ORIGIPAL ARTICLE

Mohammad ibn Mahmoud Shirvani, a Persian Immigrant Physician to the Ottoman Empire (9th Century AD), and His Medical Works

Abstract

The Ottoman Empire was established in the western neighboring Iran during the late 13th century and early 14th centuries. The relationship between the Ottoman Empire and Iran fluctuated between periods of peace and conflict. The migration of Iranian scholars to the Ottoman Empire is a significant aspect of the historical ties between These two country.

One of these scholars was Mohammad ibn Mahmoud Shirvani who authored medical books and served different Ottoman rulers.

He was born in the Shirvan region of Azerbaijan and later migrated to the Ottoman Empire. He served in the court of Sultan Mehmed II as one of the seven esteemed physicians. He continued to practice medicine and held the position of Chief Physician of Bayezid II before the year 889 AH.

His works include pharmaceutical compilations like Revzat al-Atr fi'l-Tibb, ophthalmology works such as al-Murshid, and other medical compilations like Sultaniye and Yaqubiyye. These works indicate Shirvani's extensive knowledge in various medical fields.

Shirvani's familiarity with the works of respected physicians like Avicenna and Ibn al-Baytar enriched his contributions to various medical fields. As an Iranian, he was able to draw from the works of other Iranian doctors written in Persian, benefiting from their insights. He made significant contributions to medical knowledge in the Ottoman civilization, as he facilitated the transmission of Iranian medical scholarship to the Ottoman Empire. Further research on his manuscripts and their comparison with medical texts from subsequent periods could yield valuable insights into his lasting impact on the field of medicine.

Key words: Medicine, Ottoman Empire, Safavids, Iranian scholars, migration of physicians, Azerbaijan, Civilization

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Introduction

With the establishment of the Ottoman Empire (699 AH/1300 CE - 1340 AH/1922 CE) in the late 13th and early 14th centuries, a government was established in Iran's western neighborhood, whose peace and war relations with Iran continued from the Timurid dynasty to the end of the Qajar dynasty. (Safa, 1990, p. 19; İnalcık, 2000, p. 5) The establishment of the Safavid Empire in Iran led to an increase in military, political, economic, and cultural ties between the two regions. The migration of scientific scholars from Iran to the Ottoman Empire is a significant aspect of the historical connections between the two regions. This migration began centuries ago and was intensified by changes in the political and cultural conditions of both Iran and the Ottoman Empire. (Dinparast, 2013) Several physicians immigrated to the Ottoman Empire and held positions such as Chief Physician (Hekimbasilik) in the Ottoman court or hospital physician. This contributed to the exchange of knowledge and ideas between the two civilizations.

Many of these scholars were physicians who achieved high-ranking positions in the Ottoman court or hospitals, composed significant medical texts, and translated crucial Arabic and Persian books into Turkish, significantly influencing medicine's development in the Islamic era. (Dadayev, 2020; Shoshtari Yegane et al, 2017) Among these scholars was Mohammad ibn Mahmoud Shirvani, a Physician who authored several medical books and served different Ottoman rulers.

Shirvani's life, education, migration, and Ottoman court

Mohammad ibn Mahmoud al-Qostantiynī al-Rumi al-Shirvani (also Known as Shukrollah Shirvani) was born in the Shirvan region of Azerbaijan. (Bursalı, 1923, p. 235; Uludağ, 1925, pp. 166-167) Throughout history, his name has appeared in different forms in various sources, such as Mahmoud ibn Mohammad, Mahmoud Shirvani, Mohammad ibn Mahmoud Shirvani, Haji Shirvani and Shukrollah Shirvani. (İhsanoğlu, 2008, p. 42; Şirvânî, 2012, p. 13)

In most sources, it is stated that he left his homeland for the Ottoman Empire, (Ţāshkubrī'zādah, 1975, p. 135) While some sources suggest that he went to study in Cairo, there is limited information about his place of study (Tarbīyat, 1999, p. 303) He eventually entered the court of Sultan Mehmed II(Mehmed the Conqueror, Fatih who ruled from 1444 to1446 and 1451to1481 CE) and was considered one of the seven important physicians in his court, which included four Iranians, one Arab, one Turk and one Jew. (Purgstall, 1988, p. 690) During the reign of Bayezid II (r 1481-1512 CE), Shirvani enjoyed a high level of respect and closeness in the Ottoman court. He wrote a book called *"Riadololum"* in Persian dedicated to Bayezid II. (Kiātib Tchélébi, 1941, p. 937; Al-Baghdādī, 1951, p. 225). This book covered a range of subjects, including arithmetic, astronomy, logic and innovation, poetry, and Sufism. (Tarbīyat, 1999, p. 303) Before 889 AH, Shirvani held the position of Chief Physician of Bayezid II's court. (Bursalı, 1923, p. 249)

He possessed extensive knowledge in the sciences of Hadith and Tafsīr, which according to some historians, like Joseph von Hammer Purgstall, contributed to his esteemed status in the eyes of Sultan Muhammad Fateh. (Purgstall, 1988, p. 690) However, Țashkubri'zadah holds that Shirvani's medical prowess was the main reason the Ottoman ruler took an interest in him. (Țāshkubrī'zādah, 1975, p. 135) In addition to his service to the Ottoman sultans, Shirvani served several local rulers, producing a range of scholarly works in different fields at their request. He wrote İlyâsiyye for Īliyas ibn Orhan (r 1402-1421 CE), Yakubiyye for Yaqūb bey (r 1402-1429 CE) and Sultaniye for Mehmed Chelebi (r 1402- 1421 CE) (İhsanoğlu, 2008, p. 42; Şirvânî, 2012, p. 13)

Various narratives about the year of Shirvani's death

There are different accounts regarding the year of Shirvani's death. Most historians agree that he passed away during the reign of Bayezid II in 912 AH. (Al-Baghdādī, 1951, p. 225; Kiātib Tchélébi, 1941, p. 937; İhsanoğlu et al, 1984, p. 267) but Tashkubri'zadah estimates his death during the rule of Sultan Mehmed II, around 885-886 AH. (Ṭāshkubrī'zādah, 1975, p. 135). Some other sources support Tashkubri'zadah's estimation of Shirvani's death. (Tarbīyat, 1999, p. 303; Kaḥḥālah, 1956, p. 316)

Shirvani's works and treatises

1- Tuhfe-yi Muradi

"Tuhfe-yi Muradi" is a work in Turkish (Uludağ, 1925, p. 167; Uzunçarşılı, 1989, p. 609) written by Mohammad ibn Mahmoud al-Shirvani, comprising an introduction and 25 chapters. The book was dedicated to Sultan Murad II (r 1421-1451). Researchers have estimated that the book was written in 833 AH (1430 AD). In this book, there are references to eminent medical authors such as Aristotle, Ibn Sina, and Ibn Sharif. In 2012, Mustafa Argunşah edited and published a version of this book in Turkish. He stated that *"Tuhfe-yi Muradi"* might be the same work as Shirvani's *"Cevhername,"* because both books have 25 chapters and contain similar content. However, he emphasizes that in some topics, *Tuhfe-yi Muradi* has elaborated on and expanded the subjects discussed in *"Cevhername,"*. (Şirvânî, 2012, p. 14)

2- İlyasiyye

Shirvani wrote the book "*İlyasiyye*" for Iliyas ibn Orhan in Arabic and then translated it into Turkish at the request of Iliyas. (İhsanoğlu, 2008, p. 42; Kiātib Tchélébi, 1941, p. 161) The book consists of an introduction and ten chapters.(Bayat, 2010, p. 287) No manuscript of it has been discovered to date. (İhsanoğlu, 2008, p. 42)

3- Sultaniye

"Sultaniye" is a book in Turkish authored by Mohammad ibn Mahmoud al-Shirvani and dedicated to Mehmed Chelebi. The book contains various topics about eating and drinking, body movements, eye health, ear health, sleep, the benefits and harms of hunger, the effects of constipation, bathing, and sexual relationships. A manuscript of "Sultaniye," dated 918 AH, is preserved in the Serez library (at Süleymaniye Library). (İhsanoğlu, 2008, p. 48) In one of the existing manuscripts of this book, Shirvani's name is mentioned as the author on the first page, as illustrated in Figure 1.

4- Yaqubiyye

"Yaqubiyye" is a book by Shirvani, dedicated to Yaqub bey. Some historians and catalogers believe that it was written between 1402 and 1420. (Bayat, 2010, pp. 284-285; Ihsanoğlu, 2008, p. 49) The book comprises an introduction and thirty chapters, with the

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introduction delving into the purpose of human creation and the principles of preventive medicine. Subsequent chapters cover a range of health-related topics, such as the properties of heavy and light foods, seasonal sports, horse riding, sleep patterns, and various types of medicinal treatments like poultices. (Bayat, 2010, pp. 284-285, İhsanoğlu, 2008, p. 49)

بسب الله الرجون الحريم فسير فيها وخفتها وحدد فكران اولذات كماحديثن عاجز عتواعفال وصحاء ممديتن والومتحيرارواح انبياواوليا مدعكه قدرت براه ايجا والتدى اجرام علوي مشتى كه حكمت براه بيذا التدى المستلكة وحشيرله قلدي فوع إنسكان أترف ومود رعوفىكه رافت بركة بلدردى المانافعدن تاحفظ اين بدفعته مكارهدن وتفكرايه اللهك مصنوعاتنك ومعترف أوله انك دبوبيتنه وصلوة والتكرم ذوات كاملهونف باليه ونفق ازكيه اوزرنه اولسون خصوصامر تى مجتبى فقتدى مجمع صطغيك ذاتكامله ونفرز كيه سآوندينه اولسون كيماؤل كالمده قليعد اعضاءباقيدن وهمانك الاصحاب اوزرنه اولسون كمخبر آلهخ احكابدرولر يس بككلم احكافظ محت من حقير محدين محود شيروانيم كم يازدم طب علندن بومخص منيد كافيتد بيراتد تحصه وافحج اعراضلونه وهممشتمالطيف جليليه ومحتوى راجعيليه وط وقلدم الخصرت كيوان رفعت نوامثيروان ومعدلت سكيمان كجلا يوسغ جال كالكرقاب الام خليفه الله في لعالم حافي بلاد الله وخافظ

- las

Figure 1. First pages of Sultaniye by Shirvani (Shirvani, n.d.b.)

5- Risala fi'l-qulanc va'l-Ihtibas

In "*Revzat al-Atr fi'l-Tibb*", Shirvani has discussed the causes and symptoms of abdominal pain. The date of writing this book goes back to 837 AH/1434 AD. A Turkish manuscript of this work, written by Mustafa ibn Yusuf in the year 909 AH, is kept in Sulaymaniyah Library (Şehid Ali Paşa Collection) with the number 2045/4. (İhsanoğlu, 2008, p. 49)

6- Revzat al-Atr fi'l-Tibb

"Revzat al-Atr ft'l-Tibb" is a valuable book on pharmaceuticals and their preparation methods, measurement techniques, duration, and adverse events. Throughout the book, Shirvani references the works of Iranian doctors such as Seyyed Ismail Jorjani and Ibn Sina (Avicenna). The book consists of an introduction and 44 chapters, covering a wide range of medicines including narcotics, antidotes, pills, suppositories, and other forms of drugs. (İhsanoğlu, 2008, p. 47; Shirvani, n.d.a.). Figure 2 is an example of one of the manuscripts of this book from the Library, Museum and Document Center of Iran Parliament.

An Immigrant Iranian Physician in the 9th Century

الساكرة التحيين وبرنستيس بالخار بحابا والبالتامديمة كانيا الغاضعة فتملاط لطايف يلة عنواعا لآجيلة ستقا الهديته الذكانم الدتام احسنانيتوم بتمانيج الاستقتات وجدا بالجاعد لللأاجيم كإيقيا الاوذاء وانتخط فتغليدوا واسالافضل الق ويعتد وتسريق بمناعل يتات وعده حراطا فنم والتنجم بتعاضد للادراكات وعلم منطا معتر والم المان الاليم بتناي الدوائت كم يسج كما ويتكن لالإلداستيم بالعالمات وتعاط واسدوالمنف العظم وحيت وضماعط لان واخط العظار الشميد وعجرادك فسابلان برقلير وحملته عامدة وعالعة وارعين بابا ولماكان اعاب مشاديهم معالط القلول يتم بتواروا والالانات ويط أدوا معابداتنا بنون الشيع أفقيم ، بما واخصب فتح وارجب لمع الكرم الطرالذرى وتتحليه والالمتصد العلروت مالدق ويعد يتول للذبك تجيرك الداسانة مجدب محودين جلي لاية عاسلات المعذف وادرك الغاية التصوى كيعالا ومدتال المتح والتداخترنام عاعل علاالالين وقالاته الانفالالة عدان علمالط العبرعة سلم الدوان تلوعل الدويات الشرق علواشان . عليابدا علآءاية كابنيا بخارائل وكان العام المهام استداعتام فلسوف الدائف واحتلج الانام اليه فح الم الميئة وعبادة الوطن كيف وقدوسل الصادق قرينا الم الدوايت المطهر لمتحقق التحمر للمقت عسدالمول التامى ومعاللة الزارع وطناة الخاف مستال المعان علالابدان وعلم الدويات وكان فتتراصيد للفرقة اليوم بصنعة والمكادم الظامع وللبارالوافي والتوالغام سوالجه العوافقيتينا موالماد التست تحاله والشرايج بالعطالط للاسط بعرف منكنية منظ المعت فالوجونة وردهاد المرادم فالدين فياكالاسلم والملي عجاء الحاضل العالين ونبع الطروم دعامالا يتصوران الابالاد ويتر والاخريتر ولانتريتر مؤدة كانتدا وركيته واليستصالاه المعط واللبيد الالاستمرسطلا منقته نية وعصوداجا المورقة نفرة قدمال باق والشرابع جريها ايتكردا احد وكنت ومكرمزان انقرم تدبه فاالصنعة الزيفر البيع وسابق فالمساطف الغية وتشنم ودكالع ظنية جع بوالعني لتراعليه والعليه المقوانتال ومفالك وطقت الترهافتال وفتال وبالم معاددا ليلاونها لأاوق وحوى يمنا الستين الدينة والدنيا ويردا مد طبعة حقيقة الدوسية والمالية متى المل علالانايا وادرك لجذابا أواغل بالبغل المرالاة سترااندان بارزام ال اواجعا واحرست لثانها ويترت بزالفت السون وفرقت يزاليين والايس للفز عظ قرار مارور التاب كون كافيا فمايتمد الميدلاذ وسترشده فعاف مديكون وحيشاعادامد ويم النصايل الخلالالن بعوالي عدودا ولوآ عزاطا بعالي متوقا موية معمدة العلر مالتقلم فيكون التاطرف ست التاطر علماللافة كتبت عرمة فزالت البؤم وطابت لعزويتر للود النوس الترقت اقاد العلآ والشوس واصبحت النصيالكاب بملحجت الكبت فالتان والذيرة وعداد والاسال الرعايا برعايته وادعة واستعيون الججاج بكلايته اجعة عماينا فبمعز مطر كالسلة والارشاد والمكو والموجر ومزونة المالخة ونهاج الدكان ونهاج ابدان وللدادي والقار وعتصابيه ورمل كالسلم وكاف الالددولت محالط ووفون فسلته بترال لحناى والزوروى وبسالنا العبآ وقرابا ومابرا تنبذ والمستوط استلة والصنت إيها بين العناية والانعام وعدة بنواضا العدان والكولة جربامنه على تتضي بداكس اعمت عوفقاساتن واخذته بم التجرية وااستدوته عويد الخ الدمراد تعاديهان والمقدالالعيادمند استدادت المتحا لمتسا تعكرة اذكرما المعتادة السنعة للجليل ويعزيت اسمة الكاشانية وعنابلل وف قرائدا وتالا فاودا ليشجا الدعلوي وطاقية وانفطيه وانقصرت عناية ومعدعا والمتحد الاعل فاعدا إوساعه ذاد نغية خواد الم الم الم المكان والمنهاج المنصر وللسالة الرازكر يسقطوللمومريومهاذليوع يتنيو تنير للاتالاذ المستلعنا الملاحظة والاوال المطوكالجالدي المقتدى فابساة ايتسطمانه واستآمتهم غلمل فيآه بلطف العروكرم خرستد بمجذاب الكوم واقصوت بداليد واعتمان دواللوك عليدالاان عدمت فتر يتراط 8810

Figure 2. Revzat al-Atr fi'l-Tibb (Shirvani, n.d.a.)

7- al-Murshid

"*Al-Murshid*" is a significant work in Turkish authored by Shirvani. It is about ophthalmology and the treatment of eye disorders. (Bayat, 2010, p. 291; İhsanoğlu, 2008, p. 45) It seems that the book was completed in 841 AH (May 25 to June 5, 1438 AD) Shirvani wrote this book due to the lack of a reliable and comprehensive book on eye diseases at that time. (İhsanoğlu, 2008, p. 45) This work is written in three parts: the first part has an introduction, six chapters, and eighteen sections, the second part includes seventeen chapters and one hundred and ten sections, and the third part has three chapters and eighteen sections(Bayat, 2010, p. 291; İhsanoğlu, 2008, p. 45)

Some historians consider "*al-Murshid*" to be one of the most important works on ophthalmology in the Islamic era. (Bayat, 2010, p. 291) Other works attributed to Shirvani include *Kitab-l Gozide-yi ilm-i Tib* and *al-Faslu'l-Ashir fi Marifeti'l-Evzani va'l-Mekaiyl*, *Kahhalnamih nour al-Oyun* and *Lataif al-Jalileh*. Manuscripts of these texts are available in different libraries around the world. (Bayat, 2010, p. 285; İhsanoğlu, 2008, p. 44)

Table 1 provides an overview of some of the available manuscripts of Shirvani's works in different libraries. (İhsanoğlu, 2008, pp. 42-50; İhsanoğlu et al, 1984, p. 267)

Collection number	Library	Name of the work
15049	British Library, Oriental and India Office Coll	Kitab-l Gozide-yi ilm-i Tib
1840	Manisa	al- Murshid
29	Cerrahpaça Tib Tarihi	
1061	koğuşlar	
2015	Gotha	Revzat al-Atr fi'l-Tibb
506	Hacı Beşir Ağa	
2093/3	Şehid Ali Paşa	
76	Haleb	
877	Vatican	
3137	Berlin	
288	Kavala II	
242	Med Laur	
6615	Library, Museum and Document Center of Iran Parliament	
2045/4	Şehid Ali Paşa	Risala fi'l-qulanc va'l-Ihtiba
2756	Serez	Sultaniye
184/2	Köprülü	
R 1585/1	Gazi Hüsrev Bey	
1848/4	Manisa	
2074/1	Şehid Ali Paşa	
2118/1	Şehid Ali Paşa	Yaqubiyye
2093/8	Şehid Ali Paşa	al-Faslu'l-Ashir fi Marifeti'l Evzani va'l-Mekaiyl
254	Ali Emiri Tib	Kahhalnamih nour al-Oyun
1848/4	Manisa	Lataif al-Jalileh

Conclusion

The migration of Iranian physicians and scholars to Anatolia during the Ottoman Empire is an important aspect of the history of Islamic medicine. Mohammad ibn Mahmoud Shirvani is one of the leading figures in this field, having made significant contributions to Ottoman medicine through his various works on diverse medical subjects. Compilation of works in the field of pharmaceuticals, such as *Revzat al-Atr fi'l-Tibb*, ophthalmology works, such as *al-Murshid*, and compilations in other medical subjects, such as *Sultaniye* and *Yaqubiyye*, demonstrate Shirvani's extensive knowledge across multiple medical domains.

Shirvani's deep understanding of the works of respected physicians, such as Avicenna and Ibn al-Baytar, has significantly improved the quality of his works in various fields. As an Iranian, his fluency in Persian allowed him to extensively draw from the works of other Iranian doctors, like Seyed Esmail Jorjani, who also wrote in Persian, enabling him to extensively draw from their works. Undoubtedly, he has made a significant contribution to the advancement of medical knowledge within the Ottoman civilization and facilitated the transmission of medical knowledge from both Muslim and non-Muslim Iranian scholars to the Ottoman Empire.

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Further research on Shirvani's manuscripts and comparing them with subsequent medical texts can provide valuable insights into his influence on Islamic medical knowledge, offering a promising avenue for future studies.

Authors' Contribution

Mehrdad Karimi and Sobhan Ghezloo conceived of the presented idea.

Mohammad Sadr encouraged Sobhan Ghezloo to investigate old manuscript in different libraries.

Mehrdad Karimi and Amir Hooman Kazemi Motlagh supervised the findings of this work and contributed to the interpretation of the results.

Mohammad Sadr provided critical feedback and helped shape the research.

All authors discussed the results and contributed to the final Manuscript.

Sobhan Ghezloo wrote the manuscript with input from all authors.

All authors read and approved the final version of the work.

Conflict of Interest

None.

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