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Ethnopharmacological Note

A novel herbal formulation to treat puerperal fever by a Hajong tribal healer

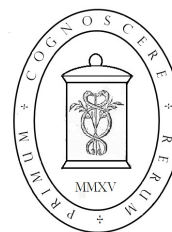
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Puerperal fever is a consequence of uterine infection (puerperal sepsis or the presence of pathogenic bacteria or their toxins in blood) following childbirth. It is also known by other names like childbirth fever, childbed fever, and postpartum fever. It is one of the causes of high maternal mortality rates in rural Bangladesh (Khan et al., 1985). Such puerperal sepsis has been linked with socio-demographic factors like degree of literacy of both husband and wife (Taskin et al., 2016). Since rural women of Bangladesh do not appear before unknown men, it is more difficult for them to discuss their gynecological problems with a doctor, who may be male and on top of it, possibly unknown. Moreover, modern doctors may not be available in the villages. In situations like puerperal fever, it is a common custom to seek treatment from an available folk medicinal practitioner (FMP) by the mainstream population, or from a tribal medicinal practitioner (TMP) by the tribal people of Bangladesh. In this note, we describe the formulation of a Hajong tribal healer in Netrakona district, Bangladesh, to treat puerperal fever. The Hajongs are an ethnic group who possibly came to live in east central districts of Bangladesh from the Chittagong Hill Tracts region in the southeast part of the country. According to anthropologists, the Hajongs originally came from North Burma (presently Myanmar). The Hajong TMP was named Kamcharan Hajong, male, age 75 years and practicing for 5 years. He learned his formulations from a 'guru'. In his formulation for puerperal fever, red flowers of *Nymphaea nouchali* Burm.f. (Nymphaeaceae, English: red water lily, Bengali: lal shapla), skin of fruits of *Punica granatum* L. (Punicaceae, English: pomegranate, Bengali: dalim), red flowers of *Hibiscus rosa sinensis* L. (Malvaceae, English: China rose, Bengali: rokto joba), leaves and pulp (dried and powdered) of immature fruits of *Aegle marmelos* (L.) Corr. (Rutaceae, English: Bengal quince, Bengali: bael) are boiled with water until color of water turns blood red. One glass of this decoction was to be taken orally in the morning and evening. It was claimed by the TMP that this formulation can cure puerperal fever and associated problems. All plants or plant parts are common in Bangladesh and are well-known; even then plant specimens were photographed and identified by a competent botanist at the Medicinal Plant Collection Wing of the University of Development Alternative. Interestingly, the Hajong TMP used Bengali names of these plants; either there were no Hajong names or the TMP preferred Bengali names for better comprehension by the interviewers. Ethnomedicinal uses of the four plants used by the TMP in Bangladesh are discussed (below), which suggest that the polyherbal formulation of the Hajong TMP to treat puerperal fever is unique. Stems of *Nymphaea nouchali* (Figure 1) is used to treat urinary difficulties in men by the Marma tribal healers of Naikhongchhari, Bandarban district, Bangladesh (Rahmatullah et al., 2009a). The Tudu sub-clan of the Santal tribe in Joypurhat district, Bangladesh, uses whole plants of *Nymphaea nouchali* to treat dysentery (Zahan et al., 2013). In Manikganj district, Bangladesh, whole plant is used to treat passing of blood with urine (Shahnaj et al., 2015). FMPs of



Shitol Para village, Jhalokati district, Bangladesh, uses bark and flowers of *Punica granatum* (Figure 2) to treat menorrhagia, constipation, and dysentery (Rahmatullah et al., 2010). The Tudu sub-clan of the Santal tribe residing in Joypurhat district, Bangladesh, orally takes flowers of *Punica granatum* and *Hibiscus rosa sinensis* to stop excessive bleeding due to any reasons (Zahan et al., 2013). The Garo tribal community living in Netrakona district, Bangladesh, use leaf paste of *Punica granatum* for treatment of oncomycosis (Rahmatullah et al., 2009b). Flowers of *Hibiscus rosa sinensis* (Figure 3) are used to treat abdominal pain and menstrual disorders by a Garo TMP in Haluaghat at Mymensingh district, Bangladesh (Ahmed et al., 2017). The Nag clan of the Rai Ghatual tribe of Moulvibazar district, Bangladesh, uses flowers of *Hibiscus rosa sinensis* to treat burning sensations during urination (Das et al., 2013). Roots of *Aegle marmelos* (Figure 4) are used by the Teli tribe of Natore district, Bangladesh, to treat burning sensations during urination (Rahmatullah et al., 2012). The various communities including Garo tribals residing in Garo Hills of Durgapur, Bangladesh take ripe and unripe fruits of *Aegle marmelos* for constipation; decoction of leaves is taken for peptic ulcer; leaf oil is used to treat respiratory disorders (Khan et al., 2015). In villages of Kurigram district, Bangladesh, paste prepared from leaves and flowers of *Punica granatum* and fruits of *Aegle marmelos* are taken for dysentery (Das et al., 2012). In villages of Jamalpur district, Bangladesh, dried pulp of young fruits of *Aegle marmelos* are taken to treat constipation and body pain (Jannat et al., 2015). In villages of Khulna district, FMPs use both ripe and unripe fruits of *Aegle marmelos* to treat stomach disorders, constipation, to clear bowels and to keep body cool (Afrin et al., 2015). In fact, the fruits are considered traditional home remedy for gastrointestinal disorders.

Keywords: medicinal plants, *Nymphaea nouchali*, *Punica granatum*, *Hibiscus rosa sinensis*, *Aegle marmelos*, puerperal fever

Declaration of conflict of interest

No conflict of interest associated with this work.

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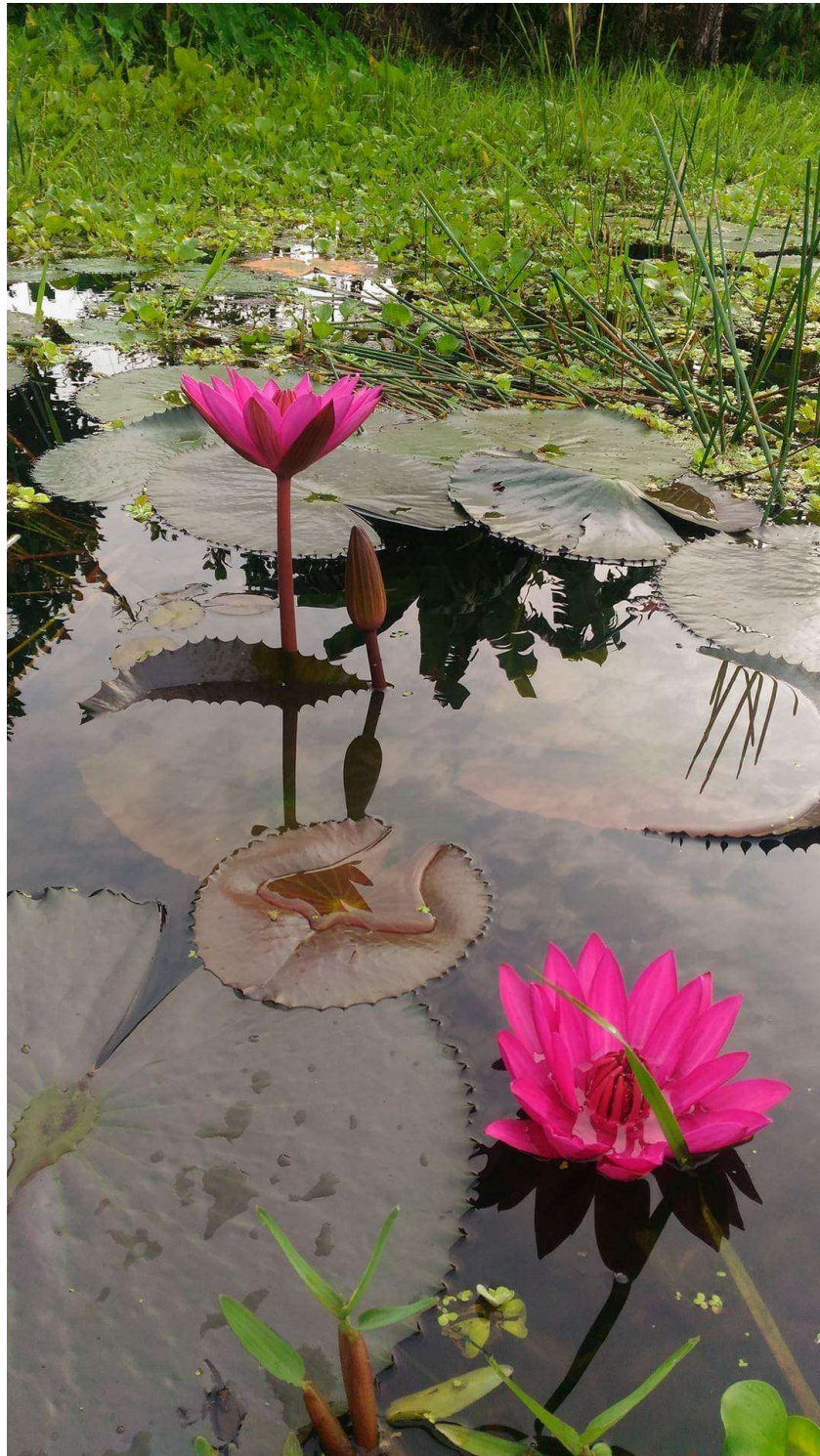


Figure 1. *Nymphaea nouchali* (red-flowered)



Figure 2. *Punica granatum* tree



Figure 3. Red-flowered *Hibiscus rosa sinensis* plant



Figure 4. *Aegle marmelos* tree with fruit