

ORIGINAL ARTICLE

A Study of Iranian Physicians' Immigration to Baghdad: The Effects of Immigration on the Prosperity of Medicine Practice in the Abbasid Period

Abstract



The conquest of Iran by the Arab armies resulted in radical political and social changes in Iran. The connection of local rulers to the Caliph in Baghdad and the peaceful coexistence of different ethnic groups facilitated the movement of the population in other parts of this territory. Population movement has always brought the transfer of knowledge and culture, and host countries have welcomed immigrants with high scientific degrees. Therefore, such immigrants play a crucial role in advancing that science in the new territory. Physicians' migration from Jundishapur to Baghdad, the center of the caliphate, is an excellent example of this situation.

This phenomenon resulted in (a) Iranian medicine transfer, (b) hospital construction, (c) medical textbooks translation, and (d) medicine's advancement in Baghdad. The primary purpose of this research was to examine the migration of Iranian physicians and their role in transferring Iranian medicine to Baghdad and its consequences. The results of this study were as follows: (a) the ease of movement after the conquests, (b) the migration of Jundishapuri doctors to Baghdad, and (c) the invitation and religious tolerance of the Abbasid caliphs for doctors, which led to the prosperity of medicine in Baghdad and the Islamic world. Although Jundishapur University lost its prestige due to the migration of physicians to Baghdad, and such reputation disappeared later, medical science continued to exist in Baghdad and made significant progress.

Key words: Migration, Medicine, Jundishapur, Physicians, Baghdad, Translations

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Introduction

The displacement of the expert and elite population is among the issues of special importance in the history and culture of any country. With an ancient history In Iran, this issue has always led to the transfer of cultures and sciences and in some cases the advancement of sciences and many sources have spoken about the movement of specialists and doctors in different periods in pre-Islamic Iran (Qifī, 1992, pp. 183-184; Ravandi, 1975, p. 730). According to the Greeks scripts including Herodotus, Cyrus invited several doctors after conquering the western lands in Iran and Egypt from these lands which was indicated by the entry of one of the famous Egyptian oculists to the royal court (Takmil Homayoun, 1989, p. 311). The information in this field is limited due to the lack of sources in the Achaemenid and Parthian empires; however, there has always been talk of the migration of Greeks to Gundeshapur or of people moving to India to learn the sciences, especially medicine in the Sassanid period (Qifī, 1992, pp. 183-184; Browne, 1972, pp. 27-28). After the Arab invasion of Iran and their initial conquests and Umayyad ethnocentrism, Arab tribalism was to some extent reduced during the Abbasid period, the movements of the elite especially from Gundeshapur to Baghdad, the center of the Abbasid caliphate gained more momentum with Iranians who entered the ruling system and ministerial positions, including The Barmakids. The attention of the Abbasids to intellectual sciences (Zaydan, 1954, pp. 212-240) and the relocation of a part of the population of Iran, which was sometimes at the request of the caliphs and in some cases an individual decision caused the prosperity of medicine and the practice in Baghdad (Najmabadi, 1987, p. 425). No research has been done so far regarding the transfer of doctors to Baghdad and the causes, while only few references have been made to Gundeshapur physicians in Baghdad. In this article, the population of doctors moving to Baghdad its effect on medicine practice in that city is investigated; the reasons for these moves and its consequences are also examined. But first the position of medicine in ancient Iran is briefly mentioned; in the following, the movement of Gundeshapur doctors after the Arab conquests in Iran and the collapse of the Sassanid government is discussed.

The Significance of Medicine in Ancient Iran

The oldest references to medicine and its techniques in ancient Iran has remained in parts of the Avesta and some texts of Zoroastrian literature such as "*Bundahish*" and "*Dinkard*" books. In "*Vendidad*", it has been talked about the types of physicians, types of diseases, employment terms for physicians and their wages (Darmesteter, 2005, pp. 149-152) and that the beginning of medicine is rooted in Iran and Tariteh from the family of Sam who was the first physician and healer (Darmesteter, 2005, p.269). *Bundahish* has spoken about the existence of pain and disease in the human body (Farnbagh Dadavieh, 2015, pp. 124-125). It is stated in *Dinkard*: In order to find a solution for illness and malady, it is needed to establish a flawless hospital in all cities and countries and an expert, kindhearted physician provides the medicine and treatment (Dinkard, 2002, p. 79). During the Achaemenid period, scientific fields were active in Akbatan, Persepolis, Azarbaijan, Rey and other cities in Iran in a way they promoted the study and research of medicine and astronomy throughout the country (Takmil Homayoun, 1989, p. 312). There is very limited information about Parthian medicine. In the Sassanid era, the principles of medicine were mostly based on the Avestan tradition; however, the influence



of Greek and Indian medicine is evident so that the Gundeshapur School was created by combining Iranian, Greek, Indian, and Syriac medicine. This school which was founded by Sassanid Shapur was built to house Roman prisoners; it has been considered the most important medical center in the world for centuries (Tabari, 1970, Vol. 2, p. 590; Fry, 1984, pp. 26, 38). After marching to Rome and capturing the king and captives from Rome, Shapur built the city of Gundeshapur for their residence (Dinvari, 1992, p. 73; Ibn Athir, 1992, p. 213, Yaqubi, 1981, p. 195; Christensen, 2005, p. 90). Upon Shapur's call, some Indian and Zoroastrian scholars were involving in scientific work and especially medical studies, hence the Iranian medical school in Gundeshapur was flourished by means of the knowledge and experiences of Iranian, Indian, Greek, Alexandrian, and Syriac physicians (Ravandi, 1975, p. 730; Nasr, 1980, p. 181). There have always been great migrations to Gundeshapur due to the attention the Sassanians had paid to this region and its scientific center. Among the Greek scholars who emigrated at that time was Baziq (Tiyadaq) who taught medicine at Gundeshapur University (Mustawfi, 1983, p. 66). Another report about the history of medical knowledge in Gundeshapur states: After the peace treaty was established between Iran and Rome, Shapur founded a city in Iran called Gundeshapur which was similar to Byzantium for his Roman wife, the daughter of the Roman Emperor Aurelianos (270-275 AD). Aurelianos sent a group of Greek physicians with her daughter to provide her comfort; these physicians promoted Hippocratic medicine in the city of Gundeshapur (Ibn al-'Ibri, 1985, p. 128; Qifti, 1992, pp. 183-184). In the Sassanid era, there were immigrations with the aim of learning Indian knowledge and medicine; among these people was Barzoweh the Physician (Tha'alibi, 1989, pp. 405-406). He was the head of Persian physicians and the special physician of the Sasanian king. Barzoweh brought a number of medical books with him when he traveled to India which were later translated into Pahlavi language (Ravandi, 1975, p. 732). A group of Indian physicians were invited to Gundeshapur at the suggestion of Khosrow I. Anoushirvan sent a Christian physician named "Baz" to India to collect medicinal plants and who wrote a book about his investigations and brought Indian medicine to Iran to teach the Indian medicine (O'Leary, 1995, p. 108). During the reign of Khosrow Anushirvan, the doctors of Gundeshapur discussed and debated about medical knowledge at a meeting chaired by Jibril Darstabaz, the head of Gundeshapur University Hospital at the request of the king, and their comments and opinions were written down in a book (Qifti, 1992, pp. 184-185) which indicates their profound knowledge of medicine. In addition to philosophy, medicine was very famous in Gundeshapur University and a large number of scholars who had a thirst for knowledge used to go there from inside and outside the country. For example, Harith bin Kalde migrated from Taif to Persia before Islam and studied medicine in Gundeshapur and engaged in medical profession. Then he returned to Taif and practiced medicine, and even the Prophet used to tell the sick to refer to him (Ibn al-'Ibri, 1985, p. 146; Afzal ul-Mulk, 1982, p. 307; Mohammadi Malayeri, 2000, p. 271). After the conquest of Gundeshapur by the Arabs, these displacements increased with the subsidence of the conquests and left a deep impact on the medical knowledge of Baghdad.

Emigration of doctors and going to Baghdad

At the same time as the rise of Islam and the Arab invasion of Iran, Gundeshapur Uni-



iversity was at the peak of its authority and created a foundation for many changes in medical science in the following periods. Although the city surrendered to the Muslim army (Tabari, 1978, Vol. 5, pp. 10-19; Balādhurī, 1985, p. 371), the prudence of people due to the peace with the Arabs (Qudāmeḥ ibn Jaʿfar, 1981, p. 385) and the academic reputation of the university made it immune to the disaster. Later, however, it was re-lined and relegated its position to Baghdad due to the relocations and migration of professors and physicians while its name and fame remained as the foundation of developments and advances in medical science in Islam. According to historical reports, the medical school and hospital of Gundeshapur had been struggling to survive without the financial support of the Islamic government and only with the support of doctors from families such as Bukhtishu and Masawaiyh in the years following the fall of the Sassanids (Ibn Abī Usaybiʿa, 1970, pp. 435-434; Qiftī, 1992, pp. 517-518). In the early periods after the Arab conquest of Gundeshapur, there is limited information about the scientific activities and services of Gundeshapur scientists. In the Umayyad period, due to the lack of appreciation for science and culture, there is not enough information about the activities of Gundeshapur University and the movements that took place during this period. The expansion of scientific activities throughout history has been under the protection of local governments and dynasties, but Iran was subject to war and chaos after the conquest of Iran that the Caliphs were ruling throughout the Umayyad period which made scientists prefer to save their life, property and position instead of dealing with scientific issues. At the same time, Arabs considered Iran as an arena for the spread of Islam, a source of wealth to cover the expenditures of the Islamic government, and possibly as a refuge place for rebels and dissidents of the Islamic government; therefore, there were no place remained for knowledge to be flourished. Gundeshapur University has continued its activities and excelled in medicine. With Abbasids coming to power, the Arab perspective of social classes has been weakened and the caliphs became more inclined towards the presence of the Iranian element in the caliphate system, and this created the ground for movements in the territory of the Islamic caliphate, which were mostly driven by scientific motives or employment in the newly established administrative system. A clear example of these changes was the presence of Iranian doctors in the Caliphate from the time of Mansour onwards. The reputation of Gundeshapur School and its hospital remained for a long time after the advent of Islam, until Al-Mansoor Al-Khalifa resorted to the professors in this hospital for his treatment (Safa, 1992, p. 12). Mansoor, who always suffered from indigestion and the Khalifa's special doctors were unable to treat it, invited Georges Bukhtishu, the president of Gundeshapur University to come to Baghdad after learning about his medical reputation. After appointing son as the head of Gundeshapur University, Bukhtishu came to Baghdad with a number of his colleagues (Qiftī, 1992, pp. 217-218; Ibn Abī Usaybiʿa, 1970, pp. 317-318; Ibn al-'Ibri, 1985, pp. 185-186). This was the first official transfer at the request of the central government from Gundeshapur to the center of the caliphate and the beginning of the official influence of Iranian physicians in the royal court of the caliph, which continued for a long time. The delegation of physicians was welcomed with respect and the Caliph shared the history of his illness with Georges and a few days later; the treatment was completely successful and hence, Georges was asked to stay in the royal court as the Caliph's chief physician (Ibn al-'Ibri, 1985, p. 186). This move and presence in the royal court is considered as a turning point for the



expansion of medical science in Baghdad since Georges was the science of medicine and also famous for expertise in translation as he was one of the first translators of medical works to Arabic (Ibn Abī Usaybi'a, 1970, p. 502). Bukhtishu's family members and his children had been living in the court of the Abbasid caliphs until the time of Azd al-Dawlah. Although Bukhtishu's children did not have the academic credit of their father and were more engaged in political affairs, they were always respected by the Caliph. The immigration of this family to Baghdad was also a victory for other Iranian doctors from Gundeshapur in the caliphate, one of the most important of which was the Masawaiyh family. In 152 A.H., Georges became ill and requested the Caliph to return to his hometown to be buried next to his ancestors. The caliph requested him to send his son Bukhtishu to Baghdad in his place before his return; But Georges responded that the people and the hospital of Gundeshapur required Bukhtishu and left his disciple Isa son of Shahlafa with the caliph in Baghdad (Qiftī, 1992, p. 220; Ibn Abī Usaybi'a, 1970, pp. 320-321; Ibn al-'Ibri, 1985, p. 186). Although Isa was an excellent physician, he soon abused his position and started corrupting and harassing people (Qiftī, 1992, pp. 341-342) until his property was confiscated by order of the Caliph and he was exiled (Ibn Abī Usaybi'a, 1970, pp. 318-321; Ibn al-'Ibri 1985, 186-187). Mansour again called his agent in Gundeshapur to bring Georges to Baghdad; But because he had fallen from the roof of his house at that time, he sent Ibrahim, his student to the caliph (Qiftī, 1992, pp. 341-342; Ibn Abī Usaybi'a, 1970, pp. 321-322) and selected his other student, Isa Chaharbakht, who was a doctor and pharmacist, to be the head of Gundeshapur Hospital (Qiftī, 1992, p. 341). Isa Chaharbakht also went to Baghdad later and engaged in practicing medicine and pharmacy there (Ibn Abī Usaybi'a, 1970, p. 500). These transfers of doctors from Gundeshapur to the Caliphate center continued at the request of the central government. Bukhtishu, the son of Georges, who had taken over the headship of the Gundeshapur hospital in his father's absence, was called to Baghdad during the Mahdi Caliphate (158-169 AH) to treat the illness of Hadi, the crown prince and son of the caliph (Ibn Abī Usaybi'a, 1970, p. 318; Qiftī, 1992, p. 218). Sometimes, these transfers from the center of the caliphate to Gundeshapur were reversed due to some issues. As though Bukhtishu saved the crown prince from illness; due to the enmity of Abu Quraysh Isa, the court physician and the incompatibility of Khaizran, Mahdi's mother and wife of the Caliph, he was returned to Gundeshapur and continued to be the director of Gundeshapur hospital (Ibn Abī Usaybi'a, 1970, pp. 322-323; Qiftī, 1992, pp. 140-141). In 171 AH, Caliph Harun al-Rashid became ill and with the inability of the court doctors to treat him, at the suggestion of Yahya son of Khalid Barmaki and at the suggestion of the caliph himself, couriers were sent to Gundeshapur and Bukhtishu was brought back to Baghdad. Bukhtishu was chosen as the head of the Caliph's doctors by treating the Caliph's illness, and for this reason, they gave him a lot of wealth (Ibn Abī Usaybi'a, 1970, pp. 323-324; Qiftī, 1992, pp. 141-142; Ibn al-'Ibri, 1985, p. 193). In 175 AH, Bukhtishu, the son of Georges, the doctor of Harun al-Rashid, treated the illness of his minister, Ja'far bin Yahya Barmaki, and in response to his request to introduce him to a wise doctor, he said, "I don't know anyone more skilled than my son Jibril, that he is more skilled in this field than I am" (Tabari, 1978, Vol. 3, p. 1605) and Jafar Barmaki accepted Gabriel to immigrate from Gundeshapur to Baghdad who then treated Jafar Barmaki (Tabari, 1978, Vol. 3, p. 1605). After that, he became the special physician of Jafar and other compatriots of the Iranian Barmaki family (Qiftī, 1992, p.



185; Ibn Abī Usaybi'a, 1970, p.325; Ibn al-'Ibri, 1985, pp. 193-194; Azarnoosh, 1995, p. 603) and he gained amazing wealth in this way (Jahshiari, 1975, p. 289). Jibril later entered the royal court of Harun al-Rashid. About how Jibril, the son of Bukhtishu, entered the court of Harun al-Rashid, it is said that he treated one of Harun al-Rashid's maids who was suffering from muscle spasms with a nervous shock, and then he entered the group of the Caliph's physicians (Tabari, 1978, Vol. 3, p. 1605; Ibn al-'Ibri, 1985, pp. 193-194; Safa, 1992, p. 54). Jibril was so highly respected by Harun al-Rashid that thousand warriors took charge of guarding Gabriel's life during the wars of the caliph (Qiftī, 1992, pp. 188-192). He soon gained considerable wealth through practicing medicine and was chosen as the head of court physicians (Qafti, 1992, pp. 185-186; Ibn Abī Usaybi'a, 1970, pp. 326-327; Ibn al-'Ibri, 1985, pp. 193-194; Safa, 1992, p. 54). Another family of doctors who immigrated to Baghdad at this time was the Masawaiyh family. Masawaiyh, along with his sons Mikael and Yohanna entered Harun al-Rashid's government and competed with Bukhtishu's family due to their academic reputation. Among the sons of Masawaiyh, Yohanna had more scientific and medical fame and he had been engaged in medicine and translating Greek works during the four Abbasid caliphs, namely Ma'mun, Mo'tasim, Wathiq and Mutawakkel, (Ibn al-'Ibri, 1985, p. 205). Upon the death of Caliph Harun al-Rashid, Jibril became the special physician of Caliph Amin, the son and successor of Harun al-Rashid, with the support of Fazl bin Rabi, the politician minister of Harun al-Rashid (Qiftī, 1992, pp. 193-195; Ibn Abī Usaybi'a, 1970, pp. 327-328). With the death of Amin and the beginning of Mamun's caliphate (218-198 AH), Jibril was imprisoned by the order of the caliph and his minister, Hassan bin Sahl; then, his assets were confiscated, but soon after, the minister became sick and brought him from prison to his bedside due to the inability of other doctors. He recovered due to Jibril's efforts, and after that Hassan bin Sahl became Jibril's supporter in the court of Baghdad (Elgood, 1977, p. 108). In 205 Hijri, after six years of living in the city of Merv, Khorasan, Mamun returned to Baghdad and invited Michael the physician, the husband of Jibril's sister, to the court and unemployed Jibril. But in 210 AH, Ma'mun became sick and when Michael, Yohanna son of Masawaiyh and other doctors were unable to treat the caliph, they called Jibril to Ma'mun's bedside again. Gabriel freed the Caliph from the suffering of illness and regained his glorious position and wealth (Qiftī, 1992, pp. 195-196). But Jibril became seriously ill in 213 AH. Mamun, who was heading to Asia Minor, took Bukhtishu, the son of Jibril with him. Jibril soon died of this disease. In his will, he named Ma'mun as his executor. Ma'mun entrusted the handling of the contents of the will to Bukhtishu, son of Jibril (Qiftī, 1992, pp. 195-197; Ibn Abī Usaybi'a, 1970, pp. 328-330). Bukhtishu, the son of Jibril and grandson of Bukhtishu, came to Baghdad from Gundeshapur in 213 AH during the period of Caliph Mamun and was the Caliph's physician together with his father (Qiftī, 1992, pp. 196-197). After Bukhtishu's death, his son Jibril became famous in the court of the caliphs of Baghdad; he should be called the greatest doctor of Bukhtishu's family undoubtedly (Azarnoosh, 1995, p. 603; Ibn Abī Usaybi'a, 1970, p.35).

During the period of Caliph Al-Wathiq (227-232 AH), the fame of Bukhtishu's medical knowledge and wealth rose to such an extent that it aroused the jealousy of Muhammad bin Abdul Malik Zayat, the minister of the Caliph, and Ibn Abi Dawood, the judge of Baghdad. They started the enmity and slander and caused Al-Wathiq confiscate Bukhti-



shu's wealth and property, and return him to Gundeshapur (Ibn Abī Usaybi'a, 1970, pp. 351-352; Qiftī, 1992, pp. 142-143). Five years later, the caliph fell seriously ill and remembered his Gundeshapur doctor once again, however he died before arrival of Bukhtishu, and al-Mutawakkil (232-247 AH) succeeded him (Qiftī, 1992, p. 142). During the Caliphate of Mutawakkil, Bukhtishu gained amazing wealth through practicing medicine, and he was willing to compete with the nobles of the court and even the caliph himself. The Caliph made an excuse and confiscated all Bukhtishu's assets. Later, Mutawakkil became sick and Bukhtishu regained his former glorious position by treating him (Mustawfi, 1983, p.323). Nevertheless, the period of the Abbasid Caliphate was the golden age of Bukhtishu's life, and most of the reports and stories about his medical activities and treatment methods can be seen in historical texts are associated with this period (Azarnoosh, 1995, p. 604). He was dignified by Mutawakkil and he was an exception to Mutawakkil's strictness regarding doctors (Ibn al-'Ibri, 1985, p. 207). But in 247 Hijri, once again, Bukhtishu's assets were confiscated and he himself was exiled to Basra as a result of conspiracy of the court nobles (Ibn Abī Usaybi'a, 1970, pp. 352-353). Of course, the medical profession was under severe pressure after the caliphate of Mutawakkil due to his strictness in religious matters and the prejudice he had towards non-Muslims, especially physicians (Zaydan, 1954, p. 254). The Caliph's policy caused a stagnation in the science of medicine, and this continued until the time of the Buyid. With the beginning of Al-Musta'in caliphate (252-248 AH), Bukhtishu was called to the court from his exile in Basra, he remained the physician of the Abbasid court, the caliph and his successors, Al-Mu'tatz (died 252 AH) and Al-Muhtadi (died 256 AH) (Ibn Abī Usaybi'a, 1970, PP. 353, 365 -366; Azarnoosh, 1995, p. 604).

The son of Bukhtishu, Yohanna was a physician practicing for Al-Mufaqqballah, an experienced physician who knew Greek and Syriac languages, and he had translated many books from Greek to Syriac. He had written a book called "*Fi Ma Yahtaha Al-Tabeeb Men al-Elm Nojum*" (Ibn Abi Usaibia, 1970, pp. 498-499). Bukhtishu, son of Yohanna, was one of the prominent physicians at the court of Caliph Al-Maqtardullah (296-320 AH) and a colleague of Senan bin Thabit bin Qara, another physician of Al-Maqtardar (Qiftī, 1992, p. 146) and after the death of Al-Maqtardar, he became the physician practicing for his son, Khalifa Al-Razi (320-326 AH) and these two caliphs had given Bukhtishu considerable wealth (Ibn Abī Usaybi'a, 1970, p. 449).

Another physician from Gundeshapur doctor than Bukhtishu's family in Baghdad, Hunayn bin Ishaq was a Christian doctor who was famous at the time of Mutawakkil. His father Ishaq was a pharmacist. When Hunayn grew up, he went to Baghdad to learn medicine and he was attending the lectures of Yohana Ibn Masawaiyh. He departed to Rome and learned the Greek language and started learning medicine due to a dispute that occurred between him and his teacher. Then he went to Basra and learned Arabic and then returned to Baghdad. Yusuf Tabib has stated, once I went to Jibril bin Bukhtishu's and Hunayn was there and he had translated one of the books of anatomy for Jibril who respectfully called him father. Although Hunayn was a physician and his books about medicine cannot be ignored, he is mainly famous due to the translations he has done (Najmabadi, 1987, p. 243). Two manuscripts are preserved in the library of the Hagia Sophia Mosque in Istanbul which contain the list of Hunayn's works compiled by his students after his death (Elgood, 1977, p. 134). According to this list, Hunayn has translated 95



passages from Galen's books into Syriac and 39 works into Arabic. Six other books were translated into Syriac and 70 other books were translated into Arabic by his students and read and corrected by him it is said that Hunayn had two sons called Dawood and Ishaq. Dawood was a general practitioner physician. His niece named Habish has done many translations and some of Habish's translations have been wrongly attributed to Hunayn (Ibn al-'Ibri, 1985, p. 209). Another doctor who practiced medicine after immigrating to Baghdad was Sahl bin Shapur whose accent indicated he was from Ahvaz, Khozestan. He became famous in medical knowledge during Ma'mun period and was a skilled and experienced physician compared to Yohanna Masawaiyh, George's bin Bukhtishu, Issa bin Hakem and Zakaria Taifouri (Ibn al-'Ibri, 1985, p. 201).

How and why the physicians immigrated

Doctors continually immigrated to Baghdad and this continued for several years until Gundeshapur failed as the root and center of medicine. These immigrations and movements had several reasons listed as follows:

1- The first and most important reason can be stated as the request of the Abbasid caliph due to the inability of the caliph's physicians to treat him; inviting the doctors from Gundeshapur to Baghdad and their entry into the caliphate system, which provided the basis for more transfers.

2- The attention of the Abbasid caliphs to intellectual sciences and medicine, religious tolerance and their special attention to physicians in spite of their different religions and ethnicities, made people pay more attention to medicine, and this favor to doctors encouraged more immigration in this field (Zaydan, 1954, pp. 212-240; Ibn al-Nadīm, 2002, p. 528).

3- Physicians enjoyed a high social status due to their knowledge and expertise which had a great impact on transfers. During the wars of Caliph Harun al-Rashid, a thousand warriors guarded the life of his physician Jibril (Qiftī, 1992, pp. 188-192). The companionship of physicians with caliphs was also another reason for the public interest in this profession and made people pay more attention to medicine. Ibn al-'Ibri's report about the company of Yohanna Ibn Masawaiyh with Wathiq Abbasi while fishing (Ibn al-'Ibri, 1985, p. 205) shows well the special status the physicians of Gundeshapur had in the court of the Abbasid caliph of Baghdad which explains why doctors departed from their hometown and practicing medicine in the highly reputable hospital and came to Baghdad.

4- These physicians had an impressive and noteworthy financial and economic status in Baghdad which was another incentive to increase the migration of doctors to Baghdad. The considerable wealth of Bukhtishu's son Jibril who was the physician of Caliph Harun al-Rashid surprised everyone, and the authors enthusiastically brought lists of his assets during his life in Baghdad (Ibn Abī Usaybi'a, 1970, pp. 346-349; Qiftī, 1992, pp. 197-198). His incomes lasted for twenty-three years of practicing medicine for Haroon al-Rashid and along with that thirteen-year in Barmakids period (Ibn Abī Usaybi'a, 1970, pp. 346-349; Browne, 1972, p. 92). Therefore, despite the sources have not mentioned, probably there have been many immigrations to Gundeshapur to learn this science in the early years due to the public interest in medical knowledge.

5- Since people paid more attention in the doctors from Gundeshapur, and most of their efforts were to visit to physicians from Gundeshapur in times of illness, this provides



more grounds for immigrations and attracts more doctors from Gundeshapur to Baghdad. Asad bin Jani once lamented about not having a client during the outbreak of the disease, and he explained the reason as: I am Muslim and people believe that Muslims are not good doctors, in addition, my name is Asad, while it would have been good if it was a Syriac or Aramaic name. My dress is a robe of white cotton, while it should be of black silk, and my language is Arabic, but it should be the language the people of Gundeshapur speak (Browne, 1972, p. 20).

6- The expertise of Gundeshapur doctors in their profession also added to this popularity. During the period of Harun al-Rashid, Bukhtishu was returned to Gundeshapur until in 171 AH the caliph became ill and the court doctors were unable to treat him. Couriers were sent to Gundeshapur to bring Bukhtishu to the caliph at the suggestion of Yahya son of Khalid Barmaki. They brought him back to Baghdad and Bukhtishu was chosen to be the head of the Caliph's doctors and they gave him considerable wealth (Ibn Abī Usaybi'a, 1970, pp. 323-324; Qiftī, 1992, pp. 141-142; Ibn al-'Ibri, 1985, p. 193). Then, the caliph kept him in Baghdad. This have surely attracted more attention to Gundeshapur University and led to more immigration to study medicine.

7- Another reason for the spread of medicine in Baghdad and the migration of doctors to Baghdad was the presence of the Barmaki family and their actions. The presence of this family at the head of the government and in the position of the ministry made it easier for them to support Iranian medicine and doctors. Barmakids, especially Yahya and his son Jafar provided unique services to Islamic culture and civilization as they organized scientific circles and debates, introduced scientists to the Abbasid caliph, collected Greek books, supported translators and translation orders have. They introduced Iranian doctors to the Caliph and provided the situation for their immigration to Baghdad. Jibril the son of Bukhtishu, the grandson of Georges the son of Bukhtishu, the special physician of Mansour Khalifa Abbasi is one of the professors who got close to Harun through the mediation of Barmakids;

8- One of the primary results of the migration of doctors to Baghdad was that due to the attention and trust in Jundishapuri doctors, the heads of hospitals in Baghdad and other places have been in the hands of these doctors and the supplier of the medical and nursing staff of these hospitals was still Jundishapor center for many years. It can be said the role of physicians from Gundeshapur in building a hospital in Baghdad and taking over the leadership of these hospitals is another reason for moving from Gundeshapur to Baghdad. The headship of hospitals in Baghdad and other places has been delegated to doctors from Gundeshapur as they were highly respected and regarded. The medical and nursing staffs for these hospitals were being supplied Gundeshapur center for many years.

9- In some cases, doctors trying to serve the people have caused them to migrate to Baghdad. That can de mention Sinan bin Thabit (Ibn al-'Ibri, 1985, p. 227). Who could improve public health services to a level of perfection that was unprecedented until that day with the help of Minister Ali Bin Isa.

10- A less considered reason is that Gundeshapur University and Hospital stroped progressing as the doctors from Bukhtishu and Masawaiyh families moved to Baghdad (Ibn Abī Usaybi'a, 1970, PP. 434-435; Qiftī, 1992, pp. 517-518); since the center were managed by these families financially and scientifically, while the caliphs didn't support Gundeshapur Hospital, in contrast to supporting Baghdad medical centers. This situation



caused other doctors to go to Baghdad after seeing this situation.

11- Specialist doctors being called to Baghdad and working there caused the gathering of these doctors in Baghdad, while a vacancy for the specialists has been created in Gundeshapur, and this caused the migration of other doctors to Baghdad for training and employment, and caused the prosperity of Gundeshapur declined. Hence doctors who needed to learn from the expertise and experience of these people traveled to Baghdad (Qifti, 1992, pp. 239-240).

12- A reason for doctor's immigration to Baghdad is that they were introduced by doctors who had previously entered the royal court. As in 175 Hijri, Bukhtishu the son of Georges, the Caliph's physician, said that I do not know anyone more skilled than my son Jibril, he is more skilled in this practice than I am (Tabari, 1978, Vol. 3, p. 1605) in response to Jafar's request to introduce him to a wise and knowledgeable physician, and hence Jibril was also called to Baghdad.

13- The competition between doctors was another reason for these transfers. The success of Bukhtishu's family tempted Masawaiyh family to follow their destiny in Baghdad. Therefore, along with his sons Michael and Yohana, Masawaiyh started to compete with the Bukhtishu family after immigrating to Baghdad (Najmabadi, 1992, p.227).

14- The employment of doctors as translators in the translation movement and cooperation in the translation of Persian and Greek medical texts into Arabic is another reason for the continuation of these migrations, as well as the existence of translated medical books in Baghdad and ease of access for doctors to use these resources have had a great impact on immigration of doctors to Baghdad. Hunayn bin Ishaq, a Christian doctor, was a famous doctor during Mutawakkil caliphate. His father Ishaq was a pharmacist. When Hunayn grew up, he went to Baghdad to study medicine and attended the lectures of Yohana Ibn Masawaiyh to be taught by him (Qifti, 1992, pp.239-240; Zaydan, 1954, pp .218-219).

15- After the conquest of Gundeshapur by the Arabs, this region became a part of Islamic government, and this made it easier for people to move from this region which has been an influential factor on immigration of doctors to Baghdad.

The Popularity of medicine and the Construction of hospitals in Baghdad

As the most important medical center of the era, Gundeshapur was the center of the gathering of scientists from various nationalities and Greek, Indian, and had mixed Iranian medical traditions with the advent of Islam. After Baghdad became science hub with the doctors came from Gundeshapur to Baghdad, medicine was also transferred from Gundeshapur to Baghdad (Browne, 1972, pp. 34-35; Najmabadi, 1992, p. 424). The attention of the Abbasid caliphs to medicine and doctors lead to the popularity of medicine among people, and despite of limited information, there were probably major immigrations to Gundeshapur to learn this science in the early years as people became interested in medical knowledge. The changes that took place in this case made the caliphs pay more attention to medicine, and therefore they planned to build hospitals and medical schools in Baghdad. In 190 AH, Jibril son of Bukhtishu built the first hospital in Baghdad called Rashidi Hospital based on the structure of Gundeshapur Hospital at the request of Harun al-Rashid (170-193 AH) (Sedigh, 1976, p. 41) and brought doctors such as Masawaiyh Khuzestani from Gundeshapur to the newly founded hospital. Since then,



the name and meaning of the Persian word “Bimarestan” (hospital) made its way into the Arabic language (Qiftī, 1992, p. 187). At this time, the Barmakids hospital was also built in Baghdad; according to Ibn Nadim, a person named Ibn Dahan Handi was in charge of it (Ibn al-Nadīm, 2002, p. 446). The organization of Islamic hospitals or the hospital system in Baghdad was established based on the Sasanian model of Gundeshapur. Although some doctors have been looking for gaining wealth, most of them have had an effective role in the major changes that have been made in the state of health and treatment. As an example, we can mention Senan bin Thabit who was one of those who examined doctors during the Abbasid Caliphate period and chose each of them to treat a certain disease. The number of doctors on both sides of Baghdad reached about eight hundred and sixty people except for the famous doctors who did not need to be tested because of their fame, and also the doctors who were in the service of the Caliph (Ibn al-’Ibri, 1985, p. 227). In medicine, Senan was also a master in organization and management more than in treating. He received help and cooperation of Minister Ali bin Isa, so that they were able to bring the public health services to a level of perfection that had never been seen before. Baghdad had a shortage of hospitals at that time and there were only four hospitals in the entire city to meet the need. Therefore, Ali Ibn Isa built another hospital at his own expense in the western part of the city. As Senan had suggested, this hospital was placed under the supervision of Abu Othman Saeed bin Yaquub al-Damashqi, who was the minister’s special physician and the chief physician of all Baghdad hospitals. He also improved the condition of hospitals and the regulations for patient reception (Qiftī, 1992, p. 271). In 306 AH, another hospital was opened by a lady in Baghdad called Al-Sidah Hospital. The affairs related to the establishment and management of this hospital were entrusted to the famous astrologer Yusuf bin Yahya, and six hundred dinars were allocated monthly for its support and maintenance. This hospital was built on the bank of Shattri River overlooking the east, and its main gate opened towards Yahya market. After the fall of Barmakids, this hospital was destroyed during the Seljuk period (Najmabadi, 1987, p. 774). In the same year, the caliph built another hospital near the Sham Gate as suggested by Sinan, in the western part of the city. This was the same famous authoritative hospital which was empowered by the monthly donation of the Caliph who was paying 200 dinars out of his own pocket (Qiftī, 1992, p. 271). Mutawakkil’s policy in reducing costs and imposing strict restrictions on non-Muslims, especially doctors who were mostly Christians caused a scientific stagnation that continued until the entry of Daylamites into the Abbasid Caliphate. As Buyid dynasty came into power and exert influence in the caliphate, doctors once again turned to scientific work. After the death of Ubaidullah, the son of Bukhtishu, Caliph al-Maqtardullah (296-320) confiscated all his possessions so his son Jibril fled to Akbara (north of Baghdad, east of the Tigris) with his mother and sister. Later, Jibril came to Baghdad and studied medicine despite poverty (Qiftī, 1992, p. 202; Ibn Abī Usaybi’a, 1970, p. 366, Azarnoosh, 1995, p. 605). He practiced medicine two nights and two days every week in the Baghdad hospital, which Azd al-Dawlah had renovated. He was also a special physician of Azd al-Dawlah (Qiftī, 1992, p. 205, Ibn Abī Usaybi’a, 1970, p. 368). In Baghdad, he wrote his biggest book, “*Al-Konash al-Kabir*”, and gave a copy of it to the Dar al-Alam in Baghdad, which the doctors in the Baghdad hospital benefited from (Qiftī, 1992, p. 208; Ibn Abī Usaybi’a, 1970, p. 371). In these hospitals, which functioned like today’s academic treatment centers, all types of medical and pharmaceutical practices



were performed, and besides that, experienced doctors trained young doctors. Of course, a Muazdullah

Hospital was built in the old part of the city before Azd al-Dawlah, which was located in the southwest on the side of the Kufa gate (Najmabadi, 1987, p. 775). This hospital has been considered as the central hospital of Baghdad since ancient times, and most of the doctors of Baghdad worked there from Bukhtishu's era until the establishment of Azodi Hospital. The Baghdad hospital was completed in 982 AD, the number of employees in this hospital reached about eighty people, and Jibril, the special doctor of Azd al-Dawlah, was called to work in this hospital (Qiftī, 1992, p. 575; Najmabadi, 1987, p. 7). Great and famous doctors such as Abu Ali Sina and Razi were raised in this situation and always shone bright as scientific honors in Iranian culture and knowledge.

Ophthalmology was another branch of medicine that entered Baghdad and maintained. This science also owes its first experiences to the movement of Gundeshapuri doctors. The first news about ophthalmology goes back to Masawaiyh. He once came to Baghdad from Gundeshapur and after treating the eyes of one of the servants of Fazl bin Rabi, the minister of Khalifa, the minister himself also suffered from an eye disease, and after being treated by Masawaiyh, he ordered him to bring his family to Baghdad. In the following, Harun al-Rashid got an eye disease and called Masawaiyh to his presence; in this way he became the ophthalmologist of the caliph (Ibn Abī Usaybi'a, 1970, pp. 430-431). Jibril was also the ophthalmologist of Ma'mun Khalifa Abbasi (Ibn al-'Ibri, 1985, p. 203). The most important writings about ophthalmology are found in the book of Hunayn bin Ishaq, entitled "*Kitab al-Masail fi al-Ain*" which he wrote for his sons Dawud and Ishaq. It seems that attention to ophthalmology has increased with the publication of Hunayn's book, as it can be seen that in all medical textbooks after that time, a large part is devoted to the discussion of eye diseases (Ibn al-Nadīm, 2002, p. 525). Muslims acquired the knowledge of the two nations of Iran and Greece through translation and added to it; Muslims were able to explain many eye diseases and explain their treatment due to the progress of this science. Gundeshapur University gradually lost its popularity and became ruined at the end of the third century following the doctors' immigration to Baghdad and the establishment of the hospital and Bait al-Hikma in Baghdad (Sedigh, 1976, p. 41).

The role of immigrant physicians in the translation movement and translation of medical texts

One of the major developments considered as the pinnacle of scientific pride in the Islamic world is the translation movement, which began at the beginning of the Abbasid era and reached its peak in the Ma'mun era with the start of the work of Bait al-Hikma, and it can be said that it is one of the most important periods in the history of medicine. The great interest of the translators, most of whom were immigrant doctors at the royal court of the Caliph, to translate Greek medical works and the support of the caliphs of the time for this scientific movement and the accuracy of the translators for translating these works were all among the factors that made it a golden period in scientific prosperity, especially medical science. After the rise of Islam, many Syriac and Greek works were translated from Pahlavi into Arabic proving that Iran has been the transmitter of ancient knowledge to the Islamic world (Fry, 1984, p. 38). Medicine in Baghdad owes greatly to



the ancient legacy of Gundeshapuri medicine; specially the doctors of the Iranian family Bukhtishu and Masawaiyh who introduced Muslims to Greek, Syriac, Iranian and Indian medical tradition. Gundeshapuri doctors, including the Bukhtishu and Masawaiyh families with a brilliant medical background in their hometown for more than two centuries, were both the Caliph's physician and the officials of the Abbasid caliphate, and the pioneers of translating ancient Greek, Iranian, Indian, and Syriac writings in the fields of medicine, astronomy, philosophy, and other sciences to Arabic. It has been stated that Georges was the first doctor who translated books from Greek to Arabic for Mansour (Ibn Abī Usaybi'a, 1970, p. 502). Probably, he also had translations to Syriac language; Because Hunayn bin Ishaq had translated the book "*Konash*" (a collection of medical notes) of Georges from Syriac to Arabic (Ibn Abī Usaybi'a, 1970, p. 332; Azarnoosh, 1995, p. 603). This was the first medical book that was translated into Arabic during the Abbasid period (Samerai, 1984, p. 337) and there are numerous quotations from it in the books of later authors (Sezgin, 2001, p. 280). Abu Rihan Biruni in "*al-Saidna fi al-Tabb*" refers to the book of "*Konash*" from Georges (Azarnoosh, 1995, p. 603). In *Al-Hawi fi al-Tabb*, Razi quotes from two other books of Georges called *Akhlat* and *Diabeeta* (Sezgin, 2001, p.280).

Bukhtishu, the son of Georges wrote the books of "*Konash*" and "*Al-Tazkarah*" (Ibn Abī Usaybi'a, 1970, p. 325) and the book of "*Al-Zina*" in the field of medicine (Ibn Juljul, 1970, p. 135). Like other scholars from Bukhtishu's family, Jibril played a great role in transferring medical knowledge to the Islamic world and translating Greek and Syriac scientific texts into Arabic. At Jibril's suggestion, Caliph Harun al-Rashid sent a group to Rome to collect Greek medical writings and hired translators to translate these ancient writings, which continued in Mamun's period as well (O'Leary, 1995, p. 249, Azarnoosh, 1995, p. 604). Yohanna Ibn Masawaiyh, a Syrian Christian, was one of the doctors of Harun al-Rashid who put him in charge of translating old medical books, and many students attended his lessons (Ibn al-'Ibri, 1985, p. 194). Upon his request, Hunayn bin Ishaq, a famous physician and translator who was one of Jibril's students in clinical medicine, translated some of Galen's writings that Jibril himself was interested into Arabic; (Qiftī, 1992, p. 241; Ibn Abī Usaybi'a, 1970, p. 461). The first book that Hunayn bin Ishaq translated from Galen's writings into Arabic was "*Kitab fi Asnaf al-Hamiyat*" which he gave to Gabriel as a gift (Hunayn bin Ishaq, 1976, p. 380).

Hunayn bin Ishaq had translated several other books from Galen's writings for jibril (Hunayn bin Ishaq, 1976, pp. 376, 380, 389, 404, 409-410). Ayub Rahavi, another translator and physician of this period also translated some writings for Jibril into Arabic (Hunayn bin Ishaq, 1976, pp. 379, 383, 411). Jibril's writings in medicine were always the favorite of the doctors of the Islamic world; As Abu Rihan al-Biruni in *al-Sydneyyah fi al-tab* and Muhammad bin Zakariya Razi in "*Al-Hāwī fī al-ṭibb*" book have given many medical sayings from Jibril. The book written by Jibril in Syriac in which he benefited from the words of Galen, Hippocrates and others had been used by students to understand Greek medicine (O'Leary, 1995, p. 249). Another family that had a great influence in the transfer of science to the Islamic world was the Masawaiyh family. Yohanna left behind many books and works which included almost all fields of medicine, including clinical medicine, gynecology, pharmacy, and anatomy, even in a simpler way (Ibn Juljul, 1970, pp. 137-138). Almost all of his works have been lost, and two of his works including



a treatise on diet and a brief pamphlet on medical artifacts have been preserved in the Leiden Museum (Elgood, 1977, p. 114). Shapur, the son of Sahl was the first renowned pharmacist of the school and the head of Gundeshapur Hospital, whose pharmacology books has been taught in this school for many years. This work included 22 books that were translated into Arabic and is known as the first collection of pharmacology throughout the Islamic world (Ibn al-Nadīm, 2002, p. 528). These cases are proof of the important role of Iranian immigrant doctors in the translation of medical books in the translation movement and show the efforts of these doctors to advance this science in Baghdad and the Islamic world.

Conclusion

After Gundeshapur was conquered by Muslim Arabs in 17 AH, this region became a part of Islamic government and this made it easy for people to move from this region which led to the transfer of culture and science. Among these immigrations, after the conquests subsided, the physicians of Gundeshapur immigrated to the center of the Abbasid Caliphate at the request of the government. The result of these movements was the transfer of Iranian medicine to the new land and the center of the Caliphate. Accordingly, the organization of hospitals was established based on the Sasanian model of Gundeshapur often managed under the supervision of Gundeshapur doctors. After that, we see the spread of medicine and its other branch, ophthalmology in Baghdad which had its roots in Gundeshapur. Of course, the ground for the migration of more doctors to Baghdad was provided and a great scientific movement in the field of medicine emerged in the Islamic world, due to the following events: efforts of the Barmakids, religious tolerance, the great attention of the Abbasid caliphs towards doctors, translators and writers in the field of medicine who were mostly Christians, and providing a suitable environment for their activities, as well as attracting experienced doctors from Gundeshapur to Baghdad and the favorable economic status of doctors. These Iranian doctors served the advancement of this science in Islamic lands by translating and writing medical books with the beginning of the translation movement in the period of Ma'mun. After Ma'mun's period, these doctors were still at the helm of the spread and progress of medical science in the Islamic world. Due to the strictness of the Abbasid Muttiwakil toward doctors, this science continued its way in the Al-Buyeh system, and the result of these shifts and attention to doctors led to the progress of medical science which was clearly revealed in the works of Ibn Sina, Razi and other doctors in the later era. A consequence of these relocations and the immigration of doctors to the centers of the Islamic Caliphate was the destruction of the Gundeshapur scientific center, although Gundeshapur is still considered as the origin and root of this science. Another consequence of these movements was the prosperity of some scientific fields, including medicine, and the construction of new scientific and medical facilities in the centers of the Islamic Caliphate.

Conflict of Interest

None.

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