A CASE STUDY OF AN URBAN GARO TRIBAL MEDICINAL PRACTITIONER IN MYMENSINGH DISTRICT, BANGLADESH

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ABSTRACT

Background. The Garo tribal people are a fairly large tribe residing in various districts of Mymensingh Division, Bangladesh. The objective of the present study was to document the use of medicinal plants by a Garo tribal medicinal practitioner (TMP) practicing in Mymensingh town in Mymensingh Division, Bangladesh. Methods. Interview of the tribal medicinal practitioner was carried out with the help of a semi-structured questionnaire and the guided field-walk method. Results. The tribal medicinal practitioner used a total of 17 plants distributed into 14 families for treatment. The various diseases treated included gastrointestinal disorders, burns, snake bite, jaundice, pain, helminthiasis, skin diseases, Alzheimer’s disease, hypertension, eye diseases, impotency, bone fracture, high cholesterol, asthma, piles, diabetes and arthritis. One plant was used as a cardiotonic.

Conclusion. The medicinal plants used by the Garo medicinal practitioner comprise some unusual plants not usually used for treatment by tribal or folk medicinal practitioners of Bangladesh and so deserve scientific attention.

KEYWORDS: Tribal medicine, medicinal plants, Garo, Mymensingh, Bangladesh.

BACKGROUND

Bangladesh has a fairly large tribal population consisting of possibly more than several dozen tribes. The habitats of the majority of the tribes are in the southeastern, northeastern and northern forested parts of the country. Tribal medicinal practitioners practice in these less accessible forested areas among their own people. Among the tribes, the Garo tribe is the
predominant tribe inhabiting the northern hilly sparsely populated areas of various districts of Mymensingh Division of the country. The Garos possess their own distinct cultural ethnicity, although in recent years they are converting to Christianity and are intermingling more with the majority Bengali speaking population of the country.

It is very unusual for a tribal medicinal practitioner (TMP) to practice in urban areas for they are mostly confined to rural areas among their own tribal population. As such, it was of interest to find a Garo TMP practicing in Mymensingh town in Mymensingh Division of the country. We had been conducting ethnomedicinal surveys among folk medicinal and tribal medicinal practitioners for a number of years.\textsuperscript{[1-21]} It was of interest to document the medicinal plants and formulations used by this urban Garo TMP, whose clientele consisted of both Garo people and Bengali speaking population.

METHODS
The TMP who was interviewed was named Shankar Dada, male, age 41 years, and practiced in the Charpara Area of Mymensingh Town in Mymensingh district. 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 his name both nationally and internationally. Actual interviews were conducted in the Bengali language, which was spoken fluently by the TMP 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\textsuperscript{[22]} and Maundu.\textsuperscript{[23]} In this method the TMP took the interviewers on guided field-walks through areas from where he collected his 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 Medicinal Plant Collection Wing of the University of Development Alternative.

RESULTS
The TMP was observed to use a total of 17 plants distributed into 14 families in his various formulations for treatment of a number of ailments. The results are shown in Table 1. The ailments treated included gastrointestinal disorders, burns, snake bite, jaundice, pain, helminthiasis, skin diseases, Alzheimer’s disease, hypertension, eye diseases, impotency, bone fracture, high cholesterol, asthma, piles, diabetes, and arthritis. One plant was used as a cardiotonic, sedative, and blood purifier.
A number of the plants used by the TMP, according to our previous surveys, are not in general use by the folk and other tribal medicinal practitioners of Bangladesh. Examples of such plants include *Cascavela thevetia* (used for burns and snake bite), *Xanthosoma violaceum* (used for Alzheimer’s disease, eye diseases, impotency), *Bixa orellana* (used for bone fracture), *Syzygium fruticosum* (used for diabetes and dysentery), *Plumbago auriculata* (used for skin diseases, jaundice, epilepsy and headache) and *Ziziphus rugosa* (as cardiotonic, sedative and blood purifier). These findings suggest that there may be many more medicinal plants in Bangladesh used by folk and tribal medicinal practitioners and whose therapeutic uses and identities are yet to be documented.
Table 1. Medicinal plants and formulations of the Garo tribal medicinal practitioner in Mymensingh town, Bangladesh.

<table>
<thead>
<tr>
<th>Serial Number</th>
<th>Scientific Name</th>
<th>Family Name</th>
<th>Local Name</th>
<th>Parts used</th>
<th>Ailments and mode of medicinal use</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Centella asiatica (L.) Urb.</td>
<td>Apiaceae</td>
<td>Dhol manik</td>
<td>Leaf</td>
<td>Dysentery, diarrhea. Leaf juice is taken orally with water twice daily after meals in the morning and evening.</td>
</tr>
<tr>
<td>2</td>
<td>Cascavela thevetia (L.) Lippold</td>
<td>Apocynaceae</td>
<td>Kolkipul</td>
<td>Leaf, seed</td>
<td>Burns. Seed oil is topically applied. Snake bite. Leaf paste is topically applied to bitten area.</td>
</tr>
<tr>
<td>3</td>
<td>Holarrhena antidysenterica (L.) Wall.</td>
<td>Apocynaceae</td>
<td>Kurchi</td>
<td>Leaf, flower</td>
<td>Jaundice. Leaf juice is orally taken. Pain. Flower paste is topically applied.</td>
</tr>
<tr>
<td>4</td>
<td>Rauvolfia serpentina (L.) Benth. ex Kurz.</td>
<td>Apocynaceae</td>
<td>Sharpogandha</td>
<td>Root</td>
<td>Hypertension, diarrhea, pain. Roots are dried, powdered and taken orally with slightly warm water twice daily after meals.</td>
</tr>
<tr>
<td>5</td>
<td>Lasia spinosa (L.) Thw.</td>
<td>Araceae</td>
<td>Kanta kochu</td>
<td>Leaf, root</td>
<td>Intestinal diseases, throat afflictions, helminthiasis, skin diseases. Leaves and roots are dried under the sun and powdered. The powder is taken orally with water twice daily in the morning and evening.</td>
</tr>
<tr>
<td>6</td>
<td>Xanthosoma violaceum Schott</td>
<td>Araceae</td>
<td>Shada kochu</td>
<td>Tuber</td>
<td>Alzheimer’s disease, eye diseases, impotency. Boiled tubers are consumed orally with rice.</td>
</tr>
<tr>
<td>7</td>
<td>Bixa orellana L.</td>
<td>Bixaceae</td>
<td>Bairali</td>
<td>Leaf</td>
<td>Bone fracture. Paste of Bixa orellana leaf and Zingiber officinale rhizome is applied topically to fracture area.</td>
</tr>
<tr>
<td>8</td>
<td>Terminalia chebula Retz.</td>
<td>Combretaceae</td>
<td>Horitoki</td>
<td>Bark</td>
<td>High cholesterol, constipation, asthma, piles, skin diseases. Bark extract at doses of 500 mg is taken every 8 hours orally for up to 3 months.</td>
</tr>
<tr>
<td>9</td>
<td>Ipomoea mauritiana Jacq.</td>
<td>Convolvulaceae</td>
<td>Sampaccu</td>
<td>Leaf, root</td>
<td>Hypertension, tonic, muscle relaxant. One cup of leaf juice is taken orally twice daily. Alternately, roots are boiled in water and taken orally.</td>
</tr>
<tr>
<td>10</td>
<td>Kalanchoe pinnata</td>
<td>Crassulaceae</td>
<td>Pathorkuchi</td>
<td>Leaf</td>
<td>Analgesic, antimicrobial. Leaf juice is taken</td>
</tr>
<tr>
<td>No.</td>
<td>Species/Genus</td>
<td>Family</td>
<td>Part Used</td>
<td>Common Name</td>
<td>Uses</td>
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<tr>
<td>11</td>
<td>Phyllanthus emblica (Lam.) Pers.</td>
<td>Euphorbiaceae</td>
<td>Amloki Fruit</td>
<td>Ulcer, hair loss, fungal infection, bacterial infection, skin diseases. Dried fruits are soaked in water and the water taken orally in the morning and evening.</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Litsea monopetala (Roxb.) Pers.</td>
<td>Lauraceae</td>
<td>Kharajora Bark</td>
<td>Diabetes, diarrhea, dysentery, arthritis. Bark is dried and powdered. Pills prepared from the powder are taken orally in the morning.</td>
<td></td>
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<tr>
<td>13</td>
<td>Syzygium fruticosum (Roxb.) DC.</td>
<td>Myrtaceae</td>
<td>Tithi jaam Seed</td>
<td>Diabetes, dysentery. Seeds are dried and powdered. Pills prepared from the powder are taken orally in the morning.</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Plumbago auriculata Lam.</td>
<td>Plumbaginaceae</td>
<td>Nil chita Root, bark</td>
<td>Skin diseases. Paste of root is applied with milk topically to affected areas of skin. Jaundice, epilepsy, headache. Bark is dried and powdered and taken orally with water.</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Ziziphus rugosa Lam.</td>
<td>Rhamnaceae</td>
<td>Gasal boroi Fruit pulp</td>
<td>Sedative, cardiotonic, blood purifier. Fruit pulp is dried and powdered. One teaspoon of the powder is taken orally with one cup of warm water twice daily.</td>
<td></td>
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<tr>
<td>16</td>
<td>Aloe barbadensis Mill.</td>
<td>Xanthorrhoeaceae</td>
<td>Ghritokumari Leaf</td>
<td>Asthma, inflammation, abdominal pain, arthritic pain. Leaf juice is mixed with water and sugar and taken orally once daily in the morning on an empty stomach.</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Zingiber officinale Roscoe</td>
<td>Zingiberaceae</td>
<td>Ada Rhizome</td>
<td>See Bixa orellana.</td>
<td></td>
</tr>
</tbody>
</table>
DISCUSSION
The plants used by the Garo TMP for treatment of hypertension, Alzheimer’s disease, high cholesterol, diabetes, and arthritis are of special interest for these diseases are difficult to cure or incurable with existing allopathic medicines and newer and more efficacious drugs need to be discovered. Hypertension was treated by the TMP with *Rauvolfia serpentina*. The use of this plant for treatment of hypertensive patients has been shown several decades ago in 1953.[24] The plant is also used by folk herbalists in Bangladesh for treatment of hypertension and insomnia.[25]

Alzheimer’s disease causes progressive mental deterioration due to degeneration of the brain, which is generalized. Much research is currently going on for drugs to treat this dreaded disease. From that view point, the use of *Xanthosoma violaceum* by the Garo TMP to treat this disease, if scientifically validated, can be an important breakthrough in the disease’s treatment. The use of *Bixa orellana* to treat bone fracture by the Garo TMP is to our knowledge the first reported use of the plant for treatment of bone fractures. Usually *Cissus quadrangularis* is the plant of choice for this purpose by the folk medicinal practitioners of Bangladesh.[4] *Terminalia chebula* was used by the TMP to treat high cholesterol, constipation, asthma, piles, and skin diseases. The antihyperlipidemic activity of the plant has been shown in high cholesterol diet fed rats.[26]

Diabetes and arthritis was treated with bark of *Litsea monopetala* by the TMP. The antihyperglycemic activity of leaves of this plant has been reported.[27] The anti-arthritic effect of the plant is yet to be established; however, eugenol has been isolated from the bark of the plant;[28] eugenol is known to possess analgesic properties, so the plant can at least be used to get relief from arthritic pain, if not offering a complete cure for arthritis.

CONCLUSION
The plants used by the Garo TMP comprised of several fairly well used and several very little known plants of Bangladesh. The lesser known plants can be of special interest to scientists for further research leading to discoveries of novel drugs and lead compounds.

Conflicts of interest
The authors declare that there are no conflicts of interest.
REFERENCES


