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Flow of Islamic Medical Knowledge into India and Use of Indian Medical Knowledge by Islamic Physicians: A Historical Perspective

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Abstract: Recent developments in information technology and communications (ITC) have significantly enhanced the facilities for near-seamless access to scholars and scholarly writings, almost at all times and from any location, and exchange of news, views and messages on a global scale. In this context this paper presents a brief overview of the flow of information, experiences and knowledge of Islamic medicine into India and assimilation of India’s ancient medical knowledge into Islamic health care system, since the 8th century CE. The notable Islamic physicians and their works, which influenced the Indian medical system, are briefly described.

Keywords: Islamic health care system; Indian medical systems; Information exchange; historical perspective. Notable Islamic physicians.

1. Introduction

A World Conference such as WCMLIS facilitates the flow and exchange of information and knowledge between scholarly Islamic studies and such studies of other countries, cultures and faiths, whether technology-enabled or otherwise. Such exchange, however, is centuries old. In the early stages, the exchange was mainly through inter-country travelers of various genre with different motives – trade, intellectual curiosity about other countries and cultures, military campaigns, colonization, enjoyment of travel and entertainment, propagation of religion, etc. Of course it was a slow process. During recent decades developments in fast travel facilities, burgeoning information materials of different formats, innovative means of communications and information sharing, and push of globalization have rapidly and greatly facilitated inter-country, inter-cultural and interfaith information flow and exchange in practically all sectors of human activity. Further, in the recent past developments in information technology and communications (ITC), especially wireless technology, hand-held devices, such as mobile phone, palmtop and tablet with facility for remote access to the Internet, have enhanced people’s capacity for seamless global exchange of messages, texts and images and access to scholarship, almost at any time and from anywhere. Networking, social networking via the Internet – blogging, twittering, YouTube, etc. are now widely accepted means of communication and information dissemination. In this context, it is worthwhile to look back across centuries for a glimpse of the flow and exchange of information and knowledge between Islamic and Indian medical scholarships and practices.
2. Background

A brief overview of early contacts, exchanges and mutual enrichments in the medical and related fields, among the countries of Europe, Persia, Arabia, and India provides a background and context to the more recent developments in medicine and healthcare in the Indian subcontinent.

2.1 Buddhist Missions

Monks from Buddhist states in the Indian subcontinent sent out on missions to Central Asia, Egypt and Greece were a powerful medium of exchange of ideas in science, technology and the art of healing. The distant mission stations – monasteries - served as important intermediaries for disseminating Ayurvedic ideas.

2.2 India-Greek Contacts

During the time of Hippocrates the materia medica of Greece had incorporated medicinal plants of Indian origin. Specific processes for the preparation of specific foods useful in preventing seasonal diseases were prescribed in the related dietetics. Greek, Roman, Arabian, Middle Asian and later European medical systems assimilated some of the basic ideas and techniques of Ayurvedic dietetics either in the original form or with some modifications to suit their respective cultural and ecological environments and practices.

During the early phase of Greece-India medical exchanges the Ayurvedic tradition shared ideas on humours with Greek medical system. It is believed that some of the anatomical discoveries of Herophilus and Erasistratus (280 BCE) were incorporated into the Ayurvedic system. However, international exposure of the Ayurvedic system was largely confined to Central Asia, China, Indo-China, Indonesia, Korea and Japan. The export to these countries were Indian Ayurvedic drugs.

2.3 India’s Contacts with Islamic Medicine-

Before discussing Islamic contacts, it is worthwhile to briefly overview the achievements of selected Islamic physicians and their contributions from about the 8th century onwards, which were subsequently introduced into India.

During the period 8th to 15th century, known as The Islamic Golden Age, many advances in science, particularly in Islamic medicine, were achieved. Knowledge gathered by Islamic scholars from several countries was integrated into their own works and findings. [Shuttleworth, 2010]

The core of Islamic medicine is the belief in the Qur’an and Hadiths. It required Muslims to care for the sick, their body and spirit, as a matter of duty. Such care was referred to as “Medicine of the Prophet,” covering “improvement of the quality of healthcare and ensuring that there is access for all; the Hadiths provide guidelines for such a holistic approach to health.”

“In the early days of Islam, there was some debate about whether Islamic physicians should use Greek, Chinese and Indian medical techniques, the latter seen by some as pagan.
However, after much debate, Islamic physicians were given free hand to study and adopt any technique they wished.

2.4 Hospitals

Establishment of some thirty hospitals, spread across the Islamic world, but begun even as early as the 8th century CE and paid for by the charitable donations (Zakat tax), is a major contribution. “These hospitals, as well as providing care to the sick on site, sent physicians and midwives into the poorer, rural areas, and also provided a place for physicians and other staff to study and research. These hospitals varied in role, some aimed at serving the general population, while others providing specific services, such as the care of lepers, the disabled and the infirm.”

“The system of educating physicians was well structured, usually on a tutorial basis, and the reputation of the individual physicians in certain areas meant that students travelled from city to city to learn from the best. The Islamic physicians were also meticulous with their documentation or record keeping, as a way to spread and share knowledge, and to provide notes for peer review in case the physician was accused of malpractice.”

Some of the notable Islamic medical men whose ideas were introduced into India are mentioned in the following section.

2.5 Notable Islamic Physicians

2.5.1 Al-Razi (Rhases)

Many Islamic physicians made outstanding discoveries in different aspects of medicine during the Islamic Golden Age, building upon the knowledge of Galen and the Greeks and adding their own discoveries. Al-Razi (850-923), is called the Father of Islamic medicine. He was at the forefront of Islamic researches into medicine and a prolific writer with over 200 books about medicine and philosophy, including an “unfinished book of medicine that gathered most of the medical knowledge known to the Islamic world in one place. This book was translated into Latin and it became a backbone of western medicine.” His work on refining the scientific method and promoting experimentation and observation was well known. Al-Razi wrote extensively on the crucial relationship between doctor and patient. In his belief that a holistic approach to medicine was crucial, taking into account the background of the patient and also considering any ailments suffered by close family, he was following Galen and came close to modern medicine. His emphasis on understanding the nature of illness, looking at causes for the symptoms is praiseworthy. His writings about human physiology gave some insight on how the brain and nervous system operated muscles. It is said that only the Islamic distaste for dissection prevented him from moving deeper in this area. He was director of hospital for a large part of his career and performed most of his research that defined Islamic medicine.

2.5.2 Ibn Sina

The Islamic scholar Ibn Sina, known as Avicenna, was a polymath, excelling in several academic fields, including philosophy, theology, Islamic medicine and natural sciences. Even at a young age, he became famous as a physician and teacher, writing many detailed treatises on medicine. His publication, The Canon, became a core text and a guide for diagnosing and treating ailments, for physicians across the Islamic world and Europe,
Ibn-Sina believed that many diagnoses could be made by simply checking the pulse and the urine, and a large part of the Canon deals with diagnoses from the colour, turbidity, and odor of urine, and Islamic holistic approach of looking at diet and background of the patient. His other contributions were suggestions for infant care and, based upon his belief that bad water was responsible for many ailments, he included guidelines on how to check the purity of water.

2.5.3 Al-Kindi

Al-Kindi (800-870 CE), a polymath, was much influenced by Galen’s work. In his Aqrabadhin (Medical Formulary), he described many preparations drawn from plant, animal and mineral sources. He added knowledge drawn from India, Persia and Egypt about drugs known to earlier physicians such as Hippocrates and Galen. Like other Islamic works, his books contained information based upon medicinal herbs, aromatic compounds, such as musk, and inorganic medicines. Islamic contributions saw the first divide between medicine and pharmacology as separate sciences.

2.5.4 Ibn Al-Nafis

Ibn Al-Nafis (born 1213) is credited as the first to understand the respiratory-circulatory system, although his knowledge was incomplete. He understood that the heart was divided into two halves and that there were no pores connecting the two halves of the heart, as proposed by Galen. Al-Nafis noted that blood could only travel from one side of the heart to the other by passing through the lungs. His other observation was that the heart was nourished by the web of capillaries surrounding it, contradicting Avicenna. He touched upon the subject of the role of capillaries in circulation, proposing that the pulmonary artery and vein were linked by microscopic pores. His theory was rediscovered four centuries later and the idea of capillaries was extended to the rest of the body. Al-Nafis was also the first to understand the mechanisms behind the pulse, that the pulsation was caused by the action of the heart pushing blood around the body. He correctly noted that the pulsation of the arteries lagged behind the action of the heart and that it did not occur simultaneously down the whole length.

Al Nafis was a proponent of dissection, and was able to correct many misconceptions in physiology concerning the brain, gall bladder, bone structure and the nervous system. Unfortunately, very little of his work was translated into Latin and his knowledge was underutilized by western scientists.

Al Nafis’s pharmacological works derived remedies from all across the world and also introduced the idea of dosages into administration of treatments.

2.5.5 Other Contributors to Islamic Medicine

Serapion, a Syrian Christian, wrote a detailed treatise on pharmacology, in the 9th century, describing several diseases and listing the known remedies for them. Al Dinawari followed this with the book The Book of Plants, which was translated into Latin. It influenced western medicine,

“There are many examples of medicines unknown to the Arabic regions passing into their medical books, and, in the 6th century the Persian doctor, Burzoe, traveled to India and brought back many remedies, in addition to gathering information from the hired Indian physicians and
healers working for the Caliphate. Many Sanskrit works were translated into Arabic and Indian medicine certainly lay at the heart of Islamic medicine. “Most of his works are lost and are only referred to as quoted in later texts.”

Al-Tabari’s work was made up of nine discourses, each divided into many chapters:

I. General pathology, symptoms of internal disorders and general therapeutic principles
II. Diseases and conditions affecting the head
III. Diseases of the eyes, nose, face and mouth
IV. Nervous diseases
V. Diseases of the chest and throat
VI. Diseases of the stomach
VII. Diseases of the liver
VIII. Diseases of the heart and lungs
IX. Diseases of the intestines, urinary tract and genitals

Al-Hakim (d. 840) wrote the earliest known book on medical sciences in the Islamic world and it drew heavily upon Greek sources, including about physiology, surgery and general healthcare, etc..

Yuhanna Ibn Masawyh (777 – 857) was regarded as amongst the great translators from Greek into Arabic. He also acted as a physician to the Caliphs and served at a hospital. He is believed to have written ‘Disorders of the Eye’ and ‘Knowledge of the Oculist Examinations’ as well as Kita al Mushajjar al-Kabir, a short work including descriptions, diagnosis, symptoms and treatments of diseases.

Hunayan ibn Nishaq (808-873), known as Johannitus in the West, a titan of Islamic medicine. He authored several medical texts and also did extensive translation work. His The Book of Introduction to Medicine, drew heavily upon Galen but also included many unique and novel additions. His work may be the first Islamic medical text translated into Latin. [http://www.experiment-resources.com/islamic-medicine.html#ixzz1QRZZRI4H]

Some of the ideas of Islamic healing methods can be traced back to Claudius Galenus of Pergamum (2nd century CE) and also to ancient Iranian (Persian) medicine. As already mentioned, the basic knowledge of Unani medicine as a healing system was developed by Hakim Ibn Sina (Avicenna) and described in his Persian medical encyclopedia The Canon of Medicine, in which he mentioned the origin of Unani healing ideas to be around 1025 CE. Avicenna was primarily influenced by Greek and Islamic medicine, but also derived from the medical teachings of Sushruta and Charaka of India.

Unani medicine first arrived in India around 12-13 century CE with the establishment of the Delhi Sultanate (1206-1527 CE). Muslim rule over North India flourished under the patronage of the Mughal Empire. Alauddin Khilji (H. 1296-1316) had several eminent Unani physicians (Hakims) in his royal courts. This royal patronage meant development of Unani practice in India, and also of Unani literature with the assistance of Indian Ayurvedic physicians.

In India, as an alternative form of medicine the Unani system found deep roots with royal patronage during medieval times progressing during the Indian sultanate and Mughal periods. Unani and Ayurveda: Both are based on the theory of the presence of the elements (in Unani, they
are fire, water, earth and air) in the human body. According to followers of Unani, these elements are present in different fluids and their balance leads to health and their imbalance to illness.

The Persian physician Ali Ibn Rabban al Tabari’s treatise *Firdous all Hikmat* (850 CE) contains details about Indian medical system of the time.

The coming of the Muslims to India catalyzed the diffusion of chemical and medical ideas in Ayurveda, for example, distillation of rose water, perfumes, scented oils, crude petroleum (naft), etc. were introduced.

Al-Razi’s *Kitab Sirr Astar* (9th c.) and abi-al khayr al Hasani’s *al-Najum al Shariqat* (16th c. Arabic text) describe in detail the medical and chemical uses of refined and unrefined petroleum and asphalt (pitch). India’s medical system, hygiene and cleanliness were respected.

Indian drugs, herbs and physicians are known to have had easy access to the hospitals in Baghdad. Several Sanskrit texts on medicine and drugs were translated into Arabic. Indian ideas on pharmacology were preserved in the Persian works of Abu Masur Muwaffaq (10th c.) who had made a "scientific" journey to India (Ahmed Y al-Hassan and Hill, 1986)

The advent of Muslim rule in India brought with it Greece-Arabic and Indic medical tradition or the Unani system based on the biomedical and biotechnological concepts of Egypt, Greece and India and advances made in Arabia and Persia under the Khalifs of Baghdad. The Sultans of Delhi appear to have urged their doctors to contribute to medical knowledge by producing medical literature, and innovating better medico-surgical procedures. However, the haphazard mix of Ayurvedic medico-chemical and medico-botanical knowledge with Unani system and the religious basis of Ayurveda did not appeal to the Sultans. So they preferred to bring Hakims from Persia, who adopted Hippocratic and Galenic medicine with Arab-Persian modifications based on biochemical experiments. Unani-Ayurveda became more accommodative of vital tenets of each other.

Western medicine entered India with the establishment of the East India Company in 1600 and more importantly its Indian Medical Service in 1897 through the merger of the three Presidency Services – Bengal, Bombay and Madras. This is described in another paper contributed to this Conference.
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