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**INTERNATIONAL JOURNAL OF  
 ADVANCED RESEARCH (IJAR)**

Article DOI:10.21474/IJAR01/6337  
 DOI URL: <http://dx.doi.org/10.21474/IJAR01/6337>



### RESEARCH ARTICLE

#### THE HISTORY OF TRADITIONAL INDIAN MEDICINE FROM BEGINNING TO PRESENT DAY

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#### Manuscript Info

##### Manuscript History

Received: 18 November 2017  
 Final Accepted: 20 December 2017  
 Published: January 2018

##### Key words:-

Appearance of Ayurveda, Universities of Ayurveda, Buddhist period, Mongol period, Western period.

#### Abstract

In 1500 B.C. the Dravidian people were invaded by the Aryans who brought the Atharva-Veda, from which came the Ayurveda. In 1000 B.C., the philosophical foundations of Ayurveda arose through Samkhya. In 700 B.C., the creation of Ayurvedic medicine Universities took place, and in Buddhist period (500 B.C-10<sup>th</sup> century), there was an expansion of this medical knowledge. From 10<sup>th</sup> century to the 12<sup>th</sup> century, with various Muslim invasions, the destruction of a part of the Ayurveda culture was verified, and only in the 16<sup>th</sup> century some of the texts of Ayurveda were recovered. In the 16<sup>th</sup> and 17<sup>th</sup> centuries, through the contact with the diseases of the Western civilization, the discredit of Ayurveda occurred, which only reappeared in the 20<sup>th</sup> century.

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#### Introduction:-

Ayurveda (Traditional Indian Medicine) is the name given to medical knowledge developed in India over 5000 years ago, which makes it one of the oldest medicinal systems of mankind (e.g. Mukhopadhyaya (2003)). In mythological terms, the Ayurveda has two origins: one is Dhanvantaridev who revealed this wisdom to Susruta in order to lessen human suffering. Another is Brahma who revealed this medical knowledge to Prajapati Daha, having given rise to an encyclopedia on Ayurveda, known as the *Agnivesha Treatise* (e.g. Macdonell (1074)).

Ayurveda is regarded as one of the origins of medicine because its theoretical underpinnings have influenced the Japanese, Chinese, Arab, Greek and Roman medical systems (e.g. Filliozat (1975)). Ayurveda continues to be the official medicine of India and has spread all over the world as an effective system of traditional medicine. Ayurveda (from Sanskrit *Life or longevity* (Ayur) and *Science* (Veda)) has its roots in the Vedas and Samkhya philosophy (e.g. Caldecott (2006)).

Ayurveda teaches that the relationship between mind and body might be done through 3 main Doshas (Vata, Pitta, Kapha) and 15 sub-Doshas. There are 3 main types of mind, named by Gunas (Sattva, Rajas, Tamas). The knowledge of Ayurveda has two main objectives, namely to make the diagnosis of the disease and eliminate the causes of the disease (known as "Shodhana")<sup>1</sup>, alleviating the suffering of the patient. There are 5 types of Shodhana (Vamana, Virechana, Nasya, Basti and Raktha Mokshana) (e.g. Edde (2010)).

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The main feature of Ayurveda is the emphasis on one's lifestyle. The daily routine of the human being (rest of time, type of feeding, quality of thoughts and feelings) is described in the Sacred books of India as *Dinacharya*, being pointed as the main source for longevity (e.g. Turtha (2005)). In this regard, Ayurvedic massage is used as a complementary practice to detoxify the body, increasing cellular oxygenation and energetic state of the person (balancing the *chakras*).

### Methods:-

In this original article on *The History of Traditional Indian Medicine from beginning to present day*, the main books and articles on this area of study, available in academic libraries, were collected and analyzed in order to make a useful synthesis for the reader who intends to have a global idea on the subject, but without neglecting academic rigour. Within the various bibliographical references available, I selected a set composed of the 25 most important items on this topic (*primary sources*), based on the "impact factor" of the article, and the "reference" books on the subject.

### Results:-

The research work carried out for the elaboration of this original article led us to the following results that are presented in sub-chapters to facilitate the reader's reading.

#### Appearance of Ayurveda (3000 a.C. – 1000 a.C.):-

More than 5000 years ago, lived in the Indu valley, the Dravidian people<sup>2</sup> who built great cities, such as Harappa, Mohenjo-Daro and Lothal, and where there was a medical system that used substances and utensils characteristic of Ayurveda (for example, bitumen) (e.g. Marshall (1931)). This people had a great culture, having a very developed agriculture and commerce. The origins of Yoga were also present in this civilization (e.g. Fairservis (1975)). Around 1500 B.C., this civilization disappeared (although its causes are not exactly known), having facilitated the invasions of the Aryan people who brought the Vedas (means "Knowledge")<sup>3</sup>

The Vedas (Rig-Veda, Yajur-Veda, Sama-Veda, Atharva-Veda) are the oldest literature in the world that contains several useful subjects to mankind of that time, such as engineering, physics, biology, philosophy, theology, astrology, among others. (e.g. Dandekar (1973)). The Vedas are scriptures compiled by Vyasa who received this knowledge orally by the Rishis (sages) and latter carried out its codification in Sanskrit (e.g. Renou (1947)). Each Veda consists of four types of text, namely the Samhitas (mantras), the Aranyakas (rituals), the Brahmanas (comments), the Upanishads (philosophy and metaphysics) (e.g. Santucci (1976)). From the first Veda, Rig-Veda, written around 1700 B.C., came the other three (e.g. Bloomfield (1916)). From the last Veda, the Atharva-Veda, it appeared the Ayurveda (e.g. Karambelkar (1961)). The Atharva-Veda, which was composed of two groups of Rishis (sages) known as Bhrigus and Angirasas, is a handbook of practical teaching on hygienic care, ethics and spiritual activity, having various descriptions on anatomy, physiology, surgery and use of herbs for physical and psychic treatment.

1 Ayurveda is first and foremost a preventive medicine that deals with the patient in a holistic way, taking in consideration the environment (desha), the body (prasanna), the senses (indriya), the mind (manah), and the soul (atma) (or the 5 elements, earth, air, water, fire and ether), in which the state of health reflects the harmony of these elements. To achieve this balance, it is necessary to take into account 4 goals in life (Purusharthas): Dharma (means law or having a social behavior appropriate to the environment), Artha (means material prosperity), Kama (means pleasure and sentimental fulfillment), Moksha (means liberation or spiritual fulfillment). There are several authors who wrote on this topic, namely, Gerson 1995, Frawley 1989, Lad 1998, Verma 2006, Ranade 1993, Smith 1998.

2 It is known that the Dravidian people already used some typical Ayurvedic utensils. For a more in-depth study on this topic, read Bussagli 1951, Kutumbiah 1974, Wintemitz 1898. However, it is not known exactly what led to the disappearance of the Dravidian people because recent archaeological discoveries suggest that when the invasions carried out by the Arian people took place, the cities were already uninhabited. For a more detailed study on this topic, read Marshall 1931, vols. 1, 2 and 3.

3 The Rig-Veda or "Veda of the hymns" is the oldest Veda, and the oldest document of the Hindu literature, being constituted by 1028 hymns, rituals and offerings to the Deities; The Sama-Veda or "Veda of ritual songs" consists of hymns to be sung by the Udgatar priests in which the juice of the Soma plant was offered to various deities; The Yajur-Veda or "sacrificial prohibition" contains religious texts focusing on the liturgy, rituals and sacrifice, consisting of two collections, namely Shukla (white) and Krishna (black); The Atharva-Veda is the earliest written exploratory medical account. It is not intended to make an exhaustive study on the Vedas, but rather to insert it in the context of the theme of the article. For a more detailed study of the practice of medicine in the Rig-Veda period, one should read Müller 1930, Rao 1958, Sarma 1939. For a more in-depth study on the Vedas, it is suggested to read Dankebar 1973, Renou 1947, Santucci 1976.

The Ayurveda is also based on the Samkhya<sup>4</sup> philosophical system (e.g. Dasgupta (1997)), which appeared around 1000 B.C., that originated two distinct schools (in Sanskrit *sampradayas*) in the practice of Ayurvedic medicine: Sri Dhanvantari-Sampradaya that emphasizes the importance of surgery, and the Brahma-Sampradaya that gives more importance to diagnosis, remedies and various treatments. From the Samkhya, Ayurveda went from a magic-religious medicine (such as, the Vedas) to a medicine based on natural causes (e.g. Zysk (1993)).

#### **Appearance of the Universities of Ayurveda (700 a.C. – 500 a.C.):-**

Around 700 B.C., Ayurveda Universities emerged in India. There were two main universities, namely Kashi (in Varanasi) and Nalanda (in Bihar), where the academic contents included the Sciences (Vijnana), the Training (Vidya), the Logic (Tarka), the Memory (Smriti), the Medical Practice (Kriya). It is by this time that 8 branches of Ayurveda appeared: Kayachikitsa (internal medicine), Salakyachikitsa (otolaryngology), Balachikitsa (paediatrics), Salyachikitsa (surgery), Grahachikitsa (psychiatry), Vajeeekarana (reproductive medicine), Rasayana (rejuvenation therapy) (e.g. Rhyner (1998)).

Around 700 a.C. and 500 a.C., important medical treatises on Ayurveda were generated, known as the Trilogy of Compendiums<sup>5</sup> (in Sanskrit *Brihat-trayi or Vriddha-trayi*), namely, the *Astanga Hridayam* (philosophy of Ayurveda) - produced by Vagbhata - *Charaka Samhita* (a treatise of inner medicine) - reveals Atreya's teachings to his pupil Agnivesha - and the *Sushruta Samhita* (surgery treatise) - talks about the teachings of Dhanvantari to his disciple Susruta.

*Astanga Hridayam* deals with the philosophical principles for a good functioning of the body (breathing, digestion and metabolism, temperature regulation) and has suggestions for the therapeutic use of metals and minerals (e.g. Pisharodi(2016)).

The *Charaka Samhita* is considered a composition of an old oral tradition, which is concentrated in one of the branches of Ayurveda, designated by Kayachikitsa. This is made of about 8400 verses in Sanskrit which are repeated by memory by current Ayurveda students (e.g. Sharma (2005)). *Sushruta Samhita* shows that Indian physicians were one of the first to perform plastic surgeries, with knowledge of more than 100 surgical instruments, not very different from what is currently done. This text describes operations such as hernias, cataracts, brain tumors and other types of serious injuries (e.g. Susruta (2012)).

There are still other texts (not so important), characteristic of this period, namely the Sharngadhara Samhita (brief exposition of Ayurveda), Bhava Prakasha (treatment for the rejuvenation of the body), Madhava Nidanam (treatment of several diseases in Ayurveda), Kasyapa Samhita, Agnivesa Samhita, Bhela Samhita, Harita Samhita, Bhraradvaja Samhita and Agastya Samhita. This writings remain in Sanskrit<sup>6</sup> and a few of these tracts have been translated into English (e.g. Monier-Williams (1974)).

4 The Samkhya philosophy constituted a point of view of the interpretation of the Vedas, and focuses on Cosmogogenesis, the formulation of which is attributed to the wise Kapila. The word Samkhya can be translated as "Enumeration" (Sat means "truth," and Khya means "knowing") and focuses on the beginning and end of life, and on the way to end suffering. This school defends that reality is composed by Purusha (Supreme Consciousness or Spirit) and prakriti (matter or nature), and it is the presence of Purusha in prakriti that gives rise to evolution.

5 It is not intended to make in this article an exhaustive description on the most important compendiums on Ayurveda (*Astanga Hridayam*, *Charaka Samhita*, *Sushruta Samhita*). For a more detailed study on *Astanga Hridayam* read Pisharodi 2016; on *Charaka Samhita* read Sharma 2005, 5 volumes; on *Sushruta Samhita* read Susruta 2012.

6 Sanskrit is the language of ancient India, of Vedic philosophy, and is therefore regarded as "the writing of the gods" (devanagari). It consists of 50 sounds and letters of alphabet, having 1700 *dhatu* (verbal roots), 80 *upasargas* (suffixes, prefixes) and several *pratyaya* (declinations). The Sanskrit form used in the last 2500 years, known as classical Sanskrit, was completed by Panini in the 5<sup>th</sup> century B.C., and changed little until today. Nowadays, the Sanskrit, considered by some people as a dead language, is used in Portuguese to designate words, such as Yoga, Mantra, Avatar, besides being used in the liturgical ceremonies of Hinduism, Buddhism and Jainism. The influence of Sanskrit in Central Asia is comparable to Classical Chinese in Eastern Asia, Latin and Ancient Greek in Europe. The study of Sanskrit in Europe, initiated by Heinrich Roth and Johann Ernst Hanxleden, and later by Sir William Jones, played an important role in the development of Western linguistics. For a deeper study on the History of Sanskrit read Kapur 2010, Jones 1806, Soni 2010, Kasanas 2009.

**Buddhist period up to the 10<sup>th</sup> century (500 a.C. – 10<sup>th</sup> century):-**

Ayurveda was already very developed in the time of Buddha (563-483 B.C.), and He himself encouraged his practice and study, which contributed to the development of several Universities of Ayurveda (where they were taught several disciplines, such as Sanskrit, History, Philosophy, Mathematics). In addition, Buddhist monks promoted the exchange of knowledge of Ayurveda with traditional Chinese Medicine<sup>7</sup> (e.g. Hoizey and Hoizey (1993)).

The development of Ayurveda in this period was also due to the support of the Government which wanted to keep the population healthy at low costs. One of the great practitioners of Ayurveda of this period was the Buddhist Nagarjuna (director of the University of Nalanda) who taught Ayurveda and wrote several comments on *Sushruta* and described some alchemist preparations (known as *Rasa Shastra*) that deeply influenced Unani medicine (the Islamic medical system). Nagarjuna was succeeded by Surananda, Nagbodhi, Yashodhana, Nityanatha, Govinda, Anantdev, Vagbhatta, among others.

During the reign of Chandragupta Maurya (321-297 B.C.), Ayurveda continues to be India's mainstream of medical techniques (and continued until the British colonization). His grandson, Emperor Ashoka Samrat (273-236 B.C.), influenced by the Buddhist teachings of compassion, decided to build several hospitals that also contributed to the development of Ayurveda.

In the Middle Ages, various knowledge was added to traditional Ayurveda, namely by the physician Vagbhatta (7<sup>th</sup> century), considered as one of the main authors of Ayurveda of this period. Also, in the 8<sup>th</sup> century, Madhav wrote the *Nidāna*, a book consisting of 79 chapters, which describes various diseases and their causes, as well as a chapter on smallpox (masurika). Moreover, Chakrapani Dutta (Dutta Sharma) (11<sup>th</sup> century), a practitioner of Ayurveda, wrote several books on Ayurveda, such as the *Chakradutta* which is also considered a reference of this traditional medical practice.

**Muslim invasions and the Mongol Period (10<sup>th</sup> century – 12<sup>th</sup> century):-**

From the 10<sup>th</sup> century to 12<sup>th</sup> century, the North India suffered several invasions by the Muslim people<sup>8</sup> whose culture promoted the extinction of Ayurveda (e.g. Basham (1959)). In fact, Muslims invaded India from the 10<sup>th</sup> century onwards, killing about 400 million Hindus and Buddhists (considered the greatest genocide in history), and imposed their culture on the Indian people, namely the Unani medical system<sup>9</sup>, as well as the concept of hospital (where physicians met together to treat various diseases) and pharmacy (where several therapists were responsible for prescribing pharmacopeias).

In the 16<sup>th</sup> century, the few texts on Ayurveda that were not destroyed by the Arabs, were recovered and compiled by Buddhist and Tibetan monks at the behest of Akbar, the greatest Muslim Mongolian emperor. Due to him, some works have emerged, such as *Mahava Nidana* that focuses on the diagnosis of diseases, *Raja Nighantu* and *Madanpala Nighantu* that are two important works on herbs. Also in the 16<sup>th</sup> century, Bhavamishra, considered the best scholar of this time, wrote an important text, called *Bhava Prakasha*. It was also during this period that contact with Western culture<sup>10</sup> occurred, first with the Portuguese, followed by the French, and finally the British.

7 There are studies on the exchange between Ayurveda and Traditional Chinese Medicine during the Buddhist Era, such as Rocha 2003. In these studies, it is hypothesized that in ancient India there was already an Indian acupuncture practiced in the Buddhist monasteries, and it would have been taken to China during the Han Dynasty (221 B.C.-220 A.D.). This type of acupuncture was older than the one found in Chinese literature, namely the book of the *Yellow Emperor Classic* (1000 B.C.-221 B.C.) constituted by *Su Wen* (describes the theory of Yin-Yang and the 5 elements) and *Ling Shu* (describes acupuncture).

8 The imposition of Muslim culture on the Indian was so strong that when the British arrived in India (a few centuries later), many Hindus behaved like Muslims, as described by the Muslim historian Firishta (e.g. Shah (2015)). The five dynasties of the Muslim sultanates of northern and central India were: Mamluk Dynasty (1206 - 1290), Khali Dynasty (1290 - 1320), Tughlaq dynasty (1320-1414), Sayyid dynasty (1414-1451) and the Afghan dynasty Lodi (1451-1526). The latter perished when Babur defeated Sultan Ibrahim Lodi at the Battle of Panipat in 1526, initiating the Mongol empire.

9 The Unani medical system comes from the therapeutic methods of Ancient Greece, whose teachings were compiled by the philosopher and physician Persian Ibn Sina (or Avicenna) in his book *Kitab al-Shifa* (The Book of Healing).

**Western Period (16<sup>th</sup> century-20<sup>th</sup> century):-**

In the 16<sup>th</sup> and 17<sup>th</sup> centuries, the Europeans came into contact with the Indian culture, taking their illnesses, such as syphilis and tuberculosis, whose healing process Ayurveda failed to respond adequately. Thus, for several decades, the reputation and skills of the various Ayurveda schools declined sharply, particularly with the introduction of English medicine and the construction of hospitals of Western characteristics. Thus, since 1835, only Western medicine was legally recognized for medical practice by the British and much of Indian culture. This situation has led to the oral transmission of Ayurveda, between Master (Vaidya) and disciple (Guru Kala method), has declined drastically<sup>11</sup>.

In 1947, with the independence of India, led by Mahatma Gandhi, Ayurveda once again occupied a place of prominent in Indian medicine. Since 1970s, the value of Ayurveda has again been recognized. It is true that the Hindu medical system<sup>12</sup> has undergone through some changes over time (e.g. Wise (1845)), but nowadays, Ayurveda is part of India's official public health system which is constituted by Ayurveda, Alopahy, Homeopathy, Naturopathy, Unani, Siddha (a variety of Ayurveda practiced in South India) and is regulated by the Central Council of Medicine of India (CCIM). Currently, people who want to study Ayurveda undergo through five and a half year training in some prestigious Ayurveda medical schools, such as, the Hindu University of Benares (Varanasi) or the University of Ayurveda in Gujarat. They receive a bachelor's degree in Ayurvedic Medicine and Surgery (BAMS), being necessary to have knowledge in Sciences (Physics, Chemistry, Biology) and Sanskrit. Thus, the construction of hospitals together with qualified people in Ayurveda has contributed to the increase of the prestige of this ancient practice of traditional medicine which is published in scientific articles of specialty.

**Conclusions:-**

Indian culture is made up of several races (e.g. Das (2006)). Initially, India consisted of 3 ethnic groups: Black (Dravida culture), Indo-European (Aryan culture), Mongolian and Arab (Eastern culture). Indians sought to preserve their traditions, including their religion, while absorbing new customs and ideas from invading and immigrant peoples. This is evident in traditional Indian medicine (e.g. Meulenbeld (1999)) where there are several influences from Buddhist, Arab and European cultures. At the same time, throughout this study, I have shown that Ayurveda, as an integral part of Indian history, society and culture, deserves to be referred to as an important landmark in the history of medicine in general (e.g. Sigerist (1951)), particularly for its contribution to the development of medicine in other cultures, namely Indochina and Eastern Asia<sup>13</sup>.

10 In the 16<sup>th</sup> century, some Portuguese came into contact with Indian culture, having been compiled the name of several medicinal substances in Portuguese India (e.g. Mathew (1997)). From the results of this exchange, I highlight several Portugueses, namely Tomé Pires who sent from Cochin to D. Manuel I the name of the origin of several Asian drugs, in 1516. This work was described in the *Eastern Summa that deals with the Purple Sea until the Chins* (e.g. Dias (1947)). Another very important Portuguese was the physician Garcia de Orta and his book *Colóquios dos simples e drogas e coisas medicinais da Índia* published in Goa in 1563 (e.g. Orta (1891-1895)). This work, constituted by 58 chapters, made the description of the main Indian drugs. Orta presented the first rigorous description done by an European on the botanical characteristics (size and shape of the plant) of many Indian medicinal plants. Finally, a reference to the physician Cristovão da Costa who was responsible for the work *Tractado de las drogas y medicinas de las Indias orientales*, edited in 1578 (e.g. Ezquerro (2006)), and where he made some comments on oriental drugs.

11 The oral tradition of Ayurveda, between Master and disciple, was an important tool for the transmission of this traditional medical knowledge, from its appearance until the English colonization. Nowadays, with the new technologies, this type of transmission of knowledge of Ayurveda is little used.

12 In the history of the Hindu system of medicine there have been several modifications to nowadays. The basis of Indian medicine is Ayurveda. Unani medicine was introduced in India in the 13<sup>th</sup> century when Muslim invasions and the formation of the Delhi Sultanate took place. In the 17<sup>th</sup> century, Homeopathy was introduced in India, and with British colonization, Allopathy (Western medicine) spread throughout India. Naturopathy, that was defended by the physician Hippocrates, was only used as a source of natural healing in the 19<sup>th</sup> and 20<sup>th</sup> centuries.

13 Asiatic medicine, in particular Ayurveda, is currently a subject of research by anthropologists (e.g. Alter (2005)). Some areas of research lead me to conclude that the notions of diagnosis, physiology, anatomy and therapy made by Ayurveda spread through commercial routes, both sea and land, and centers of knowledge of religious orders located along these routes. This process occurred first in Asia (from the Buddhist Era to Muslim invasions), and then in Western society (from the 16<sup>th</sup> century onwards) (e.g. Vieira (2015)). For example, during the 17<sup>th</sup> and 18<sup>th</sup> centuries, all ships of the Indian Company had a surgeon-naturalist who knew Ayurveda. In the 20<sup>th</sup> century, Ayurveda is a symbol of the Indian identity.

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