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Plants Prescribed For Both Preventive and Therapeutic Purposes By The Traditional Healers of The Bede Community Residing By The Turag River, Dhaka District

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ABSTRACT

The Bede community people are an indigenous community of Bangladesh and because of their preference for living and travelling on boats are also known as the river gypsies. They seldom reside for long at any given place but travel constantly on the waterways to ply their trade at various riverside villages. The community keeps mostly to themselves except when interacting with village people to sell sundry items, catch snakes, and practice their traditional medicinal system, which consists of cupping (drawing blood) and selling medicinal products containing plant, animal or fish parts. Medicinal plants form the chief item in their formulations for treatment of diverse ailments. The community has various professional groups within them based on their profession, among which one such group being the Dhanantari Vaidyas, who supposedly are able to cure all diseases. In recent times, the Government is trying to settle them by various riversides so as to enable them to get access to education and modern health care. The older generation, however, still prefer their traditional medicines to allopathic medicines. One such Bede group was located by the Turag River in Kamar Para village on the outskirts of Dhaka city in Dhaka district, Bangladesh. During the course of an ethnomedicinal survey among this community, it was observed that the Dhanantari Vaidyas advocated consumption of a number of plants in the cooked form for not only therapeutic but also preventive purposes. It was the objective of the present study to document the use of these plants. It was observed that 32 plant species were prescribed by the Vaidyas for regular consumption (preventive) or consumption during times when a particular disease occurred (therapeutic). These species were distributed into 20 families; the Fabaceae family contributed 4 species, while the Amaranthaceae, Asteraceae, and Cucurbitaceae families provided 3 plants each. Most of the plants were leafy vegetables with their leaves and stems prescribed for consumption following cooking; however, a few of them had their roots or fruits prescribed for consumption without cooking. Four plants (*Allium cepa*, *Allium sativum*, *Capsicum frutescens* and *Coriandrum sativum*) were used as accessories when cooking other plants. Among these four plants, *Allium sativum* was also used by itself for prevention and treatment of any type of dysentery and stomach problems, and *Coriandrum sativum* used by itself for prevention and treatment of gastrointestinal disorders and to increase appetite. Only two plant (*Eclipta alba* and *Curcuma longa*) parts were administered topically. Consumption of plants or plant parts for preventive purposes can be a cost-effective form of health care. As such, the plants prescribed for consumption by the Dhantari Vaidyas of the Bedes merit further scientific studies to assess their full curative potentials.

Key words: Leafy vegetables, Bedes, Turag, traditional medicine.

Introduction

The Bede community people are one of the indigenous communities of Bangladesh. Their exact number is unknown because of their habit of not settling in permanent habitats but moving continuously in boats through the hundreds of rivers and waterways of the country. For this reason, they are also called the river gypsies of Bangladesh. During the course of their travelling, they would stop for a few days beside villages by the banks of a river, where they would ply their trade of selling sundry items, snake catching, showing snake or monkey dances and administering their traditional medicinal formulations to village people who ask for them as treatment for a variety of diseases. The Bedes are widely scattered but meet at a certain time of the year in a pre-arranged place for exchange of information and social interactions. Very little information is available on this

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community because community members mostly keep to themselves and are quite distrustful of strangers, including the mainstream Bengali-speaking people (Murmu, 2009; Laizu, 2011).

The Bedes have from ancient times practiced their own traditional medicinal system. They have various names for traditional healers based on their practice methods, including Vaidyas, Ojhas, and Tantriks. Vaidyas generally prescribe medicinal formulations based mainly on plant and animal parts. Ojhas deal mainly with snake bites. Tantriks mainly deal with the occult, and prescribe amulets or black magic for healing. Among the Vaidyas are the Dhanantari Vaidyas, who are supposedly able to treat any disease and so are considered more powerful than ordinary Vaidyas.

In recent years, the Government of Bangladesh is trying to settle the Bede community people by the banks of several rivers in an effort to obtain accurate census of the Bede population and to provide schooling and primary health-care facilities to the Bede people. The older generation of the Bedes however still shuns modern allopathic treatments and opts for their own traditional medicines. Bede traditional medicine includes topical or oral administration of decoctions, pastes, and juices of plant parts as well as bones or flesh of various animals and fish. One of their most common treatment methods is cupping, in which an incision is made on the skin and the blood drawn off through sucking with a sawed-off cow or buffalo horn. The Bede traditional healers believe 'bad blood' to be a source of a number of sicknesses and so 'bad blood' is sucked off patients, whose ailment has been diagnosed by the healer to the patient's blood becoming 'bad'.

A community of the Bedes resides in Kamar Para village by the Turag River on the outskirts of Dhaka city in Dhaka district, Bangladesh. They are more or less settled there but still maintain their traditional roving lifestyle through occasional travelling on boats. We have been conducting ethnomedicinal surveys among both mainstream folk medicinal healers as well as tribal healers for quite some time (Nawaz *et al.*, 2009; Rahmatullah *et al.*, 2009a-c; Hasan *et al.*, 2010; Hossan *et al.*, 2010; Mollik *et al.*, 2010a,b; Rahmatullah *et al.*, 2010a-g; Jahan *et al.*, 2011). During the course of an ethnomedicinal survey among this Bede community, it was learned that two Dhanantari Vaidyas exist within the community, who prescribe a number of plants (mostly leafy vegetables) for consumption for both preventive as well as therapeutic purposes. It was the objective of this present study to document the use of these plants.

Materials and Methods

The present study was conducted among the Bede community of Kamar Para village by the Turag River, which lies on the outskirts of Dhaka city. The Bede community had two Dhanantari Vaidya traditional medicinal practitioners, namely Kala Miah and Suleiman Miah, who catered to the community's medicinal needs. Both prescribed medicinal plants for treatment of various ailments, an account of which will be given in a separate manuscript. However, both Vaidyas also prescribed certain plants for consumption when available, and according to them these plants, when consumed (primarily in the cooked form) can serve both preventive and therapeutic purposes.

Informed consent was initially obtained from the two Vaidyas that any information provided can be disseminated both nationally and internationally. Interviews of the two practitioners were conducted in the Bengali language (the language being spoken by both interviewers and informants) with the help of a semi-structured questionnaire and the guided field-walk method of Martin (1995) and Maundu (1995). In this method, the informants took the interviewers on guided field-walks through areas from where they usually collected their plants, pointed out the plants, and described their uses. Plant specimens were collected, pressed and dried on the spot and brought back to Dhaka for identification by Mr. Manjur-Ul-Kadir Mia, ex-Curator and Principal Scientific Officer of the Bangladesh National Herbarium.

Results and Discussion

Altogether, information on 32 plant species was obtained from the two Dhanantari Vaidyas. The plants were distributed into 20 families. The Fabaceae family contributed 4 plants, while the Amaranthaceae, Asteraceae, and Cucurbitaceae families contributed 3 plants per family. The information is summarized in Table 1.

Of the 32 plant species, 24 plants or plant parts were advised to be consumed in the cooked form. Most of these 24 plant parts consisted of leaves and/or stems and as such, can be classified as leafy vegetables. Exceptions to leaves and stems were tubers of *Typhonium giganteum*, seeds of *Basella alba*, and bulbs of *Allium sativum*. Cooked form of vegetable dishes in Bangladesh can include cooking with water with added oil, salt and spices; frying in oil with added salt and spices; or boiling in water followed by mashing the vegetable and partaking following addition of a little oil, salt, hot peppers and onions. Occasionally leaves and stems of *Coriandrum sativum* may be added to the mashed form to increase flavor and taste. For clarity's sake the different forms of consumption of the plants prescribed by the Vaidyas are also given in Table 1. It is also to be noted that vegetables form the most common side dish to the main Bangladeshi dish, rice. The Bedes are no

exception to this rule. The other common side dish besides vegetable is pulse or lentil, of which there is available a variety. Fish and meat are consumed on a regular basis only by the affluent class of people.

A number of the plants advised by the Vaidyas were not wild but widely cultivated in Bangladesh. These plants included *Coriandrum sativum*, *Allium cepa*, *Allium sativum*, *Nigella sativa*, *Curcuma longa* (various plants parts used as spices, leaves of *Allium cepa* also eaten as vegetable), *Amaranthus tricolor*, *Colocasia esculenta*, *Typhonium giganteum*, *Basella rubra*, *Spinacia oleracea*, *Ipomoea aquatica*, *Cucurbita pepo*, *Lagenaria siceraria*, *Cicer arietinum*, *Corchorus capsularis*, *Centella asiatica* (various plant parts eaten as vegetable), *Brassica napus* (leaves and stems eaten as vegetable, seed used to extract oil), *Momordica charantia*, *Citrus grandis*, *Capsicum frutescens* (fruits eaten), *Cajanus cajan*, *Lathyrus sativus*, and *Vigna mungo* (seeds boiled and eaten as lentil soup). These plants or plant parts could be obtained when in season in almost any of the numerous vegetable markets of Dhaka city as well as village markets.

Several plants or plant parts were not advised by the Vaidyas to be consumed in the cooked form. For prevention or treatment of whitish discharge in urine, juice from macerated roots of *Amaranthus spinosus* was orally taken. Macerated leaves of *Eclipta alba* were directly applied to head for treatment or prevention of headache, to blacken hair, or prevent graying of hair. Juice obtained from macerated fruits and leaves of *Momordica charantia* were advised to be orally taken as blood purifier and for prevention or treatment of skin disorders like boils and infections. Juice obtained from macerated leaves of *Cajanus cajan* were advised to be taken for prevention or treatment of jaundice. Mashed seeds of *Nigella sativa* were taken directly for maintenance of health and to increase lactation in nursing mothers. Juice from the fruits of *Citrus grandis* was advised to be orally taken for prevention or treatment of throat pain, fever, loss of appetite, and feeling of weakness in body. Leaves and stems of *Coriandrum sativum* could be directly eaten in the mashed form or added to other vegetables, which are consumed following cooking.

That most of the plants were advised by the Vaidyas to be consumed as vegetable in the cooked form is a novel method for preventive or therapeutic treatment. Usually the folk or tribal medicinal practitioners advise oral or topical administration of medicinal plants in form of decoctions, pastes, pills, or taking them directly. Consumption in the cooked form can be useful for the same plant can provide a side-dish to rice, can act as a source of nutrition, and at the same time serve medicinal purposes. The various ailments treated by the Vaidyas through this unusual form of medication included leucorrhoea, pain, anemia, gastrointestinal disorders, fever, mucus, coughs, heart disorders, skin disorders, jaundice, throat pain, and debility (physical weakness). Because of the general lack of proper hygienic and sanitary conditions among the rural people of Bangladesh (including the Bedes), gastrointestinal disorders and skin afflictions are common. Fever, coughs and formation of mucus are also common occurrences during change of seasons and also during the monsoon months of May till August. From that view point, the plants used by the Vaidyas for both prevention and treatment of the above diseases can serve a useful purpose. Prevention is always better than cure in reducing financial costs and body sufferings. Moreover, since the plants are common, they can be easily available to anybody and thus can benefit particularly the rural poor from visits to distant clinics and city doctors.

The Vaidyas repeatedly emphasized that their prescribed plants can serve both preventive as well as therapeutic purposes. Daily consumption of the plants, were according to them, not necessary. Once-a-week consumption was good enough for preventive purposes. However, for treatment purposes, daily consumption of the plants was advised. A number of the plants were prescribed as blood purifier. Bad blood was considered by the Vaidyas to be responsible for many diseases, and blood purifiers were thought to maintain clean blood (i.e. blood free from any accumulated toxins) and so result in a healthier person. The Ayurvedic medicinal system of India, which is believed to be thousands of years old, also advises use of blood purifiers. Toxins, according to Ayurvedic belief, may accumulate in blood due to various causes, and so it is necessary to clean such toxins at regular intervals for maintenance of good health. According to the Vaidyas, if blood purification is not possible through preventive or therapeutic use of medicinal plants, then one has to resort to cupping or sucking out of the impure blood.

Leafy vegetables are generally considered to be good sources of minerals and vitamins and provide health benefits following consumption. To cite only a few recent publications, a diet rich in leafy vegetables reportedly improved cholesterol metabolism in high-cholesterol fed rats (Ezz El-Arab, 2009). Lutein, a major anti-oxidant, is present in *Centella asiatica*, one of the plants prescribed by the Vaidyas (Chandrika *et al.*, 2010). Carotenoids, especially lutein and β -carotene, which are abundantly present in leafy vegetables, are beneficial to human health in general and to eye health in particular (Bélanger *et al.*, 2010). An inverse association has been reported between increasing consumption of leafy vegetables and coronary heart diseases (Bendinelli *et al.*, 2011). Increased consumption of green leafy vegetables has been reported to be associated with reduced incidence of type 2 diabetes (Esposito and Giugliano, 2011). Leafy vegetable diet has also been associated with decreased serum total cholesterol and low-density lipoprotein-cholesterol (Ganguli *et al.*, 2011). Dietary intake of fruits and vegetables has even been found to lower risks of non-Hodgkin lymphoma (Chiu *et al.*, 2011). Taken together, the leafy vegetables and other plant species prescribed by the Dhanantari Vaidyas of the Bede community merit detailed scientific studies for their possible disease preventing and therapeutic effects.

Table 1: Plants prescribed for preventive and therapeutic purposes by the Dhanantari Vaidyas of the Bede community.

Serial Number	Scientific Name	Family Name	Local Name	Utilized Part	Ailment(s) prevented
1	<i>Alternanthera sessilis</i> (L.) DC.	Amaranthaceae	Sanchi shak, Shanti shak	Leaf, stem	Leucorrhoea. Leaves and stems are cooked and eaten.
2	<i>Amaranthus spinosus</i> L.	Amaranthaceae	Kanta khudri shak	Leaf, top portion of stem, root	To keep body healthy, pain, whitish discharge in urine of males or females. To keep body healthy or for pain, leaves and top portions of stems are boiled, cooked and eaten. For whitish discharge in urine, juice from macerated roots is taken.
3	<i>Amaranthus tricolor</i> L.	Amaranthaceae	Laal shak	Leaf, top portion of stem	To increase blood, blood purifier. Leaves and top portions of stems are fried or cooked and eaten.
4	<i>Coriandrum sativum</i> L.	Apiaceae	Dhonia pata	Leaf, stem	To increase appetite, gastrointestinal disorders, to add flavor to dishes. Leaves and stems are either taken directly in the mashed form or added as an accessory when cooking other leafy vegetables.
5	<i>Colocasia esculenta</i> (L.) Schott	Araceae	Kochu shak	Leaf, stem	Blood purifier. Taken in the cooked form. Note that it cannot be taken if one has allergy. If following eating, no eruptions occur on the skin then the blood is considered pure.
6	<i>Typhonium giganteum</i> Engl.	Araceae	Shada narkel kochu, Dudh kochu	Tuber	Blood purifier, nutritive. Tubers are boiled in water and then cooked and eaten. Note cannot be eaten if one has itches or is allergic to it.
7	<i>Eclipta alba</i> (L.) Hassk.	Asteraceae	Kala koita	Leaf	Headache, to blacken hair, to delay graying of hair. Macerated leaves are applied to head.
8	<i>Enydra fluctuans</i> Lour.	Asteraceae	Helencha shak	Leaf, stem	Leucorrhoea. Leaves and stems are cooked and eaten.
9	<i>Xanthium indicum</i> J. Koenig ex Roxb.	Asteraceae	Ghagra shak	Top portion of stem	Any type of pain (like rheumatic pain, pain resulting from injuries). The plant is uprooted and the roots and hard portion of stem above the roots is discarded. Leaves are taken off from the top portion. Then the outer fibers are taken of the top portion of stems and stems are cut into small pieces and boiled in water till all smell is gone. Following this procedure, the stems are cooked like chocchori (Bangladesh cuisine where the item is cooked in small amount of oil till any remaining water is gone).
10	<i>Basella rubra</i> L.	Basellaceae	Puin shak	Leaf, stem, seed	To keep healthy, physical weakness. Leaves and stems are cooked and eaten. Anemia, to increase strength. Seeds are cooked and eaten.
11	<i>Chenopodium album</i> L.	Chenopodiaceae	Baitar shak	Leaf, stem	Gastrointestinal disorders (constipation, bloating). Leaves and stems are cooked and eaten.
12	<i>Spinacia oleracea</i> L.	Chenopodiaceae	Palong shak	Leaf, stem	To increase appetite. Leaves and stems are cooked and eaten.
13	<i>Ipomoea aquatica</i> Forssk.	Convolvulaceae	Kolmi shak	Leaf, stem	Whitish discharge in urine of men and women. Leaves and stems are fried or cooked and eaten. (Note that a white liquid comes out from leaves and stems of this plant, when soaked in water. This is the reason why the Bedes eat this if anybody suffers from whitish

					discharge in urine).
14	<i>Brassica napus</i> L.	Cruciferae	Shorisha shak	Leaf, top portion of stem	Fever, mucus, coughs. Leaves and top portions of stems are taken in the cooked, fried or mashed form. When taken in the mashed form, the plant parts are boiled in water till soft, following which they are mashed with onions, hot peppers, dry hot peppers, salt and a little mustard oil.
15	<i>Cucurbita pepo</i> L.	Cucurbitaceae	Kumra	Leaf, stem	To maintain strength in body, to provide nutrition. Leaves and stems are cooked and eaten.
16	<i>Lagenaria siceraria</i> (Molina) Standl.	Cucurbitaceae	Lau shak	Leaf, stem	To maintain heart in good condition, heart disorders (irregular heartbeats, high pulse rate, restlessness), to maintain navel region cool. Leaves and stems are cooked and eaten.
17	<i>Momordica charantia</i> L.	Cucurbitaceae	Korla	Young leaf, fruit	Blood purifier, preventive medicine for avoiding skin disorders like boils and infections. Young leaves are fried with black cumin (<i>Nigella sativa</i>) seeds and eaten. Jaundice. Juice obtained from macerated fruits and leaves are taken till cure.
18	<i>Cajanus cajan</i> (L.) Millsp.	Fabaceae	Orhol	Leaf	Jaundice. Juice obtained from macerated leaves is taken till cure.
19	<i>Cicer arietinum</i> L.	Fabaceae	Motor koloi shak	Leaf, top portion of stem	To provide nutrition. Leaves and top portions of stems are fried and eaten.
20	<i>Lathyrus sativus</i> L.	Fabaceae	Khesari koloi shak	Leaf, top portion of stem	Bloating, constipation, colic. Leaves and top portions of stems are cooked and eaten.
21	<i>Vigna mungo</i> (L.) Hepper	Fabaceae	Mash koloi shak	Leaf	Bloating, constipation, colic. Leaves are cooked or fried and eaten.
22	<i>Leucas aspera</i> (Willd.) Link	Lamiaceae	Dondo kolosh shak	Leaf, top portion of stem	Pain. Leaves and top portions of the stems are lightly boiled in water. Then the portions are taken out of the water and either cooked or fried with onions, garlic, hot peppers and salt and eaten.
23	<i>Allium cepa</i> L.	Liliaceae	Peyaz	Leaf	Used as an ingredient in cooking other leafy vegetables for treatment of sickness.
24	<i>Allium sativum</i> L.	Liliaceae	Deshi roshun	Bulb	Any type of dysentery, stomach problems. Bulbs (with strong pungent odor) are fried (till burnt) in mustard oil and eaten. Also used as accessory to other leafy vegetables for treatment of various diseases.
25	<i>Mollugo spargula</i> L.	Molluginaceae	Gima shak	Leaf	Fever, feeling of physical weakness, gastrointestinal disorders (bloating, constipation). Leaves are cooked or fried and eaten.
26	<i>Aegialitis rotundifolia</i> Roxb.	Plumbaginaceae	Nonta shak	Leaf, top portion of stem	Loss of appetite. Leaves and top of stems are cooked and eaten.
27	<i>Nigella sativa</i> L.	Ranunculaceae	Kalojira	Seed	Blood purifier, preventive medicine for avoiding skin disorders like boils and infections. Young leaves of <i>Momordica charantia</i> are fried with black cumin (<i>Nigella sativa</i>) seeds and eaten. To maintain health of mother after delivery, to increase lactation in nursing mothers. Mashed seeds are eaten.
28	<i>Citrus grandis</i> (L.)	Rutaceae	Lebu	Fruit	Throat pain, fever, loss of appetite,

	Osbeck				feeling of weakness in body. Juice from one fruit is taken with a pinch of salt and one glass of slightly warm water.
29	<i>Capsicum frutescens</i> L.	Solanaceae	Kancha morich	Fruit	Used as an ingredient in cooking other leafy vegetables for treatment of sickness.
30	<i>Corchorus capsularis</i> L.	Tiliaceae	Pat shak	Leaf	To stimulate appetite, to increase strength. Leaves are cooked and eaten.
31	<i>Centella asiatica</i> (L.) Urb.	Umbelliferae	Teka thankuni	Leaf, stem	Any type of stomach pain. Macerated leaves and stems are mixed with powdered rice and boras (round golf-ball like items) made from the mixture are cooked and eaten.
32	<i>Curcuma longa</i> L.	Zingiberaceae	Kancha holud	Young rhizome	Abscesses or infections on skin, to improve facial luster. Macerated young rhizomes are applied with a little mustard oil to the skin.

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