



Contents lists available at ScienceDirect

Journal of Traditional and Complementary Medicine

journal homepage: <http://www.elsevier.com/locate/jtcme>

Review article

Revival, modernization and integration of Indian traditional herbal medicine in clinical practice: Importance, challenges and future

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ARTICLE INFO

Article history:

Received 27 February 2016

Accepted 20 May 2016

Available online xxx

Keywords:

Indian traditional medicine

Ayurveda

Mainstreaming

Health

Clinical practice

ABSTRACT

In spite of incredible advances in modern science, technology and allopathic medicine a large we are unable to provide quality healthcare to all. Traditional medicine particularly herbal medicine considered as a major healthcare provider around the globe particularly in rural and remote areas. A large section of people depends on such medicine for their primary healthcare mainly in underdeveloped or developing countries. Indian traditional medicinal system like Ayurveda, Siddha and Unani has a very rich history of their effectiveness; modern research also acknowledged the importance of such medicine. Indian traditional medicine or medicinal plants are also considered as a vital source of new drug. Mainstreaming of such medicine is important for the people. Several steps have been taken in India to promote such medicine and to integrate them into clinical practice. Evidence based incorporation of Indian traditional medicine in clinical practice will help to provide quality healthcare to all.

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1. Introduction

In last century, medical science has made incredible advances all over the globe. Overall mortality rate decreased, expectancy of life increased, a lot of new life saving drugs discovered which helps us to fight against several infectious and other diseases, and new advancement in the field of technology has boosted the capacity of modern science. In spite of such incredible advancement whether such benefit of modern science/medicine has reach to the every door of the world? World Health Organization (WHO) in an International Conference on Primary Health Care in 1978 commonly known as 'Declaration of Alma-Ata' express the need to achieve the goal 'Health for All' step by step manner through tackling the poverty, illiteracy and poor sanitation. In 1998, WHO incorporates a new global health policy "Health for All in the 21st Century" and set the goal to achieve health security, health equity, increased healthy life expectancy and to ensure access to essential quality healthcare for all.^{1,2} Modern medical science, despite so many achievements and progress, is finding itself difficult to reach to every people and

deal with the ever-increasing diseases and disorders. Still, majority of world population mainly in developing and underdeveloped countries does not have access to modern medicine and depends on the time-tested traditional/alternative or complementary systems of medicine, many of these systems is much older compared to the allopathic medical wisdom.^{3,4} Therefore, the major questions still exist – (1) whether the goal has achieved? (2) whether 'Health for All' can be possible without scientific integration of traditional herbal medicine in clinical practice?

In the 21st century, pollution, unhealthy lifestyle, environmental toxins increases the risk of diseases. The side effects, over-use/misuses of allopathic drugs are also a major concern. In 2013, WHO developed and lunched 'WHO Traditional Medicine Strategy 2014–2023' and emphasised to integrate traditional and complementary medicine to promote universal healthcare and to ensure the quality, safety and effectiveness of such medicine.⁵ Therefore, the world is looking for cost effective, easily available, better physiological compatible traditional systems of medicine and holistic approach to avert such problem and provide the basic healthcare to all.

2. Indian society and traditional medicine

Knowledge regarding the therapeutic, toxicological effect of plants, minerals and other substances go back to the prehistoric

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Peer review under responsibility of The Center for Food and Biomolecules, National Taiwan University.

<http://dx.doi.org/10.1016/j.jtcme.2016.05.006>

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times when people have migrated to into the Indian subcontinent. Several evidences indicated that in Indian subcontinent medical intervention like dentistry and trepanation were exercised as early as 7000 BCE. Current archaeo-botanical excavations pointed towards the evidence regarding the use of medicinal plants in the Middle Gangetic region since the 2nd millennium BCE which are still found in Ayurvedic folk medicine.⁶ India is a land of different group of people who have their own religion, beliefs, culture, language and dialects. Thus, diverse medicinal systems have developed in this region. A number of medicinal systems also introduced here from outside and enriched in India. Since ancient time, Indian society depends on traditional medicinal systems practiced here. Introduction of allopathic drug during British era and neglecting Indian traditional medicine by British ruler are responsible for significant erosion of Indian traditional medicine. High scientific progress in allopathic medicine and modern facilities also resists the growth of traditional medicine. Still, about 70% rural populations of India are believed in traditional medicine for primary healthcare.^{7,8}

2.1. Ayurveda

Ayurveda is a comprehensive scientific medicinal system indigenous to India. The term Ayurveda means 'knowledge of life', which comprises two Sanskrit words, *Ayu* (life) and *Veda* (knowledge or science). Four Vedas, considered as the oldest Indian literature (5000–1000 BC) contain information about natural remedies. Ayurveda was established as a fully grown medicinal system.^{9,10} *Charaka Samhita* (focussing on internal medicine) and *Susruta Samhita* (focussing on surgery) were written systematically and considered as classical text of Ayurveda. Vital details of *Charaka Samhita* and *Susruta Samhita* were compiled together and updated additionally in *Astanga Sangraha* and *Astanga Hridaya*. Some other ancient classics which include minor work of Ayurveda includes *Madhava Nidana* (focussing on diagnosis of disease), *Bhava Prakasa* (focussing on additional information related to plant and diet), *Sarngadhara Samhita* (focussing on formulation and dosage form),^{9,11} Ayurveda was divided into eight major clinical subdivisions – *Kayachikitsa* (internal medicine), *Salya Tantra* (surgery), *Salakya* (diseases of supra-clavicular origin), *Kaumarabhrtya* (paediatrics, obstetrics and gynaecology), *Bhutavidya* (psychiatry), *Agada Tantra* (toxicology), *Rasayana Tantra* (rejuvenation and geriatrics), *Vajikarana* (aphrodisiology and eugenics).^{9–11}

2.2. Siddha

Siddha system of medicine is believed as a brilliant achievement and symbol of Tamil culture which originated in Southern parts of India. Siddha medicine invented from Dravidian culture and is grown in the time of Indus valley civilization. Chinese alchemy, Taoism, and Taoist Patrology are considered as a main source of inspiration for Siddha alchemy. It is believed that in ancient time, the system was developed by eighteen siddhar (a class of Tamil sages). Though Siddha system of medicine resembles with Ayurveda in many aspects it has own philosophy and concept, holistic approach, and lifestyle oriented measures.^{12–15}

2.3. Unani

Unani system of medicine is the fusion of contemporary traditional medicinal system in Egypt, Syria, Iran, Iraq, China, India and several other east countries. It was originated in Greece and later developed in Arab. Arab and Persian settlers in 11th century

introduced Unani medicine in India, the system gets recognition and enriched during Mughul rule.^{16–18}

2.4. Amchi

Amchi or Sowa-Rigpa is another ancient well documented traditional medicinal system, which was popular in Tibet, Mongolia, Nepal, Bhutan, Himalayan region of India, some parts of China and former Soviet Union. Though conflicts exist on the origin place of Amchi medicine as some believed it originated in India, some say Tibetan region and other considered it as Chinese origin. Amchi has close similarity with Ayurveda, though influence of Chinese traditional medicine and Tibetan folklore also observed in this system.¹⁹

2.5. Folk medicine

Other than codified traditional medicinal system the uncoded folk medicine also plays a vital role in maintenance of health and cure of diseases for large number of people belongs to rural/indigenous/ethnic communities. This type of knowledge is not documented properly and propagates verbally from ancestors. Nearly 8000 plants species are utilized in folk medicine and approximately 25,000 effective plant-based formulations used by the rural and ethnic communities in India.¹⁷

3. Herbal medicine and its importance

Plants are always the key source of drug or treatment strategy in different traditional medicinal systems. In recent years, many people are choosing to plant based medicines or products to improve their health conditions or as curative substance either alone or in combination with others. According to the WHO, herbs or herbal products are used by the large number of populations for basic healthcare needs. Herbal medicine includes herbs, herbal materials (like plant parts) or preparations, processed and finished herbal products, active ingredients.^{20,21} In recent years, a huge resurgence of the use of herbal product due to the side effects of modern drugs, failure of modern therapies for against chronic diseases, and microbial resistance. It is estimated that nearly 75% of the plant based therapeutic entities used worldwide were included from traditional/folk medicine. In India, approximately 70% of modern drug are discovered from natural resources and number of other synthetic analogues have been prepared from prototype compounds isolated from plants.^{20,22,23} It was reported that more than 60% of cancer drug available in market or in testing are based on natural products. Currently, about 80% of antimicrobial, immunosuppressive, cardiovascular, and anticancer drugs are derived from plant sources. More than 70% entities among 177 anticancer drugs approved are based on natural products or mimetic. About 25% prescription drug found globally are derived from plant sources, and nearly 121 such drugs entity are in use. Thirteen drugs of natural origin are approved in United States between 2005 and 2007, and clinical trials are going on more than 100 natural product-based drugs. It was also estimated that 11% of the total 252 drugs found in essential medicine list of WHO are exclusively of plant origin.^{24,25} In Indian traditional medicine a large number of plants are used. It was estimated that Ayurveda uses 1200–1800 plants, Siddha medicine includes 500–900 plants, Unani utilize 400–700 medicinal plants and Amchi medicine uses nearly 300 plants while folk healers of India use more than 7500 medicinal plants in different medicine. Three classical Ayurvedic literature *Charaka Samhita*, *Sushruta Samhita* and *Astanga Hridaya* mentioned about 526,573 and 902 number of plants.^{17,26,27}

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