anatomy
http://dergipark.org.tr/en/pub/anatomy
An International Journal of Experimental and Clinical Anatomy

Historical View

http://dergipark.org.tr/en/pub/anatomy
Received: September 26, 2025; Accepted: December 14, 2025
doi:10.2399/ana.25.1791617

The role of the Ottoman physician Şanizade Mehmed Ataullah in the modernization of medicine in Iran

Seyed Ali Mirjalili

Department of Anatomy with Radiology, Faculty of Medical and Health Sciences, University of Auckland, Auckland, New Zealand

Abstract

The nineteenth century marked a critical juncture in the modernization of medicine across the Middle East, as traditional frameworks gave way to European-inspired scientific and pedagogical models. In Iran, this transformation was crystallized through the establishment of *Dār al-Funūn* in 1851 under Mirza Taqi Khan Amīrkabīr, which introduced structured higher education in medicine and the basic sciences. European-trained physicians such as Jacob Edward Polak played a pivotal role by authoring the first modern Persian anatomy textbook and performing Iran's first official dissection, thereby institutionalizing modern anatomy teaching. However, the modernization of Iranian medicine was not solely a European import but also part of a wider regional intellectual exchange. Central to this process was the Ottoman physician Şanizade Mehmed Ataullah Efendi, whose *Mir'āt al-Abdān fī Tashrīḥ A'zā' al-Insān* (1820) was one of the earliest printed modern medical textbook in the Islamic world. Characterized by three-dimensional anatomical illustrations adapted from leading European sources, Şanizade's work bridged Islamic medical traditions with modern European anatomical science. Its Persian translation, Anwār al-Nāṣiriyyah (1855), though not formally adopted at *Dār al-Funūn*, illustrates how Ottoman scholarship directly informed Iranian medical education and royal patronage. This study situates the development of modern medicine in Iran within a broader transregional context, emphasizing the role of Ottoman contributions alongside European influences. It argues that Şanizade's work provided an essential intermediary step in shaping Iranian anatomy education and exemplifies the circulation of medical knowledge across cultural and linguistic boundaries. Ultimately, the modernization of Iranian medicine emerged from interconnected intellectual networks spanning Europe, the Ottoman Empire, and Iran.

Keywords: Iranian medicine; Ottoman physician; Şanizade Mehmed Ataullah Efendi

Anatomy 2025;19(3):136–139 ©2025 Turkish Society of Anatomy and Clinical Anatomy (TSACA)

Introduction

The nineteenth century was a formative period in the modernization of medicine across the Middle East, as scientific knowledge and pedagogical practices began to shift from traditional frameworks to European-inspired models. Iran, under the Qajar dynasty, witnessed one of its most significant intellectual and institutional transformations with the establishment of *Dār al-Funūn* in 1851. Conceived by Mirza Taqi Khan Amīrkabīr, the institution sought to introduce modern sciences, including medicine and the basic sciences, through structured education modeled after European systems.[1] This development marked a decisive turning point in the professionalization of medicine in Iran, laying the groundwork for systematic training, the introduction of anatomical dissection, and the production of Persian-language medical texts.

Yet, the modernization of Iranian medicine did not occur in isolation. It was shaped by a wider transregional exchange of ideas, texts, and practices that connected Iran to both Europe and the Ottoman Empire. The contributions of figures such as Jacob Polak, who authored the first Persian anatomy textbook and performed the first official dissection in Iran, were instrumental. Equally significant, however, was the impact of Ottoman scholarship—particularly Şanizade Mehmed Ataullah

Efendi's *Mir'āt al-Abdān fī Tashrīḥ A'zā' al-Insān* (1820), the first printed modern medical textbook in the Islamic world. Its Persian translation, *Anwār al-Nāṣiriyyah* (1855), demonstrates how Ottoman medical knowledge directly informed Iranian pedagogical practices, even if its use remained limited within formal curricula.

This paper examines the formal establishment of modern medicine in Iran with particular attention to the role of *Dār al-Funūn* and the contributions of Jacob Polak, while situating these developments within the broader intellectual context shaped by Ottoman scholarship. By analyzing the circulation and adaptation of *Şanizade's Mir'āt al-Abdān* in Iran, this study highlights the cross-cultural transmission of anatomical knowledge and underscores the importance of regional intellectual networks in the modernization of medical education.

Formal Establishment of Modern Medicine and Basic Sciences in Iran

Mirza Taqi Khan Amīrkabīr, chief minister to the Qajar king, established Iran's first formal modern educational institution, *Dār al-Funūn*, in 1851. This marked a pivotal moment in the modernization of science in Iran.[1,2] *Dār al-Funūn* was modeled on European institutions of higher education, with instruction initially provided by European academics.[1] In its early years, medical education was divided into two branches: traditional medicine, taught primarily through Ibn Sina's *Canon of Medicine and Sharh-i Asbāb-i Nafisī* by Mirza Ahmad Tabib Kashani, and European medicine, presented by European-trained physicians.[2] This dual structure created a fertile ground for interaction between traditional scholars and European experts, such as Louis Andre Ernest Cloquet,[3] gradually paving the way for the adoption of modern methods.

Jacob Edward Polak, a Jewish physician invited by Amīrkabīr in 1851, played a pioneering role in introducing European medical pedagogy to Iran. He brought with him anatomical textbooks, atlases, moulages, alcohol-preserved specimens, skeletal models, and anatomical charts, thereby establishing a new dimension of visual education previously absent in Iranian medical training.[2–4] Polak also authored *Tashrīḥ-i-Badan-i-Insān* ("Anatomy of the Human Body"), regarded as the first modern anatomy textbook in Persian. Initially written in German and translated into Persian by Mirza Mohammad-Hossein Afshar, the book was published in 1854 in 100 lithographed copies.[4] Although the text lacked illustrations, it introduced a structured descriptive approach. Due to the limited number of printed copies, students hand-wrote the manuscript, a few of which survive today in museums, private collections and the Iranian National Library.

Polak also laid the groundwork for Persian medical terminology in collaboration with Afshar. In 1853, Polak also performed the first official dissection in Iran on the body of his Austrian colleague, in the presence of *Dār al-Funūn* students.[4,5] This groundbreaking event conducted despite cultural and religious prohibitions—marked the formal beginning of practical anatomy education in Iran.

In 1855, *Anwār al-Nāṣiriyyah* was published by Mohammad ibn Abd al-Sabur Khu'i Tabrizi (known as Ḥakīm Qubūlī or Ḥakīm-bāshī).[6] This three-volume work covered anatomy, physiology, and pathology, with the first volume on anatomy containing 56 illustrations—making it the first illustrated modern anatomy textbook in Persian.[6] Although the preface claimed that the book drew upon a range of European and Turkish sources, close examination reveals that it was in fact a precise translation of the Ottoman text *Mir'āt al-Abdān* (1820).[7] Both the textual content and the illustrations, including numbered diagrams, correspond exactly to the Ottoman original (**Figure 1**). The book was published in 50 lithographed copies, though it remains unclear whether printing took place in Istanbul or Tabriz. Despite its academic significance, no evidence confirms its formal use at *Dār al-Funūn*, and it appears instead to have been intended primarily as a reference work and as part of Nasir al-Din Shah's royal library.

Şanizade's *Mir'āt al-Abdān* and its Impact

The source text of *Anwā*r *al-Nāṣiriyyah*, *Mir'āt al-Abdān fī Tashrīḥ A'zā' al-Insān* ("Mirror of Bodies in the Anatomy of Human Organs"), was authored by Şanizade Mehmed Ataullah Efendi in 1820. This work constituted the first printed medical textbook in the Ottoman Empire and is regarded as a crucial gateway for introducing modern Western medicine to the Islamic world.[6,7]

Şanizade, son of the Ottoman chief physician, studied modern medicine in Italy and mastered Latin, French, and Italian. His linguistic and cultural access to European scientific knowledge enabled him to produce a

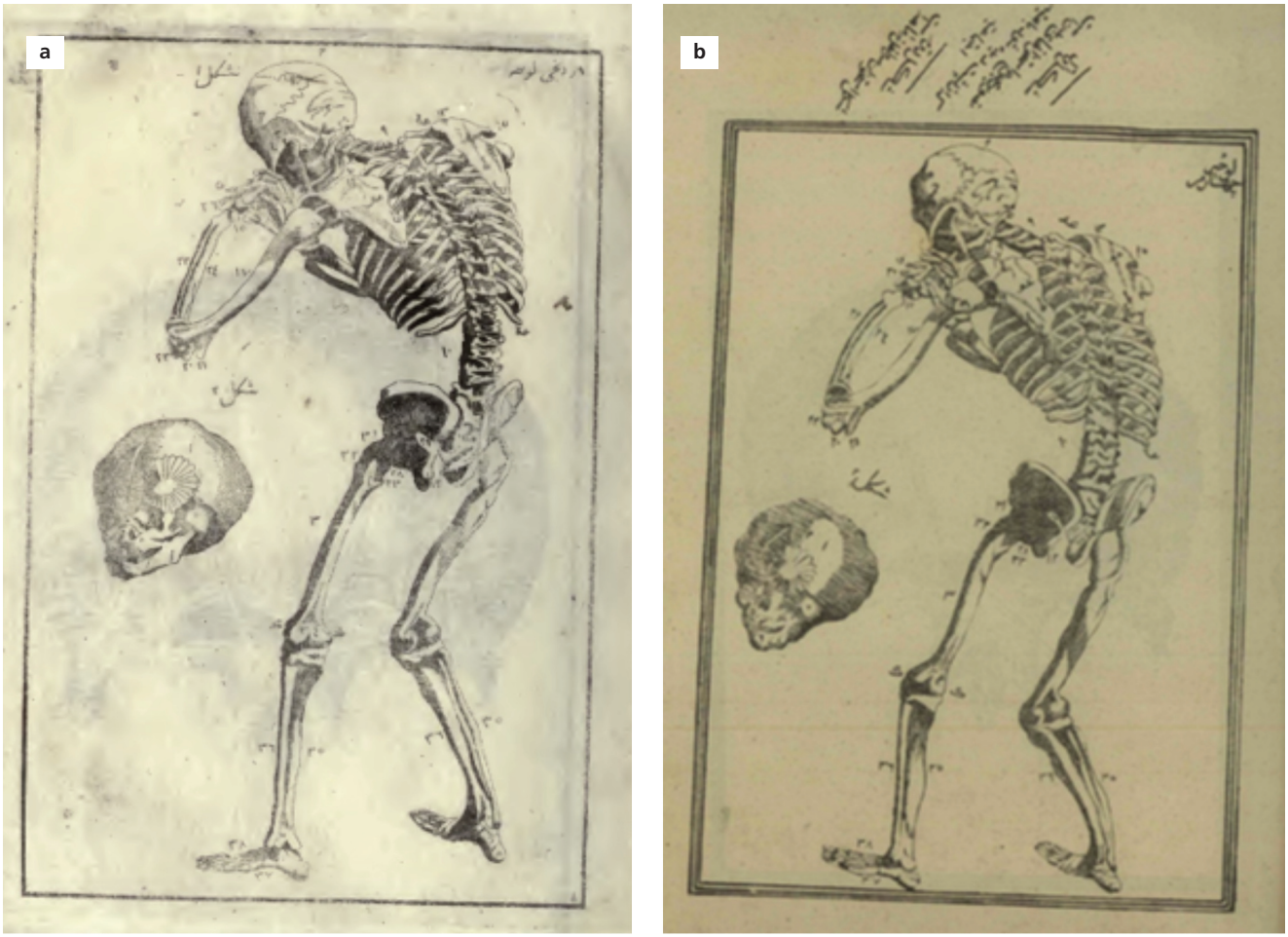


Figure 1. (**a**) Mir'āt al-Abdān fī Tashrīḥ A'zā' al-Insān, 1820; (**b**) Anwār al-Nāṣirī, 1855 [Images were scanned from hard copies of Mir'āt al-Abdān fī Tashrīḥ A'zā' al-Insān, 1820 (left) and Anwār al-Nāṣirīin, 1855 (right), from Associate Professor Mirjalili's private collection]

text that bridged traditional Islamic medical scholarship and modern European anatomical science. The anatomy section of *Mir'āt al-Abdān* contained 56 illustrations, 46 of which were adapted from Jean Palfyn's *Anatomie Chirurgicale* (1650–1730). The remainder were drawn from the works of anatomists such as Albinus, Vieussens, Haller, and Duverney.[8]

The book's significance lay in two groundbreaking features: (*1*) it was the first printed anatomy text in Ottoman medicine, and (*2*) its illustrations departed from two-dimensional miniature traditions, adopting three-dimensional perspective and anatomical accuracy. These innovations introduced a visual-scientific language that resonated with modern pedagogical standards and directly influenced subsequent medical texts in Iran through translations such as *Anwār al-Nāṣiriyyah*.

Conclusion

The modernization of medical education in Iran cannot be understood in isolation from broader regional and transnational developments. While *Dār al-Funūn* and figures such as Jacob Polak played pivotal roles in introducing European anatomy to Iran, the Ottoman contribution—particularly through Şanizade's *Mir'āt al-Abdān*—provided an essential intermediary step. The translation of Şanizade's work into Persian as *Anwār al-Nāṣiriyyah* illustrates the circulation of medical knowledge across cultural and linguistic boundaries, bridging Ottoman, European, and Iranian traditions.

Şanizade's integration of European anatomical knowledge into an Ottoman framework not only marked the first printed anatomy text in the Islamic world but also established a visual and pedagogical template that shaped Iranian medical education. His work demon-

strates how intellectual exchanges between neighbouring empires facilitated the modernization of medicine in Iran, underscoring the importance of cross-cultural transmission in the history of science.

References

1. Dar ul-Funun School. Iran Paradise, 2021. [Internet]. Available from: https://iranparadise.com/dar-ul-funun-school/.
2. Homayoun Naderian. 2020. The history of anatomy in Iran 2020, 1st Ed, p477(In Farsi).
3. Cloquet, Louis-André-Ernest. Encyclopaedia Iranica. [Internet]. Available from: https://www.iranicaonline.org/articles/cloquet-louis-andr-ernest-b/
4. Chahrour M. Der gewesene Leibarzt des Schah von Persien. Ergänzungen zu Biographie und ärztlicher Leistung des Dr. Jacob Eduard Polak. VIRUS – Beiträge zur Sozialgeschichte der Medizin 2008;7:41–52.
5. Polak, Jakob Eduard. Encyclopaedia Iranica. [Internet]. Available from: https://www.iranicaonline.org/articles/polak-jakob-eduard/
6. Mohammad ibn Abd al-Sabur Khu'i Tabrizi, Anwār al-Nāṣirī, printed in either Tabriz or Istanbul; 1855.
7. Şanizade Mehmed Ataullah Efendi, *Mir'āt al-Abdān fī Tashrīḥ A'zā' al-Insān*, printed in Istanbul; 1820.
8. Ortug G, Ortug A, Kurt NK. Miratü'lEbdan Fi Teşrih-i Azaül-İnsan: first printed illustrated anatomy book in Ottoman-Turkish medicine. Folia Morphol (Warsz) 2018;77:764–70.

ORCID ID:
S. A. Mirjalili 0000-0002-1599-3573

Correspondence to: Seyed Ali Mirjalili, Assoc. Prof., MD
Department of Anatomy with Radiology, Faculty of Medical and Health Sciences, University of Auckland, Auckland, New Zealand
Phone: 0064212661890
e-mail: a.mirjalili@auckland.ac.nz

Conflict of interest statement: No conflicts declared.

This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivs 4.0 Unported (CC BY-NC-ND4.0) Licence (http://creativecommons.org/licenses/by-nc-nd/4.0/) which permits unrestricted noncommercial use, distribution, and reproduction in any medium, provided the original work is properly cited. *How to cite this article:* Mirjalili SA. The role of the Ottoman physician Şanizade Mehmed Ataullah in the modernization of medicine in Iran. Anatomy 2025;19(3):136–139.