

ORIGINAL ARTICLE

A Survey on the Status Pharmacies and their Monitoring System in Iran and Islam

Abstract

As one of the important departments of the hospital during the Islamic civilization in Iran and Islam, the Pharmacy with its various functions, namely manufacturing and providing medicine, has played an important role and gained special status in medical contexts. Different names given to pharmacy in texts belonging to the in Islamic period ranges from *Khizāna al Adawiya* (lit. spice store), *Khizāna al-Sharāb* (lit. wine¹ store), pharmacy, Sydnh, to Sydnhnani. Since this research has taken a historical approach, by examining the historical status of hospital pharmacies in Iran and Islam, it seeks to examine the status and performance of hospital pharmacies in Iran and Islam in the period of Islamic civilization.

A library research method was used for this historical study in which the data was collected from the library. Having found and collected historical sources and references, we categorized the contents to investigate and give an account of the status of the hospital pharmacy in Iran and Islam.

Pharmacies in Iran and the Islamic world were one of the most important departments of the hospital, and pharmacists, along with physicians, played an important role in manufacturing drugs and medicine and giving them to patients. Pharmacists were ranked lower than physicians, and their performance was always monitored by *Mohtasib* to make sure that their function was in accordance to the law of sharia and o fake medicine was given to the patient. The history of pharmacies was closely

Reza Dashti¹ 

1- Ph.D., Assistant Professor of History of Islamic Civilization, Bushehr Branch, Islamic Azad University, Bushehr, Iran

Correspondence:

Reza Dashti
Ph.D., Assistant Professor of History of Islamic Civilization, Bushehr Branch, Islamic Azad University, Bushehr, Iran

dashti.r2012@yahoo.com

1- The word wine here refers to syrups and all that is in the form of liquid.

Citation:

Dashti R. A Survey on the Status of Hospital Pharmacies in Iran and Islam. *Res Hist Med.* 2020; 9(3): 189-204.



related to the social, economic, cultural and therapeutic history of its time, comprising an integral part of Islamic culture and civilization.

During the Islamic period, pharmacies in Iran and the Islamic world played an important role. In the Islamic period, there was a hierarchy in hospital pharmacies, including the head, the capacitor, pharmacist assistants and a number of vendors who worked under the supervision of the higher-rank staff or the senior pharmacist. They played an important role in improving patients' health status.

Key words: Pharmacy, Pharmacology, Hospital, Islam, Iran

Received: 19 Apr 2020; Accepted: 20 Jul 2020; Online published: 25 Aug 2020
Research on History of Medicine/ 2020 Aug; 9(3): 189-204.

2- Lewin, 2008: 5.

Introduction

Throughout life, humans, like any living thing, have been afflicted with disease and death, and for this reason they have always sought to find a way to cure and combat disease, and have used everything available as medicine.

The oldest known document available now on the method of preparation of a number of medicines is the Sumerian and Akkadian clay tablets belonging to the third millennium BC in Mesopotamia.² They testify that people at that time, not based on medical knowledge, but in the light of their experience used to prepare medicine and drugs and sell them. This was done as a profession, of course.

The issue of manufacturing and presenting medicine in pharmacies and the place where medicine was sold was one of the significant topics in medical and social history, especially in the period of Islamic civilization (mid-second century to mid-eighth century AH). This, however, has been less seriously researched. In the field of medical history, most research conducted has been related to the hospitals of the Islamic period in general, and less attention has been paid to hospital pharmacies as an important part of hospitals.

Regarding the research issue, it is worth mentioning that during the Islamic period, with the expansion of cities and the beginning of the translation movement, physicians became familiar with Greek, Persian and Indian medical and pharmaceutical texts and selling medicine began to flourish, and certain people got involved in this latter job professionally. Attaran (medicinal herb vendors) and wandering vendors also used to sell medicine and they sometimes even prescribe medicine. Apart from physicians who underwent formal and classical education and hence did know the science of pharmacology, the other vendors sold medicine out of experience with no classical knowledge. On the other hand, with the establishment of the first Islamic hospitals and the growing need for different syrups, potions and other drugs,



as well as the need for educating drug vendors to learn how to provide various compound medicines and differentiate varieties of drugs, pharmacies became doubly important.³ Lack of special law for manufacturing and selling drugs, as well as lack of proper supervision over the function of pharmacies, could make the health care system ineffective. Therefore, it seems necessary to understand the role and position of pharmacies in the Islamic period and whether there was a structure similar to hospital structures in large and important pharmacies of the Islamic period? In this study, we, through studying historical texts, have tried to understand the role, status and structure of hospital pharmacies as an important part of the medical system in Islamic civilization. This is crucial because the inefficient structure of hospital pharmacies and improper organization could make interference in medical services or could even make the health care system irresponsible to some of the vital needs of Muslims.

Regarding the background of the research, it should be pointed out that the data collected for this study comprise numerous books written on the history of hospitals and the history of medicine in Islam and Iran in which either in details or very briefly talked about hospital pharmacies. Some of the books used include *Tabbaghat al-Atabba val-hokama* (in Arabic), by Ebn JalJal (2005), *Medieval Islamic Hospitals: Medicine, Religion and Charity* (in Persian), Ahmad Raghav (2015), *History of Medical Treatment and Hospitals in Islam and Iran* (in Persian), written by Dr. Ali Akbar Velayati (2017), *History of Iranian Hospitals* (in Persian) by Hassan Tajbakhsh (2000), *History of Hospitals in Islam* (in Persian) by Ahmad Issa Beyk Masri (2014), *History of Iranian Hospitals* (in Persian) by Saeed Nafisi (1950) and *History of Medicine in Iran* (in Persian) by Mahmoud Najmabadi (1987). Furthermore, as seen below, numerous articles have been written in the field of history of hospitals, medicine and pharmacy and their evolution by Urmila T, Supriya B. (2008)⁴, Idem BM. (1985)⁵, Dols MW. (1987)⁶, and Soylemez MM. (2005)⁷.

These books and articles, in general, have dealt with the evolution of the history of hospitals, pharmacies and medicine in the world, Islam and Iran and only briefly referred to hospital pharmacies. That is to say, despite the fact that numerous works published on the evolution of the history of hospitals in Islam and Iran, none have specifically addressed the role, status and function of hospital pharmacies as an important department of hospitals in Islamic civilization.

The purpose of this study is to examine the evolution of the pharmacies, in particular, hospital pharmacies, their position

3- Zarrinkoob, 1997: 60.

4- Pharmacovigilance of Ayurvedaic Medicines in India.

5- The drug trade in antiquity.

6- The Origins of the Islamic hospital: myth and reality.

7- The Jundishapur school, its history, structure and functions.



and function as an important part of the health care system and, in addition, to find out whether or not the performance of this important part of the health care system in Islamic civilization received due attention. However, it seems that so far, this latter issue has not been under the scrutiny of researchers.

The importance of choosing this issue is that just as before Islam and among other nations, especially among Iranians, there was a proper medical and health care system, during the Islamic period and based on the teachings of Islam also Muslims paid attention to issues of health and treatment and made alleviating the pain of patients and saving their lives as their top priority. In the meantime, as pharmacies and pharmacists, together with physicians, comprised the most important components of health care system and their function was directly related to human health, then, the historical study of the role, position and function of hospital pharmacies is of importance.

Materials and Methods

The research method in this article is descriptive-analytical. Library research techniques have been employed for collecting data. First, the historical sources and references collected range from those detailing and/or giving some information about pharmacy and the science of pharmacy in different historical periods to those just giving a hint to the issue under study. Then, before writing the article, the documents have been categorized and analyzed and in the end, based on the historical data, a conclusion has been written.

Findings

pharmacies in Iran and Islam had a hierarchical system, in which the chief, the capacitor, pharmacist assistants and a number of vendors worked under the supervision of the higher-rank staff or the senior pharmacist. They were important in improving patients' health. Pharmacies were one of the most important parts of the hospital in Iran and Islam, and pharmacists had significant role in preparing and providing medicine to patients. However, pharmacists were at a lower level than physicians, and their performance was always supervised by Mohtasib to make sure that their function was in accordance to the law of sharia and they are truly functioning to the betterment of the patient. The history of pharmacies was closely related to the social, economic, cultural and medical history of its time and was considered an integral part of Islamic culture and civilization.



Analysis of the words medicine and pharmacy

Every science has a subject matter, and the research performed on that issue demands special terminology to represent that study. Regarding the word pharmacy, which is the subject of this research, it should be said that this word in Persian is a compound word that consists of two components, “*daru* (medicine)” and the spatial suffix “*khane* (house)”, which refers to the place, house or building where the drug manufacturer manufactures and combines various drugs and sells them. The word *Daru* is a Persian word, derived from the Pahlavi word *Daruk* with the same meaning as *Daru*.^{8, 9} Ibn Muqaffa (d. 142 AH), an Iranian writer and translator, has an important role in translating Pahlavi works into Arabic. He, in translating *Kalila and Dimna*, has used the term “*Khizāna al Adawiya*” (lit. spice store) for pharmacies.¹⁰ In the Abbasid period, with the influence and spread of Iranian culture in the court of caliphs and ministers, the Persian word “*Khizāna al-Sharāb*” (lit. wine store)”, was a widely-used word at that time whose meaning encompassed pharmacy as well. Tabari (d. 310 AH) has repeatedly used the word “*Khizāna al-Sharāb*”.^{11, 12} The word “*Khizāna al-Sharāb*” actually referred to the place where various drinks of the caliphs and kings were stored and since most medicines were also in the form of liquid and were drunk, such a place in the palaces of the caliphs and sultans of that era, as well as storing wine and other beverages, was used as a royal pharmacy. Ibn Jawzi (d. 597 AH) in his book “*Al-Muntazm*” has reported that the mother of the powerful Abbasid caliph allocated a part of her property to the “*Khizāna al-Sharāb*” and the physicians working there.^{13, 14} This word with the mere meaning of pharmacy was mentioned along the name of Mosque Ibn Tolun in the third century AH in Fustat, Egypt.¹⁵ At that time, mosques, in addition to their religious activities, functioned as educational and medical centers. They used to construct “*Khizāna al-Sharāb*” in which drugs were stored and sold. This was mainly for the purpose of education and treatment. Moreover, the pharmacy of some important hospitals in the Islamic regions, such as the Azodi Hospital in Baghdad and the Atiq Hospital of Fustat and Mansouri of Cairo, was also referred to as “*Khizāna al-Sharāb*”.¹⁶ Seemingly, the word had the meaning of pharmacy in hospitals and a double meaning in the palaces of kings and caliphs, where both medicine and various drinks and beverages were stored. Ibn Nadim (d. 385 AH) in the book *Al-Fihrast* and Ibn Abi Asiba’ah (d. 668 AH) in the book *Ayoun al-Anba* referred to “*Dokan al-Sidiliyyah*”, as pharmacy.^{17, 18} Abu Rihan Al-Biruni in the book *Al-Sidna Fi Al-Tib* (Pharmacology

8- Horn, 1893: 127

9- Moein, 2003: 1482. Below the word medicine.

10- Ibn Muqfā, n.d.: 127.

11- Tiberi, 1967, Vol. 8: 476.

12- Tiberi, 1967, Vol. 9: 281.

13- Ibn Jouzi, 1992, Vol. 8: 8.

14- Ibn Jouzi, 1992, Vol. 18: 215.

15- Maghrezai, 1998: 405, 406.

16- Isa Bik, 1981: 19-21, 27, 87.

17- Ibn Nadim, 1987: 355.

18- Ibn Abi Usaibi’a, 1920: 60, 329.



in Medicine) used the word “*Sidlani*” with the meaning of a pharmacist and “*Sidaneh*”, as recognizing simple drugs and manufacturing compound drugs.¹⁹

In texts, belonging to the Islamic period, the words *Sidneh*, *Sidnani*, *Attar*, *Aqaqiri* and *Hashaishi* used to have close meanings, referring to pharmacy, drugstore and attari.²⁰

In Iran, from the sixth and seventh centuries AH, the two words “*Khizāna al-Sharāb*” and “pharmacy” were differentiated, and pharmacy was used to a place where drugs and medicines were prepared, stored and sold and “*Khizāna al-Sharāb*” was exclusively used for the place where wine was prepared, stored and sold.^{21, 22}

Also, from the seventh century AH onwards, in certain areas of Iran, including Khorasan and Tabriz, the word pharmacy was used in the sense of pharmacy and was used instead of the word ‘hospital’.^{23, 24} Some other names were used for pharmacies in other parts of the Islamic world, namely, “Ejzakhaneh”²⁵ in the territory of the Ottoman Empire, and at some point in Iran “Sehatkhaneh”²⁶ and in some parts of the Islamic world, the word “*Beit al-Adawiyah*” was also used for a pharmacy. And in the book *Vaghfnameh-ha-ye Rob Rashidi*, the words, “*dar al-shafa*” and “*Beit al-Adawiyah*” both were used as a place to prepare food and medicine for patients^{27, 28}.

Pharmacies and great pharmacologists in the Islamic period

Pharmacology, *Alsylh*, or pharmacology (derived from the Greek word *pharmacon*) is the science of medicine or the knowledge of medicine. The issues discussed in this science are recognizing the location where the plants grow and if they are summer plants or winter ones, differentiating beneficial plants from harmful ones and also recognizing their properties when combined. Pharmacology is related to botany, mining, zoology, and alchemy because drugs and medicine are derived from plants, animals, or minerals, and in prescribing them and using them for the purpose of treatment, it is necessary to know how they combine. The difference between *Alsylh* and botany is that *Alsylh* discusses how to know and differentiate plant status whereas botany discusses the properties of plants²⁹ From the tenth century AH onwards, especially in the Qajar period, the word “pharmacy” has been widely used.³⁰

From the very beginning, medicine and pharmacy were so closely intertwined so that it sometimes seemed impossible to differentiate them, and Iranians were renowned in these two branches of science among the nations of the world. Since at

- 19- Bironi, 1991: 3-11.
- 20- Dehkhoda, 1998: 1276.
- 21- Khorsha ibn Ghobad, n.d: 198, 286.
- 22- Ibn Esfandiari, 1987: 121.
- 23- Taj Bakhsh, 2000: 64.
- 24- Blair, 2008: 54, 55, 63, 65, 66.
- 25- Omari, 2003: 65-66.
- 26- Floor, 2012: 40.
- 27- Chipman, 2010: 129, 138, 140-143.
- 28- Rashid Uddin, 1977: 42, 194.
- 29- Halaby, 1986: 232-236.
- 30- Etemad al-Saltanah, 1988: 2350.



that time, professors from different parts of the world worked at the Jundishapur Hospital and medical teaching Center in Iran, the science of pharmacy flourished and was taught there at a high quality. In pharmacy, Iranians did not limit themselves to medicinal plants and added some chemical substances to the existing drugs as well. Today's sulfonamides, for instance, are the successors of these drugs.³¹

During the Islamic period and from the Umayyad era, some doctors of Jundishapur Hospital were at service of the Umayyad court and due to their experiences in Jundishapur Hospital, they played an important role in the administering Damascus Hospital, which was the first Islamic hospital. Masarjuyeh, for instance, a Jewish physician of Jundishapur and the private physician of Omar bin Abdulaziz Umayy, was among such physicians.³² In the Abbasid era, great effort was made to construct hospitals and to expand medical sciences and pharmacy science, leading to a lot of progress in manufacturing and using drugs and medicines. In addition, numerous treatises and essays were written about manufacturing compound drugs. Such treatises were called 'Aghrabazin' derived from Greek word *Craphidion*. It should be noted that the Arabs used simple drugs such as herbs and animal material or mineral substances for treatment, while Iranian pharmacists, who had academic education, made compound drugs at the Jundishapur Medical Center, and because most drugs were in liquid form, the Hospital pharmacies of the Islamic period were called "*Sharāb Khane*" (lit. wine house), a Persian word meaning a place to store liquids and a variety of beverages.³³

The first great author writing in the field of pharmacy in the Islamic period was Shapur ibn Sahl, who wrote a book entitled *Al-Qarabazin fi al-Bimaristanat*³⁴ and was translated by a Jewish physician into Latin, and which, for centuries, was a reference book for European physicians.³⁵ After him, Hanin ibn Ishaq translated the book *Aashab* (lit., a land full of plants), and Ibn Rabban Tabari wrote the book *Ferdows al-Hikma* in which the use of medicines was discussed. The philosopher, Kennedy, also wrote books on deadly foods and medicines, healing spices and poisons. Muhammad ibn Zakaria al-Razi wrote a very important and valuable book in which he explained about the laxative effect of mercury on monkeys, prescribed it as a laxative for patients.³⁶ Also, Ibn Talmiz and Masouyeh al-Marandi each wrote *Craphidion* or treaties containing some useful information about compound drugs, and their specific properties as well as giving some instructions for preparing and prescribing compound drugs.³⁷

Ali Ibn Abbas Majusi Ahwazi, the third great medical fig-

- 31- Arbury, 1957: 49, 73.
- 32- Ghafati, 1371: 442, 448.
- 33- Demarche, 2010: 142, 143.
- 34- Ibn Nadim, 2002: 528.
- 35- Demarche, 2010: 142, 143.
- 36- Arbury, 1957: 49, 73.
- 37- Demarche, 2010: 142, 143.



ure of Iran and the Islamic world, also described the effect of the drug on the human body and elaborated on the importance and the effect of each drug, with an emphasis on the cold or hot nature of the drug.³⁸ The contribution of Avicenna to the science of pharmacy is well known. Avicenna not only mentioned the drugs that were commonly used by people, but also talked about drugs that were synthetically manufactured using chemical substances. In addition to describing the method of preparation and use of each drug, Avicenna was also aware of the disinfection properties of alcohol.³⁹ Attar Neyshabouri was a skilled Iranian pharmacist of the time who, in addition to selling drugs and medicine, used to examine and treat patients. Concerning visiting patients, he wrote that in the pharmacy (here means clinic), there were 500 patients waiting to be examined.⁴⁰ In this regard, Qazvini, in the introduction of *Tazkereh al-Awliya*, stated: "Sheikh Attar was engaged in treating patients and had a good pharmacy, which apparently was his office as well, and sometimes up to five hundred patients came to his pharmacy to be treated. The reason behind his nickname, Attar, was that he worked as an herbalist, formulating and manufacturing medicine for treating patients. He had a large pharmacy and made medicine and treated diseases. It seems that at that time - as it is now in Iran - Attar was said to be someone who sold and made various forms of drugs. The profession of pharmacist in the past, as it is now in Europe, was associated with medicine to some extent, and most of the reputable pharmacists knew medicine and treated diseases."⁴¹ Muslim physicians and pharmacists first obtained their knowledge from the adjacent lands but later, owing to the vastness of the Islamic realm and the diversity of plants, minerals and organisms found there, succeeded to create new methods of treating patients and to improve the science of pharmacy and medicine, including the principles of medicine, therapeutic conditions and medical ethics.

In the Islamic period, in most hospitals, there was a department called a pharmacy or *sideliyh*, which was one of the main components of Islamic hospitals, and was dedicated to manufacturing, storing and selling drugs and syrups.^{42, 43} Jundishapur Hospital was the first big hospital in which there was a pharmacy, and Masouyeh, the father, who was a pharmacist, worked there.⁴⁴ Some historians considered the clinic of the newly established city of Baghdad in the Mansour Abbasi era as the first public pharmacy of the Islamic period.^{45, 46}

The other first hospital pharmacies of the Islamic period was the pharmacy of Moayedi Hospital in Wasit, Iraq, which

- 38- Maki, 2004: 355.
- 39- Vasily, 1355: 176.
- 40- Taj Bakhsh, 2000: 88.
- 41- Attar, n.d.: 4, 5.
- 42- Ibn Abi Usaibi'a, 1920: 329
- 43- Ibn Battutah, 1986: 54.
- 44- Ghafati, 1992: 442, 448.
- 45- Elgood, 1992: 38, 312, 403.
- 46- Hamarneh, 1997; 6(1): 59-66.



was built in 431 AH by the Minister of al-Dawlah Buwayhi during the Al-Buwayhi period, and this ward of Moayedi Hospital was dedicated to providing patients with drugs and syrups.^{47, 48}

One of the large and well-equipped hospitals of the Islamic period was Mansouri Hospital in Cairo- attributed to Sultan Mansour Qalawon (AD 689 AH).⁴⁹ Al-Maqrīzī pointed out that the hospital, in addition to meeting all the need of the patients, was known for the following features: provision of drugs and syrups and combining potions, certain plants used for eye problems, suppositories and the like^{50, 51}

Rab-e-Rashidi Pharmacy in Tabriz, as part of Rab-e-Rashidi Hospital, was one of the best examples of pharmacies and drugstores in the Islamic world in the Islamic Middle Ages, which was ruled by the Mongol-Ilkhanid in Tabriz. The pharmacy was built by the Iranian minister Khajeh Rashid al-Din Fazlullah in Rab-e-Rashidi neighborhood in Tabriz, north-western Iran. In the endowment letter of Rab-e-Rashidi (Figure 1), the pharmacy was mentioned as an independent part of the hospital. However, it seems that the two words *Dar al-Shifa* (lit. 'healing house', the other name given to the hospital) and pharmacy were used interchangeably (perhaps due to the importance of the pharmacy in this complex).⁵² (Figure 2) Most information remained about the hospital is understood through the endowment letter, in which this hospital is referred to as "*Dar al-Shifa*", "pharmacy" and "*Khizāna al-Adawiya*".^{53, 54} There were several letters in Rashidi's correspondence indicating the importance of the hospital's pharmacy to Rashid al-Din Fazlullah. In those letters, he asked his sons or officers, working in different places, to send certain drugs to the pharmacy. For example, he asked his son Jalal al-Din, who was an officer in Asia Minor (Anatolia), to procure and send five hundred of the various medicines, native to Anatolia, to Rab-e-Rashidi Hospital.⁵⁵

The preparation and supply of medicines and syrups in Rabeh Rashidi Pharmacy was carried out in a section called "*Rawaq al-Muttarbin*".⁵⁶ In this pharmacy, there was a sort of platform on the top of a warehouse near *Dar al-Shifa* whose top was netted covered⁵⁷, and various drugs kept in jars were stored for several years there.⁵⁸ The working days of this pharmacy were Monday to Thursday, to have enough time for the preparation and distribution of ordered drugs.⁵⁹ The capacitor / the syrupmaker (pharmacist) was in charge of preparing and distributing medicine. Patients used to go there and sit in a que near the netted-covered platform to receive their medicine. The doctor also sat next to the netted-covered platform and after examining the patients, wrote a prescrip-

- 47- Ibn Asir, 2006: 329.
- 48- Ibn Jouzi, 1992, Vol. 8: 8.
- 49- Dashti, 2018; 10(34): 109-122.
- 50- Maghrezai, 1998: 405, 406.
- 51- Ragab, 2015. pp.76, 89-94.
- 52- Blair, 2008: 54, 55,63,65,66.
- 53- Chipman, 2010: 129, 138, 140-143.
- 54- Blair, 2008: 54, 55,63,65,66.
- 55- Rashid Uddin, 1978: 92.
- 56- Chipman, 2010: 129, 138, 140-143.
- 57- Blair, 2008: 54, 55,63,65,66.
- 58- Omidiani, 1999; 27: 65.
- 59- Blair, 2008: 54, 55,63,65,66.



tion and delivered it to the pharmacy capacitor. The capacitor prepared the medicine and delivered it to the patients from behind the platform.⁶⁰ The capacitor, sometimes, went to the patients' home for giving them food and medicine. The capacitor (pharmacist) of Rabeh Rashidi hospital must have met some features including: being trustworthy and not drinking alcoholic drink. He received forty dinars in cash annually, along with the 12 kilo bread, which was almost nothing, compared to the salaries of physicians and surgeons of the same hospital who received 330 and 100 dinars, respectively. The pharmacist's salary was equal to that given to the non-professional staff of the hospital.⁶¹ One of the greatest physicians of the seventh century AH in Islamic Iran, Maulana Shamsuddin Mohammad Tabrizi Saour was the head of Rabeh Rashidi hospital in Tabriz and was in charge of supervising and evaluating the scientific and professional activities of all physicians and pharmacists of that hospital.⁶²

- 60- Chipman, 2010: 129, 138, 140-143.
- 61- Blair, 2008: 54, 55,63,65,66.
- 62- Nakhjavani, 1976: 235-236.
- 63- Gholgshand, n.d.: 9.
- 64- Rashid Uddin, 1977: 42, 194.



Figure 1. The endowment letter of Rabe Rashidi (photo Album: National Library & Archives of Iran)

In large and famous hospitals of the Islamic period, there was a systematic, hierarchical structure to better manage the hospital pharmacies. There was usually a boss in the pharmacy, a number of pharmacist assistants, and a number of vendors or prescribers. The head of the pharmacy in the Egyptian era was referred to as “Mehtar”(the higher-rank staff) and his assistants as the “sharbdar” (one who keeps syrup). In smaller pharmacies, however, the “sharbdar” or the capacitor functioned as the manager and head of the pharmacy^{63, 64}. In Iran, as in Egypt during the Mamluk period, the head of the pharmacy was called “Mehtar” who ranked next after the doctor in terms of status and importance. Ibn



Abi Usaibia wrote that in Islamic hospital there was a pharmacy department and the pharmacists worked under the supervision of the head of the department or senior pharmacist (or senior Sidlani)⁶⁵



Figure 2. The list of amount of money and articles endowed, as found in the endowment letter of Rabe Rashidi in the 7th century AH (photo Album: National Library & Archives of Iran)

The head of the pharmacy in the Ottoman Empire was called “Ajzachi”.⁶⁶ Isa Bik also referred to the head of the pharmacy as “sheikh seidli al-bimarestan”⁶⁷. Of course, these words did not necessarily refer to the pharmacists but to those who also worked in pharmacy as well.⁶⁸ In different Islamic periods, drug vendors were also called “Aqaqiri” and “Sidlani”.⁶⁹ According to documents left from Mansouri hospitals in Cairo⁷⁰,⁷¹ and the endowment letter of Rab-e-Rashidi of Tabriz, it is understood that the pharmacist had a lower position than the physician and the former’s salary was lower than the latter. Of course, this was not true of independent pharmacies and hence the pharmacist, working in their own pharmacies, was not under a doctor’s surveillance. This explains why pharmacists working in hospitals were much less mentioned in books translated than independent pharmacists or drug vendors.⁷²

The role of Mohtasib in monitoring and inspecting pharmacies in Iran and Islam

In the administrative structure of the pharmacies of the Islamic period, the pharmacy’s functions were under close inspection. Hesbah, an administrative and religious organization in Islamic governments, was in charge of inspecting

65- Ibn Abi Usaibi’a, 1920: 60, 329.
 66- Ghassemi, 1988: 36.
 67- Isa Bik, 1981: 19-21, 27, 87.
 68- Chipman, 2010: 129, 138, 140-143.
 69- Ibn Abi Usaibi’a, 1920: 60, 329.
 70- Dashti, 2018; 10(34): 109-122.
 71- Ragab, 2015. pp.76, 89-94.
 72- Chipman, 2010: 129, 138, 140-143.



independent and hospital pharmacies. Monitoring pharmacists or drug vendors, dating back to the caliphate of Mutasim Abbasi (227-218 AH), was entrusted to Hasbah institution. In the period of Zangian (521-564 AH) and Ayubian (880-564 AH), “*Al-Ashabin*” was a title given to a pharmacy surveillance; in this period, Ibn Bitar, was the head of the *Al-Ashabin* in Egypt.⁷³ In the endowment letter of Rab-e-Rashidi, the word “*khazan*” (capacitor) was used for one who monitors the function of the pharmacy. He, in fact, was the capacitor of the pharmacy and was responsive to the doctor, not the pharmacist or drug vendor. The capacitor of the pharmacy in the Mamluk era (923-648 AH) had the duty to take medicine to the patients’ house in case they were not able to refer to the pharmacy.⁷⁴

In Islamic states, mohtasib was the head of the Hasbah institution. The Hasaba institution was established in the early days of Islam to carry out the affairs of the Hasbaya. At first, its function was limited to regulating the market, but in the Umayyad and Abbasid periods, its scope of activities gradually expanded to include almost all affairs related to ‘enjoining the good and forbidding the evil’. In the streets and markets, mohtasib, whip in hand, monitored transactions, and prevented the use of scales lacking precision, and fraudulent transactions. He also punished those who refrained from loan repayments. In addition to functioning as the enjoining the good and forbidding the evil, which was his main duty, the mohtasib also inspected the function of various guilds and occupations. The guilds supervised by the muhtasib even included the highest officials of the city, such as the judge. Among the conditions for holding this position was familiarity with the rules of Sharia and also having high political and social support.⁷⁵

Occupations such as medicine, veterinary medicine, and pharmacy have been under the inspection of mohtasib since the fifth century. Previously, the chief physician tested physicians and pharmacists and issued the license or job permit, but the inefficacy of the medical system from the fifth century onwards and the involvement of some non-professionals and profiteers in medical affairs forced mohtasib to inspect their activities at home and at work.⁷⁶ From then on, hospital heads tested doctors and pharmacists under the supervision of mohtasib.^{77, 78}

The mohtasib, as the inspector over pharmacies in all Islamic cities, was meticulous to see that they do not manufacture fake drugs and to make sure that good hygiene is observed in pharmacies⁷⁹. He also threatened the pharmacists or drug vendors that syrups or aqaqirs might be subject to inspec-

73- Zarkeli, 1986: 67.

74- Chipman, 2010: 129, 138, 140-143.

75- Zydari, 1386: 193.

76- Dawood Salman, n.d.: 38-39.

77- Shaizari, 1981: 98-101.

78- Nakhjavani, 1976: 235-236.

79- Elgood, 1992: 38, 312,403.



tion at any time (even when the pharmacies are closed) and in case they do not observe the rules, they will be punished. The mohtasib must make sure that they do not manufacture low-quality and fake drugs. In addition, he should give the permission to work in pharmacies only to those who are knowledgeable and experienced in the science of pharmacy and those who are trustworthy and God-fearing to buy or sell drugs, aqaqirs and different kinds of herbal medicine.⁸⁰

Conclusion

After the launch of the first Islamic hospitals and the growing need for a variety of syrups, potions and other medicines, the authorities began to train drug vendors to prepare various compound spices and differentiate various drugs. This made pharmacies more important. The hospital pharmacy in the Islamic period was considered as one of the important sectors of the hospital and pharmacists, along with physicians, played an important role in preparing and providing medicine. Pharmacies of Mansouri hospitals in Cairo^{81, 82} and Rab-e-Rashidi of Tabriz were the largest and most equipped pharmacies of the Islamic Middle Ages. The findings of the study are as follows:

In some Islamic regions, such as Fustat in Egypt, pharmacies were located next to great Mosque of the city, having and educational-therapeutic activities in that era.

The great Muslim physicians and pharmacists, such as Razi and Avicenna, knew how to extract the medicinal properties of the chemicals and employ them well in treating patients.

In some Islamic regions and lands such as Iran (Khorasan and Azerbaijan), pharmacies functioned as offices and clinics, visiting and examining the patient. There, they had the capability of manufacturing and preparing medicines before supplying them to the patient. The great Attar Neyshabouri and Rabe Rashidi Hospital pharmacies were among such pharmacies.

To effectively administer the affairs of pharmacies in the large hospitals during the Islamic period, there was a hierarchical system, in which the chief, the capacitor, pharmacist assistants and a number of vendors worked under the supervision of the senior pharmacist.

It was found that pharmacists were ranked lower than physicians, and they were always under the inspection of the Mohtasib to make sure that they observed the sanitary rules of the pharmacy and were not involved in making faked medicine. In this way, the mohtasib attempted to prevent any sorts of probable disruption and interference in the trend of the health care system.

80- Ibn Akhvh, 1408: 143, 151.

81- Dashti, 2018; 10(34): 109-122.

82- Ragab, 2015. pp.76, 89-94.



In conclusion, it should be said that although Muslim physicians and pharmacists, at the beginning, adopted the scientific principles of pharmacy from neighboring nations, later on, mainly because of the vastness of the Islamic realm and the availability of diverse plants, minerals and organisms, they succeeded to create new methods of treating patients and to improve the science of pharmacy and medicine, including the principles of medicine, therapeutic conditions and medical ethics. Therefore, it should be said that the history of pharmacies in Iran and the Islamic world was closely related to the social, economic, cultural and therapeutic history of its time, comprising an integral part of Islamic culture and civilization.

References

- Arbury AH et al. *The Iranian Legacy*. Translated by Bireshek A et al. Tehran: Book Publishing & Translated press, 1957. [in Persian]
- Attar N. [*Tazkart-e-Al-Awliya*]. Editing by Qazvini MMK. Tehran: Central Press, n.d. [in Persian]
- Biruni A. [*Al-Seidane fi Al-Tib*]. Correction and introduction by Zaryab A. Tehran: Center for University Press, 1991. [in Persian]
- Blair S. Architecture, and Society in the Ilkhanid Period (Analysis of the Endowment of the Raba Rashidi Letter). Translated by Qayumi M. *Golestan Honar*. 2008; **13**: 54-66. [Persian]
- Chipman L. *The World of Pharmacy and Pharmacists in Mamluk Cairo*. Leiden and Boston: Brill, 2010.
- Dashti R. A Historical Review of the Establishment and Administration of Hospitals and Medical Education Centers in the Islamic Civilization. *Med Hist J*. 2018; **10**(34): 109-122. [in Persian]
- Dawood Salman A. [*Al-Hesbah fi Al-Tab*]. Vol. 1. Edited studies in Hesbah and the Accountant at the Arabs. Baghdad: University of Baghdad press, n.d. [in Arabic]
- Dehkhoda AA. *The Dehkhoda Dictionary*. Second Edition. Tehran: Tehran University Press, 1998. [in Persian]
- Demarche SH. *History of Islamic Culture and Civilization*. Ghom: Maaref Press, 2010. [in Persian]
- Elgood C. *A medical History of Persia and the eastern caliphate*. Translated by Forqani B. Tehran: Amir Kabir Press, 1992. [in Persian]
- Etemad al-Saltanah MHK. *The History of Montazem Naseri*. Vol. 3. Attempted by Rezvani ME. Tehran: World Book Press, 1998. [in Persian]
- Floor W. *Iranian hospitals during the Safavid and Qajar eras*. Translated by Nabipour I. Bushehr: Bushehr University of Medical Sciences, 2014. [in Persian]
- Ghafati A. [*Tarikh Al-Hikma*]. Attempted by Daraei B. Tehran: Tehran University Press, 1992. [in Persian]
- Ghassemi MS et al. [*Qamus Al-sanaath Al-Shamiyah*]. Damascus: Dar Al-Tallulah press, 1988. [in Arabic]
- Gholghshandi A. [*Sobh Al-Ahsha*]. Vol. 4. Attempted by Shams al-Din MH. Beirut: Dar-ul-Kotob Al-Elmieh press, n.d. [in Arabic]



- Halaby AA. *History of Islamic Civilization*. Second Edition. Tehran: Asatir Press, 1986. [in Persian]
- Hamarneh S. The Rise of Professional Pharmacy in Islam. *Medical History*. 1997;6(1):59-66.
- Horn P. [*Grundriss der neupersischen Etymologie*]. Strasbourg: n.p. 1893. [in German]
- Ibn Abi Usaibi'a AbQ. [*Uion alAnba fi Tabaqat al Atiba*]. Vol. 1. Cairo: Makatbo al Wahabia, 1920. [in Arabic]
- Ibn Akhvh. [*Malm Al-qrbh Fi Ahkam Al-hsbh*]. Attempted by Almtyy SA, Shaban MM. Qom: school Al-Alam Al-Islam press, 1987. [in Arabic]
- Ibn Asir E. [*Al-Kamel fi al-Tarikh*]. Vol. 9. Beirut: Dar al-Sadar press; 2006. [in Arabic]
- Ibn Battutah M. [*Rahele Ibn Battutah*]. Vol. 1. Beirut: Dar al-Fakr press, 1986. [in Arabic]
- Ibn Esfandiari. *History of Tabarestan*. Attempted by Iqbal Ashtiani A. Tehran: Padideh-e-East Press, 1987. [in Persian]
- Ibn Jouzi A. [*Al-montazam*]. Vol. 8 and 18. Researched by Mohammad Ata M, Mostafa Ata. Beirut: Dar-ul-Kotob Al-Elmieh, 1992. [in Arabic]
- Ibn Muqfa A. [*Kallila -V- Damanh*]. Beirut: Dar Al Qalam, n.d. [in Arabic]
- Ibn Nadim M. [*Al-Fihrist*]. Translated by Tajadd MR. Tehran: Amir Kabi Press, 1987. [in Persian]
- Ibn Nadim M. [*Al-Fihrist*]. Translated by Tajadd MR. Tehran: Asatir press, 2002. [in Persian]
- Isa Bik A. *History of the Islamic Hospitals*. Beirut: Dar al-Raeid al-Arabi, 1981. [in Arabic]
- Khorsha ibn Ghobad. *The History of Ilchi*. Attempted by Nasiri MR et al. Tehran: Association of Cultural Works and Works Press, n.d. [in Persian]
- Lewin B. [“*Adwiya*”, “*Akrabadhin*”]. Encyclopaedia of the history of science, technology, and medicine in non-western cultures. Edited by Selin H. New York: n. p., 2008.
- Maghrezai A. [*Al-Muvaez -v- al-etebar fi Zakr al-Khatat -v- al-Asar*]. Vol. 2. Researched by Al-mansoor K. Beirut: Dar-ul-Kotob Al-Elmieh, 1998. [in Arabic]
- Maki MK. *Islamic Civilization in the Abbasid Era*. Translated by Sepehr M. Tehran: Samt Press, 2004. [in Persian]
- Moein M. [*Farhange Moein*]. Vol. 2. Tehran: Amir Kabir Press, 2003. [in Persian]
- Nakhjavani M. [*Dastor al-Katab*]. Edited by Alizadeh A. Moscow: Moscow Press, 1976. [in Persian]
- Omari I F. [*Masallak al-Bassar in Mamluk al-Masar*]. Vol. 1. Attempted by Salim M et al. Abu Dhabi: al-Mujatamh al-sa'qafi, 2003. [in Arabic]
- Omidiani H. Rabae Rashidi, the Great Educational, Scientific and Educational Complex in Tabriz (8th Century AH/ 13th Century AD). *Dedication to the Immortal Heritage*. 1999; 1(27): 27- 65. [in Persian]
- Ragab A. *The Medieval Islamic Hospital: Medicine, Religion, and Charity*. First Edition. New York: Cambridge University Press, 2015.
- Rashid Uddin F. [*Savanh Al-afkar*]. Attempted by Danesh Pajouh MT. Tehran: Tehran University Press, 1979. [in Persian]



Rashid Uddin F. [*Waqf Nameh Rābīh Rashidi*]. Edited by Minavi M, Afshar I. Tehran: Tehran University Press, 1977. [in Persian]

Shaizari ARBN. [*Nahaiat Al-rotabeh fi Talb Al-Hesbah*]. Vol. 1. Attempted by Oareeni SA. Beirut: Dar al-Fakr, 1981. [in Arabic]

Taj Bakhsh H. *History of Hospitals in Iran*. Tehran: Research Institute for Humanities and Cultural Studies Press, 2000. [in Persian]

Tiberi MiJ. *History of Nations and Kings*. Second Edition. Vol. 8 and 9. Researched by Ibrahim M. Beirut: Dar-ul-thras, 1967. [in Arabic]

Vasily NT. *A celebration of Ibn Sina*. Ibn Sina developed ideas on current Medical knowledge of the Soviet Union. Tehran: The National Heritage Association press, 1955. [in Persian]

Zarkeli KD. [*Al-A'lam Qamus*]. Vol. 4. Beirut: Dar Al-Elmieh al-Lallmeleain press, 1986. [in Arabic]

Zarrinkoob AH. *The book of Islam*. Tehran: Amir Kabir Press, 1997. [in Persian]

Zydan G. *History of Islamic Civilization*. Translated by JawharKalam A. Tehran: Amir Kabir press, 2007. [in Persian]

