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Research Article

Phytotherapeutic practices of a female Hajong tribal healer of Bangladesh

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Abstract

Documentation of indigenous uses of plants for medicinal purposes can be a basis of further research, which in turn can lead to discovery of newer and more effective drugs. The objective of the present study was to document the plants used by a female Hajong tribal healer in Sunamganj district, Bangladesh. Interviews of the healer were carried out through a semi-structured questionnaire and the guided field-walk method. The healer used 6 plants in her formulations, which were distributed into 6 families. The plants were used for treatment of leucorrhoea, urinary disorders, diabetes, allergy, helminthiasis, intermittent fever, burning sensations during urination, and bone fracture. Female tribal healers are rare in Bangladesh and their use of plants for therapeutic purposes can be quite novel. From that viewpoint, the plants used by the Hajong tribal healer possess considerable merit for further research leading to possible discovery of new drugs.

Keywords: medicinal plants, Hajong, tribal medicine, Sunamganj, Bangladesh

Introduction

It is very much likely that human beings have suffered from various diseases since their advent. It is also known since the time historical records have been maintained, that for treatment of various diseases, various materials have been used as medicines with plants forming the most dominant type of medicines. Herbal medicine has been reported for ancient Egypt (Aboelsoud, 2010). The Chinese used plants as medicines possibly as early as 6-7 thousand years ago; in India, the first mention of plants as medicines can be found in the Rig Veda, which dates back approximately 4-6 thousand years ago (Hosseinzadeh et al., 2015). Even in the modern age, many new drugs have been discovered through close studies of traditional cures of indigenous people (Gilani & Atta-ur-Rahman, 2005). Bangladesh, although small in area, is rich in tribal population and it is generally believed that over 100 tribes inhabit various regions of the country. Tribal customs as well as even tribes are disappearing fast because of



mainstream population pressure and increasing modernization along with disappearance of forests (containing medicinal plants) and loss of tribal habitat. This is a serious loss for scientists occupied with ethnomedicinal research and drug discovery, for over hundreds and possibly thousands of years, various tribes have used plants, animals and minerals (plants being the major component) for therapeutic purposes, and with the loss of tribal customs, this indigenous medicinal knowledge is also getting lost. As such, it is important to document tribal medicinal practices, for disappearance of tribal knowledge and plant species can be an irreparable loss in modern times because of adverse side-effects of a number of allopathic drugs, emergence of various allopathic drug-resistant vectors, and emergence of new diseases to which allopathic medicine has no remedy and all of which necessitates discovery of new medicines. Ethnomedicinal and ethnopharmacological research is not very common in Bangladesh. Previously, we have documented the medicinal practices of a few tribes (Hossan et al., 2014; Rahmatullah et al., 2013a,b; Rahmatullah et al., 2014a,b). The Hajongs are a small tribal community in Bangladesh mainly residing in north central Bangladesh in the Mymensingh Division. In recent days, because of loss of habitat, some Hajong communities can be found in Sylhet Division in northeast Bangladesh, which adjoins Mymensingh Division. Not much has been reported on the tribal medicinal practices of the Hajong. Moreover, tribal female practitioners or healers are rare. The objective of the present study was to document the therapeutic uses of plants by a female Hajong tribal healer (HTH) practicing within a small Hajong community residing in Hajong Para, Sunamganj district, which falls in Sylhet Division of Bangladesh.

Materials and Methods

The HTH who was interviewed was named Bishakha Rani Roy, female, age 65 years, and residing in Hajong Para, Bishwamrapur, Sunamganj district, Bangladesh. Prior informed consent was initially obtained from the HTH, who was explained as to the nature of our visit and consent obtained from both the HTH and tribal elders to document the phytotherapeutic practices of the HTH and to disseminate any obtained information including the HTH's name. Actual interviews were conducted in the Bengali language, which was spoken fluently by the HTH as well as the interviewers (the Hajongs have been residing in Bangladesh for several hundred years and although the exact time of their arrival is not known with certainty they can now speak the mainstream Bengali language fluently). The 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 HTH took the interviewers on guided field-walks through areas from where she collected her medicinal plants or plant parts, pointed out the plants, and described their uses. All plant specimens were photographed and collected on the spot, pressed, dried and brought back to Bangladesh National Herbarium at Dhaka for identification. Voucher specimens were deposited with the Bangladesh National Herbarium. Formulations, dosages and any other relevant information were obtained from the HTH in interviews mostly conducted during her spare time in the evenings.

Results

The healer used 6 plants (Table 1) in her formulations, which were distributed into 6 families. The plants were used for treatment of leucorrhoea, urinary disorders, diabetes, allergy, helminthiasis, intermittent fever, burning sensations during urination, and bone fracture. With the exception of bone fracture, all other ailments were treated with a single plant; bone fracture was treated with two plants, namely, *Cissus quadrangularis* and *Zingiber officinale*. It may be mentioned that unlike the other plants



used by the HTH, *Zingiber officinale* was not identified at the Bangladesh National Herbarium because its rhizome is an extremely commonly used spice of Bangladesh and so can be recognized by all. It is also interesting that one single plant, *Tinospora cordifolia*, was used to treat multiple diseases including diabetes, allergy, helminthiasis, and intermittent fever. Plants contain phytochemicals with diverse pharmacological activities and consequently can have diverse therapeutic uses, and the use of one plant species to treat diverse diseases suggests that the healer was cognizant of the diverse therapeutic properties of the plant species that she used. That only 6 plant species were used by the HTH suggests that either the female healer did not have an extensive knowledge of many

Table 1. Medicinal plants and formulations of the Hajong tribal healer of Sunamganj district, Bangladesh.

Serial Number	Scientific Name (Accession Number)	Family Name	Local Name	Parts used	Ailments and mode of medicinal use
1	<i>Amaranthus tricolor</i> L. (43123)	Amaranthaceae	Lal pata	Whole plant	Leucorrhoea. Whole plant is washed and then crushed to obtain juice. The juice is taken orally once daily for 4-5 days.
2	<i>Ricinus communis</i> L. (43125)	Euphorbiaceae	Gokkur kata	Thorn	Urinary disorders. Thorns are shaved off stems and powdered. Powder is soaked in water (one glass) and taken orally in the morning on an empty stomach for 1 month.
3	<i>Tinospora cordifolia</i> (Willd.) Miers. (43150)	Menispermaceae	Poddo guloncho	Whole plant	Diabetes, allergy, helminthiasis, intermittent fever. Whole plant is washed and sliced into small pieces. The pieces are crushed and soaked in water overnight. One glass of the water is taken orally every morning on an empty stomach for 1 month.
4	<i>Piper peepuloides</i> Roxb. (43133)	Piperaceae	Panamalpi	Leaf	Burning sensations during urination. Leaves are boiled in water for 1-2 hours. One glass of the resulting decoction is taken orally 2-3 times daily for 1 month.
5	<i>Cissus quadrangularis</i> L. (43131)	Vitaceae	Harbhanga lota	Stem with leaf	Bone fracture. Stems with leaves are mixed with ginger (rhizomes of <i>Zingiber officinale</i>) and made into a paste. The paste is applied topically to the fracture area thrice daily for at least 20-30 minutes each time. Alternately, a large amount of the paste is topically applied and kept for 24 hours.
6	<i>Zingiber officinale</i> Roscoe (accession number not obtained, it is a commonly used spice of Bangladesh)	Zingiberaceae	Ada	Rhizome	See <i>Cissus quadrangularis</i> .

medicinal plants (healing being almost exclusively a male domain among the various tribes) or this small Hajong community in Sylhet Division residing away from their original habitat in Mymensingh Division has lost most of its traditional medicinal knowledge.

Discussion

We have previously conducted surveys among Hajong communities of Tangail and Netrakona districts, both districts falling within Mymensingh Division of Bangladesh (Jabin et al., 2016; Khan et al., 2012). Interestingly, the Hajong medicinal practitioners in Netrakona district used *Cissus quadrangularis* along with *Zingiber officinale* to treat bone fracture (similar to the present HTH) but not any of the other plants used by the present HTH. A similar thing was observed with the Hajong practitioners of Tangail district. They also used *Cissus quadrangularis* for treatment of bone fracture,



but not any of the other plants used by the present HTH of Sunamganj district. It is possible that the HTH may have learned of uses of new plants in her present surroundings from other tribal people or mainstream folk medicinal practitioners in her area or may have obtained her information through trials and errors. When queried, she did not divulge how she obtained her information. The HTH used *Amaranthus tricolor* to treat leucorrhoea, which may result from urinary tract infections. The antibacterial efficacy of methanolic extract of leaf of the plant has been demonstrated against urinary tract pathogens (Pulipati et al., 2015). The HTH used thorns of *Ricinus communis* for urinary disorders by which she signified having trouble with urination. Castor oil, obtained from seeds of the plant, has uses in irritable conditions of the genitor-urinary organs (Rana et al., 2012), but the use of thorns is a new observation, which deserves further research. *Tinospora cordifolia*, used by the HTH for multiple diseases including diabetes, helminthiasis, allergy and fever, is a scientifically well documented plant, which is efficacious against diabetes (Puranik et al., 2010). In Ayurveda, the ancient traditional medicinal system of India, the plant is used against fever and allergy (Singh et al., 2003; Sinha et al., 2004). The anthelmintic activity of the plant has also been reported (Reddy et al., 2011). The use of *Piper peepuloides* against burning sensations during urination by the HTH needs to be scientifically validated. Burning sensations during urination can occur during reduced output of urine through dehydration or less water intake or can be due to other factors like infections of the genito-urinary tract. Thus, the plant needs to be evaluated for its anti-microbial potential. The efficacy of *Cissus quadrangularis* in healing bone fracture has been scientifically validated quite extensively (Stohs & Ray, 2013). *Zingiber officinale* rhizomes have been shown to possess analgesic and anti-inflammatory properties (Raji et al., 2002). Thus the combination of *Cissus quadrangularis* and *Zingiber officinale* as used by the HTH to treat bone fracture can prove beneficial in not only healing fracture but also reducing fracture associated pain and inflammation.

Conclusion

Taken together, the existing scientific reports suggest that indigenous tribal healers possess substantial knowledge on medicinal properties of plants and plant parts. This can be utilized in two ways. First, such knowledge can be used by scientists to conduct relevant research leading to discovery of new drugs. Second, this knowledge can be utilized in testing out any toxic effects of indigenous medicinal formulations, and the formulations can by themselves serve as cheap and readily available medicines to people. In many parts of the world, the people are poor or live in remote areas that are out of reach of modern medical facilities. Indigenous medicinal formulations can be particularly beneficial to people belonging to these categories.

Declaration of Conflict of Interest

No conflict of interest associated with this work.

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