

# Traditional Medicine: Blessing of Nature for Human Being

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## Short Communication

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## Abstract

Our earth which is one of the unique planets of universe has been a source of medicinal agents for thousands of years and an impressive number of modern drugs have been isolated from natural sources, many based on their use in traditional medicine. Out of 2, 97,000-5, 10,000 plant species distributed throughout the world, 35,000-70,000 plants have medicinal properties. The estimated number of medicinal plants used worldwide includes 10,000-11,250 in China, 7,500 in India, 2,237 in Mexico and 2,572 in North America. In India, a remarkable achievement has been made in the field of drug development to develop a new leads of therapeutic interest. This review article determine how these traditional medicines are very impotent in health system of human.

## Traditional Medicine

Nature has been a source of medicinal agents for thousands of years and an impressive number of modern drugs have been isolated from natural sources, many based on their use in traditional medicine [1]. These plant-based traditional medicine systems continue to play an essential role in health care and 80% of the world population relies on traditional medicine for their primary health care needs [2-4]. Modern medicine draws heavily from traditional medicine, which exists in every continent of the globe and in every cultural area of the world. The global demand for traditional medicine is not only large, but is growing and 85% of the traditional medicines involve the use of plant extracts. During the past decade, traditional medicine became more and more important for preventive and therapeutic purposes [5,6]. Nearly 25% of modern medicines are derived from plants first used in traditional medicine Figure 1 [7,8].

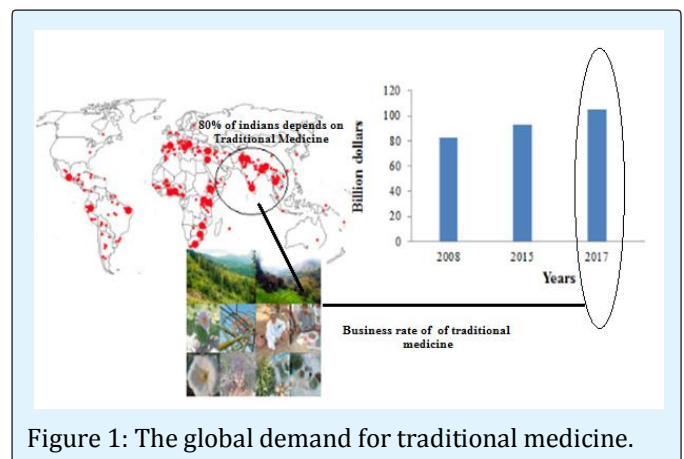


Figure 1: The global demand for traditional medicine.

World Health Organization defined Traditional Medicine (TM) as diverse health practices, approaches, knowledge and beliefs incorporating plant, animal, and/or mineral based medicines, spiritual therapies,

manual techniques and exercises applied singularly or in combination to maintain well-being, as well as to treat, diagnose or prevent illness. TM systems such as Traditional Chinese Medicine, Indian Ayurveda, Siddha and Arabic Unani Medicine and a variety of indigenous TM systems have also been developed throughout history by Asian, African, Arabic, Native American, Oceanic, Central and South American and other cultures. In the past decade there has been renewed attention and interest in the usage of traditional medicines globally. TM is practiced throughout the world representing Australia (48%), Belgium (38%), China (40%), Chile, (71%), Columbia (40%), Canada (70%), France (75%), India (65%), U.S. (42%) and up to 80% in African countries. Plants have formed the basis of sophisticated TM practices that have been used for thousands of years by people in China, India, and many other countries [9].

### Ethno Medicine

Ethno medicine refers to the study of traditional medical practice which is concerned with the cultural interpretation of health, diseases and illness and also addresses the healthcare seeking process and healing practices [9]. It deals with information pertaining to social adaptation, deviant behavior, illness, disease, medical taxonomy, folk medical knowledge, and systems of medical care. The practice of ethno medicine is a complex multi-disciplinary system constituting the use of plants, spirituality and the natural environment and has been the source of healing for people for millennia. Research interest and activities in the area of ethno medicine have increased tremendously in the last decade. Since the inception of the discipline, scientific research in ethno medicine has made important contribution to the understanding of traditional subsistence, medical knowledge and practice [1].

### Pharmacognosy

Pharmacognosy is the study of drugs of natural origin. The term comes from two Greek words, "pharmakon" means drug or medicine, and "gnosis" means to acquire knowledge. The American Society of Pharmacognosy defined it as the study of the physical, chemical, biochemical and biological properties of drugs, drug substances or potential drugs or drug substances of natural origin as well as the search for new drugs from natural sources. Pharmacognosy basically deals with the standardization, authentication and study of natural drugs. It is closely involved with allied fields. viz. Phytochemistry and toxicological screening of natural products. Much of the research in Pharmacognosy has been done in identifying controversial species of plants, authentication of commonly used traditional medicinal plants through morphological, histological, physico-chemical and toxicological parameters, especially heavy metal

estimation and radiobiological contamination in plants, prescribed by an authoritative source.

Plant preparations are said to be medicinal or herbal when they are used to promote health beyond basic nutrition. The study of drugs from plants includes the subjects of botany, chemistry and pharmacology [10]. The renaissance of herbal medicine creates a demand for studies in the field of Pharmacognosy. The pharmacognostic analysis is the key operation in determining the exact identity of material. From a practical perspective this includes i) Quality, safety and efficacy (correct botanical identity, purity, consistency), ii) Prevention of substitution and adulteration, and iii) Standardization of herbal drugs.

### Importance of Pharmacognosy

The importance of Pharmacognosy has been widely experienced in recent times. Most of the cases of accidental herbal medicine misuse begin with wrong identification of a medicinal plant prescribed [11]. Many of the traditional systems have records where one common vernacular is supplied in place of two or more entirely different species all over the world. Ginseng, which is a common Indian drug, is sold fewer than 13 different names in the market. For example, Chinese or Asiatic ginseng (*Panax ginseng*), American ginseng (*Panaxquin quefolius*), Siberian ginseng (*Eleutherococcus senticosus*), Ayurveda ginseng (*Withania somnifera*) and Russian ginseng (*Acanthopanax senticosus*), to name a few. Seven species of *Smilax* including *Smilax china*, *S. cocculoides*, *S. glabra*, *S. lunglingensis*, *S. mairei*, *S. riparia* and *S. glauochina* were referred to by unrelated names in different literature [12]. The root of *Asarumsie boldii* was mistaken for another herb, the fruit of *Hypericumascyron* for *Forsythia suspense* and *Salvia miltiorrhiza* was mistaken for a *Polygonaceae* plant. These names could create confusion over prescription, which may eventually lead to serious consequences. Some traditional medicinal herbs even have a number of synonyms names after them by various authors [3]. For example, *Cassia acutifolia* which is commonly known as Alexandrian senna has names like *Senna alexandrina*, *Cassia senna*, *Cassia obtusata* and *Cassia sophera* under its original name. The second major reason for accidental herbal medicine misuse is the non-characterization of chemical constituents of the controversial plants.

The correct identity of resource plant in some Ayurveda preparation is also still not proper, There are many examples, like the use of American Ashok (*Polyalthia longifolia*) instead of Sita-Ashok (*Saraca indica*) in preparation of Ashokarisht, confusion about the identity of Shankpushpi, Brahmi, use of bark/leaves of *Abies dense* instead of *Taxus wallichiana* in medicines for the treatment of cancer [12].

## Wealth of Traditional Medicine at Global Level

Out of 2,97,000-5,10,000 plant species distributed throughout the world, 35,000-70,000 plants have medicinal properties [2,13]. The estimated number of medicinal plants used worldwide includes 10,000-11,250 in China [14,15], 7,500 in India [16], 2,237 in Mexico and 2,572 in North America [17,18]. However, the great majority of species of medicinal plants are used only in Folk Medicine [10]. Comparatively, TM systems utilized least number of medicinal plants i.e., 5,000-6,000 in Chinese Medicine [3]; 1,430 in Mongolian Medicine [19], 1,106-3,600 in Tibetan Medicine (Pei, 2001; Pei, 2002b), 1,250-1,400 in Ayurveda [20], 342 in Unani and 328 in Siddha [16]. The numbers of plant species that provide ingredients for drugs used in Western Medicine are fewer.

Modern pharmacopoeias contain at least 25% of drugs derived from plants and many others, which are synthetic analogues, built on prototype compounds isolated from plants [2]. The recognized growing dependence on the use of alternative medicine systems for achieving the goals of cost reduction in health care services has prompted governments worldwide to increase investment in Complementary and Alternative Medicine [21]. There are some broad starting points for selecting and obtaining plant material of potential therapeutic interest. There are so many approaches in selecting the plants for drug discovery, of which ethno medicinal approach provides the best means for drug discovery. Plant-based biopharmaceuticals have been under research and development for close to 20 years, and the first plant-derived vaccines for human or animal use have only now become available [22].

## Medicinal Wealth of India

India, one of the 17 mega diversity countries in the world, harbours a high level of biodiversity. It encompasses 4 out of 34 hotspots of biodiversity, and Western Ghats is one among them [11,23,24]. In India, there are 17,500 species of flowering plants, of which 7,500 are known for medicinal uses [25]. Western Ghats harbours 4,500 plant species, of which 1,720 plant species are endemic. Based on ethno botanical knowledge, Shah (2005) identified 9 Ethno botanical major Hotspots or Traditional Knowledge Hotspots and 9 Ethno botanical minor Hotspots or Traditional Knowledge Hotspots in India [26].

The Indian traditional medicine can be grouped into three categories as i) Plants of codified knowledge used in organized systems of medicine like Ayurveda, Unani and Siddha, ii) Plants of empirical knowledge used in Ethnomedicine or folk medicine based on oral (undocumented) information being passed from one generation to the next, and iii) Plants of scientific

knowledge, which have been investigated pharmacologically and chemically, and their active principles used in modern medicine or have provided valuable leads for partial or total synthesis of new drugs.

## Plant Based Drug Development in India

In India, a remarkable achievement has been made in the field of drug development to develop a new leads of therapeutic interest. Central Drug Research Institute (CDRI), Lucknow, India has developed some plant-based drugs based on the indigenous information from the Traditional Medicines and they are Arteether, a semi-synthetic derivative of Artemisin in obtained from *Artemisia annua*, marketed as a pure compound and a modern drug.

Guggulipid derived from the plant *Commiphoramukul* containing the bio molecules named E and Z-Guggul sterones used to reduce blood cholesterol levels. And Memory Plus and Pro Mind are the commercially available standardized herbal fractions containing the bimolecular named Bacosides A and B developed from the plant *Bacopamonnieri* with memory enhancing properties.

During the course of ethno botanical exploration in the forest of Southern Western Ghats, Kerala, Dr. Pushpangadan and his team came across a unique knowledge on the use of a lesser-known wild plant namely *Trichophus zeylanicus* (locally known as Arogyapacha) from the local forest-dwelling Kani tribe. Based on this tribal lead, they developed herbal formulation, named *Jeevani* after safety evaluation, standardization, preclinical pharmacology and clinical studies [12]. India has the distinction of being the first country in the world that evolved a benefit-sharing model that implemented Article 8(j) of CBD (Convention on Biological Diversity). Tropical Botanic Garden Research Institute (TBGRI) has developed a model known as TBGRI model or Kani model or Pushpangadan model for the benefit sharing (Pushpangadan and Kumar, 2005) to share the benefits with Kani tribes on 1:1 basis. This TBGRI model of benefit sharing received wide acclaim, acceptance and popularity the world over, because it was the first of its kind that recognized the resource rights and IPR of a traditional community by way of sharing equitably the benefits derived out of the use of traditional knowledge that has been developed, preserved and maintained by that community for many generations [27-30]. Rightly so, it was conferred with the "Equator toward" by the United Nations Organization (UNO).

## Conclusion

Just like with other therapies, the therapeutic use and formal registration of Traditional Herbal Medicinal

Plants is largely based on their longstanding tradition. Many institutions in India at national and international level have contributed to this. This review gives an overview of the traditional system of medicine and its role in translational medicine in order to overcome side effect of synthetically marketed drugs and related disorders on curable disease by standard marketed drug also cured by traditional medicine drugs. "For better health need to move toward traditional medicine"

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