



## Role of Jundi-Shapur in Streamlining of *ILM-E-TIBB* (Medicine)

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### Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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### ABSTRACT

People have always felt the need to seek the knowledge from time immemorial. Be it the knowledge of religion or science or philosophy or astronomy. The knowledge of medicine was confined to cultures till 4<sup>th</sup> century AD. Every subcontinent and every civilization was having its own traditions to treat the diseases, e.g. Ayurved in India, Egyptian traditional medicine in Egypt, Chinese traditional medicine in China, Iranian Traditional medicine in Iran etc etc. It was during the 5<sup>th</sup> century AD when Roman Empire cracked down on its seminaries and the intellectuals were forced to leave the country. Those intellectuals were given refuge by Persian Empire where in a city was established with ultimate autonomy under Khusro, Jundi-Shapur became a prosperous metropolis, refuge, and melting pot for intellectuals from many regions. Shapur II (309-379 A.D.) is credited for conceiving and establishing the nucleus of the university in the latter part of the fourth century. The closing of the Athenian school by the Byzantine Emperor Justinian (AD 539) also drove many learned Greek physicians to Jundi-Shapur. This was the start of the integration of different traditional medicine of different civilizations. This formed the basis of what we see today as modern medicine. In this way *JundiShapur* has important role in the development of Medical knowledge and it remained in the leading role until 9<sup>th</sup> Century AD.

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## 1. INTRODUCTION

Health and healing had been the priority of mankind from time immemorial. Different cultures had been treating the disease through their own ways. The mode of diagnosis and treatment was based on the culture of the particular society which gave rise to different mode of treatments, like Chinese Medicine, Ayurvedic System, Egyptian System of Medicine, Traditional Medicine of Greece so on and so forth.

It was the Hippocrates who gave proper way of diagnosis and treatment to the world followed by Ayurveda, Egyptian and Chinese societies some 5000 years back.

The present system of Medicine what we call as Modern Medicine is rather the outcome of integration of all these traditional medicines which started way back in 4<sup>th</sup> Century AD. Prior to this era, the sanatoria and travel lodges of antiquity were either temples or temple annexes, where the infirm were minded by attendant priests [1].

Cruse [2] referring briefly to ancient medicine in Greece and Alexandria, Egypt wrote, 'After the Dark Ages (500 to 1050 AD), academic medicine was reestablished in Europe, especially at Salerno, Bologna, Padua, Paris, Montpellier, and Oxford' however, Canon of Medicine by Ibn-Sina or Avicenna was also mentioned. Although 500 to 1050 AD may have been dark ages in Western Europe, it was a period of renaissance for the progress of science and medicine in West Asia and Asian region.

## 2. METHODOLOGY

The paper is based on the literary survey. Books and online search was adopted for the purpose. The search engines used were Google Scholar, PubMed, EmBase.

The words used for the search were Jundi-Shapur, Gundi-Shapur, Iranian Medicine. A total of 20 papers were collected where in only 9 papers were found useful for the purpose. Books available in RRIUM, Kolkata library regarding History of Medicine were consulted.

## 3. DISCUSSION

The contribution of Jundi-Shapur can be summed up in three ways:

1. Collection and translation of Medical Literature
2. Establishment of Medical Schools
3. Development of Full-fledged Hospital

### 3.1 Collection and Translation of Medical Literature

Gondi Shapur or JundiShapur was located in the south-west Iran in Shah-Abad near Susa in Khuzestan Province. The city was rebuilt in the third century AD, whereupon it soon became the most important scientific focal point of the ancient world [3].

At the late Sassanids period, a considerable scientific movement was started in Iran [4]. Dr. Nasr has written: "it became further strengthened after 489 AD when the School of Edessa (in Arabic Alroha, now Urfa) was closed by the order of the Byzantine Emperor and its physicians took refuge in the city" [5]. This emigration from Rome had an immense influence on the cultural exchange between Greece and Persia.

The closing of the Athenian school by the Byzantine Emperor Justinian (529 AD) also drove many learned Greek physicians to Jundi-Shapur [1].

One of the physician named Burzuyah was dispatched on a mission to import medical and other knowledge from India.

Jundishapur became the focus of a convergence of medical knowledge and translation, bringing Greek and Indian medicine together with Persian and Aramaic traditions [6].

### 3.2 Establishment of Medical School

The exact date of the foundation of Gondishapur School is unknown, but most investigators believe that it was established during the Shapur II reign (309 – 379 AD) [3].

Eighteenth-century historian Edward Gibbon credits Khosrow I with founding an academy: "At Gondi Shapur, in the neighborhood of the royal city of Susa, an academy of physic was founded, which insensibly became a liberal school of poetry, philosophy, and rhetoric" [4].

Arab historian Al-Qifti (1172-1248) described Jundishapur as a center of medical synthesis and innovation:

“They made rapid progress in the science, developing new treatments along pharmacological lines so that their therapy was judged superior to that of the Greeks and the Hindus. Furthermore these physicians adopted the scientific methods of other peoples and modified them by their own discoveries. They elaborated medical laws and recorded the work they had done.”[7]

### 3.3 Development of Hospital

Gondishapur Hospital is attested by some authors as the first teaching hospital in the history of medicine and the most celebrated Iranian hospital [8].

Dr. C. Elgood (1892 – 1970) wrote: “to a very large extent the credit for the whole hospital system must be given to Persia”. Afterward, the hospitals in the Islamic world were established based on the Gondishapur Hospital’s model [9].

The activity of Gondishapur Hospital reached its climax in the 6th century AD, continued at least until 225 AH (869 AD), and ultimately it was completely suppressed by immigration of Gondishapur physicians to Baghdad [10].

Opposite the great school was built the famous hospital (Bimaristan). After being prepared in the basic sciences students were assigned in rotating groups to well-known physicians and surgeons at the Bimaristan. The teaching hospital was organized into inpatient and outpatient services, and into departments of Medicine, Surgery, Orthopedics, and Ophthalmology [11]. The director of the hospital, also Dean of the Medical School, was the most outstanding physician of his days. He was assisted by two deputies, one appointed by the Nestorians and one by the Government. Jundi-Shapur was not merely a place of teaching or healing, but an environment that fostered academic productivity. The first known pharmacopeia was compiled there by Sabur ibn Sabar (AD 869) and adopted by the eastern caliphate, as was a twenty-two volume antidotary (Aqrabadin) that discussed every known poison and its clinical symptoms and treatment [12]. Other distinctions included the first recorded major medical convention and government

sponsored medical debates [12]. Moreover, Jundi-Shapur appears to have been the first medical school to require standardized licensure examinations.

The type of Medicine which was inculcated there must have been predominantly Greek. Yet it was not exclusively Greek, for al-Qifti says: “They made rapid progress in Science, developing new methods in the treatment of disease along pharmacological lines so that their therapy was judged superior to that of the Greeks and the Hindus. Furthermore, these physicians adopted the scientific methods of other peoples and modified them by their own discoveries. They elaborated medical laws and recorded the work that they had done “ [13].

Indigenous Medicine, Indian Medicine, and possibly Chinese Medicine, must all have been represented in the School.

The Hippocratic System had, of course, a long start over other systems. The Achaemenian kings replaced their Egyptian advisers by Greek practitioners. Alexander the Great employed only Greek doctors for himself and his staff. The Seleucids continued to use Greek as their official language and to model their training and education upon Greek ideals. Even the rude Parthians could not resist Greek culture and soon became Persianised and Philhellenes, adopted Iranian names and adored Zoroastrian divine beings [8].

Much of what is known of the organization of the university and medical school is derived from scattered fragments of various works, particularly Ibn-Abi-Usaybia’s *Uyun-al-Abna fi Tabaqat-al-Atibba*. The University was divided into three major divisions: (1) the school of theology, philosophy, and metaphysics, (2) the institute of translation, and (3) the school of medicine. Medical students came mostly from other schools and had already the available preliminary training of that time. As such they often spent only a year or less in this section {Podgorny, G. 1996}

### 4. CONCLUSION

In conclusion the events which took place from third century onwards and thus gave boost to the development of *Ilm-e-Tibb*(Medicine) are summarized as follows:

1. The establishment of Zoroastrianism as the official religion of Iran in 226 A. D by

Ardeshir Babakan, collecting Avesta texts and the beginning of educational and cultural movements in Iran.

2. The victory of Shapur I over Valerian, the Byzantine Empire in 260 A. D in Antioch, capturing seventy thousand Roman soldiers and transferring them to the Khuzestan region.
3. Beginning of the building of Gondishapur under the dictum of Shapur I. Persian, Greek and Roman architects collaborated in this project. The establishment of scientific center and Gondishapur hospital in 271 A. D.
4. Choosing Gondishapur as the capital city of Persia by Shapur II's mother (Afradokht) and later himself during 310-340 A. D.
5. Preparation of a building design and then construction of the medical department under the supervision of Shapur II during 352 to 365 A.D. Assigning Tiodrus, a well-known Greek physician, as the head of the department.
6. The closing of scientific centers of Rome by Zeno in 489 A. D. The Nestorian scholars were welcomed in Gondishapur University (significant event).
7. The beginning of the reign of Khosrow Anushirvan (531-579); inviting Greek and Roman teachers to teach at Gondishapur University; sending Borzuya (physician) to India to learn the traditional Indian medicine.
8. Accepting seven prominent scholars who abandoned universities in Athens and Alexandria during the reign of Justinian, the emperor of Byzantine Rome in 529 A. D.
9. The first international medical convention under the dictum of Khosrow Anushirvan in Ctesiphon in 555 A. D. [14]

It is thus concluded that Greeko-Arab Medicine (as Unani System of Medicine is called) is actually Greeko-Persian Medicine and it is at the later stage i.e. 9th Century AD onwards that Arab Scholars started the work in the field of Medicine and other Sciences as has been highlighted by Abdolreza Gilavand [15].

The developmental phase of the Modern Medicine started way back in 4<sup>th</sup> Century AD when different traditional Medical Literature available was translated and integrated with each other at Jundi-Shapur.

The origin of the teaching hospitals, medical schools and the rise of academic medicine are the cumulative contributions by the physician-philosophers of different epochs, religions and civilizations. During a pivotal epoch of human history they assembled in Gondi-Shapur in Persia, transforming medicine from magic and myth to scientific thoughts, thus ushering in the birth of teaching hospitals, medical schools and the rise of current academic medicine [15].

## CONSENT

It is not applicable.

## ETHICAL APPROVAL

It is not applicable.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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