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Research Paper

An ethnobotanical study of medicinal plants used by ethnic people in Parbat district of western Nepal

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ABSTRACT

Ethnopharmacological relevance: Nepal, a mountainous country having diversified topographic and climatic conditions, gives rise to a wide range of flora and fauna. In villages ethnic people, including Magar and Majhi highly depend on medicinal plants for their primary healthcare. Due to over-exploitation, encroachment in forest for arable land and destruction of natural habitat, potentially useful medicinal plants are going to be threatened in their natural environment. There is a strong need to enlist highly valuable medicinal plants and use traditional knowledge to protect, utilize and manage them in *ex-situ* and *in-situ* conservation. The present research investigates and documents traditional knowledge on medicinal plants utilization as natural medicine by two ethnic communities Magar and Majhi of Parbat district in Western Nepal.

Methods: Ethnomedicinal data was collected during 2012–2013 by the following standard ethnobotanical methods. Data about medicinal uses of herbs, shrubs and trees were collected using semi-structured questionnaire, field observation, personal interview and group discussion with 334 (130 men and 204 women) pre-identified local informants, among which 13 male and 2 female were local healers. Statistical tool, informant consensus factors (F_{IC}) and fidelity level (FL) values were used to analyze the importance of ethnomedicinal plants.

Results: A total of 132 ethnomedicinal plant species belonging to 99 genera and 67 families have been documented. These plants are used to treat various diseases and disorders grouped under 12 disease categories, with the highest number of species (61) being used for gastro-intestinal, parasitic and hepatobiliary disorders ($F_{IC}=0.78\%$), followed by blood and lymphatic system ($F_{IC}=0.76\%$) category. The highest fidelity level (FL) values recorded in *Paris polyphylla* (FL=96.0%) followed by *Bergenia ciliata* (FL=95.0%) confirms that these plants are the best plant species with medicinal properties.

Conclusions: The two ethnic communities, Magar and Majhi, in Parbat district are rich in ethnomedicinal knowledge. The high degree of consensus among the informants suggests that current use and knowledge are still strong, and thus the preservation of indigenous knowledge would show good foresight in acting before much has been lost.

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1. Introduction

Human beings vital interest in plants, primarily as a source of food, shelter and clothing, dates back to the beginning of human civilization. Plants contain a large number of spread of pharmacologically active ingredients and each herb has its own unique combination and properties. Ethnic people depend on the plants around them to acquire knowledge of economic values and medicinal properties of many plants which is based on need,

observation, experience of older ethnic people, and trial and error. Indigenous medicines provide considerable economic benefits to ethnic people. The World Health Organization (WHO) mentioned that about 25% of modern medicines are developed from plants sources used traditionally; and research on traditional medicinal herbal plants lead to discovery of 75% of herbal drugs (Mian-Ying et al., 2002). World Health Organization (WHO) (2002) recorded approximately over 21,000 plant species for their medicinal uses throughout the world. Trade in drug from origins is getting recognition and popularity globally, and now it is a profitable business generating lots of income. Bioactive compounds from medicinal plants can be directly used as healing agent and their phytochemicals also serve as lead compound for developing

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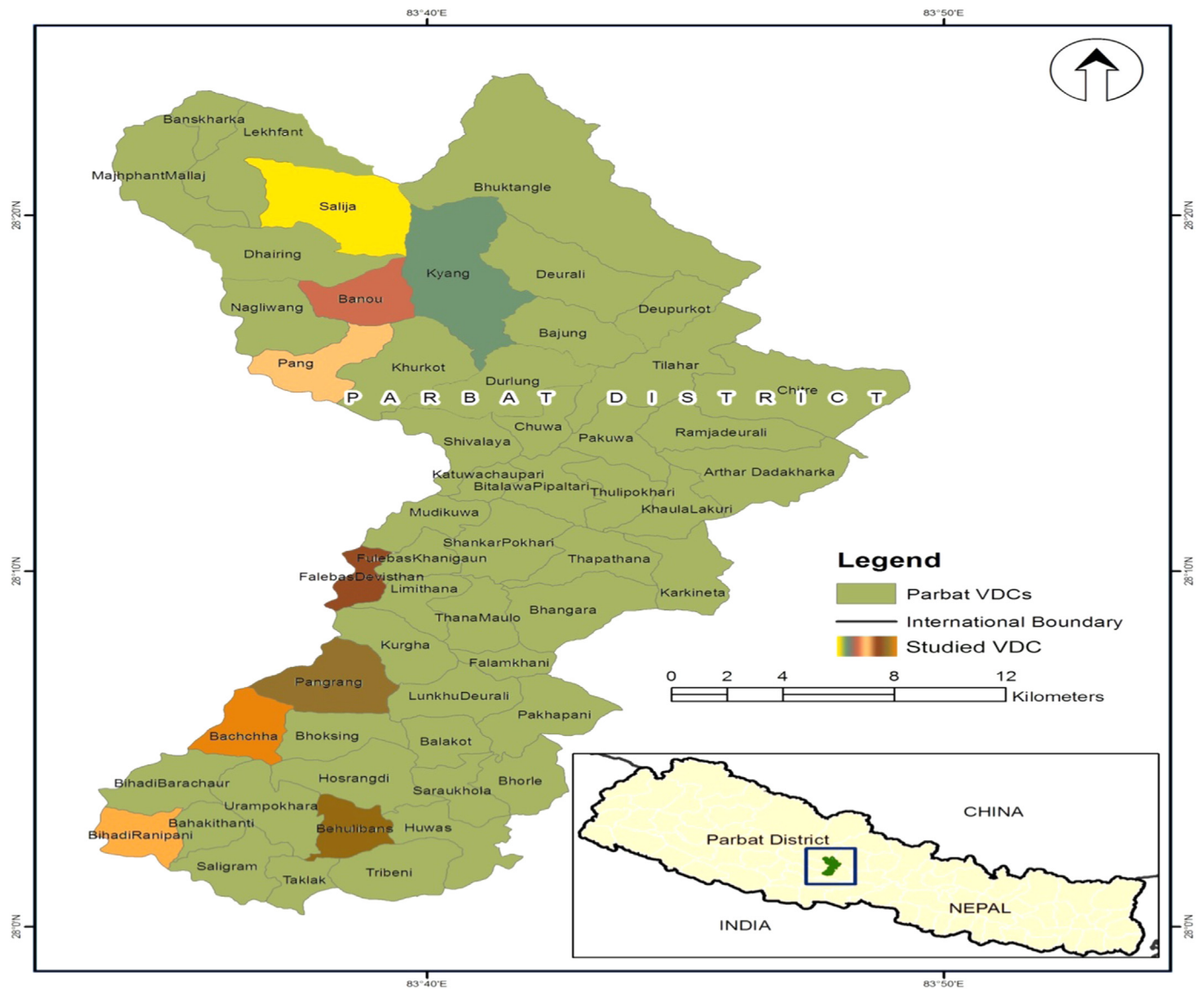


Fig. 1. Map of the study area in Parbat district, Nepal.

potential drugs to cure various diseases in human (Kamboj, 2000; Verma and Singh, 2008). Various higher plants are well known for drug therapy in traditional medicine (Martini-Bettolo, 1980; Farnsworth et al., 1985; Akerele, 1993; Aniyam, 1995; Martin, 1995a, 1995b; Ghorebani et al., 2006; Shanmugasundaram et al., 2011).

In Nepal, there are about 8.4 million indigenous people of different groups inhabiting various terrains. They possess their own culture, religious rites and rich traditional medicine practices. 6653 species of Angiospermic plants were documented among which 1792 to 2331 were recorded as potential medicinal and aromatic plants (Rokaya et al., 2010). Despite having immense potentialities to promote medicinal plants at national as well as international markets, the country is still far behind to utilize available resources to generate revenue. Traditional herbal medicine in Nepal has strong cultural and religious foundation. It exists in different ways among ethnic groups in their ritual or ceremonial practices, spiritual practices and self-healing practices. Indigenous and local communities have been using traditional and indigenous knowledge for centuries under local laws, customs and traditions to cure different diseases. Indigenous knowledge not only identifies but also provides the system of management of natural resources (Koirala and Khaniya, 2009).

Studies on ethnomedicinal plants of Nepal have been conducted in the past by the Nepalese and foreign researcher; and comprehensive works have already been published (Rajbhandari, 2001; Manandhar, 2002). However, there are limited studies of this kind with a focus in hilly districts. Plants having medicinal properties have been studied time to time in different parts of Nepal by several researchers (Manandhar, 1993, 1995, 1998; Bhattarai, 1998; Eigner and Scholz, 1999; Joshi and Joshi, 2000; Shrestha et al., 2001; Shrestha and Dhillion, 2003; Mahato and Chaudhary, 2003; Kunwar and Bussmann, 2008; Panthi and Chaudhary, 2003; Sharma et al., 2004; Bhattarai et al., 2006, 2009; Ghimire and Basakoti, 2009; Kunwar et al., 2009; Acharya and Acharya, 2009; Uptrei et al., 2010; Joshi et al., 2011; Malla et al., 2014). In Parbat, some of the studies on ethnomedicinal plants have already emphasized on their importance by some researchers (Malla and Chhetri, 2012; Thapa, 2012; Malla et al., 2014); but not much work on their importance has been done especially with reference to Magar and Majhi. In addition, due to the availability of modern medical facilities, the tradition of using indigenous knowledge for the treatment of common ailments is also rapidly disappearing. Keeping in view the importance of traditional knowledge of ethnic people, the present survey enlists the

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