THE BIAS AGAINST INDIA IN WESTERN LITERATURE ON HISTORY OF MEDICINE - WITH SPECIAL EMPHASIS ON PUBLIC HEALTH

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ABSTRACT

The article describes a systematic bias against India in Western literature on history of medicine. While many authors have ignored the contributions of India in development of medicine altogether, the others have relegated India's role much behind other civilizations. Unnecessary and deliberate controversies on dating and origin of Ayurveda, primacy of Greek vs. Hindu Medicine and the origin of the practice of variolation have been elaborated by Western authors. Some medical historians, like Siegrist, have tried to give India its due place in the history of medicine. Suitable references of Indian authors have also been quoted to give a comparative and balanced picture. The need for settling this controversy has been emphasized.

Any foray into Western literature searching for reference to India in general and its medical heritage in particular is likely to be met with a grossly biased attitude of the historians. Indian and Chinese civilizations have been universally acknowledged as the two of the oldest ones in the world. Though there are some references to China here and there (and the recent revival of international interest in Chinese medicine - acupuncture, barefoot doctors, ginseng etc.) The Western literature is strangely silent on or thoroughly biased against Indian contribution to the development of medicine & science. Even for China, as far as modern scientific revolution is concerned, Westerners are worried why this great country failed to usher in the impending/potential scientific revolution despite being just on the brink of it (Cohen, 1994). However, in chapter 6 entitled 'The nonemergence of early modern science outside Western Europe', Cohen excludes the case of India while discussing the failure to usher in the revolution by India, China and the Muslim world. The plea he gives for exclusion of India is that... “perhaps India’s time has not yet come... like China, it may need a Needham for India...”.

Most of the Western literature sings the hymns in the praise of Greek civilization (& medicine) to which they owe their origin. While doing so, they conveniently & consistently ignore the enormous contribution of India.

The chief cause of world’s ignorance of the achievements of the ancient Indians in the field of medicine is not the lack of literature but the confirmed belief among (Western) medical historians that ancient Indian medicine has not contributed and has nothing to contribute to the evolution of modern medicine. ‘Scientific medicine began with the Greeks’ is an obsession of Western historians of medicine (Kutambiah, 1962).

The ignorance and indifference prevailing in India among the members of

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the medical profession in general and of the medical teachers in particular concerning the long and rich heritage of India, in matter of public health & medicine is partly due to the type of education they got under the British rule and later under the same pattern of education followed by India (Subba Reddy, 1966).

The Western authors have taken an offensive posture by attacking the antiquity of Indian medicine by repeatedly questioning the dating of compilation and originality of Vedas, and Samhitas (Charaka & Sushruta).

While describing the timing of compilation of Charaka Samhita Western historians are at pains to assert that the treatise is the result of contribution by many authors... and not only of Charaka.... and that such contributions continued upto 6th - 7th century AD..... Thus, projecting Ayurveda/Charaka Samhita as not so old work. They conveniently ignore and forget the fact that such comments have also been made about the works of Hippocrates (that it was a result of the work of many contributors). But they never questioned the antiquity and authenticity of Corpus Hippocraticum and described it as “...a jumbled up fragmented work derived from a variety of hands. These were gathered around 250 BC. Further ‘Hippocratic texts’ were added later still. Which of them were authentic and which were spurious...... the controversy is futile.” (Porter, 1999).

Porter (1999) further justifies his bias towards Western medicine.... “avoiding condescension equally does not mean one must avoid winners’ history. The book unashamedly, gives more space to Greeks than to Goths,.... more attention to Hippocrates than to Greek root gatherers. ..... There is good reason for bringing winners to the forefront .... not because they are the best or right..... But because they are powerful.”

Roy Porter.... while making a concession by providing explanation for his bias in the favour of western medicine.... (other even do not provide such explanation) went overboard in eulogizing it.... & quite crudely at that..... even his chapter organization is slanted in favour of Western medicine.... belittling Indian and Chinese medicine eg. Ch.1 Introduction, Ch.2 Roots of Medicine, Ch.3 Antiquity ---- Mesopotamia, 3000 BC; Egypt, 1000 BC; Greek, Roman., Ch: 4 Medicine & faith - Christianity, Islam (.... no reference to Hinduism & Buddhism),

Some eminent and contemporary historians (Roy Porter) are brazenly and shamelessly more forthright by blatantly giving excuses for not giving due prominence to older systems of non-Western medicine (& for mainly concentrating on Western medicine) by saying..... “I devote most attention to what is called ‘Western’ medicine, because it has developed in ways which have made it uniquely powerful and let it to become uniquely global... Its ceaseless spread throughout the world owes much, doubtless to western political and economic domination..... But its dominance has increased because it is perceived by societies and the sick to ‘work’ uniquely well, at least for the major classes of disorders. To the world historian, Western medicine is special. (Porter. 1999).
In his scheme of things though Porter allocates Indian medicine (& Chinese medicine) a separate Chapter, he is unable to give their due place to them. It indicates a hesitant & biased approach. India (& China) fail to find a mention in earlier chapters on roots of medicine; antiquity). In the chapter on medicine & faith also only Christianity & Islam are mentioned.

King (1963) also in his book (‘The growth of medical thought’) gives an excuse for excluding many cultures / personalities from his review by stating that his book only purported to show trends in intellectual history and that it was not an exhaustive coverage. His list of medical intellectuals includes - Apollo, Asclepius, Hippocrates, Galen, Paracelsus, Vesalius, Harvey, Virchow... but no mention of Indian, Chinese or Arabic contributions (as if, these great civilizations lacked any intellectual potential).

Goerke and Stebbins (1968) also praise spiritual cleanliness and community responsibility among the Hebrews. There is no mention of India and China in their chapter on ‘Historical Development of Public health’. The only place where Asia minor merits mention is as the place where leprosy & plague originated. These diseases were reportedly taken back from Asia by the invaders (as if invasion is a virtue).

However, there are other Western authors like Berdoe (1966) who wrote favorably of India. “..... There is good reason for believing that the ancient Greeks derived much of their philosophy and religion from Egyptians... who seem in their turn to have taken both in great measures from India. Zarathustra and his followers - the Zoroastrians had been settled in India before they immigrated into Persia. Many of their gods were derived from gods of Veda.”

The irony of the situation is that even while praising Indian medicine, people like Berdoe use a language like.... “....their materia medica is so important... and has played so large a part in Western medical science that we can’t afford to despise it. Though the Hindus have contributed so little to the study of natural sciences.”

Neuburger (1966) criticised Indian contribution :-

“..... in spite of natural endowment little inferior to that of the Greeks... the intellectual impulse was lacking in the Aryan Hindu races. Under the influence of dogmatism individual development soon gave way to a condition of stagnation culminating in trivial speculation, subtle formalism and bizarre fantasy traits also expressed in a grotesquely imaginative art often far removed from beauty and harmony.”

Renoward, (1966), wrote about Indian medicine, ..... the following manoeuvre admirably illustrates the silly credulity or arrant charlatanism of the Hindu physicians... a drop of oil is allowed to fail in the vessel containing specimen of patient’s urine... unfavorable prognosis... if the oil drop attached itself to the bottom.. favorable if it floated (with this method an unfavorable diagnosis must have been rarely made). With ideas so ridiculous on the origin and diagnosis of diseases it would seem to follow that their therapeutics must have been miserable indeed.. nevertheless... they were successful in the choice of remedies...proper time for their use... manner of preparing them eg. ointment for cicatrices of variola...snake bite cures... excessive cleanliness....”

It is of interest to note that other authors
could see the positive side of the same ridiculous procedure used by Indians... as Park (1966) says, though still using derogatory language, "....ancient Hindoo charlatan priests let fall a drop of oil from the end of straw in a urine sample... This is, so far as we know, the earliest recorded way of testing specific gravity of urine..."

Reason for stagnation in the development of Indian system of medicine has been given by Renoward (1966) as... they pretend that their science is derived directly from heaven... and it is owing to this belief that they have not made any improvement on it.... for thousands of years...."

Dunglison (1966) and Buck (1966), stated -

"The pathology of the Hindoos was extremely confused. They attributed to worms all diseases of the skin... and every other they ascribed to three principles causes... wind, vertigo and change of humors.” While denouncing Hindoos for the use of theory of three humors these authors conveniently ignore the fact that even the Greeks had the famous four-humor theory (yellow bile, black bile, blood, phlegm). On the contrary, Porter (1999) attempts to glorify humoral theory... but gives the credit to Greeks...” From the time of Hippocrates in the 5th century B.C. to Galen in 2nd Century A.D. ‘humoral medicine’ stressed the analogies between the 4 elements of external nature (fire, water, air and earth) and the 4 humors or bodily fluids... whose balance determines health. Parallel to these views appear in the classical Chinese and Indian medical traditions !”.

Chandragupta has been described by Philips (1976) in his book on Vedas, as the throne usurper (of Nanda dynasty) at the time of Alexander (whom the author fails to describe as an invader of the foreign soils. Rather, invasion of foreign territories has been eulogistically described by Western authors). The opening sentence of the book gives an idea of strong ethnocentrism of Western authors -

“....Non-Christian Bibles are all development in the wrong direction. They all begin with some flashes of true light.... and end in darkness.” - Sir Monier Williams...

A widely read book (by students and practitioners of Community Medicine) ‘Public Health - Administration and Practice by J.J. Hanlon and G.E. Pickett (1984), described primitive societies and tribal customs.... classical cultures.... Minoans (3000-1430 BC) and Myceneans (1430-1150 BC) as having built drainage system, water closet, water flushing... but fail to mention Harappa and Mohan -Jo-Daro/Indus Valley Civilization. Egyptians (1000 BC) were described as the healthiest of all civilized people with a considerable sense of personal hygiene... and as having the world’s first written hygienic code (1500 BC).

They do mention Islam, but only as - Hai being the focus of spread of cholera; but fail to mention contribution of India and China in history of medicine. The only place where India and China are mentioned is the depopulation (13 million deaths) due to plague in India and China in 1340s AD. Leprosy was reported to have spread from Egypt to Europe ... and plague from central Asia to other places (Chingis Khan - Mongols).

Green and Anderson (1984) in the beginning of their book, while describing the history of public health, start with Egyptian and Babylonian health practices. (Use of opium has been ascribed to Egyptians). Other headings that follow are - Hebrew Mosaic law, Greece, Roman empire, the Dark Ages, Medieval pandemic, colonial period
and so on. Again, there is practically no mention of the contribution of Indian or Chinese civilization. The only reference India finds in their description is at the end of the paragraph dealing with Greece. “The Greeks did not borrow from other nations. The Hindus of ancient India practiced surgery for at least a century, but there is no evidence that Greeks used the Hindu methods of surgery despite Alexander’s conquests on the Indian subcontinent.”

... This apologetic description indicates a rather miserly attitude of the Westerners even while giving credit to India for something (surgery). Whereas the supremacy of certain ancient surgical techniques of India has been established beyond doubt... Green and Anderson seem to be defending the position of Greeks... Probably since the Westerners owe the origin of their ‘progressive’ civilization to the Greeks.

Oldenberg (1997) degrades role of India in development of the world.... “The Indian nation in a manner scarcely paralleled by any other nation in the civilized world.... has developed its life out of itself and according to its own laws. Far removed alike from the alien and cognate (having similar origin) people who in the West, within the compass of closer natural relations, have performed the parts to which history called them. India took no share in this work....”

He further writes “....For India, Alexander came too late! (as if Indians depended on him for their emancipation...) without a present... which they might utilize in love and hate, without a future, for which men might hope and work... they dreamed morbid and proud dreams of that which is beyond all time....” (Thus, depicting India as an idle, worthless and directionless civilization).

Osborn (1964) described the history of medicine in ancient civilizations (700 to 2000 BC) “....During this period the three civilizations that made the greatest contribution to the ‘healing arts’ were the Egyptian, the Babylonian and the Peruvian.”

‘Hindu medicine’ has been described in 2000-500 BC section....

“Susruta is probably the most renowned of early Hindu physicians. He compiled and systematized... textbooks... His work include medicine, hygiene... psychology (no mention of surgery.) .... urine was tasted for sugar.... Hindu medicine probably had more influence on developments in Eastern civilizations than upon Western civilizations”. Thus, this medical historian (Osborn) had her facts regarding Indian medicine grossly incorrect where Susruta has been described as a renowned physician “.....another advance in the health practices during the Middle Ages was the development of the hospital system (Thus, the author ignores King Ashoka’s role in this). Porter (1997) writes about India and China -

“Each area of globe has created a medicine of its own. Indian and Chinese medicine believed in glorification of the tradition, great durability and did not encourage innovation. Both proved tenacious and encouraged the myth of an essential unchangingness... so both continued in place... and experienced a tense and ambiguous encounter with Western scientific medicine and were compelled to take aspects of it on board.”

Porter, (1999) also tries to take away the credit of initiating the system of hospitals from India by saying.... “Some Buddhist monasteries included a sick room which might have developed into a distinct hospital... at around the same time as the emergence of hospitals in the Christian West.
(He conveniently ignores the fact that Buddhism originated much before Christ and that King Ashoka initiated the system of hospitals in third century BC).

He further goes on to claim. “Vedic medicine which is not at all similar to Ayurveda...Ayurvedic texts are themselves misleading... since they claim a derivation from the Vedic tradition... while the situation is complex and controversial... they probably developed out of the newer ascetic milieu...” He, then ascribes development of Ayurveda to Buddhism “... But scholarly opinion today holds that the ascetic communities of the 4th century BC onwards particularly the Buddhist community played a vital part in the evolution of Ayurveda...”

..... Dates are all tentative in India... where life was itself regarded as an illusion..... ancient Hindus were very little interested in dates..... (Major, 1954). Many Western historians have repeatedly questioned the authenticity of the date of compilation of Ayurvedic texts. Most attempts have been to show Ayurvedic texts (Charaka Samhita) to have been compiled in 1st or 2nd century A.D. This has been done by linking the origin of Samhitas with the life time of Charaka. Most historians place Charaka in the first century A.D. (Davis, 1966; Porter, 1999). Some, however, mention that he lived in 4th century B.C. (Berdoe, 1966 Withington, 1966). Major (1954) even placed him 1000 BC and Susruta in 6th century B.C. Part of Charaka’s work was modified and completed in later time...but his earlier doctrine had a great deal in common with that of Bhela..... a pupil of Atreya and Agnivesha.

The doctrine was therefore neither Charaka’s nor Aqnivesha’s nor Bhela’s but probably went back to Atreya.

Atreya as the real founder of the doctrine is borne out of Buddhist texts where Atreya is shown as a teacher of Jivaka - a contemporary of Buddha.

Hence Atreya must have lived in 6th century BC - and in any case long before the Christian Era.

.... And since the notion attributed to Atreya are really a development of Vedic physiological conceptions, there seem every reason to suppose that the two were not too distant in time and the more polished Charaka Samhita was the later of the two compendia. (Taton, 1963; Hamilton, 1966).

Some authors admit Charaka Samhita to have been compiled prior to Christ, (eg. in 1000 B.C.... Bass: 1966) but others ascribe the origin of Ayurveda to Buddhism.

There are also attempts to delink Ayurvedic medicine and Vedic medicine. (Porter.... Vedic medicine is not at all similar to Ayurveda). Though it is very clear that Rigveda and Atharvaveda had reference to medical aspects... from which Ayurvedic texts were derived.... This link is a proof of antiquity of Ayurveda. But by questioning this link the western authors attempt to sabotage the prime position of Ayurveda in the arena of world medicine.... as being the oldest one.

Philips (1976) has put a big question mark on Indian history... “The age of the Vedas can only be approximately ascertained. The Hindoos have no history... and no sense of authentic chronology. Life to them has always been a dream. Their struggles were struggles of thought, their past the problem of creation and their future the problem of existence. The present alone, which is real and living solution of the problems of the past and future, seems never to have attracted their thoughts or to have called out their energies... “Hence, they have no political history... like the Egyptians and
the Jews, the Babylonian, Assyrians, Persians, Greeks and Romans. There is no certain date in the wide range of their literature except what is imported from Greek history."

There is a need to settle this controversy of dating, origin and originality of Ayurvedic medicine. There is a need to clarify the position and facts regarding whether Greeks borrowed their medical knowledge from India or vice versa. It would be helpful if the issue is examined holistically... in context of history of overall civilization of India. If it is agreed that contribution of India was significant in other fields (mathematics, public health, social organization, public administration, philosophy, religion etc.) it is natural that Indian medicine must also have contributed its share in a significant way to the development of world medicine.

Mitra (1974) writes about origin of Indian medical texts -

"Rigveda (originating about 1500 B.C.) contains the basic concepts of Ayurveda and some medicinal plants along with some important facts about drugs in Osadhi Sukta. Atharva Veda abound in such facts which shows the developed condition of medicine in India.

Ayurvedic literature was vast enough to be included in the curricular of Taksasila University... at the time of Bimbasara (before Chaandragupta). The samhitas of Charaka, Susruta, Bhela and Kasyapa were definitely present in their original shape before the birth of Buddha (c. 424 B.C. - 549 B.C.).

Manusmiriti was also written during 600-700 B.C. the law book of this period elaborating-code of personal and public hygiene and human conduct.

Indian medicine, if we except Egyptian, Babylonian, and Jewish, is the oldest in the world."

The extreme antiquity of origin is unfortunately not satisfactorily settled. The views as to the period of composition of Ayurvedic literature vary between 1000 BC to 1000 A.D. (!!) The earlier period seems to be accepted as the more probable... and thus it is the fourth in point of antiquity of any known to us (Bass, 1966)

But it is unimaginable that any civilization which flourished extensively in a given era did not have a medical system of its own. If antiquity of Indian civilizations is established as older than other civilizations we must also accept the antiquity of Indian system of medicine. A lack of evidence of its antiquity should not be construed as the proof of later origin of Ayurveda/Indian system of medicine. Porter writes about the origin of Ayurveda -

"The earliest surviving Ayurveda texts date back from the early centuries of Christian era. Traditional claims that Ayurveda dates back thousands of years as pious.

Original composition date is a matter of speculation... earliest version may derive from as far back as the time of Buddha... 4th century BC,” (Porter, 1999). Thus, we should not base our conclusions on the surviving texts of Charaka Samhita. The issue at stake is the origin and source of Ayurvedic texts. And this certainly is the Vedas. Sigerist (1987 b) settles the issue in a more honest descriptions.

"The works of Charaka, Susruta, Vaghbatha might have been written relatively later in the present era.... But it is equally certain that their contents must be much older, the result of a long, for the most part, oral tradition.

...there was a Vedic medicine that must have flourished for centuries and Indian medicine was thereafter named... Ayurveda.
... the Tridosa theory was conceived well before 4th century BC... ... that there was rational medicine, not only magico-religious medicine at the time of Buddhism is evident by the fact that Indian medicine spread to neighbouring countries together with Buddhism...” “...Ramayana and Mahabharata contain as many references to health, disease, treatment as do the Homeric poems...”

The Hindoos are considered by Max Muller to be much older even as regards their civilization than Egyptians. Upveda were composed about 350 BC and (Berdoe 1966).

When did the remarkable development of Hindu medicine, which arose or vanished so mysteriously, actually took place? The lower limit is fixed at about 750 AD... since both Charaka and Susruta are mentioned in Mahabharata... their work must be as old as Homeric poems (But Mahabharata underwent revisions... The upper limit is fixed at 327 BC (Withington, 1966).

Controversy on small pox vaccination:

A similar puzzle is posed by small pox. Before 19th century - inoculation was popular knowledge.... widely used for protection against the disease.... with the expectation that a mild episode would follow ...A detailed account by an English surgeon dating from 1767 described the practice “it was widespread in Bengal... No trace of the practice, however, appear in any Sanskrit medical text... the disease was undeniably identified in Ayurvedic text... it seems that the technique recorded in texts.... fell into disuse.” (Porter, 1999)

Porter (1999) gives even the credit for this prior knowledge of small pox inoculation to Europe “....there had long been some folk awareness in Europe of immunizing properties of a dose of small pox.... but it was not until 1700 that this knowledge was put to use... 1714... first publication of artificial inoculation.. Turkish peasant women routinely did it....”

Inoculation against small pox was introduced in England in 1715 ...but in India especially in Bengal it was extensively practised before the British arrival, in religious association with a deity - Sitalamata. But there is a controversy about the antiquity of use of inoculation against small pox. ... To overcome natural (local) prejudice against small pox inoculation... a fraud was perpetrated by FW Ellis in Madras (a British orientalist Sanskrit scholar) who wrote a poem.... on old paper... and masqueraded it as of ancient origin ...to convince Hindus.... tracing inoculation to their sacred cow. A similar fraud was enacted by one Mr. Anderson in Madras. This amounts to indicate that the procedure of inoculation of small pox was not known in India... and that the evidence quoted for existence of such knowledge (i.e. the poem... quoted above) were in fact, the result of some deliberate fraud perpetrated by Westerners themselves (Anil Kumar, 1998)

Bagchi (1997) while describing primitive medical practices stated that inoculation against small pox and snake bite were performed by rubbing the contents of a pustule into an incision in the skin. Inoculation with human material against small pox had long been practiced in India since time out of mind as described by Holwell (1767) who also commended the Indian technique and its success (Patterson, 1987). It was well known before Jenner’s time that inoculation against small pox could provide immunity against the disease. The practice was brought to UK in 1717 from Constantinpole. Jenner’s unique contribution was that cow pox protected against small pox.

Lady Mary W. Mantagu (1689-1762) the
wife of British consul, described how Turkish peasant women carried out inoculation. She got her 5 year old daughter inoculated. King George II followed suit with his two daughters. 1757 - UK - College of physicians acknowledged inoculation of small pox... learnt by accident from laymen. Holwell described the procedure to have the sanction of remotest antiquity. He also observed it in Bengal... annual house to house inoculation by Brahmins... an instrument was used 4 1/2” - size of a large crow quill - twisted middle - flatted 1” from extremity 1/8” broad - keen edge with two sharp corners of extremity (between wrist and elbow) 15-16 scarifications. After about 80 years of sporadic and controversial use of variation a better technique was discovered by Jenner in 1796 (Kochhar, 1999).

Sigerist’s Views On Hindu Medicine:

As contrasted to the biased description of other Western authors, Sigerist (1987a, b), an eminent medical historian, has this to say about Indian medicine -

“Medicine developed at an early date not only in Egypt and Mesopotamia but also in India and China. The earliest Indian and Chinese medical texts are decidedly younger than those of Egypt and Mesopotamia. Egyptian and Babylonian medicine completed their course long ago, while ancient Indian and Chinese medicine are still fully alive and are practiced by millions” (and there is even a renewed interest of the international community in the two systems).

‘The Greek emphasis was on reason and logic... it paved the way for Western science. India also developed a rational system of medicine, but in addition had another - a mystic approach to the problems of health and disease... It was in a way, better prepared to handle mental and spiritual troubles and created therapeutic methods unknown to the West in antiquity (yoga, meditation).

Sigerist (1987) emphatically states - ‘whenever we approach the history of medicine not from the narrow Western, but from a universal point of view - Indian medicine must be given full attention.’ Thus, it is evident that Sigerist was aware of the bias against India in Western point of view. Sigerist’s intentions are clear by the title of the volume II of his book - ‘Early Greek, Hindu and Persian Medicine’ (Sigerist, 1987 b).

His balanced view is also apparent by his statement - “....since we have not texts, no document of any kind pertaining to the subject, we can merely guess that their (Indus valley civilization) medicine must have been similar to that of many other people who were civilized in the third millennium BC..... prayers must have been said here as in Mesopotamia and Egypt to placate the gods.

According to Sigerist, Mohan Jo Daro, the oldest planned city, antedates Kahun in Egypt. ‘Its public health facilities were superior to those of any other community of the ancient orient’.

‘....we have no early Greek book comparable to Atharvaveda (or any Veda) whereas, in India, the Vedas, stood like a grand monument at the very beginning of Indian literature as a source of all knowledge.’

‘....it would be a mistake to assume that Indian medicine in the Vedic period was only magical and religious. Like all archaic medicines, it also had empirical and rational elements (... and probably many more which we can ascertain).’

Sigerist further states “All religions have ecstatic conditions. The mystic communion with deity. But nowhere the technique of meditation was developed to such a high degree of perfection as in India.”
“.... A system of asana (position) in Yoga-Sutra of Pantanjali was developed much before a system of physical culture (exercises etc.) developed (in the West). In Pranayama... there was an idea that breathing and thought are linked (since rapid breathing when angry and agitated... regular slow breathing when calm and serene...). So if we regulate breathing.... we can control our thoughts”.

However, while discussing the evolution of emerging relationship between medicine and sociology, Cockerham (1986) states.... “.... Hippocrates... maintained that mind and body profoundly affect each other and can not be considered as an independent entities. Health consisted of healthy mind in a healthy body. Thus, a basic precept of the Hippocratic orientation was the recognition that the social environment was an important factor in understanding illness.” However, as described above, Indians were the pioneers in the mind-body concept.

Indian theory of karma and reincarnation influenced medicine very strongly.... and to our days medicine in India has maintained an outspokenly philosophical character.

Will power of the patient.... his determination to get well.... is a strong decisive factor in healing.... auto suggestion, .... auto hypnosis. Here Yoga has great medical potentials” (Sigerist, 1987). This is of interest to note that currently there is a renewed interest in the role of ‘will power’ and ‘autosuggestion’ in prognosis of patients.

Ayurveda - ‘knowledge/wisdom of long life’.... puts emphasis (not on healing but) on prolongation of life.... including promotion of health and prevention of disease.

**Originality of Greek Vs. Indian:**

Striking parallels (in nosology) exist between Greek medicine and the Indian clinical texts which were written later than the Timeous but their sources were older than Plato’s.... Hence, there can be no question of India’s having borrowed her medicine from Greece. On the other hand India may very well have influenced the Hippocratic collection and the Timeous.... since Plato failed to quote his sources - he is more close to India than to any Greek school.

Mention of pepper in Hippocratic work for diseases of women also supports this.... Indian medical knowledge must have seeped through Parthian Empire along the trade routes. In Aristotle’s times - Indian intellectuals visited Greece even before Alexander’s campaign. Visits of an Indian sage to Socrates have been described, methodological concepts of Indians were recognised to be far highly developed. (Taton, 1963).

Bass (1966) has written about Indian medicine, - ‘to sum up.... we must assign to it.... at all events.... a superiority over the Egyptian.... and the Jewish.... and even the first rank.... among those examples of medical cultures which have not experienced a continuous development.... and that it was not far behind.... Greek medicine”.... and that it is only a.... superficial comparison.... we can never measure it by our standards of today.... such a course would be as false as unhistorical.’ (Bass, 1966).

Indian philosophy contains the highest truth known to the ancient Greeks.... Pythagoras, Thales and Parmenides were indebted to early Hindu sages. Kanada rishi, the proponent of Vaisheshika system of philosophy and a contemporary.... of Buddha spoke of molecular motion, expansion and contraction.... centuries before the Greeks did so. Hindus were among the first to proclaim the brotherhood of man.... psychic factors
dominated their civilization when the other races were still groping about for a spirit.... to direct their steps (Brown, 1973).

Medical science of Indo-Aryans was accepted by pre-Islamic as well as post-Islamic Arabs. This science had also travelled as far as Asia minor and Greece and influenced the Canadian school of Medicine. It is well known that Hippocrates born in Cos, - an offshore Asian island, had part of his medical training in Cnidia - in Asia Minor - so he was Asiatic by birth and had definite knowledge of Indian medicine prevalent during his life....

Medical science prevalent in the world today is a bye product of the thought and practices prevalent in ancient India, Arabia and Persia. Hippocrates had more of Indian medicine in his curriculum than the medicine of Greek mainland.... Indian medical thoughts/practices must have been transmitted into ancient Greece through Greek physicians at Achaemenian courts.....much before Alexandrian invasion. All these physicians had access to information concerning India. Knife, fumigation, cauterization have been found in Greek medical practice which is distinctly of Indian origin. Greek materia medica had many Ayurvedic drugs kardamom, kushtha, guggul, til, (sesame) orientalis from India. Arabs held the people of India and Indian culture in high esteem. They described India as the most advanced nation - noble country - mines of wisdom - fountain of justice - administration - men of science and thought - surpassed all contemporary people in every science - ideas highly advanced - (that is probably why India was invaded again and again as India aroused the curiosity and envy of all). It is positively proved that civilization existed in India long before the present Europeans became aware of the use of ploughs and wheels. The great Harappan civilization existed almost more than 4500 years ago.... and lasted for more than 1000 years until ~1500 BC when it suddenly and mysteriously eclipsed (Bagchi, 1997).

Kutumbiah (1962) denies any Hellenic influence on Indian civilization - ‘it has always been warmly debated by European scholars who naturally desire to find links connecting the unfamiliar doings of isolated India with the familiar Greek ideas and institutions to which Europe owes so much.’

‘The most important and fundamental borrowing (by Indian from Greeks) is alleged to be the humoral theory, but there are references to humors at Buddha’s time and even in Rgveda. So this allegation is wrong.’ Major (1954) writes on Greek - Indian controversy - ‘Ctesias of Cnidos, a contemporary of Hippocrates visited India - wrote a treatise on Indian medicine and praised Indians as more skilled in treatment of snakebites. After Alexander, Indian medical science became part of Greek heritage - it is obvious that Pliny and Galen borrowed heavily from Indian sources.’

The similarity between Indian and Greek medicine is so striking that it is hardly surprising that the originality of the former has been frequently questioned or even denied... In consideration of the outstanding independent achievements of the Indians in most branches of science and art... and their aversion to foreign influences the trend of opinion today, informed by recent discoveries, is in favour of the originality of Indian medicine in its most salient features. (Davis, 1966).

Through the instrumentality of the Arabs many of the Indian discoveries were carried far into the West while it is to Indian influences that Asia... so far as the sway of Buddhism extends owes more or less of her
medical lore.

That the Greek medicine adopted Indian medicaments... is evident from the literature. The contact between the two civilizations first became intimate through the march of the Alexander and continued throughout the reign of Diadochi and the Roman and Byzantine era. Alexandria, Syria and Persia were the principle centres of intercourse. Indian physicians, means and methods of healing are frequently mentioned by Greco-Roman and Byzantine authors, as well as many diseases endemic in India, but previously unknown.”

Major (1954) describes Indian civilization as ‘one of the oldest on earth.....during the 4th and 3rd millennium BC..... highly developed city life....wells and bathrooms in many houses.....an elaborate drainage system.... (can be taken as an evidence of a) ....social condition .... at least equal to that found in Sumer and superior to that prevailing in contemporary Babylonia and Egypt.... It is these people that the Aryan conquered.

Pythagoras....born in island of Samos ~ 600 BC studied in Egypt.... and then in Indian Peninsula.... brought back the doctrine of metempsychosis, prejudices against animal diet, mystical notions respecting power of numbers...settled in Italy and practiced medicine (Hamilton, 1966).

Dunglison (1966) wrote about Indians.... ‘their excessive cleanliness, the frequent use of warm bath and in particular the custom of using friction and brushing of the skin on coming out of bath also had a powerful effect on their health’.

Contributions of India in Medicine & Public Health:

All said and done, there are certain areas of medicine in which the contributions of India can not be denied and are unquestionably of prime importance. Some of these are as under:

* India provided new remedies of many kinds- aloes, camphor, sandalwood, ginger, asafoetida, betel... and new fruits - mangoes.
* Ksharsootra therapy for fistula-in-ano
* Couthing for lens
* Surgery for stone
* Hypnotism and attempts at anaesthesia
* Chiropody - manicure, pedicure
* Hydrotherapy (for fever)
* Pulse description for diagnosis
* Remedy for snake bites/poisoning
* Emphasis on yoga, spirituality and religion.

* The concept of ‘like malady like remedy’.... antedating the development of concept of Homeopathy (Rupamarupam) (form.... to form force to force = primitive Homeopathy).
* Elaborate code of personal hygiene of Manu.... eg. bathing and also on right conduct.
* Elaborate description of sexuality (Vatsyayana).... providing it an unparalleled exalted and pious position.
* Elaborate sewerage system/public drainage system, town planning etc. of Indus Valley civilization.
* First to develop a system of hospitals (even for animals), nursing; trees on the roadside, medicinal gardens (King Ashoka).
* First to describe diabetes.
* Description of medicinal uses of mercury (in great detail).
* Use of aphrodisiacs.
* Rich treasure of plant and herb diversity - herbal medicine (neem, jamun, bel, lehsun etc.).
* Artificial teeth, eye and legs were mentioned in Rgveda.
* Wet nursing;
* Caution against consanguinity, endogamy.
* Eugenics: - 10 families to be avoided for matrimony (Manusmiriti) where no male child born, Veda not studied, thick hair on body, leucoderma, epilepsy, piles, phthisis, indigestion, leprosy.
* Other significant parallel developments and contributions.
  - mathematics - the concept of zero and decimal.
  - philosophy
  - religion
  - Varna system (first in the world to classify society); ashrama system - laying the ground for a harmonious development of human society.

It was in their surgical techniques that the physician of ancient India were distinguished above all their brethren of the neighbouring oriental countries and their superiority they maintained for a very long time.

Some of their hygienic rules concerning pregnant and nursing women were eminently practical (Buck, 1966).

Use of hunger suppressives by soldiers..... who could go without food for 15 - 30 days has been described by Kautilya.
- Role of female nurses in army camps was also described.
- Vish-kanyas were also used to win over enemies.
- A toxicologist was always required to attend on King.

- Kauityla also advocated an envoy to guise as physician in enemy’s capital for espionage.
- Method of producing diseases on experimental basis - among enemies by burning mixture of the powdered partridge, lizard, blind snake, leech, tail of peacock, tongue of vulture etc. was also described by Kautilya.
- Experimentation of poison on animals before offering the food to the king (parrot, mynah, swallow) was a standard practice.
- Elaborate details on recognizing poisoned food were also told by Kautilya (Mitra, 1974).

The contribution of India to the science of medicine is immense. Its medical literature is rich, varied and of great importance. It practiced a high standard of medical ethics and etiquette. It put medical education on scientific basis. During Vedic ages the course of medical instruction lasted for 6 years. Indians developed the system of prognostication and differential diagnosis to a very high degree (Bagchi 1997).

Kautilya's arthasastra is a rich treasure of civics, public administration, personal hygiene, food-hygiene, sexual hygiene, public-health laws, and bye-laws for healthful housing. There is great emphasis on preventive measures - prevention and management of fire hazards. Fire proofing, snake proofing of harems.

An elaborate system of punishments and fines has also been described by Kautilya - for promiscuity for failure to notify a serious disease, for medical malpractice, for failure to cooperate in fire-fighting, for constructing improper housing, for food adulteration, for illegal abortion, for violating the chastity of female slave, nurse, cook, or servant (Samasastry, 1960).

In Kautilya’s arthashastra there are
references to the measures to be taken during epidemics, midwifery, health inspection, a system of city superintendent (inspection of water reservoir), a system of birth and death registration, census (age, sex, occupation, income, expenditure, character), (Raina, 1991; Samasastry, 1960; Mitra, 1974).

Thus, the highly developed stage of medical science of today has not been reached by the efforts of any single person race or a nation. It is the result of the cumulative labours of almost all the human beings living in the various corners of the earth during various ages. Every nation has contributed its own efforts towards its development. And India, like other civilizations has contributed its lot to the development of medicine in the world. Repeated attempts by U.S.A. and others to seek patents for various items of Indian medicinal heritage (neem, haldi, lehsun) itself indicates the importance and worth of potential of India. Therefore, a justice to India should be done whenever history of medicine is discussed.
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पश्चिमी देशों के चिकित्सा विज्ञान के इतिहास में भारतवर्ष के योगदान के बारे में पक्षपात पूर्ण रूप से–जनस्वास्थ्य पर विशेष बल सहित

- अमरजीत सिंध