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## Original Research Article

# The efficacy of herbal system of medicine in the context of allopathic system in Indian Central Himalaya

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## ABSTRACT

Herbal medicine is part of the knowledge of indigenous cultures and marginal societies across the globe which has stood the test of time. A comparative study was conducted into traditional healing and community wellness in eight different valleys of Indian Central Himalaya. The study led to the collection of data from 40% of local people, of whom 150 were exclusively traditional herbal healers (Vaidyas) about their healing systems, common ailments and modes of treatment, the responsibility of healers towards the well-being of the community, and adaptations of the respective populations to their environments via traditional healing policies. This resulted in the documentation of 22 threatened medicinal plant species that are traditionally used for curing 12 diverse ailments without any reported side effects. Several medicinal plant species have been listed as threatened due to over exploitation and the impact of climate change/climate variability. The study revealed that in remote areas where modern healthcare facilities are rare, or inadequate, the majority of the traditional communities follow cultural and ethical codes of conduct when collecting medicinal and aromatic plants from the wild. The herbal medicines prepared by traditional herbal healers for home remedies fall into six categories: powder, paste, decoction, extract, ointment, and infusion.

The perceptions of local people, traditional herbal healers, patients and medical doctors in the study area enabled the categorisation of the ailments into two categories based on the seriousness and nature of the ailments. Results accumulated from the present study based on the perceptions of local people indicated that approximately 66.1% of the population in all the valleys were dependent on herbal medicine for curing ailments, while 33.9% of the population were dependent on the allopathic system of treatments. A comparative assessment of healing time, effectiveness and approximate cost for curing ailments through both the herbal and allopathic systems of medicine was based on the perceptions of traditional herbal healers, medical doctors and patients suffering from different ailments in the region. Of the 150 Vaidyas consulted 90% (n = 105) highlighted unavailability of desired medicinal plant species as a main reason for the loss of the traditional healthcare system. The Participatory Rural Appraisal (PRA) approach for the documentation of indigenous

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knowledge and conservation of medicinal plants was also highlighted as an appropriate measure for the management of these resources. The present paper aims to provide a practical example of sustainable utilization of medicinal and aromatic plants for sustaining the traditional healthcare system and scientific validation of available knowledge before its commercialization.

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## 1. Introduction

In recent years, demand for herbal medicines has been increasing for several reasons; these include the environmental impact and side effects of allopathic medicine, which have motivated humans to use more natural products for their health benefits. The high economic costs, side effects and carbon footprint of allopathic medicines has resulted in increased demand for herbal medicines (Kessler et al., 2001; Akhoundzadeh and Daliri Hampa, 2004; Naghdi et al., 2006; Moradi et al., 2008; Ghandali and Mirhosseini, 2008; Phondani, 2010). Medicinal preparations derived from natural sources, especially from plants, have been in widespread use since time immemorial. In fact, plants remain the main source of medicines for a large proportion of the world's population, particularly in the developing world, despite the advent of pharmaceutical chemistry during the early twentieth century, which brought with it the ability to synthesize an enormous variety of medicinal drug molecules and allowed the treatment of previously incurable diseases (Ahmad et al., 2006). There are thousands of medicinal plants in use throughout the world, with a tremendous range of actions and degrees of potency and most have a specific action on a particular body system, known to be suitable for treating certain types of ailments (Chevallier, 1996; Kandari et al., 2012).

Medicinal and aromatic plants are valuable resources for the traditional healthcare system (THCS) practiced by traditional herbal healers known as Vaidyas in the Indian Himalaya region. Accurate identification, sustainable utilization, cultivation and conservation of threatened medicinal plant species are necessary to reduce the pressure on natural resources and preserve genetic diversity (Akbarinia et al., 2006). Medicinal plant-based traditional herbal remedies have played a key role in the healthcare systems of many developing countries. In India, approximately two million traditional herbal healers still use medicinal plants for curing various ailments and Himalaya is considered to be a storehouse of herbal medicines (Maikhuri et al., 1998; Kala, 2005). The majority of medicinal plant species found in this region are threatened due to over use. At the same time, traditional knowledge of underutilized medicinal plants and the process of making many herbal formulations have declined over the past few decades due to lack of awareness and the rapid spread of allopathic medicines (Maikhuri et al., 1998; Phondani et al., 2010). Traditional herbal medicine is thought to be used by 60–80% of the world's population (Phondani, 2010). It has been estimated that about 20,000 plant species are used for medicinal purposes throughout the world (WHO, 2002).

The Himalayan mountainous region of India has played an important role in the evolution of Ayurveda, providing the

restricted habitats for many valuable medicinal plant species (Maikhuri et al., 2000; Kala et al., 2004). In India, the Ayurvedic system of herbal medicine has been used for more than 3000 years, and the folk and ethnobotanical uses of herbs among poor rural communities have played a big role in the treatment of diseases (Kala, 2005; Manadhar, 1989).

The traditional communities of the mountain region of Indian Central Himalaya are rich in ethnobotanical knowledge owing to their close affinity with the surrounding natural resources (Maikhuri et al., 1998; Kala, 2006; Negi et al., 2010). Maintaining traditional knowledge of herbal medicine in the face of sweeping modern medicine and diminishing folklore is imperative, as such wisdom in the past has proved to be the key for inventing the wonder drugs for diseases that were once considered incurable (Hajra and Balodi, 1995). Socio-economic and cultural faith, weak economy, inaccessibility and lack of modern medical facilities in these remote and far flung areas, in addition to their proven ameliorative properties, contribute to the dependence on a system of medicine based on these medicinal plant species (Maikhuri et al., 1998; Phondani et al., 2010).

The present study focuses on three objectives: (i) to document the ethnobotanical information among tribal and non-tribal communities and promote conservation of medicinal and aromatic plant resources in their natural habitats; (ii) to assess and compare the cost of and dependency of the tribal and non-tribal communities on herbal and allopathic systems of medicine; and (iii) to understand traditional herbal healers' perceptions of the weakening of THCSs and viable options for its further development.

## 2. Materials and methods

### 2.1. Study area and ethnic communities

The Indian Himalayan region is over 2800 km long and 220–300 km wide, across the states of Uttarakhand, Jammu & Kashmir, Himachal Pradesh, Sikkim, Arunachal Pradesh, Nagaland, Manipur, Mizoram, Tirpura, Meghalaya, Assam and one district of West Bengal. The central Himalayan region of Uttarakhand state is situated between 29° 26'–31° 28' N and 77° 49'–80° 06' E, and covers an area of 53,483 km<sup>2</sup>. It shares international boundaries with China in the north and Nepal in the east and is known as the origin of sacred rivers, such as the Ganga, Bhagirathi and Alaknanda. The present study was carried out in four districts of the Garhwal region, Chamoli, Rudrapur, Pauri and Tehri, which fall within eight valleys, Niti, Urgan, Pindar, Berahi, Binsar, Nadakini, Mandakini and Bhilangana/Gangi, located in the high-altitude region of

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