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Traditional Health Care Systems and Herbal Medicines

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ABSTRACT

The age-old traditional health care practices are still relevant and are followed by communities across the countries. India's contribution remains exemplary in the growth of traditional health care systems. The present study reviews the strength of traditional health care systems and medicinal plants of India that has been contributing in health care not only from time immemorial but also makes it *numero uno* choice of community for curing many chronic diseases. An extensive literature survey was undertaken for compilation of information on the traditional systems of medicine in India, which include Ayurveda, Unani, homeopathy and Siddha. The careful investigation of information reveals that Ayurveda is one of the oldest systems of medicine evolved in India. It is a holistic system of treatment, which is an amalgamation of regular diet, use of medicine and following practices like exercise and behavior. The contribution of plants, as raw material for making medical formulations, is significant in the Indian systems of medicine, and over 6,500 species of plants are known to occur in India those are used by various streams of traditional health care practitioners. Attempts made by the Government of India in enriching and managing these age-old health care systems are also discussed.

Keywords: Indian system of medicine, medicinal plants, Ayurveda, bio-prospect, capacity building, health care policy

INTRODUCTION

Globally, hundred types of traditional medical practices are known to exist, which are in use and enlisted by the World Health Organization (WHO). Continuity of traditional medicine system replete with examples across the world, for instance, acupuncture in China, magnetic healing in France, Heilpraxis in Germany, Herbalism in Sweden, Shiatsu in Japan, and Sowa Rig-pa in Tibet and Bhutan (Anonymous, 2006). Ayurveda, Unani, Siddha, Homeopathy, Naturopathy and Yoga are some of the most popular systems of alternative medicine (http://indianmedicine.nic.in/). Many traditional health care systems, largely plant-based, have evolved in the Indian sub-continent, and some of them Ayurveda, Sidhha, and Naturopathy, for example, are still playing a major role in curing many old and new born diseases (Kala et al., 2006).

People across the world rely upon the traditional systems of medicines, largely plant based, to meet their primary health care needs. In China, the traditional herbal preparations account for 30-50% of the total medicinal consumption. In Germany, about 90% populations have used natural remedies at some point in their life. In many African countries including Ghana, Mali, Zambia and Nigeria, over 60% children with malarial fever are cured at home with herbal remedies. In Europe and North America, over half of the populations have used complementary and alternative medicine, at least once (Anonymous, 2006; WHO, 2008). All these traditional medical systems have accumulated a great deal of knowledge on the various medicinal plant species. Ayurveda, the oldest medical system

in Indian sub-continent, has alone reported approximately 2000 medicinal plant species, followed by Siddha and Unani medical systems (Kala, 2006a; Kala and Sajwan, 2007).

Over the past few years, the traditional herbal therapy has gained a wide recognition due to several reasons including lesser side effects as compared to allopathic medicines. There are reports on the use of herbal-based products in cosmetic industries and these natural ingredients include extracts of several medicinal plants. The demand of such herbal-based cosmetic products has increased over the years (KIT, 2003). India and China are two of the largest countries in Asia, which have the richest arrays of registered and relatively well-known medicinal plants (Raven, 1998). Since the Indian subcontinent is well known for the age-old healthcare traditions, there is a need to review such traditions and their strengths, which make them to contribute in health care not only from time immemorial but also *numero uno* choice of community for curing many chromic diseases. The review also attempts to discuss various issues associated with traditional health care system in India.

METHODS

An extensive literature survey was carried out for compilation of information on the traditional systems of medicine in India, which include Ayurveda, Unani, homeopathy, Siddha and Amchi or Tibetan system of medicine. Since there are number of issues associated with these traditionally practiced Indian Systems of Medicine (ISM), the compiled information was broadly classified into two major categories such as use and availability of raw material and management of Indian systems of medicine. Plants being the important ingredients in ISM, the raw material-based issues were focused on the significance of medicinal plants. Management of ISM is considered quite important in view of its long-term sustainability. The management issues are, therefore, broadly analyzed in terms of the government policies for nurturing ISM, creating space for institutional networking and capacity building and sorting out the issues related to the bio-piracy while stepping out for bio-prospecting.

RESULTS AND DISCUSSION

Indian Systems of Medicine (ISM)

The traditional system of medicine in India functions through two major streams – the local health tradition and the classical scientific system of medicine. The carriers of local health care system are millions of people who cure diseases at home as a birth attendant, bonesetters, and practitioners of snake bite treatment, jaundice treatment etc. The classical scientific system of medicine has evolved with the philosophical explanation and is expressed in various manuscripts. Such system of medicine exists in the name of Ayurveda, Unani, Siddha and Tibetan (Pushpangadan, 2006).

The Ayurvedic system of medicine is an age-old system of therapy, which is associated with the Vedic civilization in India. The oldest existing literature on this form of treatment is mentioned in Rigveda around 4500-1600 B.C. Ayurveda is a holistic system of treatment, which is amalgamation of use of food, medicine and other measures like exercise and behavior (Kala, 2006a; Katiyar, 2006). Life in Ayurveda is conceived as the union of body, senses, mind and soul. Ayurveda regards human body is a composition of five basic elements namely, earth, water, fire, air and vacuum (ether), and any illness is considered the result of absence of a balanced state of the total body matrix. The disease is diagnosed by examining the general physical condition of the patient and pulse reading, along with examining urine, excreta, eyes, tongue, skin, and auditory functions. Once disease is diagnosed, the treatment measures involve use of medicines, specific diet and prescribed routine activity (http://indianmedicine.nic.in/).

The Unani system of medicine was originated in Greece and later introduced in India by Arab and Persians. Like Ayurvedic system, the Unani system of medicine prescribes daily diet quantity to patient and also depends on whole drug therapy in which the active principle of drug is not isolated (Ansari, 2006). Unani medicine assumes that the drugs possess their own temperament to act. They may be hot, cold, moist and dry. Similarly, each individual possesses his own temperament, physical structure, self-defense mechanism and reaction to environmental factors. The medicine is thus prescribed based on such factors of the person undergoing the treatment (Rais, 1986; Ahmad, 1992).

The Siddha medical system is originated in southern India during 10th to 15th century and like most of the traditional systems of medicine it follows pulse reading to diagnose the ailments (Daniel, 1984). In Siddha, like Ayurveda, any ailment in human body is thought a result of imbalance of three humors – bile (pitta), wind (vayu) and phlegm (kaph). This system of medicine has developed and accumulated a rich treasure of therapeutic knowledge in which use of metals and minerals is often prescribed (http://indianmedicine.nic.in/). It also emphasizes on individualistic approach of treatment as it takes into account the age, sex, habitat, appetite, mental frame, physical condition and surrounding environmental of the patient.

Tibetan medical system is flourished in the trans-Himalayan region, especially in Tibet, Ladakh and Lahaul-Spiti where the earlier inhabitants used to practice shamanism under the name *Ban* (Dash, 1994; Kala, 2003). In due course of time, *Bauddha Bhiksus* (monks) introduced the knowledge of Ayurveda, and propagated it among their disciples in Ladakh, Lahaul-Spiti, Tibet and wherever they preached. This system of medicine follows the procedure of pulse reading, and the number of pulse beats during one respiratory cycle indicates the status of health. Plant forms major ingredient in Tibetan medicine, besides animal products, minerals and salts (Kala, 2005, 2006b).

Role of plants in ISM

Wide arrays of plant species are used in traditional system of health care in India. Over 6,500 species of plants are known to occur in India those are used by various streams of traditional health care practitioners. Approximately 2000 medicinal plant species are used alone in Ayurvedic system of medicine, which is followed by Siddha (1121), Unani (751), Homeopathy (482) and Tibetan (337). The number of people involved in the traditional health care system is quite impressive in India. About 7,00,000 practitioners of Ayurveda, Siddha, Unani, Yoga, Naturopathy and Homeopathy are registered in the Indian Systems of Medicine. And a sizeable number of practitioners in rural and far flung areas are not yet registered. Indian System of Medicine contains 9493 manufacturing units, 22,635 dispensaries and 1355 hospitals (Kala et al., 2006; Kala, 2010).

Family traditions and cultural preferences also make people to own, decide and prefer various health care systems. In India, medicinal plants have strong acceptance in religious activities, where the plants are worshiped in the form of various gods, goddesses and local deities (Kala et al., 2006). *Aegle marmelos, Saussurea obvallata, Ocimum sanctum, Ficus benghalensis, Zanthoxylum armatum* and *Ficus religiosa* are examples of the medicinal plants highly used for medicinal as well as a religious purposes by the Hindus.

Plants are used as medicine by 4,635 ethnic communities for human and veterinary health care (Shankar and Majumdar, 1997), across the various ecosystems from high altitudes of the Himalaya to the coastal line of southern India. Apart from the human use, animal husbandry uses many plant species as its primary source of healthcare. Asvayurvedasiddhanta (Ayurvedic system for horses) is considered as the oldest existing veterinary text in India, followed by Hastyayurveda (Ayurveda of elephants) (Tiwari and Pande, 2010).

ISM, bio-prospecting and bio-piracy

Of the total medicinal plants of India, 960 species are in active trade because of their high demand (Ved and Goraya, 2008). The escalating demand of some valuable medicinal plants has led to over-harvesting of these plants from the wild. On the other hand, there are many medicinal plant species though they are less known but may have high medicinal properties. *Eupatorium perfoliatum* and *Carica papaya* are known to cure dengue fever (Manchanda and Verma, 2000; Kala, 2012) - a deadly disease continue to increase its magnitude in tropical countries like India (Gupta et al., 2012). About 25 drug plants are used in homeopathy to cure dengue, including *Eupatorium perfoliatum* (Manchanda and Verma, 2000). There is immense scope in such plant species to establish their medical efficacy using modern tools.

The traditional knowledge, at the same time, is under threat of misuse. The major challenges in traditional health care system are preventing bio-piracy and benefit sharing to actual knowledge holders. The lack of legal protection for the therapeutic properties of numerous medicinal plants has made indigenous knowledge most vulnerable to bio-piracy, as illustrated by the cases of patents on neem (*Azadirechta indica*) and turmeric (*Curcuma domestica*).

Documentation of traditional knowledge is one of the tools to prevent bio-piracy. Therefore, the Government of India attempts to document traditional knowledge in public domain in order to prevent the bio-piracy, to safeguard the sovereignty of traditional herbal knowledge, and to protect the traditional knowledge from being misused in patenting on non-original discoveries. This innovative step has resulted in the documentation of 202,500 medicinal formulations through collating the information from the existing literature in the digital form, which is called as Traditional Knowledge Digital Library (TKDL). This Digital Library has made an impact at an international level after realizing its utility in preventing misappropriation of the rich traditional knowledge and also making it as a precious tool for encouraging advanced research.

Policy issues

Over 100 countries around the world have some regulations for herbal medicine. However, differences in definitions of traditional medicines create difficulty in regulating traditional medicinal practices and products (WHO, 2008). In different countries, a single herbal product may have different priority of use such as a dietary supplement, a food, and an herbal medicine. Three key issues need to envisage the national policy on traditional medical system such as the proper definition of traditional medicine, formulation of rules and regulations, and deliberation on intellectual property rights (Anonymous, 2006).

In view of the formulation of rule and regulations, especially to regulate import, manufacture, distribution and sale of drugs in India, the Drugs & Cosmetics Act 1940 was enacted. Schedule T of this Act prescribes the specifications with respect to the good manufacturing practices for manufacturing Ayurvedic, Siddha and Unani medicines in India. It emphasizes upon the authenticity and quality of raw materials used for manufacturing drugs and it further states that raw material must be free from any contamination.

In order to meet the desired objectives, each licensee is expected to develop methods and procedures for adhering prescribed process of manufacturing drugs which has to be recorded in a manual. Nonetheless, the registered practitioners of Ayurveda, Siddha, and Unani called as Vaidyas, Siddhas and Hakeems, respectively, who prepare medicines on their own to distribute among their patients and not selling such drugs in the market are exempted from the purview of good manufacturing practices as per the Indian Medicine Central Council Act 1970. It is also perceived that the traditional practices were ignored in the first national health care policy outlined by the Bhore committee in 1946. In 1961 the Mudaliar committee had recommended strongly the integration of Ayurveda with modern ones in education, practice, and research (Srinivasan, 1995).

The provisions as laid in the Patents Act 1970 (came into force on 20th April 1972 by replacing the Indian Patents and Designs Act 1911), which are amended by the Patents (Amendment) Act 2005 and Patents Acts Rules 2006, look after the patent issues of herbal drugs. In medicinal plants, the patent eligible subject matter includes discovery of novel, unobvious and useful biological properties, making of a higher therapeutically efficacious new dosage by mixing a combination of herbal medicine, extraction and separation of new active ingredients from plants used for developing substances for curing diseases (Kartal, 2007; Sahoo et al., 2011). This encourages many pharmaceutical companies for patenting on herbal drugs.

In 1983, the National Health Policy recognized that the large stock of health manpower in Ayurveda, Siddha, Unani, Homeopathy and Naturopathy had not been adequately utilized therefore steps need to be taken to move toward a meaningful integration of the indigenous and modern systems of medicine (Anonymous, 1983). The Planning Commission and the National Medicinal Plants Board (NMPB) of the Government of India prepared a policy document on the promotional and commercial aspects of the medicinal plants sector. The Biological Diversity Act 2002 has framed many rules for sustainable utilization of medicinal plants and to mitigate the chances of bio-piracy. In view of maintaining the quality standard of Ayurvedic drugs, the Govt. of India has developed Ayurvedic Pharmacopoeia.

Besides polices at international and national levels, different state governments have framed policies and Acts, as per the requirement to strengthen and regulate the medicinal plants sector in their respective state. The Kuth Act 1921 of Jammu and Kashmir continued even after independence in 1947 in view of harvesting not only the kuth species (*Saussurea costus*) but other medicinal plants, as well, for marketing. However, the Kuth Act was not considered fit enough for meeting the expectations of the state government due to decline in the numbers of medicinal plants and cumbersome procedures for their cultivation, in 2002, the Kuth (Repeal) Act 2002 was brought in. Repealing Kuth Act is being projected as a way to encourage local people for cultivation of medicinal plants on their own land (Ishfaq-ul-hassan, 2003).

Realizing the species specific importance of medicinal plants, other states have also framed rules for conservation and management of such promising high value species. The state of Andhra Pradesh had made rules for possession and transit of sandalwood and red sanders in the state under the Andhra Pradesh Sandalwood and Red-Sander wood transit Rules 1969. Likewise, the state of Tamil Nadu framed rules for management of sandalwood as per the Tamil Nadu Sandalwood Possession Rules 1970, which states that no person should possess excess of five kilograms sandalwood without a license procured by the state forest department.

Capacity building and institutional networking

The ISM, as explained, has got quantum leap on 9th November 2014, when the Department of AYUSH under the Ministry of Health and Family Welfare was upgraded as a separate ministry, the Ministry of AYUSH, by the Government of India. This step is taken in the interest of optimal development and propagation of AYUSH systems of health care in the country.

Undoubtedly, there is immense scope in traditional medical system in India being rich with medicinal plants and interest of a large number of stakeholders right from practitioners of traditional medical knowledge to drug manufacturing units and consumers. NMPB, being an apex body, has successfully set up 35 State Medicinal Plants Boards, in past, dealing with various aspects of medicinal plants at the state level. NMPB facilitates number of activities by coordinating with various Institutions and Universities. It helps in dissemination of information, capacity building and applications of research findings on various medicinal plant species.

Besides Ministry of AYUSH, numbers of institutions have been working on the promotion of traditional knowledge and traditional health care system in India. Apart from health care, medicinal plants are also considered as the alternate income-generating source of underprivileged communities; therefore, strengthening medicinal plant based health care system may benefit and improve the living standard of poor people. A great deal of

traditional knowledge of the use of various plant species is still intact with the indigenous people, and this fact is especially relevant with the remote areas due to slow rate of development. However, when any herbal medicine gets popularity, the rush to collect such plant species becomes rampant. Unfortunately, the traditional holders of such knowledge are pushed back and they seldom receive the actual benefits of their knowledge.

Development of medicinal plants farming, encouragement of traditional herbal use and herbal healers, establishing medicinal plants conservation areas, establishing the Social Capital Trust for herbal healers, establishment of linkages among various stakeholders, etc., are among some of the social issues that need to be honored and addressed properly. The folklore on several medicinal plants and the formulation developed by using them is well recognized in different ethnic communities, which need to be examined scientifically.

Indian organizations need to collaborate with countries involved in developing agro-techniques, scientific validation of traditional knowledge, biotechnology, techniques for mass propagation of medicinal plants, exchange and trade of herbal products, quality control, production of quality planting material and capacity building. There could be many more possible areas of collaborations, which need to be explored by conducting meetings and seminars between the officials and medicinal plants stakeholders of both developed and developing nations.

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