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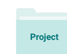

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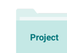

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Evolution of medical education in India: The impact of colonialism

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ABSTRACT

The cross-cultural exchanges between the people of India and their colonial rulers provides a fascinating insight into how these encounters shaped medicine and medical education in India. This article traces the history of how Indian medicine was transformed in the backdrop of colonialism and hegemony. It goes on to show how six decades after independence, we have have still been unable to convincingly shrug off the colonial yoke. India needs to work out a national medical curriculum which caters to our country's needs. A symbiotic relationship needs to be developed between the indigenous and allopathic systems of medicine.

KEY WORDS: British India, colonialism, history of medicine, imperialism, medical education

Evolution of Medical Education in India: The Impact of Colonialism

The history of cross-cultural exchanges between the people of India and their colonial rulers provides a fascinating insight into how these encounters shaped medicine and medical education in India. Given the backdrop of colonialism and hegemony, the confluence of the East and the West was turbulent. It nevertheless transformed and shaped both systems of medicine.

India's Initiation to Western Medicine

In the 16th century, it was the Portuguese who first introduced Western medicine into India. In 1600, the medical officers who arrived along with the East India Company's first fleet of ships also brought Western medicine in India. Initially, medical departments, with surgeons, were setup to provide medical relief to the troops and employees of the East India Company. In 1775, hospital boards which comprised the Surgeon General and Physician General were formed. These were essentially constituted by staff of the Commander-in-Chief of the British Indian Army in each presidency. Medical departments were setup in Bengal, Madras, and Bombay presidencies in 1785, and these looked after both military personnel and British civilians.[1]

The Mutiny of 1857 led to the dissolution of the East India Company and the British government was established in India. Several organized services such as the Indian Medical Service, the Central and Provincial Medical Services, and the Subordinate Medical Services were initiated to provide medical services and improve public health. A public health commissioner and a statistical officer were also appointed to the Government of India.[1]

In 1869, the medical departments in the three presidencies were amalgamated into the Indian Medical Service. A competitive

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examination was conducted in London to recruit people into the Indian Medical Service. The European officers of the Indian Medical Service headed the military and civil medical operations in the three presidencies. However, they needed trained assistants and supporting staff such as apothecaries, compounders, and dressers in their work. Appointing European doctors had large financial implications. This prompted the British government to look toward establishing a system of medical education in India to recruit local staff.[2,3]

In 1822, the Native Medical Institution was established in Calcutta to provide medical training to Indians. Around 20 young Indian students were instructed in the vernacular medium. European texts in anatomy, medicine, and surgery were translated into the local languages for the benefit of students.[4] Though dissection was not performed, clinical experience in different hospitals and dispensaries was mandatory. John Tyler, an orientalist, was the first superintendent of the Native Medical Institution. Parallel instruction was given in both Western and indigenous medical systems. In 1826, classes on Unani medicine were held at the Calcutta *madrasa*, while the Sanskrit college conducted classes in ayurvedic medicine. Successful native graduates were absorbed into government jobs.[2,3]

In 1826, to offer Indians the opportunity to learn and practice Western medicine, an Indian medical school was started in Southern Bombay with surgeon John McLennan as the superintendent. This school, however, did not run beyond 6 years.

In the 1830s, the anglicists managed to overturn several cultural educational policies started by the vernacularists and orientalists. Charles Trevelyan, an ardent Westernizer, chastised the British policy of educating Europeans in the languages and cultures of the East and recommended that "the Asiatics ought to be educated in the sciences of the West."[5] In 1833, Lord William Bentinck appointed a committee to look into the state of medical education in Bengal and the teaching of indigenous systems of medicine.[4] In 1834, the report, submitted by the Committee led by Dr. John Grant, criticized the medical training and assessment conducted by the Native Medical Institution.[3] Absence of instruction in practical anatomy was also censured. The report recommended that the state should found a medical college for the "education of natives." The various branches of medical science should be taught to students, as in Europe. The trainees should be able to read and write in English, Bengali, and Hindustani, and must be proficient in arithmetic. In February 1835, Thomas Macaulay composed a powerful minute recommending that the government withhold further grants to institutions, "conferring instruction in the native languages."[6]

The termination of official patronage to indigenous systems of medicine sealed the fate of the students of the two leading oriental institutions in Calcutta. The Native Medical Institution was abolished. The classes held at the *madrasa* and the Sanskrit College were discontinued in 1835.

In their place, a new medical college was established to train Indian students "in strict accordance with the mode adopted in Europe through the medium of the English language." Calcutta Medical College was established in 1835 and it ushered in a new beginning to medical education in India. Youths between 14 and 20 years of age were trained in the principles and practices of medical science using methods of the West. Around 49 students were selected, some through a preliminary examination. They were to be trained for a period not less than 4 years and not more than 6 years, after which they had to appear in a final examination. Successful candidates were given certificates allowing them to practice surgery and medicine. They were called "native doctors," and allowed to enter public service with an initial pay of Rs. 30 a month.[3]

In Bombay, Sir Robert Grant became the Governor and was deeply moved by the vast number of Indians who died due to lack of proper medical care. He envisaged the idea of training Indians in Western medicine and as he tried to expedite his agenda for a more systematically planned medical college, he met with strong opposition. To quell this opposition and also to encourage a spirit of scientific inquiry, the Medical and Physical Society of Bombay was formed in 1835. This group led by Dr. Charles Morehead studied the reasons which led to the abolishment of the previous medical school. In 1837, the Society concluded that establishment of a medical school was necessary "for the education of the Indians of the presidency in Medical Science to the extent of qualifying Indians to become useful and safe practitioners of medicine."[7] Dr. Charles Morehead wrote that in gifting medical science to the people of India, there was a scope "not merely for the operations of successful imitation but also for the adaptations of original genius."[8] The college was not designed in imitation of the Medical College in Calcutta which intended to produce government servants. The college in Bombay was designed to produce independent medical practitioners from the natives of India.[8]

In March 1838, a generous grant by philanthropist Sir Jamsetjee Jeejebhoy made way for building a new general hospital. The East India Company endorsed the proposal to setup a medical college on July 18, 1838. However, Sir Grant succumbed to illness 9 days before this news arrived. The new medical college was named after Grant as a tribute to him. The foundation stone of the Grant Medical College was laid in Bombay in March 1843 with an aim to "impart the benefits of medical instruction to the Natives of Western India through a systematic system." The general hospital which was opened in 1845 is now known as the Sir JJ Hospital.[7] The first-batch students who entered Grant Medical College were between the ages of 16 and 20 years. They were selected on set standards of vernacular language, arithmetic, and English. Two levels of instruction were offered. Indians could undertake a course to qualify as doctors as assistant surgeons or they could undertake shorter courses to allow them to practice as medical subordinates (sub-assistant surgeons, hospital assistants, and sanitary inspectors) for British government services.[9]

A medical school was established in Madras in 1835 to "afford better means of instruction in Medicine and Surgery to the Indo-British and native youths, entering the medical branch of the service in the presidency." Different courses were conducted

for the medical apprentices of the apothecary branch and for pupils of the native branch of the military sub-medical department to be appointed as dressers later. The 2-year course consisted of Anatomy, Materia Medica, Medicine, and Surgery. Later, Midwifery, Physiology, Ophthalmology, and Chemistry were added, and the course was extended to 3 years. Eventually, medical colleges were started in other provinces too, with the purpose of producing a cadre of doctors who could be recruited into the Subordinate Medical Services.[10] In 1840, the Portuguese started the Medicine and Pharmacy Licenciates, now known as Goa Medical College.[11] University-affiliated medical education became the norm in the 1850s, after the opening of the first three Indian universities in Madras, Bombay, and Calcutta.[11] Madras Medical College was the first in India to open its doors to women students in 1875.[12] Even so, in 1877, among the 8000 medical practitioners, only 450 were trained in Western medicine. The rest were practitioners of indigenous systems of medicine.[13]

While nationalism provided a fertile soil for the revival of Ayurveda and other indigenous branches of medicine, the demand for *swaraj* or home rule entailed that India needed to be projected as a progressive, modern, and scientific nation. Therefore, the revivalist efforts during this period placed importance on establishing the scientific and progressive credentials of Ayurveda. A proliferation of books on Ayurveda in English, Sanskrit, and vernacular languages "tried to transform the hitherto relatively inaccessible knowledge into social knowledge as well as a shared system of knowledge among the practitioners."[14] Ayurvedic practitioners organized themselves and founded the All India Ayurvedic Congress. The themes central to the discourses at these conferences were British orientalism, the synthesis of medical systems, and the institutionalization of Ayurveda. M. M. Gananath Sen, an ayurvedic practitioner from Bengal, founded a college for the study of Ayurveda and a pharmaceutical concern for manufacturing ayurvedic medicine. Several such efforts were made to resurrect Ayurveda in the wave of patriotism.[15]

The bright spots for medicine during colonial times were the initiation of public health measures, vaccination, and the elevation of tropical diseases to a special area of study. The state took responsibility for sanitation and hygiene. Collection of vital statistics was initiated. A number of epidemiological and research studies were conducted on cholera, plague, malaria, tuberculosis, and leprosy.[16]

The Clash of the Cultures

British India was a cauldron of several systems of medicine which intermingled with each other. Commonalities and contradictions existed between the different medical traditions. Long before the East India Company entered the subcontinent, an exchange of knowledge and ideas had occurred between the Indian systems of medicine and their foreign counterparts such as the Arabs and Chinese. The *vaidyas* and the *hakims* from the ayurvedic and Unani systems of medicine complemented and borrowed from each other. The practitioners of these systems collaborated and learned from each other, and there is hardly any account of animosity between them.[14] However, the interaction between the practitioners of indigenous and Western medicine was anything but smooth.

There was a clash of cultures where the East was seen as weak against the powerful knowledge of the West. Both groups tried to differentiate their own set of ideas from those of the other. In the East, medicine was largely pluralistic and there was awareness and acceptance of alternative traditions. Medicine was not viewed simply as a biological phenomenon and emphasis was given to a patient's societal standing, environment, and relation with the therapist. As colonial arteries hardened, claims of the Western superiority and scientific authority isolated Western medicine. Allopathic practitioners saw themselves as modernizers and often treated their indigenous counterparts with contempt for their "inferior knowledge." Local knowledge was labeled unscientific or irrational. While Western medicine was accorded the status of official medicine, the state turned discriminatory and hostile toward the other systems.[17] The rising tides of nationalism also posed to be an obstacle in a healthy exchange of ideas.[18]

The intrusion of Western medicine was resented by the practitioners of indigenous medicine, and they stoutly defended their traditions. These practitioners also tried to avoid humiliation by acquainting themselves with the new techniques of diagnosis. In the 1920s, Benaras Hindu University developed a course which had both Ayurveda and Western medicine. The Principal's argument was "When these are once installed, the students will see how ridiculous Ayurvedic medicine is and it will die a natural death. If it were opposed, it would occupy a martyr's place and be much more likely to continue."[19] As Panikkar points out, "they were inclined to borrow, but they could not create a dialogue between the two epistemics."[14]

Medical registration was also a cause of acrimony among the practitioners of Indian medicine. Graduates of the Government Indian Medical School were considered enabled "to bring to bear on the problems of health and ill-health not only the expert knowledge of their own systems but, as far as practicable, the best that is in other systems also." These graduates sought to distance themselves from the graduates of Madras Ayurvedic College because the latter were seen as purists and therefore not attuned to modern methods. The ayurvedic graduates were to be registered as "B Class" practitioners, against the "A Class" accorded to medical graduates.[20] The denial of registration to practitioners of indigenous systems of medicine by the Madras Medical Registration Act of 1914 was seen as gross discrimination.[21] According to Roger Jeffery, "Indigenous practitioners who served about eighty percent of the people of the land were being treated as untouchables of the profession by the allopathic practitioners who considered themselves as 'seraphi illuminati'."[22] There were several other problems with the indigenous systems of medicine. Age-old practices were followed blindly by their proponents with absolutely no scope for questioning and scientific scrutiny.[23] This absence of openness to criticism and scientific rigor still is a cause for concern about scientific communities.

However, pushed to a defensive position, knowing that Western medicine was here to stay, there were several voices of reason, asking for cooperation and synthesis between the two systems of medicine. C. G. Mahadeva argued, "There cannot be water-tight compartments between the two systems of medicine. Both aim at alleviating human suffering… What is really good in one must be assimilated by the other."[24] An anonymous article in the June 1928 issue of The Journal of Ayurveda or the Hindu System of Medicine argued,[25] "Medical Education in India should be so devised that it should take into account not only the present-day medical education but also medical knowledge of the past… While Ayurveda cannot move on in [an] old groove, Allopathy should not be accepted in toto for India. While we should absorb the pathology of the 'seed of disease' from Allopathy, we must give the 'pathology of the soil' in disease to modern medicine. The two angles are at present different but should be harmonized."

In this period, when indigenous medical traditions were marginalized, the local doctors tried to secure a space within the newly created professional structure to attain a privileged social status. Practitioners of Indian systems of medicine are treated as "second-class doctors" in India even today. Along the way, we have often ignored non-Western concepts of disease, and discarded alternative ways of providing succor to humanity. However, even today, traditional medicine seems to dominate the primary levels of health care while Western medicine is more popular as we move up the social ladder. Having said this, much needs to be done to improve the quality and duration of training given to students of indigenous systems of medicine, including emphasizing the need for periodic curriculum review and improvement, adoption of scientific rigor and the spirit of inquiry.

Medical Education: The Postindependence Era

Medical education in post-independent India faces significant challenges. These include the rapid, asymmetric rise in the number of medical schools, the questionable validity of student selection policies, a curriculum that is far removed from national health care requirements, and declining quality of teaching in medical schools.[26,27]

Six decades after independence, educationists have still been unable to convincingly shrug off the colonial yoke. Strangely, the curriculum followed by medical trainees has not been fundamentally altered since the days of the Raj. The traditional ways of teaching have continued. There is comfort in continuing with tradition and a reluctance to change. Several calls for curricular reform have been made since independence. In the mid-1970s, the Shrivastav Committee advocated reorientation of medical education by national priorities and needs.[28] In 1986, the Bajaj Committee called for the establishment of an educational commission for health sciences.[29] It also noted that medical school faculty, though efficient in their clinical specialties, were deficient as educators.

Faculty shortage has hit medical schools very hard. To meet regulations, administrators have to show that they have an adequate number of qualified faculty. It is commonplace to hear of faculty having been lured with exorbitant salaries or to hear of imposters being produced as faculty before inspecting teams from the Medical Council of India. Faculty members are called upon to teach large batches of 200–250 students. Much before the British stepped into India, residential universities in Takshashila and Nalanda provided organized institutionalized training in medicine. Students were trained in both theoretical and practical aspects under the guidance of a *guru* or a preceptor. The unique feature of these universities is the presence of tutorial cells where a teacher took a fixed number of students under him/her and bestowed personal attention on them. The teacher–student ratio in these *gurukul* systems closely corresponds to what is recommended by modern medical educators. In the blind race to produce a mass assembly line of medical graduates, that traditional concept of apprenticeship has been lost. Only recently, there has been a resurgence of interest in faculty development and medical education. Training and refresher courses in medical education have now been made mandatory for medical teachers. Several efforts are being made to revamp the curriculum to make it relevant to the Indian context.

Simultaneously, some efforts have been taken by the state to support the Indian Systems of Medicine. In 1995, a new government department of Indian Systems of Medicine and Homeopathy was created. This was renamed as the Department of Ayurveda, Yoga and Naturopathy, Unani, Siddha, and Homeopathy in November 2003. This was done to promote indigenous systems, upgrade their standards, ensure quality control and standardization of drugs, and improve educational standards and research in these areas.

Medical students who are taught in tertiary hospitals do not feel at home when they are asked to practice in rural areas. Forced and compulsory postings to fulfill the dearth of medical personnel in rural areas are resented by fresh graduates. On the other hand, from colonial times, the state has been apathetic to the practitioners of indigenous medicine who serve rural populations. Lack of societal respect and support forces them to practice allopathic methods, which is beyond their expertise, often with disastrous consequences. The focus of the Indian systems of medicine has always been on health promotion and prevention, rather than the curative focus of the West. Had a dialog been successfully initiated between these two systems, symbiotic growth might well have led to better health for our people. The abject lack of communication and learning between the Western system of medicine on the one hand and indigenous systems of medicine on the other hand has not worked well for the country.

Medical education in India needs to transform to be meaningful for our own people. For this, the health agenda need to be accorded importance in governance. Absence of a clear vision, a concerted effort by all stakeholders, and a strong political leadership in the area of medical education are the significant causes for the slow progress toward this metamorphosis. The prime task that lies ahead for India is to work out a national medical curriculum which caters to our country's needs. It is

also important to streamline the process of faculty development in the country and make it effective so that what is taught in workshops can be transferred into the workplace. Accreditation of medical institutions and quality assurance in their functioning needs attention.

Indigenous systems of medicine need further state support to grow. To start with, the indigenous branches need to strengthen their research, improve the structure of their curricula, and standardize the regulation of their education system.[30] Eventually, a symbiotic relationship will have to be developed between the two systems of medicine, but before that, a lot of groundwork will need to be done in each system individually.

Merely mimicking the West, without paying heed to local priorities will amount to reinforcing the worst aspects of colonial practices. Of course, there is always something that can be learned from any tradition, but it can only be to mutual benefit if done in a respectful manner.

In the words of Mahatma Gandhi, "*I do not want my house to be walled in on all sides and my windows to be stuffed. I want the cultures of all the lands to be blown about my house as freely as possible. But I refuse to be blown off my feet by any*."

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There are no conflicts of interest.

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