formation has been reported (Rajendran et al., 2012).

Despite the belief in genies or ghosts, the use of a number of plants by the TMP appears to be remarkably justified considering the various ethnomedical and scientific reports on the uses and pharmacological properties of those plant species. *Acorus calamus* was used by the TMP for treatment of asthma; various constituents of the plant like phenyl propanoids, sesquiterpenes, monoterpenes, xanthone glycosides, flavones, lignans, and steroids possess properties, which include anti-convulsant and smooth muscle relaxant properties and which properties justifies the use of the plant for treatment of asthma (Divya et al., 2011). Traditional uses of *Achyranthes aspera* for treatment of strangury has been reported (Krishnaveni and Thakur, 2006); the TMP used the plant for treatment of urination difficulties and passing of blood during urination. The use of *Aerva sanguinolenta* for treatment of snake bite by the Tonchongya TMP is also practiced by traditional medicinal practitioners in Sri Lanka. *Amaranthus spinosus* was used by the TMP for treatment of excessive bleeding during menstruation; in Indian ethnomedicinal systems, the seeds of the plant are used for treatment of internal bleeding and excessive menstruation, while the leaves of the plant are used for colic menorrhagia (Baral et al., 2011).

*Holarrhena antisydenterica* was used by the TMP to treat dysentery; the ancient Indian traditional system of medicine known as Ayurveda uses an Ayurvedic formulation known as Kutajghan Vati containing this plant for treatment of dysentery (Lather et al., 2010). *Rauvolfia serpentina*, used by the TMP to treat high blood pressure has long been established in the scientific literature as an effective treatment for this disorder (Vakil, 1955). *Chromolaena odorata* was used by the TMP for treatment of abscess with pain; notably, analgesic and anti-inflammatory activities of flavonoid fractions of the plant has been shown (Owoyele et al., 2008).

Ethnomedicinal uses of a particular plant species may be the same or vary among ethnic groups of various regions of the world. *Ricinus communis* was used by the Tonchongya TMP to treat blood dysentery. Some ethnic groups of India use the plant as an anti-inflammatory and analgesic agent (Anilkumar, 2010). The Oromo ethnic group in southwestern Ethiopia uses the plant to treat rabies (Yineger et al., 2008). The local community of Jalalpur Jattan in Punjab, Pakistan uses the plant for treatment of constipation, and stomach and bowel problems (Hussain et al., 2010). The Kalanguya tribe in Tinoc, Ifugao, Luzon, Philippines use the same plant for treatment of scabies (Balangcod and Balangcod, 2011). *Canavalia gladiata*, used by the Tonchongya TMP for treatment of measles in children is used by the Kanikkar tribal group in Tirunelveli district in Tamil Nadu, India for treatment of pain occurring in external piles (Mohan et al., 2008). *Cassia alata*, used by the TMP for treatment of skin infections, has ethnomedicinal uses in Thailand as a laxative and for treatment of fungal skin diseases (Gritsanapan, 2010). The Kalanguya tribe in the Philippines uses the plant both for treatment of scabies (leaves) and for treatment of helmintic infections (seeds) (Balangcod and Balangcod, 2011). Cassia fistula was used by the TMP for treatment of constipation in children; such ethnomedicinal uses have been reported for in Iran. Moreover, the laxative effect of the plant has been established for pediatric functional constipation (Mozaffarpour et al., 2012).

Folklore herbalists and the Tripuri tribe of India use the rhizomes of *Curculigo recurvata* on boils and to stop bleeding from external cuts and wounds (Majumdar and Datta, 2007); the Tonchongya TMP used the roots for treatment of allergy. *Ocimum basilicum* was used by the TMP to treat asthma; relaxant effects of the plant on tracheal chains has been reported (Boskabady et al., 2005). The plant is also used by the Mbo community of Nkongsamba Region, Cameroon for treatment of asthma (Nouni, 2010). Juice obtained from young leaves of *Vitex agnus-castus* was used by the TMP for treatment of cataract; the plant has ethnoveterinary uses in Trinidad for treatment of hormone imbalances in horses (Lans et al., 2006). The roots of the plant *Pericampylus glaucus* were used by the TMP for treatment of constipation in young children; the people of Nawalparasi district in Central Nepal uses the plant for treatment of dysuria and as a diuretic (Bhattarai et al., 2009). In traditional medicines of Assam, India, the plant is used to treat hematuria (Deka et al., 2008).

The Tonchongya TMP used the plant *Mussaenda glabrata* for treatment of headache, while other tribal people of the Chittagong Hill Tracts region like the Chakmas, Marmas and Tripuras use the plant for treatment of jaundice and leprosy (Biswas et al., 2010). Leaves of *Paederia foetida* were used by the TMP to treat rheumatic fever. The plant is used in some parts of India to treat rheumatism (Shetti et al., 2012); the Tai Ahom tribal people of Dibrugarh district in Assam, India use the plant to treat abdominal pain (Kalita and Phukan, 2010). The Tripuri tribe of India uses the plant for treatment of rheumatic pain (Majumdar and Datta, 2007).

A comparative ethnomedicinal analysis of the use of a particular plant species by different indigenous communities in various parts of the world combined with scientific reports on phytochemical constituents and pharmacological properties of the same species can be a good indicator of the possibility of finding a new drug from that plant species or use of the plant for treatment of a given disease. From that view point, the plants used
by the Tonchongya TMP merits further studies for a number of plants are validated in their uses on the basis of scientific reports on their pharmacognostic profiles or ethnomedicinal uses. The forests of Chittagong Hill Tracts region are yet to be thoroughly explored regarding the plant species present in the region, and the Tonchongya healer used a number of plants not used by the mainstream folk medicinal practitioners of Bangladesh. Many of the plant species mentioned are on the point of endangerment. Scientific recognition of these endangered species as possible sources of new and better drugs can spur conservation efforts of these plants and at the same time lead to more efficient health-care among not only the tribal people but the population as a whole.

References


