

EDITORIAL

Indian Contribution to Health Science — AYUSH

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Ayurveda (Sanskrit: Aur- life, veda- science/knowledge)

Indian contribution to health science goes back to Rigveda (1700-1100 BCE) era, followed by Yajurveda (1400-1000 BCE), Atharva Veda (1200 BCE). Ayurveda is one of the oldest medical system of India. It relies on the natural and holistic approach towards physical and mental health. Plants are the main source of ayurvedic medicine (herbal medicine) though it may contains minearal, metal and animal products also. Life style modifications including dieting, exercise are integral part of ayurveda.

Person practicing ayurveda was known as Vaidya who usually approached an ailing person thoroughly considering his/her history including mental, seasonal, life-style and other surrounding factors, followed by physical examination. In fact they began the rational approach to an ailment. Proper documentation solely as a medical literature we got from Charaka Samhita, Sushruta Samhita.

Charaka (3rd century BCE) was the famous physician and principal contributors of Ayurveda. Charaka Samhita (Sanskrit text on Ayurveda) (dates between 4th century to 2nd century BCE) was first taught by Atreya, codified by Agnivesa, compiled

by Charaka. In 6th century CE the book was revised by Dridhabala.¹Charaka is been called as Father of Medicine in India.²

While Charaka Samhita primarily described the medicinal part, Sushruta Samhita mainly described the surgical part. It was written most probably 6th century BCE, or mid 1st millennium BCE which was redacted and expanded with Uttara-tantra in 1st millennium CE.³ Sushruta is called as Father of Plastic Surgery.⁴ Another great contribution in ayurveda was by Vagbhata's Astanga Sangraha and Astanga Hridaya in 6th-7th century CE.^{5,6}

Mādhavakara (Mādhava Nidāna) 700-800 CE, detailed the aetiopathogenesis of the disease (Madhava Nidana).⁷ Sōdhala (1200 CE) contributed two important works to Ayurvēda – Sōdhbala nighaṇṭu and Gadanigraha which described Ayurvēda drug dictionary, their formulae arranged according to the types of pharmaceutical preparation and systematic arrangement of the diseases.⁸ Sārangadhara (14th century CE) wrote Sārangadhara Samhita which was the earliest Indian treatise to describe nādīparīkṣa as a diagnostic tool.⁹ Bhava Mishra (1347 CE) of Magadha, had described 470 medicinal plants in Bhava Prakasha.¹⁰ Madana Pala (14-15th century CE) in his treatise Madanapala Nighantu had included anjira/fig (dried fruit of fig-tree, Ficus carica

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Linn. for medicinal use.¹¹ Narahari Pandita (17th century CE) wrote Raja-Nighantu where many new and interesting medicinal plants e.g. Brahmadandi, Dhumrapatra, Ekavira, Hastisundi, Jambu, Jhandu, Samudraphala, Svetamli, Sveta, Vrścika etc were described.¹² Ashtavaidyan Vayaskara N.S. Moos's significant contributions to 20th century Ayurvedic literature is publication of ancient texts alongwith his own original works.¹³

Ayurveda is widely practiced in Hindustan peninsula (India and the neighboring countries) and nowadays gained popularity in developed countries also e.g. Europe, USA, Japan etc.^{14,15} Govt. of India has dedicated its one ministry towards development and propagation of AYUSH (Ayurveda, Yoga & Naturopathy, Unani, Siddha, Homeopathy) system of health care.

Yoga & Naturopathy

Yoga & Naturopathy is a system of medicine which believes in healthy living via drugless system of healing. Naturopathic therapies include nutrition, hydrotherapy, fasting therapy, yoga, behavioral therapy, health promotion etc.¹⁶ This system was mentioned in Vedas and other ancient texts. But it became popular these days in India by the work of Shri D. Venkat Chelapati Sharma who did Telegu translation of German Louis Kuhne's book "New science of healing" in 1894. This is followed by translation of this book in Hindi and Urdu by Shri Shrotri Kishan Swaroop in 1904.¹⁷ Gandhiji was a firm believer of Naturopathy. He had written many articles on naturopathy in his newspaper Harijan. Since pre-independence era naturopathy was well practiced in Andhrapradesh, Uttar Pradesh, Bengal, Maharashtra and Gujarat. In search of yoga as therapeutic intervention the literature search in PubMed, PsychInfo, MEDLINE, IndMed, Indian Citation Index, Index Medicus for South-East Asia Region, Web

of Knowledge, Embase, EBSCO, and Google Scholar revealed that most publications originated from India, followed by United States and Canada.¹⁸

Major contribution to revive Naturopathy in India are by Mahavir Prasad Poddar, Janaki Sharan Varma, Sharan Prasad, Khushi Ram Dilkash, S. J. Singh, Hiralal, Vitthal Das Modi, Kulranjan Mukherjee, Sukhram Das, J. M. Jussawala, M.M. Bhamgara, Vegi Raju Krishnam Raju, B Venkat Rao, B. Vijaya Laxmi, Ganga Prasad Gaur Nahar, Dharam Chandra Saravagi, Sukhbir Singh Rawat, Acharya K Laxman Sharma etc.¹⁷ Yoga is the integral part of Naturopathy. Tirumalai Krishnamacharya is considered as the father of modern yoga. Other praiseworthy yoga gurus are Swami Sivananda Saraswati, Maharishi Mahesh Yogi, Swami Rama, B.K.S Iyengar, Swami Kavalayananda, Krishna Pattabhi Jois, Jaggi Vasudev, Paramahansa Yogananda, Dharendra Brahmachari etc.¹⁹

Gandhi Nature Cure College was started in Hyderabad in 1970 by Nisargopachar Trust with financial assistance from Govt. of India and Shri Kamalnayan Bajaj under the able guidance of Dr. B Venkat Rao and Dr. B Vijayalakshmi.²⁰ National Institute of Naturopathy was started at Pune in 1986 by Govt. of India. Now 12 Naturopathy colleges are present at different places of India teaching 5.5 years Bachelors program in Naturopathy and Yoga (BNYS).¹⁷ But there is lack of systematic effort made to understand various aspects of Naturopathy and Yoga in its clinical practice, education, research and promotion as a system of medicine.

Unani

The Unani system of medicine is introduced to India by Persian & Arabian (11th century CE). At present India is a leading country in Unani practice of medicine and education. Unani originally invented by Hippocrates,

Greece, later made popularised by Arabians. In India, Delhi Sultans gave patronage to the Unani system of medicine. In unani health is governed by 7 basic physiological principles – Arkan (elements), Mizaj (temperament), Akhlat (humours), Aaza (organs), Arwah (spirits), Quwa (faculties), Afaal (functions). Main types of unani treatments are – Ilaj-bil-Tadbir (regimental therapy), Ilaj-bil-Ghiza (dieto therapy), Ilaj-bil-Dawa (pharmacotherapy), Ilaj-bil-Yad (surgery).²¹

In 14th century CE Hakim Ziyauddin Nakshabi had good contribution to Unani system in Inida.²² During Shah Jahan rule (1628-1658 CE) two famous Unani physician - Hakim Amanallah Khan and Hakim Nur al-Din Muhammad wrote many famous books of Unani medicine.²³ Hakim Ajmal Khan (1868-1927) a renowned physician of Delhi, first chancellor of Jamia Milia Islamia University, founded the Tibbia College (Ayurvedic and Unani Tibbia college), Delhi and pioneered the research activity in Unani. Hakim Abdul Aziz (1855-1911) had founded Takmil al Tibb School at Lucknow for research and practice of Unani who systematised unani instruction around the texts of Ibn Sina, supplemented by practical instruction of surgery and anatomy.^{21,24} Salimuzzaman Siddiqui (1897-1994) worked at Tibbia College and Indian Council for Scientific and Industrial Research. Later he moved to Pakistan. He invented Ajmaline, class Ia anti-arrhythmic drug in 1931 from the roots of *Rauwolfia serpentina* which was named after his mentor Hakim Ajmal Khan. In 1942 he extracted 3 compound from neem oil – nimbin, nimbinin, nimbidin.^{21,25}

Padma Bhushan Hakim Abdul Hameed (1908 - 1999), former Chancellor of Aligarh Muslim University, founded Jamia Hamdard University for research, study and practice of Unani medicine.²⁶ Hakim Syed Niamathullah (1900-1961) had popularized Unani in Chennai and other part of

Southern India.²⁷ Padma Shri Hakim Syed Khaleefathullah (1938-) had done immense research work on Unani medicine and also founded the Niamath Science Academy in 1985 to promote Unani medicine.²⁸ Govt. of India has established Central Council for Research in Unani Medicine (1979) for doing research activity in Unani medicine.

Siddha

Siddha system of medicine is originated from Tamil Nadu and is one of the oldest medicinal systems of India. It is contemporaneous with Egyptian, Meopotamian, Grecian and Chinese system of medicine. Palm leaf manuscripts says that Siddha medical system is brain child of Lord Shiva which He described to his consort Parvati → Parvati told to Nandi → Nandi transmitted to disciples, Siddhars. Sage Agasthya was the foremost among 18 siddhars. →Siddhars spread and practice this medical system.²⁹ Other 17 siddhars are – Thirumoolar, Bogar, Konganar, Therayar, Korakkar, Karuvurar, Edaikkadar, Chattamuni, Sundaranar, Ramadevar, Pambatti, Machamuni, Kudambai, Azhuganni, Agapai, Nandhidevar, Kakapusundar.³⁰

In Siddha, examination of 8 areas are required to reach diagnosis – Na (tongue), Varnam (colour), Kural (voice), Kan (eye), Thodal (touch), Malam (stool), Neer (urine), Naadi (pulse). Drugs used for treatment are categorized in 3 parts – Thavaram (herbal product), Thadu (inorganic substances), and Jangamam (animal products).^{29, 31}

Yugimamahuni is known as Father of Siddha pathology.³² In his Vaidya Chinthamani-800, he had written about 4448 diseases. His major contribution appeared to be on diabetes.³³ National Institute of Siddha, Chennai and Central Council for Research in Siddha are doing many research activities in this field of medicine.

Homeopathy [Greek: Homois (similar) Pathos (suffering)]

Second most popular form of treatment seeks by Indian population. About 10% of Indian uses Homeopathy for curing their illness.³⁴ John Martin Honigberger (1795-1869) introduced Homeopathy in India (1839)³⁵ though other source said that a German geologist who had some knowledge of homeopathy distributed homeopathic medicines to his ailing workers and local people at Bengal in 1810 CE.³⁶

Babu RajendraLal Dutta (1818-89) started practicing homeopathy in 1861. Pandit Iswar Chandra Vidyasagar and Raja Sir Radhakanta Deb Bahadur, Sovabazar Rajbari, got cured by him. These 2 success story gave homeopathy huge popularity among common people. He is been called as Father of Indian Homeopathy.³⁶

Mahendra Lal Sircar was the first Indian who became a certified homeopathic physician and contributed immensely to this subject.^{37,38} Pratap Chandra Majumder and D N Roy founded Calcutta Homeopathic Medical College in 1881. Mahesh Chandra Bhattacharya, basically chemist and pharmacist, made good quality homeopathic medicine available for poor people.³⁷ Father Augustus Muller popularized homeopathy in South India. In Kerala M N Pillai (1882-1962) made it popular.³⁶ In 1867LokenathMaitraestablished the Banaras Homeopathic hospital. G Salzar had cured the cataract of Maharaja Bahadur of Jaipur in 1870.³⁷ In Odisha Abhi Chandra Rao had established the first homeopathic medical college.³⁶ Pareshnath Banerji, Mihijam (1891-1971) had introduced homeopathic medicinal mixtures.³⁹ He had invented the homeopathic medicine Lexin, used for treatment of snake-bite.⁴⁰ Nand Raj also had good contribution in homeopathy.⁴¹

Govt. of India has established National Institute of Homeopathy in 1975 at Kolkata.

Central Council for Research in Homeopathy is another great initiative by Govt. of India to promote research activities in homeopathy. In 2015 JSPS Govt. Homeopathic Medical College, Hyderabad and Indian Institute of Chemical Technology invented a homeopathic medicine Crotalus Horridus from rattlesnake venom which may be able to arrest the multiplication of HIV.⁴²

Nursing

Nurses constitute $\frac{2}{3}$ rd of Indian health workforce.⁴³ Their significant role in patient care, treatment, rehabilitation, prevention and promotion of health care delivery system are very much praiseworthy. Though nursing care was mentioned in Sushruta Samhita, but establishment of first nursing school was evidenced during Charaka's time (300-200 BCE).⁴⁴

Florence Nightingale had a great influence on nursing of India and she reformed the nursing care in military and civilian hospitals (1861 CE). In 1867 St. Stevens Hospital, Delhi first started training of Indian women for nursing care. At Govt. General Hospital (GGH), Madras, first nursing school of India was started with 6 months diploma in midwifery (1871).⁴³ Since then many nursing school and colleges are established in India. In 1946 the first 4 year B.Sc Nursing was established at College of nursing, Delhi and Christian Medical College, Vellore.⁴⁵ The first 2years M.Sc Nursing was started in 1960 at Rajkumari Amrit Kaur College of Nursing, Delhi in 1960.⁴⁶ Trained Nurses Association of India (TNAI) was formed in the year 1908 and the Indian Nursing Council (INC) was passed by ordinance on December 31, 1947, constituted in 1949. TNAI becomes member of Commonwealth Nurses Federation (CNF) in 1974.^{46,47}

Though there are lots of contributions to healthcare from nurses, but uniqueness of their contribution is that they work as

a team, hence individual nurses name as famous personality is a very few to get. Miss B.J. Singh was the first Indian woman to be sent as representative of TNAI (Trained Nurses' Association of India) to the ICN (International Council of Nurses) Congress in Rome (1933).⁴⁸ In 1956, Miss Adrenwala was appointed as first Nursing Advisor to Government of India.⁴⁹ At present, nurses from Kerala are highly appreciated due to their excellent dedication towards this profession. In fact this nursing profession has transform the women of Kerala from 'burden to asset'.⁴⁸

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