Ethnobotanical uses of medicinal plants by the Tudu sub-clan of the Santal tribe in Joypurhat district of Bangladesh


Faculty of Life Sciences, University of Development Alternative, Dhanmondi, Dhaka-1205, Bangladesh


ABSTRACT

An ethnomedicinal survey was carried out among the Tudu sub-clan of the Kisku clan of the Santal tribe in Joypurhat district, Bangladesh. This sub-clan is almost on the verge of disappearance and presently numbers only about 200 people. Their ethnomedicinal wisdom is also on the point of complete disappearance, and so it was important to document whatever remaining ethnomedicinal knowledge existed among this sub-clan. Only ten medicinal formulations were obtained from the sole tribal practitioner. These formulations included ten medicinal plants distributed into ten families. The various ailments treated with these formulations included gastrointestinal disorders, bleeding, oral lesions, blood purification, and ‘meho’, the last being a set of conditions usually identified by allopathic doctors as indicative of endocrinological disorders, and more particularly diabetes. Meho is an Ayurvedic term but also used by the folk medicinal practitioners of Bangladesh, who practice among the mainstream Bengali-speaking population of the country. The low number of ailments treated by the Tudu practitioner suggests that most of the tribal ethnomedicinal knowledge has been lost (a point acknowledged also by the practitioner). The study underscores the importance of documenting ethnomedicinal knowledge of the various small tribes of Bangladesh and their clans and sub-clans before this knowledge is totally lost.

Key words: Medicinal plants, tribal medicine, Tudu, Santal, Bangladesh

Introduction

Indigenous communities are present in most countries of the world. Prior to the introduction of allopathic medicine and even following the introduction of allopathic medicine, most indigenous communities still rely on their own traditional healers for treatment of their various ailments. The formulations of indigenous community healers usually consist of medicinal plants, although animal parts, minerals and incantations also may form part of the treatment process. The general approach is holistic, where the treatment method consists of both treatment of the actual ailment, along with soothing the mind of the patient and building up confidence in the patient as to that their ailments will be and can be cured.

The medicinal practices and knowledge of indigenous community healers are accumulated and passed on orally through successive generations of healers. This process has possibly continued for centuries in these communities. As a result of successive generational accumulation of knowledge, the healers of these communities have gained considerable wisdom on the medicinal properties of plants and their curative properties. Such knowledge can work, or be utilized by the scientific community towards discovery of new allopathic drugs. Indeed, many modern allopathic drugs have been discovered on the basis of close observations of indigenous medicinal practices (Balick and Cox, 1996; Cotton, 1996; Gilani and Rahman, 2005). Plants form an important source of medicine. The total number of plant species in the world is estimated to exceed 250,000 with each plant producing a unique combination of phytochemicals with distinguishing pharmacological properties, and which properties can be used, besides other things, to treat different diseases or their symptoms.

A laborious method of discovering novel drugs from plants is working with individual plants, isolating and identifying the various phytochemicals produced by the plant, and then studying the individual pharmacological properties of each phytochemical. A more convenient and cheaper approach is to gather and document...
ethnomedicinal practices of traditional healers, whose methods of treatment various diseases with any specific plant species can serve as a pointer towards the healing properties existing in that particular plant species. However, in this era of globalization, most tribes are fast losing their culture including their traditional medicinal practices, and are gradually getting assimilated with the mainstream population. This is unfortunate, because with such assimilation, the traditional practices of indigenous communities are also disappearing.

Bangladesh is believed by anthropologists to have more than 100 indigenous communities or tribes. These communities are again divided into clans and sub-clans, with every clan and sub-clan possessing their own sets of beliefs and practices. Most of these indigenous communities are on the verge of disappearance, because of either decline in population or because of assimilation with the mainstream Bengali-speaking population. Some are also being converted to other religions like Christianity by missionaries, who are introducing allopathic medicine and different socio-cultural practices within the tribes. Whether in the long run, this is good or bad for the tribe is too early to tell, but one of the emerging results is appearance of disbelief in the indigenous community or tribal people of their ancient wisdom including ethnomedicinal knowledge. It is therefore of importance to document the ethnomedicinal wisdom of particularly the small indigenous communities and more so of their still smaller clans and sub-clans before this knowledge is totally lost to science. Towards a comprehensive documentation of traditional and tribal medicinal practices in Bangladesh, we have been conducting ethnomedicinal surveys among the various sections of traditional and tribal healers for 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). Although substantial progress has been made in the documentation process, there still remains a huge body of work to be done to obtain a total picture of the traditional and tribal medicinal practices existing within the country.

The Santals are one of the largest indigenous communities in the northern and northwestern regions of Bangladesh. They are divided into a number of clans, each clan having again a number of sub-clans. Some of these sub-clans are now on the verge of disappearance because of rapid decline in populations caused through loss of their natural forest habitat and consequent loss of food (particularly protein) which was previously obtained through hunting. The tribal medicinal practices differ considerably among the various clans and sub-clans of the Santal tribe. The objective of the present study was to conduct an ethnomedicinal survey among the Tudu sub-clan of the Kisku clan of the Santal tribe in Joypurhat district of Bangladesh. This sub-clan now numbers less than two hundred people and will possibly die out or become assimilated with the mainstream population within a short time period.

Materials and Methods

The present survey was carried out among the Tudu sub-clan of the Kisku clan of the Santal tribe residing in Nowda Santal Para in Joypurhat district of Bangladesh. The tribal population numbered about 200 and the tribe had a sole practitioner, namely Subol Tudu, about 65 years in age. Informed consent was first obtained from the practitioner and the tribal Headman. They were apprised as to the nature of our visit and consent obtained to disseminate any information obtained both nationally and internationally. The tribe could speak fluent Bengali and the plant names that the practitioner provided were in the Bengali and not in the Santal language, which suggested that the tribe although living separately from the Bengali-speaking mainstream population, is gradually assimilating the language of the mainstream population.

Actual 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 tribal healer took the interviewers in guided field-walks through areas from where he collected his medicinal plants, pointed out the plants, and described their uses. Plant specimens were photographed and collected on the spot. A number of visits were made to collect the plant specimens, all parts of which plants like flowers, fruits or seeds being available only in particular times of the year. Plant specimens were dried and brought back to Bangladesh National Herbarium at Dhaka for complete identification. Voucher specimens were deposited with the Medicinal Plant Collection Wing of the University of Development Alternative.

Results and Discussion

A total of ten plant species was observed to be used by the healer. These ten species were distributed into ten different families. The results are shown in Table 1. The low number of plant species and the ailments treated suggested that most of the ethnomedicinal knowledge of this sub-clan at least has been lost, which point was acknowledged also by the healer. He also mentioned that he was the lone surviving healer of this sub-clan and since he did not have any apprentices, whatever knowledge he still had would probably be gone following
his demise. Of the ten plants mentioned by the healer, four plants were used for treatment of gastrointestinal disorders like stomach pain and dysentery. Three plant species were used to stop bleeding, one plant for treatment of oral lesions, one plant used as a blood purifier, and one plant used for treatment of ‘meho’, which is difficult to interpret in modern allopathic terminology, but is generally denoted by allopathic doctors to problems arising out from endocrinological disorders, and more particularly indicative of diabetes. Mehoh is more or less always accompanied by problems in urination.

Table 1: Medicinal plants and formulations of the Tudu healer.

<table>
<thead>
<tr>
<th>Serial Number</th>
<th>Scientific Name</th>
<th>Local Name</th>
<th>Parts used</th>
<th>Disease, Symptoms, Formulations, and Administration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Centella asiatica (L.) Urb.</td>
<td>Thankuni</td>
<td>Leaf</td>
<td>Stomach pain, dysentery. Leaves are orally taken.</td>
</tr>
<tr>
<td>2</td>
<td>Blumea lacerata (Burm.f.) DC.</td>
<td>Kukurnuta gach</td>
<td>Leaf</td>
<td>Bleeding from external cuts and wounds. Juice obtained from crushed leaves is applied topically to cuts and wounds to stop bleeding.</td>
</tr>
<tr>
<td>3</td>
<td>Cassia albus L.</td>
<td>Takor kolai pata</td>
<td>Leaf</td>
<td>Oral lesions. Leaves are chewed twice daily.</td>
</tr>
<tr>
<td>4</td>
<td>Hibiscus rosa sinensis L.</td>
<td>Joba</td>
<td>Flower, root</td>
<td>Excessive bleeding. Flowers of Punica granatum and Hibiscus rosa sinensis (red-flowered variety) are crushed together and taken orally. Whitish discharge in urine of females (leucorrhea). Crushed roots of the white-flowered variety of the plant are taken orally.</td>
</tr>
<tr>
<td>5</td>
<td>Nymphaea nouchali Burm. f.</td>
<td>Laal shapla</td>
<td>Whole plant</td>
<td>Dyentery. Whole plants of Nymphaea nouchali are crushed with rhizomes of Alpinia conchigera and taken orally.</td>
</tr>
<tr>
<td>6</td>
<td>Piper peepuloides Roxb.</td>
<td>Pipul</td>
<td>Leaf</td>
<td>Blood purifier. Crushed leaves are taken orally.</td>
</tr>
<tr>
<td>7</td>
<td>Punica granatum L.</td>
<td>Dalim</td>
<td>Flower</td>
<td>Excessive bleeding. Flowers of Punica granatum and Hibiscus rosa sinensis (red-flowered variety) are crushed together and taken orally.</td>
</tr>
<tr>
<td>8</td>
<td>Solanum tuberosum L.</td>
<td>Alu</td>
<td>Tuber</td>
<td>Stomach pain. Boiled tubers are taken with a little salt.</td>
</tr>
<tr>
<td>9</td>
<td>Abroma augusta L.f.</td>
<td>Olot kombol</td>
<td>Bark</td>
<td>‘Meho’ (endocrinological disorder, but generally indicative of diabetes). Bark is soaked in water for one hour. Paste prepared from wet bark is then taken orally.</td>
</tr>
<tr>
<td>10</td>
<td>Alpinia conchigera Griff.</td>
<td>Tejbol</td>
<td>Rhizome</td>
<td>Dyentery. Whole plants of Nymphaea nouchali are crushed with rhizomes of Alpinia conchigera and taken orally.</td>
</tr>
</tbody>
</table>

One plant (Hibiscus rosa sinensis) was used by the healer both for treatment of excessive bleeding as well as treatment of whitish discharge in urine of females (leucorrhea). This plant can produce different colors of flowers. It is interesting that the flowers of the red-flowered variety of the plant were used for treatment of excessive bleeding. Moreover, red flowers of this plant were prescribed by the healer to be taken orally with flowers of Punica granatum, which flowers are also red in color. Many traditional medicinal practitioners prescribe plants on the hypothesis of ‘like treats like’. In this case, red flowers of two plant species were used possibly with the view point that such red color will replace the loss of blood, the color of blood being also red. Notably, the white-flowered variety (and not the red-flowered variety) of Hibiscus rosa sinensis was used by the healer for treatment of whitish discharge in urine of females (leucorrhea). However, the use of Hibiscus rosa sinensis to promote wound healing has been reported (Kate and Lucky, 2010). Punica granatum is also considered in Ayurveda as a ‘blood tonic’ (Jurenka, 2008). The tribal healers of Kappat Hills, Gadag district, Karnatka in India reportedly orally administer the flowers of this plant along with honey for treatment of leucorrhea (Harihar and Kotresha, 2010).

Centella asiatica was used by the Tudu healer for treatment of dysentery and stomach pain; use of this plant in bowel complaints has been reviewed (Tiwari et al., 2011). Nymphaea nouchali was also used by the Tudu healer for treatment of dysentery; the plant is used in Ayurveda for treatment of diarrhea, and in Sudanese traditional medicine for treatment of dysentery (El Ghazali et al., 1994). Anti-bacterial properties of hexane, ethyl acetate and methanolic extracts of the plant have been described against Escherichia coli and Enterococcus faecalis (Kumar et al., 2012). Piper peepuloides was used by the Tudu healer as a blood purifier; accumulation of toxins in blood is believed to be in Ayurveda to be a causative agent for many diseases; such toxins accumulate in blood supposedly from undigested food in the stomach. Some Ayurvedic influences are
discernible in the Tudu healer’s choice of plants, which is not surprising considering that the sandals are regarded to be the oldest indigenous community in Bangladesh and so possibly had contact with Ayurvedic practitioners for over three millennia.

*Solanum tuberosum* (English: potato) was advised by the Tudu practitioner for treatment of stomach pain; stomach pain can arise from hunger, and so partaking of boiled potatoes with a little salt can alleviate such problem, for it would mitigate the hunger. *Abroma augusta* bark was used by the Tudu healer for treatment of ‘meho’, which is often indicative of diabetes; aqueous extract of fresh leaves of the plant have been shown to significantly reduce the absorption of glucose administered orally (Islam et al., 2012). *Alpinia conchigera*, used by the Tudu healer for treatment of dysentery has also been reported to be used by the Chakma tribe of Bangladesh to treat dysentery (Khisha et al., 2012). Cumulatively speaking, the plants used by the Tudu healer, although small in numbers, possess ethnomedicinal and pharmacological significance and merit further studies by the scientific community towards discovery of new drugs.

References


