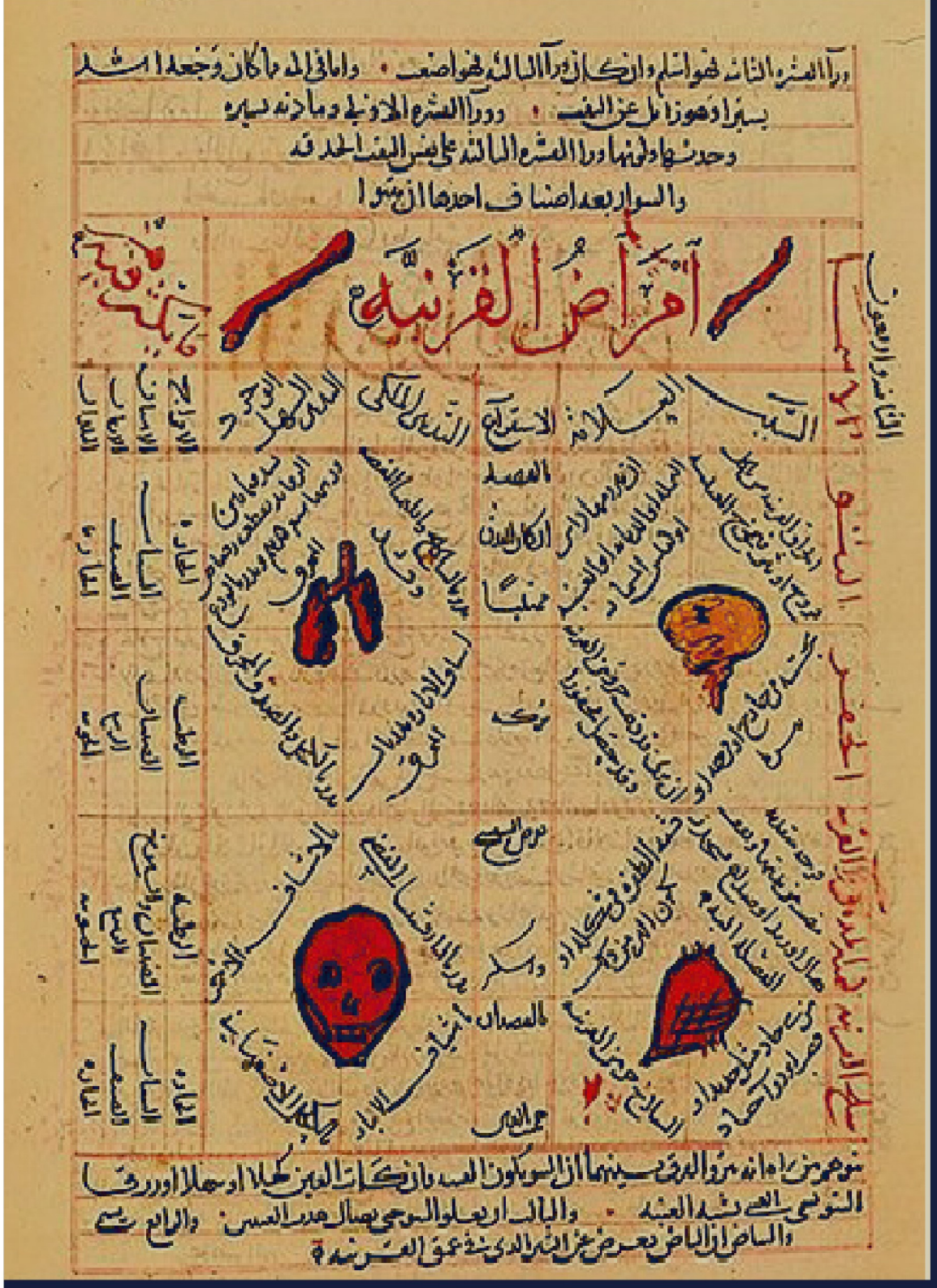

Islamic Republic of Iran
Ministry of Health and Medical Education
Office of Persian Medicine

Research Office for the History of Persian Medicine

Tehran University of Medical Sciences
School of Persian Medicine

Medical Ethics and History of Medicine research center

Persian Medicine

Meeting Booklet

The 2nd History of Medicine Meeting 2025; Entangled Histories: Contribution of Iran & Türkiye to the Development of Medical Sciences

October 07 - 10 , 2025 - Shiraz, Iran

The 2nd History of Medicine Meeting

Entangled Histories: Contribution of Iran & Türkiye to the Development of Medical Sciences

October 07 - 10, 2025
Shiraz - Iran

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Islamic Republic of Iran
Ministry of Health and Medical Education
Office of Persian Medicine

Research Office for the History
of Persian Medicine

TEHRAN UNIVERSITY OF MEDICAL SCIENCES
SCHOOL OF PERSIAN MEDICINE

Iranian Society for the History of Pharmacy
Persian Medicine

Medical Ethics and History of
Medicine Research Center

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Meeting Organization

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Dr. Fuat Ince; Soleyman Demirel University, Isparta, Türkiye

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Message of the Chair

Arman Zargaran; PharmD, PhD

Associate Professor and Head, Department of History of Medicine, School of Persian Medicine, Tehran University of Medical Sciences, Tehran, Iran

Iran and Türkiye: Contribution of Two civilizations in Developing Medical Sciences through History

Today's advances in medical science have been shaped by the efforts of great scientists of the past in ancient civilizations from ancient times to the present day. Iran and Türkiye are two neighboring countries with historical backgrounds, rooted in ancient times. Iran is one of the oldest civilizations in the world, dating back to the thousands of years and always named as Iran or Persia. The Persian empires in ancient times (pre-Islamic era) have always been considered great world powers, and in particular, during the time of the Achaemenids (550-330BCE), they formed the largest empire in the world, stretching from the borders of China and India to whole Middle East and borders of Greece and North Africa. In Islamic era, Persia was also a great player in the region as well. Iran (Persia) always played a great role in development and progress of sciences, in particular medical sciences. Persian civilization is not limited to current country of Iran, but also its heritages could be found in new contemporary born countries in the region like Afghanistan, Pakistan, Uzbekistan, Tajikistan, Iraq, etc., in the atmosphere of old great Persia. Great scientists like Borzouyeh (6th century), Rhazes (865-925CE), Akhawayni (?-983CE), Avicenna (980-1037CE), Jorjani (1042-1147CE), etc. are some of the most outstanding scholars belonging to this civilization. Current Türkiye is also the host of many great civilizations in the era that was called Anatolia in the past history. Hittites was one of the oldest civilizations in that era dating back to the early 2nd millennium BCE. Eastern parts of the Anatolia was mostly a part of the Persian civilization; but there were other great civilizations like Lydia (8th – 6th Centuries BCE). Later, there were the host of many of Empires Like Rome and Byzantium; and finally, Ottoman Empire as a Turkish Civilization was originated from this region and succeed to build a great Empire in Western Asia, Eastern Europe and North of Africa. Following this long history, New Türkiye was born from this historical civilization in 1923. There are many valuable Turkish physicians like Şerafeddin Sabuncuoğlu (1385–1468) and Gevrekzâde Hasan Efendi (1727–1801)

Meeting Organization

who had great role in progress of medical sciences. Iran (Persia) and civilizations located in Türkiye region had always scientific and cultural relations during centuries in the history. These relations helped to both civilizations to develop scientific paradigms and achievements. In the 2nd History of Medicine Meeting: Entangled Histories: Contribution of Iran and Türkiye to the Development of Medical Sciences, we try to make a scientific platform for investigating the role of these two civilizations and their cooperations on development of medical sciences through history.

Scientific Program

Opening Ceremony: Oct 07, 2025 / 19:00 – 22:00 (Iran Standard Time)

Row	Speaker	Title
1		
2	**Dr. Hamid Mohammadi** Vice President of Research and Technology, Shiraz University of Medical Sciences	Welcome Message
3	**Dr. Arman Zargaran** Chair of the Meeting	The Report of the Meeting
4	**Dr. Alireza Mehdizadeh** Director of the Research Office for the History of Persian Medicine	The Report of Research Office for the History of Persian Medicine
5	**Dr. Alim Kosar** Vice President of Suleyman Demirel University	The Perspective of collaboration of SDU with Shiraz and Tehran Universities of Medical Sciences
6	**Dr. Nafiseh Hosseini Yekta** General Director of the Office of Persian and Complementary Medicine, Ministry of Health and Medical Education	Ministry of Health Landscape on Development of History of Medicine in Iran
7		Dinner

First day: Wednesday; Oct 08, 2025 / 08:00 – 15:45 (Iran Standard Time)

Row	Speaker	Title	Time
1	---	Registration	8:00 – 9:00

Pannel A: 09:00 – 10:45
Chairs: Dr. Arman Zargaran (Iran)**, Dr. Alim Kosar** (Türkiye)

Row	Speaker	Title
1	**Dr. Mohammad H. Ayati**	Persian Physician Contribution to Develop Medical Sciences in Islamic Golden Age (9-13th Century CE)
2	**Dr. Hamed Arezaei**	The Architecture of Medical Knowledge: An Analysis of a Post-Avicennian Commentary on Avicenna's Definition of Medicine
3	**Dr. Fuat Ince**	Hulusi Behçet's Contributions to Medicine
4	**Dr. Ibragimov Fakhriddin Nusratovich**	The Dissemination of Medical Knowledge: The Role of al-Qanun Abridgements in the Muslim East
5	**Panelists**	Q&A

Row	Speaker	Title	Time
1	---	Coffee Break	10:45 – 11:00

Scientific Program

Pannel B: 11:00 – 12:45
Chairs: Dr. Fuat Ince (Türkiye)**, Dr. Mohammad H. Ayati** (Iran)

Row	Speaker	Title
1	**Dr. Kadircan Keskinbora**	Ibn Sīnā (Avicenna) on Medical Ethics: An Analysis of Principles, Philosophical Foundations, and Contemporary
2	**Ms. Narges Tajik**	Evolution of Surgery in the Ottoman Empire: From Islamic Heritage to Modern Practice
3	**Dr. Fayzkhodja Makhmudov**	Akhwayini Bukhari, A Pioneer in Psychiatry
4	**Mr. Hamed Ahansazan**	Treatment of Mental Health Disorders in the Safavid and Ottoman Empire: A Comparative Socio-historical Analysis
5	**Panelists**	Q&A

Row	Speaker	Title	Time
1	---	Lunch & Pray	12:45 – 14:00

Pannel C: 14:00 – 16:00
Chairs: Dr. Alireza Mehdizadeh (Iran)**, Dr. Fakhriddin Ibragimov** (Uzbekistan)

Row	Speaker	Title
1	**Dr. Kader Keskinbora**	History of Pain: From Avicenna to Melzack
2	**Ms. Mahnaz Sadat Mortazavi**	Challenges in Verifying Historical Ophthalmological Texts: The Case of a Turkish Book Derived from a Persian Source
3	**Mr. Kamran Mahlooji**	The Era of Elite Schools and the History of Islamic Medicine
4	**Mr. Seyyed Hadi Tabatabaei**	Hakim Unsuri al-Khattabi al-Gilani al-Lahijani, An Iranian physician and astronomer in Ottoman court and his heritage
5	**Panelists**	Q&A

Scientific Program

Second day: Thursday; Oct 09, 2025 / 09:00 – 15:00 (Iran Standard Time)

Pannel A: 09:00 – 10:45
Chairs: Dr. Ardalan Shariat (Iran)**, Dr. Kadircan Keskinbora** (Türkiye)

Row	Speaker	Title
1	**Dr. Alim Kosar**	An Overview of the History of Turkish Urology
2	**Dr. Younes Karamati**	Turkish Redaction of Alāʿī Maghribī's Taqwīm al-Adwīya: A Comparative Study on Its Arabic Original and Persian Redaction
3	**Ms. Maryam Mohseni Seyfabad**	The Medical Knowledge Network on the Silk Road during the Ilkhanate Era: Examining the Central Role of Iran (Rabʿ-e Rashīdī) and the Anatolian Corridor
4	**Ms. Nikki Maleki**	Telehealth in Pregnancy: Historical Evolution and Practical Insights from Iran and Turkey
5	**Ms. Mahsima Abdoli**	Shamanic – Magic Medicine in Opposition to Mazdayasnian Medicine in Ancient Persia
6	**Panelists**	Q&A

Row	Speaker	Title	Time
1	---	Coffee Break	10:45 – 11:00

Pannel B: 11:00 – 13:00
Chairs: Dr. Hamed Arezaei (Iran) **, Mr. Hamed Ahanszan** (Iran)

Row	Speaker	Title
1	---	Poster Talk Presentation

Row	Speaker	Title	Time
1	---	Lunch & Pray	13:00 – 14:00

Closing Ceremony: 14:00 – 15:00

Row	Speaker	Title
1	**Dr. Arman Zargaran**	Conclusion Remarks
2	**Dr. Negahdaripour**	Conclusion Remarks
3		**Poster Winning Awards**

Third day: Friday; Oct 10, 2025 / 09:00 – 18:00 (Iran Standard Time)

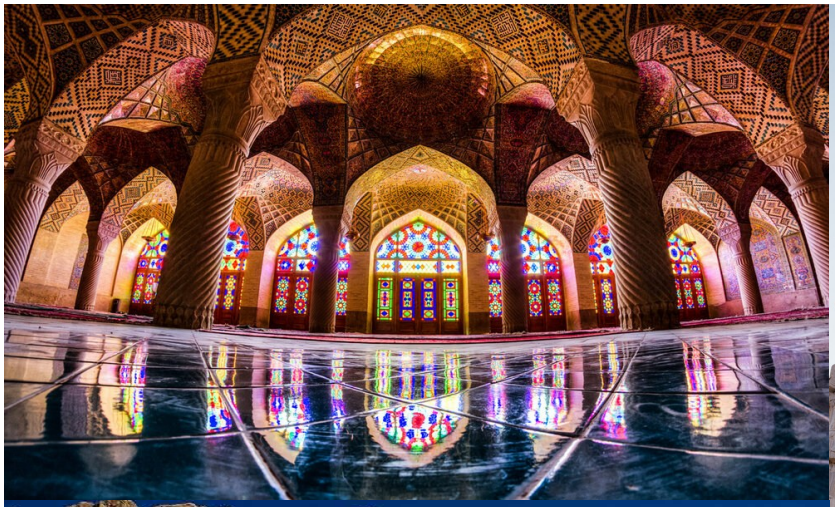
Sightseeing Tours

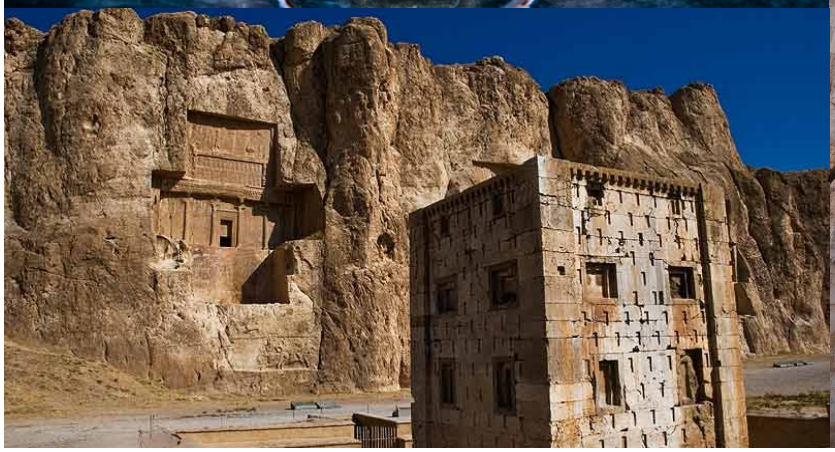
Only for Invited Speakers, International Delegates and the persons who registered for sightseeing tour

Registration: On desk at the first day of the Meeting

Visit to:

Nasir al-Molk Mosque / Persepolis / Naqsh-e-Rostam





Keynote Speech | WEDNSDAY - October 08, 2025 - Pannel A: 09:00 - 10:45
Full text is published in the Journal of Research on History of Medicine | Vol 14, Suppl. 01

The Architecture of Medical Knowledge: An Analysis of a Post-Avicennian Commentary on Avicenna's Definition of Medicine

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Summery

Avicenna's Canon of Medicine, composed across various cities in Iran, initiated a powerful commentary tradition (sharḥ) that often took a critical stance, particularly within the Persian-speaking intellectual sphere. This article introduces a previously unstudied Ottoman treatise which directly engages with this critical tradition. Authored in Anatolia and dedicated to Sultan Bayezid II, the text offers a robust philosophical defense of Avicenna's definition of medicine, effectively responding to critiques that originated in the East. This treatise serves as a prime example of the entangled intellectual history of Iran and Türkiye, where a philosophical debate spanning centuries and geographical regions created a shared scientific heritage. The analysis highlights the dynamic dialogue between the intellectual centers of the Islamic world and the enduring legacy of Avicenna in the Ottoman medical context.

Keywords: History of Medicine, Avicenna, Canon of Medicine, Ottoman Empire, Medical Epistemology.

Keynote Speech | WEDNSDAY - October 08, 2025 - Pannel A: 09:00 - 10:45
Full text is published in the Journal of Research on History of Medicine | Vol 14, Suppl. 01

The Dissemination of Medical Knowledge: The Role of al-Qanun Abridgements in the Muslim East

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Summary

Ibn Sina's monumental medical encyclopedia "The Canon of Medicine" was a hugely influential work but its sheer size consisting of five extensive books were too large for daily use by physicians and students. To solve this problem, a crucial tradition of writing abridgements began in the mid-eleventh century. This practice was vital in making the vast knowledge contained within "The Canon" more accessible to a wider audience, thereby ensuring its ideas could be applied more easily in medical practice and education. The abridgements were not simply summaries. They were often enriched with the authors' own new ideas and clinical observations, transforming them into new, dynamic texts. This shows that Ibn Sina's influence was not static; it led to a living body of knowledge that was continually adapted and expanded upon. This article highlights key abridgements such as al-Fusūl al-Ilāqiyya fī kulliyāt aṭ-ṭibb by al-Īlāqī (d. 1068), Mu'jaz al-Qānūn by Ibn al-Nafīs (1207–1288) and Qānūncha fī-ṭibb by Maḥmūd ibn Muḥammad al-Chaghmaynī (fourteenth century).

Keywords: Ibn Sina, Canon of Medicine, Abridgments, al-Īlāqī, Ibn al-Nafīs, al-Chaghmaynī, Medical Literature.

Keynote Speech | WEDNSDAY - October 08, 2025 - Pannel B: 11:00 - 12:45
Full text is published in the Journal of Research on History of Medicine | Vol 14, Suppl. 01

Treatment of Mental Health Disorders in the Safavid and Ottoman Empire: A Comparative Socio-historical Analysis

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Summary

This comparative-historical analysis explores how mental disorders were treated in the Safavid and Ottoman empires. Both empires shared a common foundation based on humoral medicine and a holistic understanding of the mind-body connection. Treatments encompassed physical methods, such as diets, herbal remedies, and cupping, as well as spiritual therapies, including Quranic recitation, prayer, and pilgrimage. However, there were notable differences in the role of the state and the institutionalization of mental health care. The Ottoman state, particularly in the 16th century, developed a more institutionalized and centralized system by establishing charitable institutions known as Dartışşifa (house of healing). This trend culminated in the 19th century with the modernization of Ottoman medicine. In contrast, the Safavid Empire did not have a comparable institutionalized and centralized network, and the responsibility for treatment largely rested on the community, family, and local healers. This decentralized, community-based approach remained in place throughout the Safavid era and did not evolve into a centralized, state-run psychiatric system.

Keywords: History of Medicine, Mental Health, Ottoman, Safavid.

Keynote Speech | WEDNSDAY - October 08, 2025 - Pannel C: 14:00 - 15:45
Full text is published in the Journal of Research on History of Medicine | Vol 14, Suppl. 01

History of Pain: From Avicenna to Melzack

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Summary

Pain has been a universal and enduring element of the human condition since antiquity. From early humoral theories to modern neuroscience, its conceptualization reflects the evolution of both medicine and philosophy. Galen (2nd century AD) regarded pain as a disturbance of tissues within the framework of bodily humors, establishing an anatomical but peripheral perspective. Avicenna (980–1037), in his Canon of Medicine, introduced a more advanced proto-neurophysiological model, describing the brain as the central organ for pain perception and recognizing that pain could persist even without tissue damage. René Descartes (1596–1650) transformed pain theory through a mechanistic model, describing it as a linear transmission of signals along nerve "threads" to the brain, a revolutionary but reductive framework. The 20th century marked a paradigm shift with Ronald Melzack and Patrick Wall's Gate Control Theory (1965), and later Melzack's Neuromatrix Theory (1990s), which reframed pain as an active, multidimensional brain output shaped by genetics, cognition, and emotion. This review traces the historical trajectory of pain theory, emphasizing the continuity between Avicenna's insights and Melzack's neuroscience, highlighting the intellectual transition from humoral and mechanistic frameworks to the biopsychosocial model that dominates contemporary pain medicine.

Keynote Speech | WEDNSDAY - October 08, 2025 - Pannel A: 09:00 - 10:45
Full text is published in the Journal of Research on History of Medicine | Vol 14, Suppl. 01

Hulusi Behçet's Contributions to Medicine

Fuat Ince

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Summary

Hulusi Behçet (1889–1948), a pioneering Turkish dermatologist and scientist, is globally renowned for identifying Behçet's Disease, a systemic vasculitis that now bears his name. Beyond this landmark discovery, Behçet made significant contributions to dermatology, venereology, and infectious diseases through extensive clinical observations and over 200 scholarly publications. He advocated a multidisciplinary approach to diagnosis and was among the earliest proponents of integrating laboratory medicine into dermatological practice in Türkiye. His influence extended to medical education, where he played a key role in modernizing curricula and promoting research-based clinical training. This paper aims to provide a historical overview of Behçet's contributions, contextualizing his work within both national and international developments in early 20th-century medicine. By examining his publications and institutional legacy, we argue that Hulusi Behçet not only discovered a disease but also reshaped medical thinking in his region and era.

Keywords: Hulusi Behçet, Behçet's Disease, dermatology, history of medicine, Türkiye

Keynote Speech | THURSDAY - October 09, 2025 - Pannel A: 09:00 - 10:45
Full text is published in the Journal of Research on History of Medicine | Vol 14, Suppl. 01

An Overview of the History of Turkish Urology

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Summary

This study presents a concise overview of the historical development of urology in Türkiye from the late Ottoman period to the present day. The research traces early urological practices such as surgical interventions for bladder stones and contextualizes the emergence of urology as a distinct medical discipline. Key developments during the Republican period, including institutionalization, academic training, and the influence of European medical models, are highlighted. The contributions of pioneering figures and the evolution of urological education reflect Türkiye's broader modernization efforts in medical sciences. Through a literature-based historical analysis, this work aims to illuminate the milestones, transformations, and legacies that have shaped the trajectory of Turkish urology.

Keywords: Urology, History of medicine, Türkiye, Ottoman Medicine, Republican Era, Medical education.

Keynote Speech | WEDNSDAY - October 08, 2025 - Pannel A: 09:00 - 10:45
Full text is published in the Journal of Research on History of Medicine | Vol 14, Suppl. 01

Akhwayini Bukhari, A pioneer in Psychiatry

Fayzkhodja Makhmudov

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Summary

Abu Bakr Rabi' ibn Ahmad Akhawayni Bukhari, a prominent 10th-century physician from Bukhara and a pioneer in psychiatry, played a key role in the development of medical science during the early Islamic Renaissance in Turan (Transoxiana). This article examines Akhawayni's life, works, and scientific innovations by analyzing his most important surviving work, "Hidāyat al-Mutaʿallimīn fi al-Ṭibb" (lit. The Students' Guide to Medicine). Regarded as the first comprehensive medical text in the Persian language, this book was not only used as a valuable textbook for generations but also contains extensive clinical observations and the author's personal experiences. Akhawayni's innovations in medical classification, diagnosis, and treatment of mental illnesses—which earned him the title "Physician of the Insane"—along with his descriptions of diseases, such as diabetes and infectious diseases, solidify his status as a distinguished physician and researcher in the history of medicine.

Keywords: History of Medicine, Akhawayni Bukhari, Psychiatry, Medieval Iran, Hidāyat al-Mutaʿallimīn.

Keynote Speech | THURSDAY - October 09, 2025 - Pannel B: 11:00 - 12:45
Full text is published in the Journal of Research on History of Medicine | Vol 14, Suppl. 01

Ibn Sīnā (Avicenna) on Medical Ethics: An Analysis of Principles, Philosophical Foundations, and Contemporary Relevance

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Summary:

This article provides an in-depth analysis of the medical ethical principles espoused by Ibn Sīnā (Avicenna). Drawing from scholarly analyses of his philosophical system and his masterpiece, The Canon of Medicine, the study unveils Avicenna's ethical proposals in three pivotal areas: the primacy of patient interests, the art of patient-physician communication, and the imperative of professional excellence. These principles have deep philosophical and metaphysical foundations. They are linked to his concepts of the rational spirit, the virtue of moderation (*haddi e'tidal*), and his proto-scientific methodology. The report provides a comparative analysis that highlights the similarity between Avicenna's ethical principles and modern bioethical principles, such as beneficence and nonmaleficence. It also examines the historical divergence regarding patient autonomy and informed consent. The study concludes that Ibn Sina's ethics constitute a complex, integrated system based on a holistic philosophy of the human person, offering enduring insights for contemporary medical education and practice.

Keywords: Avicenna, Ethics, Medical Ethics, History of Medicine

Oral Presentation | WEDNSDAY - October 08, 2025 - Pannel B: 11:00 - 12:45
Full text is published in the Journal of Research on History of Medicine | Vol 14, Suppl. 01

Evolution of Surgery in the Ottoman Empire: From Islamic Heritage to Modern Practice

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Summary

Surgery, as a fundamental branch of medicine, has evolved over centuries across different civilizations. In the Islamic world, pioneers such as Zahrawi, Avicenna, and other scholars advanced surgical practice both theoretically and practically. With the establishment of the Ottoman Empire in the 14th century, this heritage was transferred to Anatolia and Istanbul, adapting to unique socio-political, military, and cultural circumstances. Early Ottoman surgery relied on Islamic texts and Persian translations, with notable figures including Sherefeddin Sabuncuoğlu (1385–1468), Surgeon Ibrahim (active around 1505), and Ali Mensi (d. 1733) contributing to both practical techniques and theoretical knowledge. Iranian physicians such as Hakim Mohammad Sabzevari and Ghyath al-Din Sabzevari also played key roles in transmitting surgical knowledge. By the 19th century, the Tanzimat reforms and the establishment of Istanbul Medical School Integrated European methods, marking the emergence of modern surgery in the Ottoman Empire.

Keywords: Surgery History, Ottoman Empire, Persian Medicine, Medical Education

Oral Presentation | WEDNSDAY - October 08, 2025 - Pannel C: 14:00 - 15:45
Full text is published in the Journal of Research on History of Medicine | Vol 14, Suppl. 01

The Era of Elite Schools in the Islamic World (11th–13th Centuries CE)

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Summary

In the Second Half of the Iranian Renaissance (9th –13th Centuries CE), which led to the flourishing of the Persian language, philosophy, and rational sciences, the arrival of Turks from the northwest into Iran altered the political-military structures and redirected the trajectory of knowledge in the Islamic world. With the dominance of the Ghaznavids and Seljuks, the scientific center of gravity shifted back toward the western centers of the Islamic world, with religious sciences and the Arabic language gaining prominence in educational domains. However, eastern regions, such as those under the Khwarazmian rule, remained exceptions, preserving their indigenous rational traditions. This article, drawing on historical studies of medicine and education, examines the transformations during this "Era of Elite Schools" and demonstrates how this period laid the foundation for the Nizamiyyah schools, religious-scientific networks, and a shift in the scientific balance between the eastern and western Islamic world. This process continued until the Mongol invasion, after which a phase of scientific reconstruction began.

Keywords: History of Medicine, Persian Medicine, The Era of Elite Schools, Iranian Renaissance

Oral Presentation | WEDNSDAY - October 08, 2025 - Pannel C: 14:00 - 15:45
Full text is published in the Journal of Research on History of Medicine | Vol 14, Suppl. 01

Challenges in Verifying Historical Ophthalmological Texts: The Case of a Turkish Book Derived from a Persian Source

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1- Department of History of Medicine, School of Persian Medicine, Tehran University of Medical Sciences, Tehran, Iran.

2- Department of History of Medicine and Ethics, Faculty of Medicine, Suleyman Demirel University, Isparta, Turkiye.

3- Institute for History of Pharmacy and Medicine at the Philipps University of Marburg, Germany.

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Summary

This study aims to describe the challenges of authenticating and establishing the uniqueness of historical ophthalmological treatises by way of comparative analysis of two significant texts: the Persian "Zaḫīre-ye Ḫāwarizmšāhī" authored by Ismaʿīl Ibn Ḥusayn Ǧurǧānī (1040-1136 AD) and the Turkish "Mīftāḥ al-Nūr wa-Ḫazāʾīn al-Surūr" of Muʾmin Ibn Muqbil, a 15th-century Ottoman oculist from Sinop (present-day Turkey). Although the latter claims independent scholar merit, investigation confirms that it is an adaptation and translation of the Ǧurǧānī's work. It raises major issues in medical historical scholarship, such as proper source material identification, translation concerns, and the consequences of misattribution in the history of ophthalmology. It accentuates the importance of rigorous source authentication protocols in ensuring scholarly integrity and generating more understanding of the transmission of medical knowledge in the Islamicate world, specifically in the Iranian plateau and Anatolia. It also addresses implications of broad significance for historians examining the development of ophthalmological knowledge in different cultures.

Keywords: History of Ophthalmology, History of Medicine, Islamicate, Ǧurǧānī, Muʾmin

Oral Presentation | WEDNSDAY - October 08, 2025 - Pannel C: 14:00 - 15:45
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Hakim Unsuri al-Khattabi al-Gilani al-Lahijani, An Iranian physician and astronomer in Ottoman court and his heritage

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Summary

one of the less known physicians in ottoman emperor was a great Iranian scientist, Hakim Unsuri al-Khattabi al-Gilani al-Lahijani who was originally from Gilan region of Iran and work as a chief astronomer and great physician of 3 ottoman kings. he wrote some books and treatises in astronomy and medicine and they remain as a manuscript today. all his treatises are in Arabic and Persian and because of his position in court as an important scientist and teacher of princes, study and analyze on his books will lead us to better understanding of influence of Iranian and Ottoman medicine on each other. in this article we will introduce him and his treatises by new and old written sources and their manuscripts.

Keywords: History of Medicine. Iran. Ottoman. Hakim Unsuri al-Gilani.

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Shamanic – Magic Medicine in Opposition to Mazdayasnian Medicine in Ancient Persia

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Summary

The shamanic–magic medicine in pre-Islamic Iran was an independent system with deep ethnic roots that, rather than being absorbed into the Mazdayasnian framework, interacted with it only peripherally and to a limited extent. Such interaction was mostly evident in the use of certain plants and select rituals, while its intellectual structure and worldview remained distinct. Based on historical records, ethnographic data, and Pahlavi texts, it identifies structural and philosophical differences and similarities between the two systems. Findings indicate that, despite ideological distinctions, shamanic–magic medicine influenced Mazdayasnian medicine in areas such as herbal therapy and certain rituals. Archaeological evidence from Panjikent to the Caspian littoral supports the notion of limited coexistence. Scholarly views diverge: the dominant position sees shamanic–magic practices as a parallel, often opposed tradition, while a minority emphasizes partial functional overlap and shared heritage. This research sheds light on the dynamics of interaction and conflict between these two traditions in the localized contexts of ancient Persia.

Keywords: Ancient Persia, Persian Medicine, History of Medicine, Magic Medicine, Avesta.

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The Medical Knowledge Network on the Silk Road during the Ilkhanate Era: Examining the Central Role of Iran (Rab-e Rashīdī) and the Anatolian Corridor

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Summary

Documentary evidence demonstrates the medical knowledge network along the Silk Road during the Ilkhanate era (13th-14th centuries CE), highlighting Iran's central role through Rabʿ-e Rashīdī in Tabriz as the critical nexus connecting with the Anatolian Corridor. Through analysis of primary sources including the Mukātabāt-i Rashīdī correspondence, this research highlights how Rashīd al-Dīn Fażl Allāh, himself from a medical lineage, implemented strategies such as recruiting fifty physicians from diverse regions and establishing structured apprenticeship systems at Dār al-Shafā in Muʿālijān, which, contrary to prevailing assumptions fostered unprecedented medical knowledge integration. Documentary evidence confirms how the western branch, enriched by Seljuk hospitals like Ghīyāthiyya, functioned as a specialized medical corridor where architectural similarities between Tabriz and Anatolian medical complexes reveal a shared template for education and practice. It demonstrates how deliberate governance by Iranian ministers of the Ilkhanate transformed these routes into integrated systems for transferring pharmacological materials and medical knowledge, fundamentally reshaping cross-cultural scientific exchange during this period, evidence that challenges the conventional narrative of Mongol-era scientific decline.

Keywords: Silk Road; Persian Medicine; Knowledge Management; Interdisciplinary Communication; Medical Education.

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Telehealth in Pregnancy: Historical Evolution and Practical Insights from Iran and Türkiye

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Summary

This narrative review explores the history of telehealth in pregnancy, following the evolution of telehealth since initial physiological monitoring systems in the 1960s to the complex digital platforms that many have embraced during and after the COVID-19 pandemic. Although the progress has been global, there is an increased interest in Iran and Turkey, where telehealth initiatives have evolved significantly over the past years. The literature review was performed through the PubMed, Google Scholar, and Scopus searches with the following keywords: telehealth, telemedicine, pregnancy, Iran, Turkey, history. Telehealth in obstetrics was initially in the form of low-end consultations in the 1990s, but has evolved into high-end digital gadgets (e.g. apps, sensors) by the 2010s. Equity, privacy, and evidence-based standards should be considered in the requirements of the future integration owing to the desire of quality and accessibility.

Keywords: History, Iran, Telemedicine, Turkey, Digital Health

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The Content and Significance of the Mesopotamian Cuneiform Source Sakikkû in the Development of Medicine

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Summary

The Sakikkû (SA.GIG) series, a 40-tablet diagnostic handbook from ancient Mesopotamia (11th century BCE), represents a pivotal advancement in medical history. Compiled by scholar Esagil-kin-apli, it systematized symptom observation and prognosis. Organized into six groups, the text documented ~3,000 entries covering: environmental omens (Tablets 1–2); head-to-toe symptomatology (Tablets 3–14); and disease progression patterns (Tablets 15–25), including early contagion recognition. Later tablets detailed neurology (epilepsy), divine causation theories, and obstetrics (fetal development). While retaining spiritual elements, Sakikkû prioritized empirical methods anatomical precision, temporal tracking, and prognostic correlations establishing foundational diagnostic principles that influenced later medical traditions. This study was conducted to highlight the importance of sakikkû in Mesopotamian medicine.

Keywords: Sakikkû, Mesopotamian medicine, ancient diagnostics, cuneiform medical texts, empirical observation.

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Dynamics of the Iranian Renaissance(9th and 13th centuries CE)

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Summary

The Iranian Renaissance, spanning approximately from9rd and 13th centuries CE, constituted a prominent phase of cultural and scientific efflorescence in Iranian history, emerging in the aftermath of the Baghdad Translation Movement within the domains of the Samanids, Buyids, and Ghaznavids [Frye1975 ,pp: 220 225]. The Iranian Renaissance can be divided into two part : the Foundational Phase (3rd–4th centuries AH / 9th–11th centuries CE) and the Era of Elite Schools (5th–7th centuries AH /11th –13th centuries CE). In this text, we will focus more on the first part of this Renaissance. This erawas forged through the interplay of several key dynamics, including relative political-geographical stability, sustainable management of water and agricultural resources, absorption and indigenization of antecedent knowledge, revival of the Persian language, expansion of commercial and knowledge networks, patronage by rulers and viziers, and cultural integration of non-Arab ethnic groups alongside interactions with declining centers in Baghdad. Iran's emergent identity and scientific autonomy occasionally engendered tensions with the Arab-centric inclinations of the Abbasid Caliphate, yet these did not impede the Renaissance. Employing an interdisciplinary historical-systemic approach, this study investigates the processes of formation, sustainability, and transmission of this civilizational experience, modeling it as a "civilizational ecosystem."

Keywords: History of medicine, Persian medicine, Iranian Renaissance, Translation Movement, Islamic Golden Age

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Role of the Waqf Institution in the Establishment and Sustained Operation of Dar al-Shifas and Dar al-Ajazas in Anatolia: Evidence from Waqf Deeds During the Seljuk Period

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Summary

Public health and sanitation were critical indicators of civilizational advancement in Islamic societies, particularly during the Seljuk period in Anatolia (483–707 AH / 1077–1308 CE). This study examines the role of the waqf (charitable endowment) system in establishing and sustaining dar al-shifas (hospitals) and dar al-ajazas (care homes for the elderly and disabled) through an analysis of waqf deeds. The findings highlight how revenue from endowed properties supported the construction, operation, and management of these institutions, ensuring their functionality amidst the political, military, and cultural dynamics of the Seljuk Rome period.

Keywords: Waqf, Waqf Deed, Dar al-Shifas, Dar al-Ajazas, Seljuks of Rome

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An Early Report of Midwifery in Ancient Persia

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Summary

Midwifery, one of the most ancient healthcare professions, is central to the history of medicine and the protection of maternal and neonatal health. Studying its historical trajectory reveals the interplay between cultural beliefs, religious practices, and medical care. This research examines maternal healthcare in ancient Persia through the Shāyest nē-Shāyest, a Middle Persian (Pahlavi) text from the Sasanian era. Although primarily a religious and ritual guide, the text preserves remarkable detail on the organization of childbirth. It also prescribes ritual practices such as maintaining the sacred household fire to safeguard pregnancy, linking spiritual observance with maternal health. These findings demonstrate that, even in non-medical sources, ancient Persia displayed a sophisticated and organized midwifery system, underscoring the integration of cultural-religious traditions with practical, structured care for pregnant women in Sasanian society.

Keywords: Midwifery, Maternal, Ancient Persia, Persian Medicine, History of Medicine

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Migration of Diseases in Iranian and Ottoman Border Cities during the Qajar Era

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Summary

The expansion of trade and cultural relations and the existence of pilgrimage sites were among the reasons for the contacts between Iran and the Ottomans in the Qajar era. The geographical location of the Ottomans to reach Europe strengthened the relations between the two countries. This descriptive-historical study aims to analyze the causes of the migration of diseases along the borders of Iran and the Ottomans in the Qajar era. The findings show that the expansion of economic-trade relations, cultural exchanges, tourist and pilgrimage trips, and the transportation of corpses in the border cities of Iran and the Ottomans were the reasons for the migration of diseases in these regions. The lack of preparedness of governments to deal with the spread of diseases led to financial and human losses. Sanitary fences and the implementation of preventive rules by the two countries were among the methods of dealing with epidemics.

Keywords: History of Medicine, Infectious diseases, Ottoman, Qajar, Quarantine

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Diplomatic Relations and Healthcare Services: A Historical Document on Iran–Ottoman Interactions in the Late Nineteenth Century

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Summary

The relationship between Iran and the Ottoman Empire throughout history has involved both peaceful and conflictual interactions. In the meantime, ongoing social, cultural, and scientific exchanges facilitated the migration of intellectuals, particularly physicians and pharmacists, from Iran to Ottoman territories. During the late Ottoman era, Istanbul emerged as a multiethnic and international city, housing a significant Iranian population that required specialized medical and healthcare services. This article examines a historical document related to the activities of the Iranian Embassy physician in Istanbul, emphasizing both the diplomatic and healthcare aspects of these interactions. The findings reveal that ensuring the health of Iranian migrants was not just a humanitarian issue but also a critical element in strengthening diplomatic relations between the two states.

Keywords: History of medicine, Health diplomacy, Seririyât Surgical Hospital

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A Historical-Descriptive Study of the Orthopedic Chapters in Cerrahiyetü'l-Hâniyye: Revisiting a Neglected Surgical Source in the Islamicate Tradition

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Summary

This historical-descriptive study investigates the orthopedic chapters of Cerrahiyetü'l-Hâniyye, the first illustrated surgical manual in Turkish authored by Şerafeddin Sabuncuoğlu in the 15th century. The focus is on the manuscript preserved at the Bibliothèque nationale de France, believed to be autograph and illustrated by the author. We examine treatments of fractures and dislocations, specialized surgical terms, instruments, and illustrations showing stepwise orthopedic procedures. The methodology includes codicological examination, textual analysis comparing with classical sources (especially al-Zahrawī's al-Taṣrīf), and visual analysis. Results show coordinated text and image use, practical adaptations of classical teachings, detailed management techniques including reduction, immobilization, and post-operative care, and innovations suited to local clinical settings. This work underscores Cerrahiyetü'l-Hâniyye as both pedagogical and historical document in the Timurid-Ottoman surgical tradition.

Keywords: History of Medicine, Medieval, Bone Fractures, Orthopedic Procedures, Surgical Instruments, Islamic Medicine

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Health Diplomacy in the Late Ottoman Era: The 1892 Medical Mission from Istanbul to Iran during the Cholera Outbreak

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Summary

This study examines the 1892 Ottoman medical mission dispatched from Istanbul to Iran during a devastating cholera outbreak, based on a historical document dated 6 Safar 1310 AH (30 August 1892). The document provides valuable insight into how the Ottoman authorities organized and executed a cross-border health intervention that combined medical, humanitarian, and diplomatic objectives. By sending physicians and pharmacists equipped with treatments, the Ottoman Empire sought not only to alleviate suffering but also to reinforce regional ties, project soft power, and fulfill religious and ethical obligations of charity and solidarity. The analysis highlights how this mission exemplified the intersection of health and diplomacy in the late Ottoman period, reflecting both organized public health response and strategic foreign policy considerations. This case contributes to our understanding of the historical foundations of health diplomacy and demonstrates its enduring relevance for contemporary global health governance.

Keywords: Health Diplomacy, Ottoman Empire, Medical Mission, Cholera Outbreak

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Waqf, Health, and Education in Iran and the Ottoman Empire

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Summary

A review of credible academic sources and historical documents reveals that waqf served as a fundamental socio-economic mechanism that facilitated the establishment, funding, and sustainability of hospitals and medical schools in Iran and the Ottoman Empire. While both empires used waqf to create self-sufficient and sustainable healthcare infrastructure, significant differences exist in the scale of the institutions and the roles of key patrons. The Ottoman system, exemplified by the grand Süleymaniye Complex and the prominent involvement of court women as waqf patrons, showcases a more centralized and bureaucratic approach. In contrast, Iranian examples from the Ilkhanate (1256-1356 C.E.) period to the Qajar (1796-1925 C.E.) era reflect remarkable initiatives that were often less centralized, driven by powerful viziers and individual benefactors. This study underscores that waqf was not merely a charitable act, but a dynamic and vital institution for social and scientific advancement. It ensured the continuity of medical services and educational activities, independent of the political and economic fluctuations of governments.

Keywords: Waqf, History of Medicine, Medical Education, Iran, Ottoman Empire.

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Women in Medicine across Empires: A Historical Study of Female Medical Practitioners in Iran and the Ottoman World

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Summary

This study provides a comparative historical analysis of female medical practitioners in the Ottoman Empire and Iran from the early modern period to the nineteenth century. Utilizing a historical-comparative methodology, it examines primary and secondary sources to reveal a significant divergence in women's professional opportunities. The findings indicate that Ottoman women achieved notable integration as physicians, surgeons, and midwives, supported by formal training and institutional legitimization. In contrast, women in Qajar Iran were predominantly confined to informal roles as midwives and healers, their advancement constrained by stricter sociopolitical structures. The study concludes that women's participation in Islamic medicine was profoundly shaped by distinct imperial policies and religious interpretations, challenging homogenized understandings of gender roles in premodern medical history.

Keywords: Women in medicine, Ottoman Empire, Iran, gender history, Islamic medicine, midwifery

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The role of Physician Salih Ibn Sallum al-Halabi in Ottoman Medicine

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Summary

During a period of relative scientific decline in the Islamic world, Anatolia emerged as a hub for scholars. In this environment, Ibn Sallum rose to the position of Chief Physician of the Ottomans and, through works like Ghayat al-Itqan, played a pioneering role in introducing modern European medical science to the region. Nearly two centuries before the physicians of Muhammad Ali Pasha's era in Egypt, he introduced Paracelsus's revolutionary theories of chemical medicine to the Arab world, serving as a bridge between Eastern medical traditions and emerging Western advances in medicine. This review highlights Salih Ibn Sallum Al-Halabi (Ibn Sallum), a prominent 17th-century physician who served as Chief Physician of the Ottoman Empire, highlighting his significant contributions and works.

Keywords: History of Medicine, Ottoman Empire, Salih Ibn Sallum al-Halabi

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Jamal al-Din al- Aqsarai and Hal al-Mujez

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Summary

Jamal al-Din al-Aqsarai, a 14th-century Iranian physician who lived and worked in Aqsaray (modern-day Turkey), is recognized for his scholarly commentary on Hall al-Mujez, a medical treatise by Ibn al-Nafis rooted in Avicenna's Canon of Medicine. This study is review-based research, compiled through the analysis of scholarly sources available in libraries and information centers. Hall al-Mujez is considered one of the most famous and authoritative commentaries due to its ease and clarity. It was widely known and frequently used by physicians, serving as one of the most prevalent educational resources for traditional medicine in India. Understanding physicians like Aqsarai will significantly contribute to a deeper understanding of the medical history of both the Iranian and Ottoman civilizations.

Keywords: History of Medicine, Ottoman Empire, Jamal al-Din al- Aqsarai

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Concepts and Therapies for Cancer from Islamic Golden Age to Ottoman Empire

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Summary

From its origins during the Islamic Golden Age (8th –14th centuries) to its use and dissemination during the classical Ottoman medical tradition (15th –18th centuries), this article charts the development of cancer knowledge and treatment. This analysis shows a remarkable continuity in the humoral theory of cancer as a disease of black bile, drawing on important primary sources such as the writings of Rhazes, Avicenna, and Haly Abbas, as well as Ottoman surgical manuals (jarrāh-nāmes). Although the Ottoman texts were primarily used to translate and preserve classical Islamic knowledge, they also show a consistent medical paradigm in which a systemic approach to a feared and frequently fatal disease was taken through the use of diagnosis, diet, purgation, and cautious surgery.

Keywords: Cancer, History of Medicine, Persian Medicine, Pharmacology

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Travelogues of Iranian Pilgrims: Narratives of Public Health and Hygiene in The Ottoman Realm during the Qajar Era

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Summary

During the Qajar period, the Hajj pilgrimage was not only a religious ritual but also a cultural and social experience, documented by pilgrims in the form of travelogues. One significant aspect of these accounts is their reflection of public health and sanitary conditions in the Ottoman-ruled territories. this study examines the role of Iranian pilgrims as informal reporters of public health, contributing to a form of transnational health knowledge. Content analysis of these texts reveals valuable insights into infectious diseases, inadequate facilities, drinking water conditions, public baths, quarantine measures, and the Ottoman Empire's health policies along the Hajj routes and rituals. Beyond individual narratives, these reports reflect broader social experiences and offer a critical perspective on the inefficiencies of the public health system in certain Ottoman regions. As such, they can serve as complementary sources in the historiography of health.

Keywords: Hajj, Iranian pilgrims, travelogues, public health, Ottoman Empire.

Introduction

In the Qajar era, the Hajj went beyond its devotional function, becoming a platform for cultural, scientific, and even medical exchange. Iranian pilgrims, as religious travelers, encountered diverse environmental, medical, and sanitary realities during their journey and recorded their observations and experiences regarding public health and hygiene in the Hijaz and along the pilgrimage routes in the form of travelogues. These accounts reveal that Iranian pilgrims, as keen observers with a critical and ethnographic-medical perspective grounded in lived experience, documented the state of hygiene and the health challenges in Ottoman territories during the Qajar period (Naser al-Saltaneh, 2011: 11.24)

Methodology

present study has been conducted using a descriptive-analytical approach and is based on data drawn from Hajj travel narratives of the Qajar period.

Research Findings

The narratives of Iranian pilgrims highlight public health conditions, preventive measures, and the Ottoman government's health policies. Below is a brief overview of their key observations:

1. Drinking Water and Food Hygiene Status

The critical shortage of safe drinking water and the lack of sanitary oversight over water sources in Ottoman holy cities were recurring themes in Iranian pilgrims' accounts. These reports critically and meticulously documented water scarcity, contamination, the purchase of clean water, and the absence of hygienic water reservoirs (Naser al-Saltaneh, 2011:14-142.163).

The lack of safe drinking water led to outbreaks of diseases such as cholera and diarrhea. Water in the Hejaz region was sourced from wells and reservoirs, which were often located in flood-prone areas. Negligence by their owners sometimes allowed pollutants and filth to seep into the water, ultimately triggering disease outbreaks—a fact not lost on the pilgrims: "Most illnesses stem from this rainwater and well water, which is full of worms and microbes" (Naser al-Saltaneh, 2011:141). Water scarcity was not limited to the travel routes; similar conditions prevailed in the Hejaz itself (Kermani, 2007: 59, 78).

Beyond the shortage of clean water, securing sufficient and hygienic food—along with improper food storage—posed major challenges for pilgrims during travel, quarantine, and Hajj rituals. Pilgrims' reports highlight the poor quality of food and the consumption of spoiled items such as worm-infested cheese and rotten meat, which endangered their health and facilitated disease outbreaks (Naser al-Saltaneh, 2011:190).

2. The Spread of Epidemic Diseases: Overcrowding and Lack of Welfare Facilities

The spread of contagious diseases was among the most pressing health concerns for Iranian pilgrims in Ottoman territories. Infectious diseases like cholera, fever, plague, and severe diarrhea disrupted travel, forced quarantines, and, most critically, caused high mortality among pilgrims. Overcrowding, inadequate sanitation, poor lodging conditions, abandoned corpses, and waste accumulation—exacerbated by the intense heat—were key factors in disease transmission (Salim Khan, 2009:98).

To combat this, the Ottoman government implemented ineffective measures such as mandatory quarantines. Quarantine stations were set up along land and sea routes, where pilgrims were immediately taken upon arrival. There, they were required to bathe, while their bodies and clothing were disinfected with steam, and their belongings were fumigated (Naser al-Saltaneh, 2011: 185; Salim Khan, 2009:116). However, the unsanitary conditions in some quarantine centers reduced their effectiveness and even worsened the situation (Naser al-Saltaneh, 2011:190; Kermani, 2007:59), leading some to describe them as "prisons of calamity" (Kermani, 2007:59-60).

When epidemics broke out before the Hajj season, the lack of public awareness meant pilgrims paid the price with their lives. The death toll from diseases like cholera was so severe that pilgrims wrote in their travelogues about the intensity of illness and the scale of fatalities: "By God's will, the sickness grew so severe... the dead and the sick lay scattered like autumn leaves" (Salim Khan, 2009:100).

3. Environmental Pollution and Lack of Medical Facilities

Numerous accounts highlight the unsanitary conditions in pilgrims' accommodations during both sea and land journeys (Hedayati, 2010: 629; Naser al-Saltaneh, 2011:183). Severe overcrowding on ships, lack of space, and inadequate sanitation facilities exacerbated the unhygienic conditions of maritime travel (Naser al-Saltaneh, 2011:183; Jazairi, 2011:219-220). In such circumstances, foul air and the absence of clean food led to localized epidemics and pilgrim fatalities, as one report states: "May God relieve all believers of this obligation, but not by sea—no prayer, no worship, no pure food; everything is filth upon filth" (Kermani, 2007:49,78). Another firsthand account describes disease outbreaks: "Most travelers broke out in red rashes... many suffered diarrhea and vomiting, and three died" (Hedayati, 2010:630-631). The lack of doctors on ships further contributed to the high mortality rate (Naser al-Saltaneh, 2011:199).

Land travel posed even graver sanitary challenges, with caravans facing shortages of clean water and proper facilities. One pilgrim wrote: "The stench kept me awake all night" (Kermani, 2007:81,61). The rotting carcasses of sacrificial animals and the absence of waste disposal mechanisms worsened air pollution, Thus, Escaping this stench is characterized as a transition from a fatal stage to the onset of a renewed life.

4. Lack of Personal Hygiene Facilities

Bathing held significant importance for personal and public hygiene, yet the absence of adequate bathhouses—or their deplorable state—was a recurring grievance. Pilgrims protested:

"Whoever enters the public baths in [Cairo] clean emerges filthy, so decrepit and foul are they" (Naser al-Saltaneh, 2011:106). "I went to the bathhouse at dawn—what a bathhouse! How can I describe its filth?" (Kermani, 2007:86) More critically, the scarcity (or total lack) of bathhouses along pilgrimage routes forced delays in bathing, causing widespread dissatisfaction and health risks: "In Mecca and Medina, there are no proper baths—just makeshift stalls over latrines" (Kermani, 2007:78).

Conclusion

The findings indicate that the travelogues of Iranian pilgrims, as informal narrators, reflect the personal and lived experiences of the travelers and provide valuable information on health conditions, public health challenges, and governments' responses to disease crises. Although the pilgrims lacked medical expertise, they critically described the sanitary conditions of cities and offered detailed accounts of shortcomings in medical services, the spread of diseases, inadequate public hygiene, and the Ottoman authorities' handling of health crises. These travelogues are ethnographic texts that can serve as complementary sources for understanding the history and development of public health, as they are based on a popular, experience-based perspective and present a view beyond official governmental accounts of health and public hygiene.

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Arabic as the Lingua Franca in Medieval Islamic Medicine: Facilitating Iran-Türkiye Medical Exchange and Development

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Summary

This paper investigates the central role of Arabic as the dominant scholarly lingua franca in the interrelated development of Persian and Turkish medical sciences in medieval Islam based on a qualitative, historical-comparative methodology. As a shared medium, Arabic facilitated the translation, transmission, and learning of medical knowledge from Greco-Roman, Persian, Indian, and Syriac traditions. Foundational works, like Avicenna's Canon of Medicine, were composed in Arabic and widely disseminated across Iran and Anatolia, fostering a shared scientific culture that transcended ethnic and regional divides. The case of Kayseri and Adudi Hospitals demonstrates how Arabic medical texts enabled standard curricula and practices. Moreover, Arabic created standardized medical terminology, enriching Persian and Ottoman Turkish vocabularies and facilitating intellectual exchange. Continued political and cultural patronage of Arabic, particularly by Abbasid and Ottoman empires, consolidated its hegemonic status as the intellectual linchpin uniting and advancing medical sciences in Iran and Türkiye in broader Islamic civilization.

Keywords: History of Medicine, Iran, Türkiye

Introduction

The pervasive use of Arabic as the lingua franca was an important factor in comprehension, transfer, and ultimately development of medicine through scholarly communication between interconnected regions of Iran and Türkiye (Gutas, 2012, p.). Both spaces at key regions of Islamic civilization having linguistic, religious and scholarly traditions that prompted purposeful cross-cultural exchanges. The flowing of ideas, arts, sciences including medicine cycle through the intertwined histories of the both regions and travels along trade routes and networks of scholarship connecting those who practice medicine (Buell,

2007, p. 279-295). The cross-cultural prospect of intellectual property was more than a question of language; the use of Arabic as a lingua franca worked as an organizing mechanism bringing together the various scientific traditions into a cohesive, evolving corpus of medical knowledge (Pormann, 2022, p. 17-38). This paper will offer some thoughts on the nature of Arabic as the Lingua Franca of entwined histories of Iran and Türkiye and the role it played in more broadly fostering medicine in Medieval Islam.

Material and Methods

This study pursued a qualitative, historical-comparative method in investigating the joint, overlapped development of medical sciences in Iran and Türkiye during the medieval Islamic period, more specifically regarding the role of the Arabic language as a scholarly lingua franca. The main data were classical medical manuscripts composed or translated into Arabic, Persian, and Ottoman Turkish, including archive collections. The secondary data were peer-reviewed scholarly articles. Content analysis, systematic review of manuscripts, historical texts, and comparative analysis were employed as the analysis technique of this research.

Results

Role of Arabic as a Lingua Franca in Medical Science Development

During the Middle Ages, the dominant language of learning that contributed towards the development of medical sciences in Iran and Türkiye was Arabic. The original medical texts of Greek, Roman, Persian, Indian, and Syriac origins were translated into Arabic in an organized manner, hence building a shared corpus to be referred to by scholars throughout the region. Arabic served as the main language in medical schools and hospitals in cities including Istanbul, Baghdad, Isfahan, Tabriz, and Bursa. Influential Persian polymaths like Avicenna wrote important works such as the Canon of Medicine in Arabic which became disseminated throughout not only Iran, but also Anatolia (Mahlooji and Abdoli, 2018, p. 209-216).

Medical Institutions and Curriculum

Kayseri Hospital, founded around 1206 CE during the Seljuk period, functioned as both a medical school and hospital. Its curriculum was based on Arabic medical manuals—especially Avicenna's Canon of Medicine and Al-Razi's Al-Hawi—used by physicians and students throughout Seljuk territories. Similarly, Adudi Hospital (981–1258 CE) in Baghdad, staffed by Persian physicians including Al-Razi, became a prototype for later Islamic hospitals. Arabic Adudi manuscripts spread to Anatolia and even beyond, influencing medical education in the whole region (Ibn Sahl) (Benek et al., 2015, p. 108-110, Turgut, 2010, p. 147-148).

Standardization of Medical Terminology

Arabic was essential in the standardization and enrichment of medical terminology throughout the region. The formation of a standardized Arabic scientific vocabulary made it possible to write exact definitions in anatomy, pathology, pharmacology and therapeutics, having a lasting influence over the medical terminology of Persian and Ottoman Turkish. The mixing of lexical and conceptual insights from Arabic into other medical traditions shows the close relationship between Iranian and Turkish histories (Pormann and Savage-Smith, 2007, p. 223).

Intellectual Exchange

Even with the regional and ethnic variations, the common Arabic linguistic framework allowed for on-going intellectual flow and conversation. Scholars, doctors, and students moved between Persian cities (e.g., Nishapur, Rayy, Isfahan) and Anatolian cities (e.g., Konya, Kayseri), and contributed to the transfer and expansion of medical knowledge mainly between the 11th and 15th centuries CE during the Seljuk and early Ottoman periods (Ghezloo et al., 2024, p. 125-132).

Discussion

The evidence indicates that Arabic was not merely a language of communication but also a framework that united many medical traditions into a coherent scientific culture across the Islamic World (the areas extending from Iran to Türkiye). The dependence of institutions on Arabic medical texts, as well as the establishment of common curricula, promoted unification in medical knowledge. Additionally, the standardization of vocabulary in Arabic allowed for conceptual convergences in the medical sciences to occur without concern for borders and time, demonstrating the lasting legacy of Arabic as the lingua franca of science in medieval Islamic medicine.

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The Sasanian Role in Reconstructing and Transmitting Medical Knowledge from India and Greece to the Islamic World, with Special Emphasis on Military Medicine in Sasanian Iran

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Summary

Sasanian Iran (224–651 CE) transformed Ctesiphon into a civilizational hub for reconstructing and transmitting medical knowledge from Greek, Anatolia and local traditions, laying the groundwork for Islamic medical science. This study identifies Ctesiphon as the epicenter of a pre-Islamic medical renaissance, where a dynamic intellectual ecosystem integrated theory and practice, fostering a flexible, localized therapeutic culture. Sasanian military medicine further pioneered a decentralized, adaptive model of biological crisis management evident in mobile care units whose legacy influenced Abbasid bimaristans and modern emergency systems. Comparative analysis with Byzantium's rigid model highlights the Sasanians' innovative role in medical history. Despite gaps due to the scarcity of surviving texts and limited archaeological attention to Ctesiphon, this research underscores the need to reevaluate the Sasanian contribution as foundational to the transmission and evolution of medical knowledge. Targeted excavations and interdisciplinary studies are recommended to further uncover this hidden legacy.

Keywords: Sasanian Empire; Ctesiphon; History of Medicine; Military Medicine; Knowledge Transfer

Introduction

Sasanian Iran (224–651 CE) was not merely a political and military power but a civilizational force that reshaped the trajectory of medical knowledge in Late Antiquity. Ctesiphon, the imperial capital, functioned as a "civilizational laboratory" where Greek, Anatolia and indigenous Persian medical traditions converged, were critically assessed, and recombined into a hybrid, dynamic paradigm (Morony, 2015). This process laid the intellectual and institutional foundations for the medical renaissance of the Islamic world. While scholarship often centers on Greek or Byzantine contributions, the Sasanian role as an active reconstructed rather than a passive transmitter of medical knowledge remains underappreciated

(Anooshahr, 2020). This study repositions the Sasanians as pioneers in medical epistemology and practice, with a special focus on their innovations in military medicine. Furthermore, by tracing knowledge transmission routes into Anatolia, this work engages with the theme of intertwined Iranian and Anatolian histories, highlighting a shared legacy that prefigured later Islamic syntheses.

Materials and Methods

This study applies a historical-analytical approach to published sources. Primary testimony is drawn indirectly from Late Antique chronicles reporting events within or adjacent to Sasanian domains (e.g., Theophanes Confessor for seventh-century upheavals), supplemented by archaeological and topographical syntheses where available. Secondary works were selected on the basis of scholarly standing, relevance to Sasanian and Byzantine institutional history, and explicit discussion of medical or proto-medical practice (Elgood, 2010; Miller, 1985; Morony, 2015; Pormann and Savage-Smith, 2007). Comparative analysis isolates structural differences between Sasanian adaptiveness and Byzantine institutional conservatism, while thematic coding highlights translation practices, clinical organization, and crisis management.

Results

Institutionally, Gondishapur and Ctesiphon fostered translation from Greek and Indian corpora and their reframing within Iranian intellectual settings (Elgood, 2010; Pormann and Savage-Smith, 2007). The outcome was a pragmatic, prevention-attentive culture that integrated ritual conceptions of purity with bedside utility. In military contexts, evidence points to organized, mobile care proximate to campaigning forces—an approach that prioritized rapid stabilization and return-to-duty over centralized hospitalization. Conceptually, this resembles an early model of decentralized crisis response rather than static custodial care.Sasanian kings, particularly Kavad I, played a pivotal role in transforming Khuzestan into a targeted medical hub by fostering institutions like Gondishapur, which integrated and advanced medical knowledge from diverse traditions (Mahlooji et al., 2024).

Channels of transmission into early Abbasid practice included translators trained on Pahlavi intermediaries and clinicians associated with Gondishapur, whose curricular and ward-based arrangements have been cited as antecedents to later bimaristan forms (Pormann and Savage-Smith, 2007). While Byzantine institutions cultivated hospital traditions, their logic emphasized centralized care and doctrinal preservation (Miller, 1985), contrasting with Sasanian flexibility. Crucially, these networks extended into Anatolia, where Persian medical ideas interfaced with Byzantine and later Seljuk and Ottoman practices, forming a continuum of care that spanned centuries (Theophanes Confessor, 1997).

Discussion and Conclusion

The Sasanian contribution to pre-Islamic medicine is best understood as reconstructive: translation paired with contextual re-articulation and operationalization. This yielded a localized therapeutic rationality attuned to prevention and practice, and, in military settings, a notably mobile, decentralized care model. In contrast with Byzantine centralization, Sasanian adaptiveness appears as a strategic response to distance, logistics, and campaigning realities (Miller, 1985; Elgood, 2010).

Transmission into the Islamic world occurred through translators and clinicians connected to Gondisha-

pur and Ctesiphon, shaping Abbasid medical education and institutional design (Pormann and Savage-Smith, 2007). The plague of 627–628 CE cautions that this system, for all its operational strengths, lacked epidemiological tools later developed in Islamic and post-medieval contexts (Theophanes Confessor, 1997; Morony, 2015).

Overall, the Sasanians emerge not as passive custodians but as agents who re-built medical knowledge for their environment and, in doing so, laid foundations for Islamic medicine. Further archaeological work at Ctesiphon and re-examination of Late Antique testimonies can refine this picture and recover a still-underappreciated chapter in the global history of medicine.

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Physicians Without Borders: Iranian Medical Practitioners at the Ottoman Court and Their Intellectual Influence

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Summary

This research investigates the role and influence of Iranian physicians at the Ottoman court, particularly with regard to Ottoman medical thought and practice. The study sheds light on Iranian physicians who had major positions between the 14th and 16th centuries, diagnosed cases, and treated patients, thereby shaping the emerging scientific outlook through the application of medical theories, texts, and treatments. It is seen that the Ottomans opted to hire foreign scholars, especially Iranians, to bolster their scientific system. Indeed, while the roles of Jewish, Christian, and European doctors are very well accounted for, comparatively very little attention has been paid to Iranian practitioners. The study emphasizes the importance of transregional networks of knowledge on the shaping of early modern empires.

Keywords: Iranian Physicians; Ottoman Empire; Medical History; Transregional Knowledge; Intellectual Exchange.

Introduction

The rise of the Ottoman Empire as a major political and cultural force was heavily dependent on this astute appropriation of intellectual capital from the Islamic world. The other facet of this policy has been the deliberate recruitment of scholars and physicians from the great houses of learning, especially from Iran which possessed a much richer tradition of medicine, philosophy, and natural sciences. After the establishment of the first Ottoman madrasa, in 1331 at Iznik, the empire constantly sought to strengthen its educational and medical systems by drawing from foreign experiences (Bicer, 2023, pp. 1–14).

This strategy of intellectual integration was then furthered in later centuries when the Ottoman court began to act as a scholarly hub. The gradual arrival of scholars from Persia, Egypt, Iraq, and India by the middle of the 14th century at least reflected one proud-assertion imperial approach, which treated

knowledge as a matter of governance and prestige (Dole, 1944, p. 330). Among these transnational actors, Iranian medical practitioners exerted perhaps the most considerable influence, extending even into clinical practice; their role in the transmission of medical theory; the translation of Persian medical texts; their adaptation for new uses; and the training of successive generations of court physicians.

This article investigates the role and influence of Iranian medical practitioners within the Ottoman court, placing their activities within the broader processes of Imperial knowledge production. By investigating individual careers and the circulation of medical texts, the study stresses the profound impact of Iranian scientific traditions on Ottoman medicine and the importance of transregional intellectual networks in establishing early modern Islamic empires.

While some earlier studies have noted the presence of Iranian physicians in the Ottoman Empire (e.g., Khabiry et al., 2018), few have paid much attention to their intellectual contributions during the formative 14th to 16th centuries. Although useful biographical information has been established, this study concentrates specifically on the mechanisms of knowledge transfer, the process of absorbing Persian medical theories, and how these physicians influenced Ottoman medical institutions and thought on a more permanent basis. This change in focus—from the enumeration to the intellectual impact—adds another dimension to the historiography.

Materials and Methods

The present historical study is qualitative in nature and relies on documents. It interrogates the presence and importance of Iranian medical practitioners at the Ottoman court. Historical primary and secondary sources including biographical dictionaries, medical treatises, and scholarly historical literature were all systematically searched to identify Iranian physicians who had served in an official medical capacity within the Ottoman Empire. Particular focus was given to works by Ozdinc (2020) and Russell (1990), which offer exhaustive details concerning individual practitioners and the general medical situation of the time. The analysis was carried out from the perspectives of the professional roles of the individuals under investigation, their contributions, the intellectual legacies left behind, and from the angle of observing where transfer of knowledge or acceptance of those medical practices into local institutions was taking place. The data concerning the role of Iranian medical knowledge in Ottoman scientific progress were then welded together under thematic headings.

Results

This study identified a cohort of notable Iranian medical practitioners who served at the Ottoman court and contributed meaningfully to the intellectual and clinical development of Ottoman medicine. The historical record documents several prominent individuals, including Molla Hakim Kutbeddin, Hakim Lārī, Hakim Hoca Ataullah, and Molla Hakim Şukrullah Şirvanī, all of whom secured esteemed positions within the imperial medical establishment due to their advanced expertise and scholarly credentials (Ozdinc, 2020, pp. 56–61).

Among these, two physicians—Hakim Ahi Celebi and Molla Hakim Şah Mehmed Qazvinī—stand out for their particularly innovative and enduring contributions during the reigns of Sultans Mehmed II (r. 1444–1446; 1451–1481) and Bayezid II (r. 1481–1512). Ahi Celebi, in particular, authored a notable monograph on kidney and bladder stones, representing a sophisticated advancement in urological knowledge that enriched the Ottoman medical corpus (Ozdinc, 2020, pp. 56–61). Similarly, Qazvinī's

intellectual and clinical activities contributed to shaping medical discourse at the imperial court during a pivotal period of institutional and scientific growth.

The impact of these Iranian physicians extended beyond the delivery of healthcare. By participating in scholarly exchange and medical authorship, they played a central role in the integration of Persianate medical traditions into the Ottoman context. Their presence fostered cross-cultural transfer of medical knowledge and practice, including the adaptation of diagnostic frameworks, therapeutic techniques, and medical ethics rooted in the broader Islamic-Galenic tradition. This assimilation of Iranian intellectual paradigms into Ottoman medicine underscores the empire's broader strategy of leveraging transregional expertise to strengthen its scientific infrastructure.

Despite these significant contributions, the historiography of Ottoman medicine has often overlooked the distinct role of Iranian physicians. Existing literature tends to emphasize the involvement of Jewish, Christian, Greek, and European medical professionals, with comparatively limited attention given to Iranian scholars (Russell, 1990, pp. 243–267). Consequently, important dimensions of Iranian practitioners' influence—such as their methodologies, pedagogical roles, and textual contributions—remain insufficiently explored. This gap calls for further archival and textual analysis to reconstruct the nuanced pathways through which Iranian medical knowledge was transmitted, localized, and institutionalized within the Ottoman Empire.

Discussion and Conclusion

The integration of Iranian medical practitioners into the Ottoman court reflects a broader pattern of transregional intellectual exchange that characterized the early modern Islamic world. Their presence illustrates the permeability of political and cultural boundaries in the pursuit of scientific advancement. The Ottoman Empire's openness to foreign expertise, particularly from Iran, not only reinforced its medical infrastructure but also fostered a pluralistic environment in which diverse traditions of medical knowledge could coexist and evolve. This study underscores the importance of viewing medical history through a transnational lens, where knowledge flows are not confined to territorial borders but are shaped by diplomacy, scholarly mobility, and institutional patronage.

It should also be noted that during this period the political relationship between Iran and the Ottoman Empire was often strained, while Iran maintained stronger ties with India. As a result, many Iranian physicians were more frequently engaged with Indian courts, which may partly explain the relatively limited documentation of their presence and influence within the Ottoman context.

Further research is needed to more fully uncover the mechanisms through which Iranian scientific traditions were localized within Ottoman institutions and to assess their long-term impact on the development of Ottoman medical education and practice.

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A Study of Persian Medical Manuscripts in the Ottoman Empire (1512–1566 CE)

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Summary

This study presents a comprehensive overview of 9th–10th-century AH (15th–16th-century CE) Persian medical manuscripts within the historical context of the Ottoman Empire, focusing on three prominent books: Nasihatname and Javahirname of Hakim Shah Qazvini, and Zubdat al-Ilaj by Ahmad Ustadi Makki Tabasi. These books emerged during a period of significant change, particularly marked by the migration of Iranian doctors and scholars to Ottoman territories. This movement encouraged the continuation of Persia's scientific tradition in the Ottoman sociocultural context and royal court. Persian was not merely a medium for transferring medical knowledge but also a vehicle for encouraging cultural exchange and interdisciplinary research, mediating medicine and theology, and the natural sciences. These texts are integral documents in examining the evolution of Islamic medical practice, as well as disease prevention and treatment techniques dominant during those periods

Keywords: Medical manuscripts, history of medicine, Persian medicine

Introduction

Manuscripts are of invaluable significance as pillars of cultural heritage, serving as priceless assets to the preservation and transmission of knowledge, offering unparalleled visions into history, literature, religion, and cultural studies. (Sadeqzadeh, 2019) Among them are Persian and Arabic manuscripts—especially those authored by Iranian scholars—which stand as permanent witness to the Islamic tradition of intellectual enterprise. (Ebadi, M., 2010) Highly revered for its eloquence and richness, the Persian language has served as a powerful vehicle for the propagation of Iranian-Islamic culture throughout the ages (Kamaladdin, 2008). One of the turning points in this tradition was the emigration of Iranian scholars from Safavid Iran to the Ottoman Empire. (Zarrinkoub, 2022) This was a period during which Per-

sian medical manuscripts became focal carriers, making it possible for the flow of Iranian medical knowledge to Ottoman centers. The manuscripts not only show the scientific and cultural interconnection between the Ottomans and Iran but also the active exchange of ideas that made these two cultures richer. This is an ambitious foray into this breathtaking cross-cultural intellectual encounter, laying bare the profound interchange that shaped the shared heritage of these two resplendent cultures

Research Methodology

This research employs a descriptive-analytical methodology grounded in written sources to explore its subject matter. Persian-speaking physicians active between 918 and 973 AH, along with their contributions, were identified by consulting bibliographic tools and academic platforms such as Scopus and Google Scholar. Manuscripts were meticulously gathered from archival catalogs in both Iran and Turkey, while the insights derived from these materials were examined through a structured analytical framework.

Persian Medical Literature in the Ottoman Empire (918–973 AH)Medical Prose

Nasihatname and Javahirname

Author:

Hakim Shah Qazvini emerged from a lineage of physicians in Qazvin, where he acquired his foundational education (Tashakpurizade, 2000, p. 200). Pursuing advanced learning, he studied in Shiraz under esteemed intellectuals such as Mir Jalal al-Din Davani and Sadr al-Din Muhammad Dashtaki, developing expertise in both rational and traditional sciences (Mudarrisi, 1974, vol. 4, p. 454). Following a sojourn in Mecca, Qazvini was invited by Sultan Bayezid II to Istanbul, where he assumed the role of court physician (Safa, 1967, vol. 5, p. 1642). This position persisted through the reigns of Sultans Selim I and Suleiman. Notably, he dedicated the treatise "Javahirname" to Selim I, thus contributing significantly to the dissemination of Persian medical knowledge within the Ottoman intellectual and scientific milieu (Riyahi, 1982, p. 172).

Book: Nasihatname

Hakim Shah Qazvini composed Nasihatname in 929 AH (1523 CE), writing in Persian for Sultan Suleiman the Magnificent, as evidenced by references in sources such as Haji Khalifa (1958, vol. 2), Shishin, Uqkar, and Azki (p. 222), and Darajati (1965, vol. 33, p. 486). This work was crafted during a period marked by a cholera outbreak, during which Qazvini chose to remain in the city while the sultan sought refuge in the highlands (Qazvini, Nasihatname, p. 4). Enriched with Quranic verses, prophetic traditions, and the poetry of renowned Persian poets including Hafez, Ferdowsi, and Nizami (Qazvini, pp. 4–15), the treatise is structured into three distinct sections. The introduction addresses the relationship between climatic conditions and epidemics (pp. 8–13). The central segment discusses the six foundational principles of health (tadabir sitta zaruriyya) in detail (pp. 44–59), while the concluding portion delves into religious practices pertinent to health and well-being (pp. 59–68)

Javahirname

The Javahirname is an extensive manuscript centered on gems, precious stones, metals, and their medicinal applications. It begins with two introductory sections: the first highlights the importance of gemology, while the second elaborates on philosophical and natural definitions, offering a critique of earlier perspectives (pp. 1–5). The primary segment, titled "On Gems," explores 21 entries detailing the proper-

ties and therapeutic uses of various stones, including pearls, rubies, emeralds, and corals (pp. 5–165). Another section, "On Metals," delves into seven metals and their alloys, examining their distinct properties (pp. 169–189). Qazvini extensively references works like Javahirname Sultani by Mir Sadr al-Din Dashtaki and Zahar al-Afkar fi Javahir al-Hijar by Tifashi to enrich his treatise. (Modarres Tabrizi, 1995). (Qazvini et al., 2012)

Medical Poetry: Zubdat al-Ilaj

Author

Little is known about the life of Ahmad Ustadi Makki Tabasi (pen name: Rezaei).

Book

Zubdat al-Ilaj, authored by Ahmad Ustadi Makki Tabasi, was composed following his return from the sacred cities and while serving under Sultan Suleiman. The treatise commences with an introductory preface that extols God and delineates its intended objectives (p. 2). The primary section, entitled "Maqsud," systematically addresses 153 ailments, progressing from those affecting the head to conditions impacting the extremities, along with their corresponding treatments (pp. 3–50). The concluding portion reflects on the temporal and spiritual motivations for the work's compilation, concluding with a supplication for divine forgiveness. The manuscript itself was finalized between 15 Rabi' al-Awwal and 14 Jumada al-Thani in the year 942 AH (p. 51). Tabasi drew extensively from previous works, such as Ilaj wa Amraz and Jami' al-Fawa'id, composed by Yusefi Haravi, as foundational sources for his exposition. (Tabasi, 1532/939 AH)

Conclusion

The study highlights that the analyzed manuscripts are predominantly descriptive in nature. Nasihatname concentrates on the importance of disease prevention and hygiene, Javahirname explores the curative traits of gems and metals, while Zubdat al-Ilaj presents a structured catalog of diseases along with their respective treatments, adopting a clinical perspective. Together, these Persian medical texts within the Ottoman framework provide an extensive overview of the medical practices of the time and possess considerable cultural and historical significance.

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From Persian to Ottoman Turkish: The book of *Ẕakhīrah-'i Khārazmshāhī* in Suleiman's Era

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Summary

As one of the most important comprehensive medical encyclopedias in Persian, Ẕakhīrah-'i Khārazmshāhī garnered attention not only in Persian-speaking regions but also achieved global significance through translations into multiple languages, including Arabic, Hebrew, Urdu, and Turkish. Numerous copies of the Turkish translation of this work exist in libraries, yet it has not been seriously studied to date. In this research, we aim to introduce the manuscript numbered 3574 at the Nuruosmaniye Library with 244 folios, 487 pages.

Keywords: Medical Manuscript, Ẕakhīrah-'i Khvārazmshāhī, History of Medicine, Iran, Turkey, Translations, Jurjānī.

Introduction

One of the most enduring works in the history of Persian science and literature is the book "Ẕakhīrah-'i Khārazmshāhī" by Ismā'īl ibn Ḥusayn Jurjānī(a city near Khwarazm). Considered a complete medical encyclopedia, this text holds immense scientific value and played a crucial role in the expansion and enrichment of the Persian language.

Jurjānī composed this monumental work after arriving in Khwarazm in 504 AH (1110 CE), at a time when Arabic was the dominant language of scientific writing. Yet, he chose to write the "Ẕakhīrah" in Persian, creating a unique masterpiece. Alongside other works like Hidāyat al-muta'allimīn and Al-Abniyah 'an al-ḥaqāyiq al-adwīyah it is recognized as a precious treasury of medical knowledge in Persian.

Interestingly, the book's significance extends far beyond its region. Many historians of science consider

Jurjānī a pioneer in writing scientific encyclopedias—a style that became popular in Europe centuries later.

Following Rāzī's Medical works like al-Manṣūrī and Ibn Sīnā's al-Qānūn fī al-ṭibb, this work became the primary source for Persian-speaking physicians. The distinguished scholar Elgood equated its impact on Iran's scientific language to that of the Bible on English prose. This book was initially structured in nine books by Jurjānī. The global significance of Ẕakhīraẖ is evidenced by its translations into multiple languages: for example This book was also translated into Hebrew, and some sources claim that it was the first and only Persian medical work translated into Hebrew. The 17th-century French traveler Anglais de Joseph introduced this work to Europeans as "the best medical book of the Iranians" (Peyman Mateen, 1393).

Regarding the background of research on this manuscript, it should be noted that although it has been addressed in previous studies, the existing works have only focused on examining the content of specific topics within the text, comparing it with the Persian version of the book and Avicenna's Canon of Medicine. However, until now, this specific translation has not been the exclusive subject of research, and external analytical aspects, such as the motivations behind its translation and the cultural and social context of the translation era, have received little attention.

Materials and Methods

Despite numerous translations, Turkish manuscripts of Ẕakhīrah-'i Khārazmshāhī in libraries-such as MS 3574 at Istanbul's Nuruosmaniye Library-, with different translators, remain separately understudied. This research focuses on introducing one of these translations and comparing it with one of the oldest complete manuscripts (603 AH/1206 CE) in Ali Akbar Sa'idi Sirjani's published facsimile edition. Because we have not yet had a critical correction of the Persian text, there is a need to compare the accuracy of the translation and its features with a reliable and authoritative version.

Results

The Turkish translation of MS 3574 (Nuruosmaniye Library) is a fluent and accessible text. The Turkish preface, authored by the translator Abu'l-Fazl Muhammad ibn Idris Daftari or Efendi (Ethé 1889–1930, p 1576), provides invaluable insights:

It details the motivations for translation and provides context for the project.

He points out that this decision was made in a council attended by Sultan Suleiman Khan (Suleiman I) (r. 1520–1566 CE) (Ágoston and Masters, 2009, pp 541-547).

It highlights Ẕakhīrah's esteemed status among scholars, literati, and physicians, noting its use by medical practitioners and students.

The translator repeatedly emphasizes the work's comprehensiveness and cites accessing its valuable content as the primary motivation.

He asserts the translation was rendered directly from the Persian original, vouching for the accuracy of his source manuscript—a claim requiring further verification.

While the initial catalog lists nine books, this manuscript contains only the first five.

Discussion

The use of Ottoman Turkish as a literary language (especially in prose) was not common until the 16th century; this was mainly due to the lack of a standard grammar and the cultural dominance of Persian, which in the 15th century effectively served as the literary language of the Ottoman court. Although Bayezid II's simultaneous commission of two historical works—Bidlisi (the father of daftari)'s Persian Hasht Bihisht (Eight Paradises) and Kemalpaşazade's Ottoman Tevarih-i Al-i Osman (Annals of the House of Osman)—enhanced the status of the Turkish language, it was Suleiman the Magnificent (r. 1520–1566) who definitively established Ottoman Turkish as the principal literary language of the empire. His patronage led to a cultural flourishing, especially in historical writings, which also reflected the decline of Persian cultural influence.

Conclusion

The Turkish translation of Ẕakhīrah-'i Khārazmshāhī in the era of Suleiman the Magnificent, by attempting to remain faithful to the original Persian text, played a key role in the transmission of medical knowledge to the Turkic-speaking world. This manuscript, while reflecting the Ottoman cultural policies to promote the Turkish language, is considered a valuable document for the study of scientific-cultural interactions between Iran and the Ottoman Empire, which have not received the attention they deserve so far. The incompleteness of this text (only the first five books have been preserved) also creates research limitations.

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Cleansing the Gut-Liver Axis: A Traditional Persian Medicine Approach to Preventing Metabolic Disease

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Summary

The global crisis of metabolic diseases necessitates effective preventive strategies. This article presents Traditional Persian Medicine (TPM) as a structured historical framework for preventive care, focusing on the gut-liver axis. Through a conceptual analysis of foundational principles such as Mizāj (temperament), this paper explores Paksazi (body cleansing) as a strategy to address Fozulat (waste materials). TPM posits that the accumulation of Fozulat is a primary cause of chronic disease. Paksazi is presented not as an acute cure, but as a preventive strategy to rebalance the system by cleansing the gut-liver axis and supporting the body's innate healing intelligence. This ancient system of thought articulates a structured and personalized approach for the long-term management of metabolic diseases, thereby providing a significant conceptual antecedent to modern functional medicine.

Keywords: Traditional Persian Medicine, metabolic disease, prevention, Paksazi (body cleansing), gut-liver axis.

Introduction

The global crisis of metabolic diseases, such as non-alcoholic fatty liver disease (NAFLD) and type 2 diabetes, has made it clear that a focus solely on "disease treatment" is no longer sufficient (World Health Organization, 2022), highlighting the urgent need for approaches centered on "prevention" and "addressing root causes." In modern medicine, functional medicine is a prominent example of this paradigm shift (Jones, Hofmann and Quinn, 2021). Concurrently, there is a growing academic interest in historical medical systems that inherently possessed such a holistic and preventive viewpoint. Traditional Persian Medicine (TPM) stands out as an ancient system with a highly structured and logical framework for health preservation, known as Hifz al-Sihha (Naseri, 2023). This article argues that the concept of

Paksazi (body cleansing) in TPM, with its specific focus on the gut-liver axis, offers a coherent conceptual model and a significant historical antecedent for the principles of modern functional medicine.

Methods

This study employs a conceptual analysis and historical review to articulate the preventive framework of TPM. The methodology involves a three-stage process. First, foundational principles regarding health preservation, such as Mizāj (temperament), Fozulat (waste materials), and Paksazi (body cleansing), were extracted from classical sources, primarily Avicenna's Canon of Medicine (Zargaran and Naghizadeh, 2024). Second, a review of contemporary scientific literature was conducted to identify parallel concepts in modern preventive medicine, specifically the principles of functional medicine, and the role of the gut-liver axis. Finally, a synthesis was performed to build a conceptual bridge, comparing and contextualizing the ancient TPM framework with its modern counterparts.

Results

The TPM framework for preventing chronic disease is based on four foundational principles:

- Mizāj (temperament) as the Basis for Personalization: The cornerstone of TPM is the concept of Mizāj; a unique and inherent constitution that defines an individual’s physiological and psychological tendencies. All preventive interventions in TPM are tailored to the individual's specific Mizāj, making it a deeply personalized system of medicine (Zargaran and Naghizadeh, 2024).
- The Primacy of the Gut-Liver Axis: TPM identifies the primary digestive and metabolic organs-the stomach, intestines, and liver-as the foundational core from which health and disease originate. The proper functioning of this axis is considered paramount for systemic well-being, a concept that closely mirrors the modern understanding of the gut-liver axis (Wiest et al., 2017).
- Fozulat (waste materials) as the Root of Disease: TPM posits that many chronic diseases, particularly those of a metabolic nature, arise from the accumulation of Fozulat. To understand this concept, a distinction must be made. The first category is the normal refuse resulting from a proper digestion; this is a natural and harmless state. Fozulat, in contrast, are the direct result of Su-e-Hazm (maldigestion) and weakness in the digestive powers. This incomplete process generates materials of a corrupted quality, described in classical texts as "raw and uncooked" or "burnt" humors. These substances are no longer mere waste; they become a new source for disease themselves, capable of disrupting cellular function and promoting inflammation (Naseri, 2023).
- Paksazi (body cleansing) as the foundational strategy: consequently, the primary preventive strategy in TPM is Paksazi. This approach is operationalized primarily through the sapiential and principled system of culinary medicine and the targeted use of medicinal herbs. Paksazi is not an acute intervention; rather, it is a foundational process for restoring balance. Its primary goal is to remove obstacles (accumulated fozulat) from the vital gut-liver axis, thereby supporting the body’s innate healing force and wisdom (Tabi'at) to rebuild and maintain health.

Discussion and Conclusion

The TPM framework's logic mirrors the foundational principles of modern functional medicine (Jones,

Hofmann and Quinn, 2021). Both systems utilize a personalized approach, based on Mizāj in TPM and the biochemical individuality of each person in modern medicine, and emphasize the centrality of gut-liver health in addressing the root causes of metabolic disease. The TPM strategy of Paksazi is an ancient framework for optimizing the body's natural cleansing processes, aiming to improve the internal environment, not just manage symptoms. The established role of the gut-liver axis in chronic, widespread inflammation confirms the accuracy and importance of TPM's long-standing focus on this vital health center (Wiest et al., 2017).

However, this preventive framework must be positioned within a responsible integrative model. It is intended for the management of chronic conditions and those issues where the body's normal function is impaired, but permanent structural damage has not yet occurred. A cornerstone of this approach is using modern diagnostics to ensure the absence of acute and emergency medical conditions before commencing any traditional therapeutic regimen.

In conclusion, TPM offers a structured, historically validated framework for preventive health. Its principles of personalization via Mizāj and rebalancing through cleansing the gut-liver axis provide valuable insights for managing metabolic diseases. This sapiential system merits further scientific investigation for responsible integration into contemporary wellness and lifestyle medicine strategies (World Health Organization, 2022).

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A Comparative Study of A Comparative Study of Medical Systems, Health Practices, and Institutions in the Safavid and Ottoman Empires (16th–18th CE) Medical Systems in the Safavid and the Ottoman Empires 16th–18th CE

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Summery

Medicine during the Safavid and Ottoman eras was shaped by a variety of scientific and cultural traditions. A comparative analysis of these two medical systems can reveal their shared influences, similarities, and differences. This study explores the medical practices in the Safavid and Ottoman empires from the 16th to 18th centuries, utilizing a library-based approach that gathers data from historical texts and academic research. In the Safavid era (1501–1736 CE), three primary medical approaches emerged: humoral medicine, which served as the formal educational system; Islamic medicine, which drew from the teachings of the Prophet Muhammad and Imams; and folk medicine, based on popular and experiential practices. Similarly, in the Ottoman Empire (1299–1922 CE), these three approaches were also present, although Islamic medicine relied exclusively on the traditions of the Prophet Muhammad. Several key factors contributed to significant similarities between the two medical paradigms, including exchanges among physicians, the use of Persian medical texts, the invitation of Iranian physicians to the royal court, and the sharing of religious beliefs.

Keywords: Persian Medicine, Islamic Medicine, Folk Medicine, Ottoman Empire, Safavid Empire

Introduction

In the sixteenth to eighteenth centuries, medicine in the Safavid Empire (1501–1736 CE) and the Ottoman Empire (1299–1922 CE) experienced a continuity of diverse approaches. In both civilizations, three main medical approaches existed: humoral medicine as the formal educational system, Islamic medicine based on the Prophetic traditions and (in Iran) the narratives of the Imams, and folk medicine rooted in oral traditions and popular rituals. This study adopts a comparative approach to examine the continuity, similarities, and distinctions among these approaches, highlighting the role of scientific and social ex-

changes in bringing the two medical systems closer together.

Material and Methods

This study is focused on comparing medical systems in Safavid and Ottoman empires that is covering the sixteenth to eighteenth centuries. A qualitative approach employing a library-based research method was adopted in this study. Data was gathered from Persian and English sources, including medical treatises and scholarly investigations. Sources were retrievad using keywords such as "Persian medicine," " Safavid history, ""Ottoman history, "and "Islamic medicineSearches were conducted in databases such as NoorMags, JStor, PubMed, and Elsevier. The extracted data were then used in the analysis of the subject.

Results

1- Safavid Medical Approaches:

The course of medical knowledge during the Safavid Empire largely followed the traditional path of its earlier heritage. Medical knowledge in the Safavid era was categorized into three main types: humoral medicine, Islamic medicine, and folk medicine.

Humoral medicine:

This system was based on the theory of the four humors and drew upon Galen's works, translated into Arabic in the early Islamic centuries. It was taught in medical schools, and physicians intending to practice were required to study specific Greek translations as well as earlier medical writings. This medicine was also applied in hospitals.

Islamic medicine:

This type derived its legitimacy from traditions attributed to the Prophet Muhammad and the Shi'a Imams, defined as medical treatments, prevention, and spiritual practices recommended by Prophet Muhammad to his companions. Followers believed practicing medicine without acknowledging divine causation violated God's law and Sharia.It seems in this approach, surgery was generally discouraged due to the risk of mortality and complications, and was performed only in specific cases such as circumcision or tumor removal. (Karimi, 2016, pp.80- 86).

Folk medicine

This approach focused on experiential healing methods. The knowledge was transmitted orally rather than through texts. It was rooted in popular beliefs, closely tied to the social and cultural structures, and interwoven with local customs and religious beliefs. This included practices such as healing through magic, prayers, various amulets, fumigation, and percussion, and hydrotherapy. Traces of this tradition can also be found, to some extent, in official works of physicians (Aliyan et al, 2022).

2- Ottoman Medical Approaches

In the sixteenth to eighteenth centuries, Ottoman medicine, like other traditional systems, consisted of several branches. These approaches arose and persisted for specific reasons, each with its own form of legitimacy. Rather than replacing one another, they functioned as complementary practices, so that patients might at times try two or even three methods simultaneously (Shefer-Mossensohn, 2009, pp.12–

13).

The medical approaches in the Ottoman Empire included humoral medicine, practiced in urban communities, royal palaces (Owing to their financial resources and wider access), and hospitals, and taught as the official system in medical schools. The second approach, Islamic medicine (tibb al-nabi), shared similarities with both folk and humoral medicine, deriving its principles from the sayings and traditions of the Prophet. The third, folk medicine, was rooted in Ottoman cultural traditions and transmitted orally across generations, especially widespread among the poor (Uğurlu,S, 2011). Medicine also unconsciously served as a means of social demarcation, reinforcing distinctions of status. None of the medical systems held complete dominance or were universally recognized as "superior." This context fostered a relationship of both competition and complementarity among the three approaches (Shefer-Mossensohn, 2016).

Conclusion

The examination of medical practices in Iran and the Ottoman Empire during the sixteenth to eighteenth centuries shows that despite political and cultural differences, both empires relied on three main medical approaches: humoral medicine, Islamic medicine, and folk medicine. This similarity stemmed not only from shared religious and cultural foundations but also from extensive scientific interactions, translations of Persian medical texts into Turkish, and physician migrations between the two lands. In both states, humoral medicine served as the basis of formal education and the main framework for hospital treatments. Alongside it, Islamic medicine, grounded in religious teachings, and folk medicine, based on popular experience, each held a distinct position. In Iran, Islamic medicine additionally considered the traditions of the Imams due to religious differences. This structural and intellectual continuity indicates that medicine in these realms was not an isolated phenomenon but part of a broad network of knowledge and cultural exchange in the Islamic world. Studying these approaches opens also a new perspective on the history of medicine.

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Clinical Diagnosis Methods in Persian Medicine: A Brief Comparative Review of the History of Medicine

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Summary

In Persian medicine, as one of the prominent medical systems of the ancient world, disease diagnosis relied on careful observation of symptoms and the use of the five senses. Key diagnostic methods included checking the pulse, examining urine and feces, evaluating the patient's tongue and overall appearance, palpating the body, analyzing sleep and dreams, and engaging in conversations with the patient and their surroundings. This approach, based on the concepts of temperament and the four humors, emphasized a holistic view that integrated both body and mind during the diagnostic process. These methods were not only used in contemporary civilizations such as Greece and Rome, but also exhibited greater diversity and accuracy in Persian medicine, with some techniques later being adopted by other medical schools. The significance of this legacy lies in the fact that Persian medicine's approach to clinical diagnosis extended beyond mere physical observation, taking into account the psychological, social, and lifestyle dimensions of the patient.

Keywords: Persian Medicine, History of Medicine, Clinical Diagnosis

Introduction

In great civilizations, including Iran, medicine has always held a central position and is regarded as a sacred matter in religious texts like the Avesta. In this tradition, the physician was not only responsible for treating diseases but also for preserving the health and balance of society. A distinct feature of Persian medicine is its emphasis on rationality and comprehensiveness. Consequently, beyond their clinical skills, physicians were expected to possess extensive knowledge in various sciences and were often referred to as "sages." Over time, this medical tradition evolved, particularly after the invasion of Alexander the Great, as it merged with Hippocratic and Galenic medicine. This integration led to the emergence

of prominent sages and thinkers. The core principle of this medical tradition is the maintenance of balance and equilibrium within the body's forces. Disease is viewed as a result of disruptions in this balance. One fundamental aspect of Iranian medicine is the process of diagnosis, which is divided into clinical and non-clinical. In clinical diagnosis, taking a detailed medical history, evaluating symptoms, and conducting a thorough clinical examination are essential. Physicians are required to identify the root cause of a disease by continuously assessing the patient. The significance of this approach lies in its reliance on the five senses, eliminating the need for advanced equipment. Today, clinical diagnosis remains central to prognosis, decision-making, and the overall treatment process (Gorji et al, 2017).

Materials and Methods

This study is a historical review. Primary sources, including Persian Medicine manuscripts, historical sources, and treatises on diagnosis in Persian Medicine, were reviewed. Secondary sources included articles from PubMed, Science Direct, and specialized databases on the history of Medicine. Data were synthesized to present a comprehensive approach on diagnosis in Persian Medicine.

Findings

In ancient Persia, diseases were often attributed to demonic forces, and medicine was viewed as sacred and divine. However, as time progressed into the Islamic era, Iranian medicine became more structured and began to incorporate scientific methods for diagnosing diseases. Physicians employed various techniques, including pulse examination, tongue observation, and analysis of urine and feces, alongside physical examinations and direct patient interviews (Rezaei, 2017).

Clinical Methods of Diagnosis:

1. Pulse Examination: This was the most important diagnostic tool. Physicians would detect heart conditions and other disorders by palpating the artery and assessing its rhythm and strength.
2. Sleep and Dreams: This method, particularly emphasized by Avicenna, regarded the content of dreams as an indication of an individual's temperament and the dominance of different bodily humors. It was a practice also found in ancient Greece and Rome (Movahed, 2011).
3. Urine and Feces Analysis: Observing the appearance, color, concentration, and sediment of urine (chavura) as well as the quality of bowel movements provided crucial information about the liver, kidneys, and digestive health.
4. Touching the Body: This technique involved assessing the warmth, coldness, dryness, and moisture of the patient's body or affected organs.
5. The Four Humors: The balance among bile, phlegm, and other bodily fluids was considered essential for health, and fluctuations in these humors were seen as indicators of disease.
6. Tongue Observation: Changes in the tongue's color, taste, thickness, or moisture were used as indicators of potential diseases affecting the stomach, liver, or brain.
7. Patient Interview (History): Gathering a thorough patient history was the first step in diagnosis. Medical sages emphasized that without effective communication and obtaining accurate information from the patient and those around them, a complete diagnosis was not possible (Zohalinejad, 2013).

8. Patient's Appearance: Assessing facial expressions, movement, speech patterns, and even the positioning of limbs provided important diagnostic clues.
9. Blood Analysis: Examining the quality of blood—its color, consistency, taste, and smell—was utilized to determine the type and severity of an illness.

The main feature of these methods was their reliance on the five senses and the lack of need for advanced instruments. This shows that Muslim doctors, in addition to theoretical knowledge, had very high practical skills in observation, touch, and analysis. Together, these methods created a comprehensive picture of the patient's condition and enabled the differential diagnosis of diseases.

Discussion

Clinical diagnosis methods have varied greatly across different civilizations, shaped by cultural beliefs, living conditions, and the knowledge of the human body. The scientific understanding of doctors regarding internal elements and external factors in disease development has significantly contributed to this diversity. Some civilizations developed specific innovations that were later adopted by others. For instance, in India, diagnostic methods included examining the patient's lips, facial features, and eyes; in Iran, the analysis of urine and feces was particularly important; and in China, assessing the heartbeat was a key diagnostic approach.

Despite these differences, many methods were commonly used across civilizations. For example, examining sleep and dreams, studying the four humors, communicating with the patient and those around them, and physical examinations were approaches shared by Iran, Greece, and Rome (Lakzadeh, 2019). Additionally, scientific and medicinal exchanges resulted in similarities between Persian and Chinese medicine. In Persian medicine, the variety of diagnostic methods was particularly notable. Physicians considered not only direct examinations and physical symptoms but also the patient's lifestyle, dietary habits, and psychosocial conditions. This comprehensive perspective led to a more holistic and humane approach to diagnosis and treatment in Persian Medicine.

Conclusion

By emphasizing careful observation and comprehensive analysis of symptoms, Persian medicine presented an advanced approach for its time. In addition to empirical foundations, these methods were also based on the philosophy of body balance. The influence of these traditions is seen in the history of medicine in the Islamic civilization era and even medieval Western medicine, showing that clinical diagnosis is a lasting legacy of the intellectual school of Persian medicine. Based on a comparison of civilizations, the greatest diversity in diagnostic methods is related to India and then Iran, while the least diversity belongs to China. Overall, some methods have been specific to a culture, and others are common among civilizations. Today, many of these methods, with changes and evolution, are still used in the form of complementary medicine in various countries, including Iran.

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Somatotype and human physical types in radiational Medical Texts and Knowledge

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Summery

The concept of somatotype has held importance throughout history in psychology, medicine, and physical fitness. Body appearance has been important for social, psychological, and especially disease treatment purposes. Consequently, scientists and physicians have long studied body appearance, categorizing it into distinct groups. Researchers like William Herbert Sheldon, Ernst Kretschmer, and others classified body types and explored connections between physical appearance and personality behaviors. Historical medical texts reveal that traditional medicine sages also emphasized body appearance and developed classifications. Ibn Sahl, an Iranian physician, identified five primary body types, offering detailed definitions for each. Similarly, Muhammad ibn Yahya Qureishi as an Ottoman physician documented various body types in a detailed diagram, illustrating their characteristics.

Key words: Somatotype, History of medicine, Al-Ma'e fi al-Tibb, Ottoman Empire, Shajrat al-Tibb

Introduction

Somatotype refers to the classification of human body types based on physical characteristics, particularly in terms of body composition, shape, and size (Sheldon.1954). This practice can be traced back to ancient times. In ancient times, proportionate and balanced bodies were highly regarded and approved. During the time when slaves were bought and sold, there were specialists who, based on their physical condition, selected slaves for work that suited their bodies. People with strong bodies were good choices for heavy work or fighting, while people with slender were good choices for marriage (Keykavus.2021). The classification of body shape and physique was also important for economics and clothing design, but understanding the human body and physical appearance was more important because of its connection to disease and treatment methods.

Throughout history, many people have tried to understand and study the human body with various goals

and classifications. One of these people was the American psychologist William Herbert Sheldon, who, to understand the relationship between appearance and behavior, divided the human body into three groups: Ectomorphs, very thin, slender, and bony people; Mesomorphs, muscular, fit people; and Endomorphs, obese, short people with a protruding belly. He defined characteristics for each and believed that the shape of the human body was related to their personality (Sheldon.1954). After him, the German psychiatrist Ernst Kretschmer, in 1921, provided a detailed description of human characteristics based on the physical structure of the body. Kretschmer introduced three types of body types by accurately measuring body structure and using objective methods. The first type is thin, slender, and bony people with little body fat, and he called the Asthenic type. The second type, called Athletic, describes an athlete who has a muscular and active body. The third type is obese, called Picnic, and the main indicator of this type is having a lot of fat in the body parts. He also mentioned a fourth type, called the disproportionate type, which includes people who are physically awkward and abnormal (Shamlou.1984).

History shows that traditional medicine sages have also paid attention to the structure and physique of the body to maintain health and choose the appropriate treatment method, realizing the connection between the body's appearance and diseases. Hippocrates and Galen, as the most prominent Greek physicians, divided the human body into two main groups: obese and thin. They then provided a brief explanation of the characteristics of these people by further dividing each group.

Abu Sahl Isa ibn Yahya al-Masih al-Jurjani, an Iranian physician from the city of Jurjan, divided the body structure into five main groups in his book entitled Al-Ma'e fi al-Tibb and provided a specific definition for each. In his other book entitled Al-Tibb al-Kali, he divided the appearance of the body into five groups. Although he used different words, they are the same in terms of meaning and definition. The first group, under the title of Obulah, is divided into two groups: Shahm, which is more like adipose tissue, and the other is called Lahm that is more like muscle mass. The second group is Qazave which is divided into two groups: lack of meat and lack of fat. The third group is body porosity which is caused by heat, humidity, or both. The fourth group is Takasof , which is caused by cold, constipation, or both. Finally, the fifth group is called fitness (Abu Sahl Masihi.1010).

Another physician who divided the appearance of the body into five categories was Ahmad ibn Muhammad Hayati Qureishi, a 10th-century physician who served as the chief physician of the Levant. He wrote a book called Shajrat al-Tibb in Understanding the Principles of Ancient Medicine. The structure of the book is in the form of a diagram, and the author has tried to explain all the principles of medicine branch by branch and in simple language so that medical students can easily become familiar with the basic principles of medicine and remember them (Moghaddas.2018). Qureishi presented his book to the court of Sultan Bayezid II so that his name would be known among the Ottoman courtiers. Sultan Bayezid, who was the sultan of the Ottoman Empire from 1481 to 1512, carefully read the works that were presented to him and, while supporting scientists and physicians, set a certain stipend for them, and was a grateful person by nature. In his book, Qureishi has divided the body's postures into five main groups in the form of a diagram and has provided a short definition for each. Qureishi also used similar terminology in the classification of the works of Isa Ibn Sahl (Qureishi.1568).

Methods

The present research was conducted with a descriptive analytical approach and based on the collection of research files from library studies. In this study, Islamic period resources were examined using a library-based approach. The term “Somatotype” was searched in Google Scholar and Civilica to gather

relevant literature. This method allowed for a comprehensive review of existing scholarly works related to the concept of somatotype.

Results

The concept of somatotype, classifying human body types by physical characteristics, traces back to ancient civilizations. Body type classification impacted social, economic, and health perspectives. Traditional medicine sages categorized body structures to study their relationship with disease. Interactions between Iranian and Ottoman physicians influenced Ottoman medical writings, reflected in shared methods and terminology.

Discussion

The study of somatotypes in traditional medical texts, as evidenced by the works of Abu Sahl Masihi and Ahmad ibn Muhammad Hayati Qureishi, reveals a sophisticated understanding of human physical types in Islamic medicine, paralleling modern classifications by Sheldon and Kretschmer. These historical categorizations, such as the five-group systems in “Al-Ma'e fi al-Tibb” and “Shajarat al-Tibb”, demonstrate an early recognition of the interplay between body structure, health, and disease, influencing treatment strategies. The emphasis on moderation as a distinct category underscores the holistic approach of traditional medicine, aligning with contemporary views on balanced body composition for optimal health. Further exploration of these texts could enhance our understanding of how historical medical knowledge informs modern personalized medicine.

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Introduction to the Book Alwah al-Sihha and Its Health Preservation Structure

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Summary

The book Alwah al-Sihha by Habib al-Tabib Jilani, composed in 947 AH, is a prominent source of traditional Iranian and Islamic medicine, commissioned for Sultan Bayezid of the Ottoman Empire. Focusing on the principles of health preservation, it includes an introduction, three chapters, a tablet of five essential traits, and a conclusion, addressing disease prevention, strengthening bodily faculties, and coping with toxicities. Alwah al-Sihha demonstrates the importance of transferring Iranian medical knowledge to the Ottoman realm and highlights the high regard Ottoman rulers held for medical science. This article introduces existing manuscripts, explains the book's structure, and emphasizes its scientific, cultural, and historical significance.

Keywords: Alwah al-Sihha, health preservation, Iranian medicine, Sultan Bayezid, knowledge transfer

Introduction

The Safavid period (10th–12th century AH) was a pivotal era in Iranian history, not only politically and religiously but also in the field of medicine. Despite military and territorial rivalries between Safavid Iran and the Ottoman Empire, there were extensive cultural and practical exchanges between the two states. The Safavid court supported medical schools and hospitals, creating an environment conducive to the development of medicine.(1)

At the same time, political and social changes led some scholars and physicians to migrate to Ottoman lands, either due to religious pressures or the attraction of the Ottoman court. Although these migrations temporarily weakened Iran's scientific network, they ultimately helped spread Iranian medical knowledge in the Ottoman Empire. Iranian physicians not only authored important works but also served as key intermediaries, transmitting the Iranian medical tradition to new audiences.(2)

Alwah al-Sihha by Habib al-Tabib Jilani is one such work. It reflects the Iranian medical tradition while also showing the influence of the Ottoman scientific environment. This article aims to introduce the structure, content, and significance of Alwah al-Sihha in the history of medicine during the Ottoman period, highlighting the role of Iranian migrant physicians in preserving and spreading Iran's medical heritage.

Alwah al-Sihha is a key source of traditional Islamic and Iranian medicine, composed by Habib al-Tabib Jilani in 947 AH. In the preface, the author humbly acknowledges his limitations while emphasizing the importance of understanding the principles of health preservation and hygiene. The main goal of the book is to provide practical guidance for maintaining health, preventing diseases, and restoring wellness when it is lost.

A critical point in the introduction is the attribution of the book to Sultan Bayezid of the Ottoman Empire. The author addresses the work to this sultan, highlighting the significance of medical knowledge in Ottoman governance and their interest in ensuring the health of their people.

Transfer of Iranian Medical Knowledge to the Ottoman Empire

The preface also emphasizes the transfer of Iranian medical expertise to Ottoman territories. Historically, many Iranian physicians and scholars were invited to or moved to Istanbul and other Ottoman regions to share their experience in medicine, pharmacy, and health preservation. This exchange facilitated the dissemination of Iranian medical concepts, including methods of maintaining health and treating diseases, with Alwah al-Sihha serving as a prime example of such knowledge transfer.

Manuscripts and Preservation

Manuscripts of this book are held in the libraries of University of Tehran, Dr. Meftah, and Dehkhoda. The present manuscript bears the stamp of the royal library of Sultan Mahmoud Khan, reflecting the respect Ottoman-era rulers held for medical science. These manuscripts are invaluable resources for studying Islamic medical history and hygiene practices in Iran and the Ottoman Empire.

Structure of the Book

Alwah al-Sihha is organized into an introduction, three chapters, the tablet of five essential traits, and a conclusion, each focusing on different aspects of health preservation:

1- Introduction:

The author defines medicine and health, emphasizing that the main purpose of medicine is to understand the body's condition to preserve existing health and restore lost health. Physical wellness is a state in which all bodily functions operate according to nature. The introduction also stresses understanding temperaments, natural heat and moisture, and their impact on physical and mental health.

2- Chapter One:

This chapter contains advice and anecdotes from trustworthy physicians and scholars regarding health preservation, presenting behaviors and practices that prevent diseases.

3- Chapter Two:

This chapter explains principles of health preservation based on the six essential factors (Sette Zaruriyah), including food, sleep, physical activity, air, and mental well-being, which play a key role in disease prevention.

4- Chapter Three:

Health preservation strategies are described according to the four seasons, ensuring the body adapts to environmental changes and seasonal illnesses are prevented.

5- Tablet [Five Essential Traits for Health Preservation]:

The author identifies five critical traits required for maintaining health:

- Knowledge of medical laws or obedience to the physician: The individual should understand basic medical principles or follow the doctor's instructions.
- Possessing financial means: The person must have the resources to acquire necessary remedies and therapeutic agents.
- Having free time: Sufficient time should be available to implement treatments and health routines.
- Prioritizing health in all matters: Health should take precedence over other daily affairs, without conflict with life circumstances.
- Ability to act on what is beneficial and avoid what is harmful: Self-control is necessary to consume what promotes health and avoid what is detrimental.(3)

6- Conclusion

The conclusion addresses prevention of progressive diseases, enhancement of sexual health, and management of toxicities, providing practical guidance to ensure overall wellness.

Scientific and Cultural Significance

Alwah al-Sihha is a valuable example of the transfer of Iranian medical knowledge to the Ottoman Empire. The author combines theoretical principles with practical experience to create a comprehensive system for health preservation, including temperament analysis, disease prevention, restoration of health, seasonal care, nutrition, and toxicity management.

The attribution to Sultan Bayezid and the preservation of manuscripts highlight the high regard Ottoman rulers had for medical knowledge and the recognition of Iranian scholarly contributions. This underscores the historical importance of the book in studying Islamic medicine and cross-cultural scientific exchanges between Iran and the Ottoman Empire.

Conclusion

Alwah al-Sihha is a comprehensive work on health preservation, commissioned for and addressed to Sultan Bayezid of the Ottoman Empire. Its structured composition—including the introduction, three chapters, the tablet of five essential traits, and the conclusion—provides a detailed framework for understanding principles of hygiene and wellness. The migration of Iranian physicians and the existence of preserved manuscripts in prominent libraries reflect the book's pivotal role in the history of medicine and hygiene. Alwah al-Sihha is not only a scientific reference but also a testament to the cultural and scholarly interactions between Iran and the Ottoman Empire in the field of medicine.

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A Comparative Analysis of Hospitals in the Safavid and the Ottoman Empires (16th-18th Centuries)

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Summary

This study provides a comparative analysis of hospitals (Dār al-Shifāʾ) in Safavid Iran and the Ottoman Empire (16th-18th centuries). Using a library-based method, data were drawn from historical sources, travel accounts, and academic studies. Safavid hospitals, mostly urban, followed Persian and European architectural models, were funded through waqf, and staffed by physicians, nurses, clerics, attendants, and pharmacists; surgeons were largely absent. Care was gender-segregated, and many hospitals later became mental asylums. Ottoman hospitals, by contrast, formed large complexes attached to mosques and madāris, serving mainly Muslim patients. They were supported by waqf and featured staff such as imams and body-washers, with music employed therapeutically. Both systems admitted patients with severe or terminal illnesses and were regarded as a last resort. Their shared features point to an interconnected network of medical, religious, and cultural knowledge across the Islamic world, shaping early modern healthcare institutions.

Keywords: Hospital, Safavid Empire, Ottoman Empire, Persian medicine, History of Medicine.

Introduction

Hospitals in the Islamic world reflect the convergence of medical knowledge, religion, politics, and society. In Safavid Iran (1501–1736 CE) and the Ottoman Empire (1453–1827 CE), hospitals functioned as cultural and intellectual centers in addition to providing medical care. While many studies have examined individual hospitals, comparative analyses of these two systems remain rare. This study compares their institutional structures, funding, and staffing, highlighting both shared and distinctive features.

Methods

This study compares the medical systems of the Safavid and Ottoman empires over the sixteenth to eighteenth centuries. A qualitative design employing a library-based research method was adopted. Data were gathered from Persian and English sources, including medical treatises, travelogues, scholarly works, and architectural records, and searched in databases such as Google Scholar and PubMed using keywords including “Persian medicine,” “Safavid hospitals,” “Ottoman hospitals,” and “Islamic medicine.” Extracted data were critically appraised and synthesized.

Results

1. Safavid Hospitals

1.1. Location and Accessibility. Safavid hospitals (Dār al-Shifāʾ) were predominantly located in major urban centers, thereby limiting access for large segments of the population. These institutions took two principal forms: traditional Iranian-style hospitals and European-inspired facilities, such as the Portuguese hospital on Hormuz Island (Speziale, 2012, p. 42).

1.2. Administrative Structure and Personnel. In addition to physicians and nurses, Safavid hospitals employed supervisors, cleaners, porters, cooks (ṭabbākh), pharmacists, clerics, and teachers. Notably, surgeons were not part of the official workforce. Medical treatment was based on humoral theory, and services were provided in gender-segregated settings (Speziale, 2012, p. 82, 83, 40).

1.3. Financing and Functional Transformation. Hospital funding derived from religious endowments (waqf). As their medical role declined, many institutions were repurposed as mental asylums (Dār al-Majānīn). Because patients typically turned to hospitals as a last resort, they were colloquially referred to as Dār al-Mawt (House of Death) (Speziale, 2012, p. 45).

1.4. Military Role. During wartime, mobile hospitals were established to accompany military forces, providing care during campaigns and in peacetime garrisons (Speziale, 2012, p. 50).

1.5. Notable Institutions. Prominent examples include the hospital of Tabriz, the Dār al-Shifāʾ of Mashhad, the Shaykh Ṣafī al-Dīn Ardabīlī complex, the Khāna-ye Salāmat in Yazd, and the Ḥakīm Khayrī hospital in Tehran (Floor, 2021, p. 63–72).

2. Ottoman Hospitals

Originating in the Anatolian Seljuk tradition, Ottoman hospitals underwent a gradual transition to more modern forms by the nineteenth century (Tonbuloğlu Altundağ, 2024, p. 458).

2.1. Architecture. These hospitals were designed in the style of madāris, incorporating iwans and colonnaded courtyards (Tonbuloğlu Altundağ, 2024, p. 448).

2.2. Religious Policy. Hospital personnel were typically Muslim, and services were primarily offered to Muslim patients, a fact sometimes reflected in waqf documents. Each hospital employed a muʾadhdhin, an imam, and a body-washer (ghassāl) (Tonbuloğlu Altundağ, 2024, p. 447-52; Shefer-Mossensohn, 2009, p. 126–7).

2.3. Therapeutic Culture. Music was employed as a form of healing (Shefer-Mossensohn, 2009, p. 99).

2.4. Financing. Hospitals were chiefly supported by waqf endowments and were commonly integrated into tripartite complexes with mosques and madāris (Shefer-Mossensohn, 2009, p. 151).

2.5. Notable Institutions. Examples include hospitals commissioned by Mehmed II, Suleiman I, Bayezid II, and Hürrem Sultan. They were generally regarded as a last resort, with most patients receiving treatment at home (Kayaalp, 2019, p. 102; Shefer-Mossensohn, 2009, p. 122–28).

Comparative Analysis:

Common features.

– Endowment-based financing: both systems relied primarily on charitable waqf support.

– Integrated complexes: hospitals coexisted with mosques and madāris, combining medical, spiritual, and educational functions.

– Diverse staffing: personnel included not only physicians and nurses but also teachers, students, clergy, and attendants.

– Social role: hospitals functioned less as centers for routine treatment and more as refuges for those with major illnesses.

Differences.

– Access and inclusivity: Safavid hospitals served broader segments of the urban population, whereas Ottoman institutions explicitly prioritized Muslims, as indicated by certain waqf documents.

– Military medicine: Safavid authorities developed mobile hospitals, a feature less prominent in the Ottoman context during this period.

– Sectarian policies: Ottoman hospitals more directly institutionalized religious segregation, a practice that persisted into the nineteenth century until the establishment of the Hamidiye Hospital.

Discussion

These findings accord with prior research on Islamic medical institutions and draw attention to the comparatively understudied divergences between the Safavid and Ottoman systems. The study shows how early modern medicine in the Islamic world was embedded within wider social and political contexts. Although the two systems shared institutional models and a common medical culture, differences, such as the role of religion in healthcare practices, contributed to distinctive approaches, reflecting each empire's strategy for organizing care and linking medical knowledge to society. At the same time, persistent commonalities point to an interconnected and partly unified medical culture.

Conclusion

Hospitals in the Safavid and Ottoman empires (16th-18th centuries) demonstrate that medical institutions played roles beyond treatment. In addition to providing care, they served educational, charitable, and religious functions. The findings indicate that Islamic hospitals in the early modern period pursued objectives extending beyond direct medical intervention, reflecting the social, religious, and political contexts of their time. Understanding this background is essential to explaining the evolution of healthcare systems in the Middle East.

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The Interconnected Development of Iranian and Turkish Medical Traditions through Global History Perspective

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Summary

This article explores the intertangled medical histories of Iran and Türkiye through global history lens, highlighting the transnational currents that shaped regional and worldwide medical practices. Ancient Mesopotamian and Persian cultures provided the original primitive medical knowledge in these countries, combining empirical observation with religious medicine. Byzantine Empire with a medical school at Constantinople preserved and advanced Greco-Roman medicine, and the Sassanid Empire's Gondeshapur Academy was a peak institution that merged Greco-Roman, Persian, Indian, and Syriac medicines. Iranian and Turkish intellectuals in the Islamic Golden Age synthesized diverse traditions and composed seminal works and expanded hospital facilities with emphasis on sanitation and care of patients. The flow of texts throughout Iran and Ottoman Türkiye is a prime example of their ongoing intellectual entwinement. These entwined traditions fostered rich transregional currents of knowledge, projecting Iran and Türkiye into the central positions in the global development of medical science and learning.

Keywords: History of Medicine, Cross-Cultural Comparison, Iranian Traditional Medicine

Introduction

The value of global history for medicine is that it provides a framework for locating medical knowledge and medical practices in transnational and inter-cultural contexts, in ways that avoid simply retelling histories through the lens of a particular nation-state or tradition. This more global orientation allows us to reflect on the complex entanglements and exchanges of medical knowledge that resulted in advances in many countries. It not only allows for a more complex understandings of health, disease, and medical institutions, but also contextualizes understandings of global health, provides contemporary global

health policies with a historical perspective, and includes socio-political, economic, and environmental factors in addressing global health equity issues across time and place. As such, thinking globally about the history of medicine will undeniably contribute to understanding the field of scholarship and ultimately, advancing health outcomes as a whole (Harrison, 2015, p. 639-689). Additionally, the medical heritages of Iran and Türkiye is rich with substantial interdisciplinary scholarly exchange and integration while being characterized by its emergence from Islamic and pre-Islamic medical traditions that established and developed a historic transmission of medical knowledge between the two region. The purpose of this article is to engage the shared medical history of both Iran and Türkiye in both Islamic and pre-Islamic times in terms of global history, highlighting medical traditions that mostly display transnational exchanges, cultural connections, and interrelated medical practices that have existed to inform regional and global traditions (Ghezloo et al., 2024, p. 125-132).

Material and Methods

This study employs a qualitative, historical-analytical approach to examine the medical entanglement of Iran and Türkiye from a global history perspective. The references include both primary sources (historical medical books and manuscripts) and secondary sources (research articles and systematic reviews), all of which have been meticulously validated and documented with critical attention to authenticity. The mixed-methods approach enables a satisfying, comprehensive understanding of the networks of medical knowledge and cross-cultural scientific exchanges that influenced the medical history of Iran and Türkiye.

Results

For all of human history, the medical traditions of Iran and Türkiye have been important in medical history - signalling cultural exchanges and growing body of knowledge, especially in ancient, medieval and Islamic contexts. Aujourd'hui's Iran and Türkiye were vital in the early development of medical knowledge within ancient Mesopotamian and Persian cultures. About 3000 BCE, Mesopotamian medicine synthesised practical knowledge in conjunction with religion via mystical frameworks, including cuneiform tablets that formalised diseases, remedies and that encompassed surgery with wound treatment using antiseptic plasters and bandaging. The practitioners - asû (healing priests), barû (seers), and those who performed incantation - all integrated the rational and magical within the confines of their understanding of religion (Biggs, 1969, p. 94-105, Teall, 2014, p. 2).

Later, both the Byzantine Empire centered in Constantinople and the Sassanid Empire of Persia played crucial roles in the formation and circulation of medical information. Byzantine physicians preserved and added to the Greco-Roman medical texts from Hippocrates and Galen. In Constantinople, a wealthy intellectual capital, hospitals and medical encyclopedias emerged; prominent physicians like Oribasius and Paul of Aegina authored popular texts in Europe and the Islamic world. Byzantine hospitals, often supported by the church or the state, were organized institutions providing formal medical care, which set an important precedent for medicine in Islamic civilization (Miller, 1999, p. 323-335). Meanwhile, the Sassanid Academy of Gondeshapur integrated Greek, Persian, Indian, and Syriac medical knowledge into a formal training program for physicians that also certified completion of training. The Academy functioned as a center of culture and science that influenced both medicine in Islamic civilization during the Islamic Golden Age, and medieval European medicine (Daneshfard et al., 2022, p. 4267-4272).

The Islamic Golden Age (8th-14th centuries) saw Iran and Türkiye as part of an integrated medical network that pulled together diverse medical traditions into a coherent Islamic medical structure. Scholars from Iran and Türkiye contributed exceptional texts, as well as hospital systems that highlighted hygiene and patient care, and incorporated an education system. The flow of Persian medical texts such as Hedayat al-Motaallemin fi Tebb into Ottoman Istanbul, points to the lively form of intellectual exchange that crosses borders. The Ottomans specifically began formalizing the integration of Persian and Arabic medicine into one framework of medical knowledge, through translation, adaptation, and education via medical schools and hospitals. The Ottoman standing, geographically and culturally, sustained strong cross-regional innovation and intellectual exchange in medical and related fields (Pormann and Savage-Smith, 2007, p.).

Discussion

These results highlight how the intertwined medical traditions of Iran and Türkiye were formative to global medical history. The evidence shows a continual transmission of knowledge and a cultural entanglements spanning the ancient, Mesopotamian, Byzantine, Sassanid, Islamic, and Ottoman periods. The development of medical institutions, texts, and scholarly avenues express and link a common heritage that made possible the trajectory development of medical science beyond narratives constrained by nation states. The blending of varied medicine paradigms and the creation of hospitals and education structures established important frameworks for modern medicine. This historical articulation emphasizes the value of imagining medical knowledge globally and transregionally, as the Iranian and Turkish medical observations showcase an enduring collaboration and intellectual exchange that shaped the larger history of medicine.

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Iranian and Turkish contribution to Ophthalmology in the Medieval Islamic Golden Age

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Introduction

Ophthalmology emerged as one of the most advanced branches of medieval Islamic medicine, merging theoretical inquiry with practical ingenuity. Iranian scholars spearheaded major developments from anatomical frameworks to surgical instruments while the evolving educational infrastructure in Anatolia ensured the continuity and distribution of these ideas. This study centers on literature review methodology, synthetizing primary medieval sources and modern historiography to reflect the entangled legacy of Iran and Türkiye in ophthalmic sciences.

Materials & Methods

A qualitative literature review was conducted, drawing on key medieval treatises such as Hunayn ibn Ishaq's book of the Ten Treatises of the Eye, Avicenna's Canon and Ali ibn Isa al-Kahhal's Tadhkirat al -kahhalin alongside scholarly studies on Islamic ophthalmology and institutional history. Modern sources interpreting manuscripts, surgical instruments and educational contexts were also included.

Results

Theoretical and anatomical foundations (Iranian Scholars):

Hunayn ibn Ishaq (9th century) authored the book of the Ten Treatises on the Eye, offering systematic anatomical description, notably placing the crystalline lens at the center of the eye. An influential but erroneous view that persisted until the 16th century.

Ibn al-Haytham (Alhazen 965-1040) revolutionized optics with his book of Optics, correctly defining the process of vision as light entering the eye and laying foundations for experimental methodology.

Avicenna (980-1037) integrated ophthalmic care into the Canon of Medicine, providing detailed anatomical description and innovative treatments for cataracts and related eye conditions.

Surgical innovation and clinical practice:

Ammar ibn Ali al-Mawsili (11th century) introduced the hollow needle (aspiration syringe) for cataract extraction, offering suction rather than couching techniques and emphasized the surgeon's steadiness and experience.

Ali ibn Isa al- kahhal (940- 1010) complied the authoritative Tadhkirat al- kahhalin, richly detailing ocular diseases, treatments and instruments while describing conditions like Vogt- Koyanagi-Harada syndrome and epiphora.

Khalifah ibn Abi al Mahasin (Al Kafi fi al Kuhl, 1256) presented the first comprehensive illustrations of ocular anatomy (including the optic chiasm and brain structures) and an organized table of ophthalmic surgical instruments.

Transmission and institutional context (Turkish Anatolian Setting):

While Turkey's contribution was less focused directly on ophthalmology, the Seljuk medical academic infrastructure, notably the Gevher Nesible Medical Complex in Kayseri (early 13 century) provided vital institutional continuity for medical learning and practice across the region. The broader wisdom translation movement and preservation of Persian texts in Anatolian and Ottoman educational settings further facilitated the spread of ophthalmic knowledge.

Discussion

The medieval Iranian corpus established the scientific and practical underpinnings of ophthalmology through anatomical, optical and surgical innovations. These contributions were embedded into textbooks and manuscripts that later circulated into Anatolia, sustained by institutions such as Seljuk hospitals. Though not directly creating new ophthalmic theories, Turkish centers maintained and transmitted these rich legacies, illustrating the entangled collaborative nature of medical progress across these regions.

Key words: Medical history, Iran, Türkiye, Ophthalmology

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Anesthesia in Ancient Iran: A Historical and Comparative Perspective

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Summary

Anesthesia, the temporary induction of unconsciousness to relieve pain or allow surgery, has deep roots in ancient civilizations. In Iran, its practice went beyond medicine, touching culture, literature, and religion. Substances such as cannabis, opium, and henbane were commonly used, often combined with wine. Literary works, especially Ferdowsi's Shahnameh, describe sedation in important events, like Rostam's birth and the story of Bijan and Manizheh, showing cultural awareness of anesthetic techniques. Religious texts, including the Arda Viraf Nama, mention the use of narcotics to induce trance states. Iranian physicians also developed methods to revive consciousness using rosewater, musk, and other aromatics. Compared with Egypt, Mesopotamia, India, China, and Greece, Iran's tradition was particularly sophisticated. Later, scholars such as Avicenna and Rhazes refined these practices, highlighting Iran's important and lasting role in the history of anesthesia.

Keywords: Anesthesia; History of Medicine; Iran; Opium; Cannabis

Introduction

The history of anesthesia is a key part of medical progress, representing human efforts to alleviate pain and perform surgery safely. Although modern anesthesia began in the nineteenth century, its origins stretch back to ancient civilizations, including Egypt, Mesopotamia, India, China, Greece, and notably Iran. Among these, Iran held a unique place due to its blend of medical knowledge, cultural integration, and spiritual insight.

For ancient Persians, anesthesia was more than a medical tool—it was also a cultural and spiritual practice. This is reflected in literature, rituals, and pharmacological texts. Ancient Iranian sources suggest that sedatives and narcotics were widely known and carefully applied. This paper examines anesthesia in

ancient Iran by analyzing literary, medical, and religious texts, and compares these practices with those of other contemporary civilizations. The goal is to show both the similarities and unique aspects of the Iranian approach.

Materials and Methods

This study uses a multidisciplinary approach combining textual analysis, historical investigation, and comparative study. The sources include:

1. Medical Texts: Classic Persian works, especially Avicenna's Canon of Medicine, detailing preparations and methods for inducing and reversing unconsciousness.

2. Literary Sources: Ferdowsi's Shahnameh and other poetry that describe sedation or narcotic use, offering insight into cultural knowledge and attitudes toward anesthesia.

3. Religious Texts: The Arda Viraf Nama, documenting the use of narcotics for trance and visionary experiences.

4. Comparative Data: Records from Egypt, Mesopotamia, India, China, Greece, and Rome to contextualize Iranian practices in a global framework.

The methodology combined careful reading of texts with historical and cultural analysis, ensuring both medical and cultural dimensions of anesthesia were represented accurately.

Results

Medicinal Substances:

Cannabis (Bang): Used as a sedative and pain reliever, often mixed with wine to enhance effects.

Opium: Widely recognized for pain relief, commonly used in surgical and other medical contexts.

Henbane: Containing powerful alkaloids, carefully prepared to induce unconsciousness.

Wine: Served as a vehicle for administering narcotics.

Stimulants for Recovery: Rosewater, musk, sandalwood, and other aromatics were applied to awaken patients, showing understanding of both sedation and revival.

Literary Evidence:

Ferdowsi's Shahnameh provides clear examples of anesthesia. Rudabeh is sedated during the birth of Rostam, illustrating awareness of pain management. In the story of Bijan and Manizheh, Bijan is given narcotic wine to incapacitate him, and later revived with aromatics, demonstrating both sedation and methods for regaining consciousness. Folk tales similarly mention narcotics used in wine to weaken enemies or manage critical situations.

Religious Contexts:

The Arda Viraf Nama describes Viraf consuming wine mixed with cannabis to enter a trance for visionary journeys. This reflects a spiritual use of anesthetic substances beyond purely medical purposes.

Comparative Perspective:

Compared to other civilizations, Iranian practices were distinctive. Egyptians used opium and mandrake, Indians relied on alcohol-based sedatives, Chinese physicians developed herbal mixtures like ma fei san, and Greeks often combined narcotics with wine. Iran, however, integrated medical practice with cultural and literary awareness, creating a unique synthesis of technique and context.

Discussion and Conclusion

Anesthesia in ancient Iran was deeply integrated into medical practice, literature, and ritual, not a marginal technique. Persians mastered both inducing and reversing unconsciousness, showing advanced pharmacological knowledge. Unlike other civilizations, Iran emphasized both practical application and the cultural significance of sedation.

Later physicians like Rhazes and Avicenna refined these methods, bridging ancient practices with early modern anesthesiology and influencing Islamic and European medicine. Examining these traditions today highlights Iran's significant and enduring role in the history of anesthesia, demonstrating a sophisticated understanding of physiology and the cultural embedding of medical knowledge.

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Examining the Historical and Medical Context of Castration in Pre-Modern Iran and Türkiye

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Summary

During the Safavid, Qajar, and Ottoman Empires, castration—a perilous surgical procedure—was performed by physicians. In lands that now make up present-day Iran and Turkey, various castration techniques were employed, often to create eunuchs for specific roles within royal courts or households. These methods included crushing, twisting, partial removal of the testicles, and complete removal of both testicles and the penis. While crushing and twisting were more commonly employed on animals, the practice of partial or complete removal of genitalia was more frequent among humans. In cases of partial removal, the penis was left intact, preserving the individual's ability to urinate comfortably. Conversely, complete removal necessitated attaching a wooden or metal pipe to enable urination for the affected person. Examining the methods and objectives of this practice can illuminate various aspects of medicine in this era, especially in the field of surgery.

Keywords: Persian Medicine, Castration, Eunuchs.

Introduction

Castration of men and boys has been practiced since ancient times in various civilizations for a range of reasons, including religious purposes, punishment, court administration, and slavery. In lands under the Ottoman monarchy and the Safavid and Qajar governments, this practice was primarily carried out for court administration purposes. Due to Islamic prohibitions on castration, slaves were often brought from Africa, and they were likely Copts, Sudanese, or Egyptian Jews who were castrated to serve in the Iranian and Ottoman courts. While there were also instances of people being castrated for their crimes during this period, the main purpose was for court service. During the Ottoman Empire, black slaves, usually bought from Nubia as young boys, were castrated and served in the court (Junne, 2016). In Safavid Iran,

there were two types of eunuchs: white and black. White eunuchs were mostly Georgians and Europeans captured in wars and were employed in court affairs primarily because of their attractive appearance, but they were not permitted to have direct contact with the ladies of the court. On the other hand, black eunuchs were bought from Africa and were subjected to complete castration (removal of both genitalia and testicles). These eunuchs served the ladies of the court and occasionally attained high political positions in the courts of Iran and the Ottoman Empire (Sanagustin, 1986).

Materials and Methods

In this study, by utilizing relevant keywords and leveraging available resources in the Google Scholar search engine and databases such as PubMed, Scopus, and Embase, classical medical texts and secondary sources were collected and analyzed.

Results

According to the documents left from the Ottoman era, the rulers of Egypt were responsible for buying slaves from the African region and castrating them and sending them to the center of the Ottoman government, one of these documents is the letter of the Ottoman Sultan to the ruler of Egypt to send 40 castrated people to the capital in 1722 AD, because in this year a large number of eunuchs of the court were killed due to the plague. Normally, male castration usually occurred between the ages of 6 and 9. The method of operation was that after tying the child and restraining him in a chair, a rope was tied around the penis and scrotum and the genitals were completely cut off with a razor. The bleeding was stopped with boiling oil and wax or hot sand, followed by acacia bark extract. The mortality rate reached one-third of the patients. After castration, a lead rod was placed in the urethra to prevent narrowing of the urethra (Ürkündağ, 2023).

In his book titled Human Customs, published in London in 1049, John Bulmer discusses the eunuchs of the Safavid period: "In Iran, boys are made into eunuchs so that they can later serve in the courts of princes, and indeed they had become quite skilled at doing this. After the procedure, these eunuchs are forced to use a reed for urination, which they wear on their hats as a decoration and a sign of their identity." It is interesting to note that Shah Abbas the Great was accustomed to performing surgical procedures for amusement and often engaged in making eunuchs and castrating the children of his servants. It has been written that he became skilled in this practice, and the number of individuals who died under his hand was relatively low (Sanagustin, 1986).

Hakim Muhammad explains exactly how a boy is eunuch in his book and says that the surgeon should take the limbs that need to be amputated in his left hand and then cut them off with a knife in his right hand and remove them from the body with one blow, and in this work the speed of the operation is of utmost importance. Immediately after the amputation of the limbs, the surgeon's assistant would pour hot ashes on it and put an old knife on it and press it so that not too much blood would flow from Ghulam, Hakim Mohammad says that he himself kept the children who operated in this way in the bathroom for 24 hours after the blood stopped, and then he treated the wound like any other wound In the Qajar era, as in the Safavid era, the practice of eunuchs continued with similar methods and goals, of course, in the Qajar period, due to the contract of 1243 AH with the Russians, the sale and purchase of Caucasian men and women was prohibited, and most of the eunuchs in this Sahani period were from the Zangi, Abyssinian, and Nubian ethnicities (O'Connor et al., 2024, Zargari Nejad and Alipour, 2009).

Conclusion

Castration in Iran and the lands under the Ottoman Empire has some similarities in methods and goals, which requires a deeper study to better discover the techniques performed, the drugs used, and the success rate of this operation

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The Anaesthetic and Analgesic Concepts of Abu Bakr al- Rhazes: A Comprehensive Review

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Summary

In Persian medicine, the use of anesthetic drugs was considered as an important method in relieving pain and facilitating surgical and medical treatments. Abu Bakr Muhammad Ibn Zakariya Al- Rhazes, one of the best-known scientists of ancient Persia have carefully examined the properties of anesthetic and analgesic drugs. These drugs were usually derived from plant and mineral compounds that had the ability to make anesthetic, sedative, and pain-relieving effects.

In the present study, we reviewed the traditional literature from 10th century and also conventional scientific studies by searching the electronic data banks including Medline, Pub Med and Scopus.

Rhazes described the different compounds of anesthetic and analgesic drugs, their mechanism in the human body, and clinical applications in the treatment of acute and chronic pains, as well as facilitating surgeries. Recent studies also confirmed most of these characteristics. Rhazes has also addressed the side effects and recommended administration routes. He emphasized the importance of physician supervision in the use of anesthetic drugs.

Rhazes's findings about anesthetic drugs indicate a scientific and innovative perspective that he had in improving surgical methods and pain relief. The information of traditional medicine has valuable data that lead to finding new compounds in medical science.

Keywords: Rhazes; Persian Medicine; Al Hawi; anesthetics; sedative; analgesic

Introduction

Pain is a common experience of mankind and the pursuit of pain relief has always been a major challenge in the history of medicine. Pain theories and the management of pain have been modified through-

out human history [1]. Historically, the dread of surgical pain represented one of the most significant barriers to medical progress. The historical development of anesthesia represents a pivotal advancement in medical practice. Thus, pain relief is considered one of the greatest achievements of medicine [2]. This study examines the pioneering work of the 10th century Persian scholar Abu Bakr Muhammad Ibn Zakariya Al- Rhazes, who documented the properties, mechanisms, and clinical applications of anesthetic and analgesic compounds derived from plant and mineral sources. By reviewing both traditional Persian medical literature and contemporary scientific databases, this research highlights Rhazes's methods and evaluates his contributions to the field of pain management and surgery, underscoring the potential of historical texts to inform modern medical science.

Abu Bakr Muhammad Ibn Zakariya Al-Rhazes (Rhazes)

Rhazes is one of the greatest Persian Physician, Philosopher, scientists, alchemist, and encylopedist, has significant contributions to medical sciences. He was born in Rayy, a city near present-day Tehran, Iran, in the year 865 AD (251 Hegira). He was early interested in music. He then started studying alchemy and philosophy [3].

His ingenious innovations in medical sciences, from differential diagnosis of measles and smallpox to discovery of Ethanol and pioneering for medicinal chemistry and pharmacy, have held his name in high esteem as an unforgettable icon in medical history. Al-Rhazes was quite generous and charitable for his patients, treating them in a quite humane manner [4].

He wrote more than 224 books on various subjects. His most important work is the medical encyclopedia known as Al-Hawi fi al-Tibb, known in Europe as Liber Continens. Kitab Al Mansuri Fi al-Tibb (Liber Medicinalis ad Almansorem) is a concise handbook of medical science that was wrote for the ruler of Al Rayy Abu Salih Al-Mansur Ibn Ishaq, the ruler of Al Rayy around the year 903 [3,4].

The Anesthetic Sponge: A Historical Method for Inhalation Anesthesia

Kitab Al Mansuri Fi al-Tibb Contains sections on surgical procedures and pain management, including the use of soporific sponges soaked in narcotic solutions. This method, described in the book "Canon," attributed to the prominent Iranian physician and scientist Avicenna, involved soaking a piece of sponge in Cannabis extract and desiccating it under the sun light. Then, before any procedure requiring general anesthesia, the sponge was moistened in water and inserted into the patient's nose. The extract would be absorbed via nasal epithelium directly to the brain elicits general anesthesia. Rhazes made significant contributions to medicine, including early discussions on anesthesia and pain management. He applied cotton for medical purposes [5, 6]. Then, Al-Zahrawi (Albucasis 936–1013) used a sponge soaked in aromatic and hypnotic substances including hashish, opium, c-hyoscine, and zo'an (Arabic for wheat infusion) and placed on the patient's lips and nostrils [7].

Medicinal Plants in Anesthesia and Analgesia: Cannabis, (hemp, banj)

Cannabis, commonly referred to by names such as banj in historical Persian and Arabic texts, is a plant genus primarily comprising the species Cannabis sativa L. and Cannabis indica L. (family Cannabaceae). It was one of the first plants to be used by man for fiber, food, medicine, and in social and religious rituals. It is an annual, dioecious flowering plant, easily identified by its characteristic serrated leaves

and dense covering of glandular trichomes. These trichomes are the primary site for the biosynthesis of a rich array of bioactive compounds, including phytocannabinoids, terpenes, and flavonoids. The most prominent phytocannabinoid tetrahydrocannabinol (THC), cannabidiol (CBD), cannabinol (CBN), and cannabigerol (CBG) are the primary drivers of the plant's therapeutic and psychoactive effects [8].

The historical use of cannabis for pain relief spans millennia and is well documented within ancient medicinal systems. It was employed in Traditional Chinese Medicine, Ayurveda, and across the Middle East to alleviate pain and inflammation, induce sedation, and facilitate surgical procedures. This traditional knowledge was adopted by Western medicine in the 19th century, where cannabis tinctures were extensively explored and prescribed for conditions such as migraines, neuralgia, and rheumatic pains. However, its widespread medical use declined in the early 20th century due to political and social prohibition. The late 20th and early 21st centuries have witnessed a dramatic resurgence in interest, propelled by the medical cannabis legalization movement and a growing body of scientific research seeking to validate its traditional applications.

Recent Studies on Cannabis's Analgesic & Anesthetic Properties

Modern investigations into cannabis's analgesic and anesthetic properties have focused on elucidating its sophisticated mechanisms of action, primarily through interaction with the body's endogenous endocannabinoid system (ECS). The psychoactive compound THC is a partial agonist of the CB1 receptors, densely located in the central nervous system, and CB2 receptors, found predominantly on peripheral immune cells. Activation of these receptors modulates the release of neurotransmitters and cytokines, leading to a reduction in pain perception and inflammation. In contrast, CBD exerts its analgesic effects through a more complex, multi target mechanism. It has a low affinity for canonical cannabinoid receptors but acts as an indirect modulator of the ECS, an agonist of the serotonin 5 HT1A receptor (implicated in nociception and mood), and an agonist of the TRPV1 vanilloid receptor (a key mediator of inflammatory and neuropathic pain). This synergistic interaction between multiple cannabis compounds, known as the "entourage effect," is believed to enhance its overall therapeutic potential for pain management [9, 10].

The recent discoveries of the medicinal properties of cannabis and the cannabinoids in addition to their potential applications in the treatment of a number of serious illnesses, such as glaucoma, depression, neuralgia, multiple sclerosis, Alzheimer's, and alleviation of symptoms of HIV/AIDS and cancer, have given momentum to the quest for further understanding the chemistry, biology, and medicinal properties of this plant [8].

Medicinal Plants in Anesthesia and Analgesia: Opium (poppy, afyūn)

Opium (known as afyūn in historical Arabic and Persian medical texts) is derived from the opium poppy, Papaver somniferum. Although native to the Mediterranean region, this annual herbrecognizable by its striking white, pink, red, or purple flowers—is now cultivated globally. Its primary therapeutic value lies in the milky latex exuded from the scored, unripe seed pods, which is dried to form raw opium. This complex substance contains a powerful array of benzylisoquinoline alkaloids, each with distinct pharmacological actions. The most significant of these are morphine, a potent primary analgesic; codeine, a milder painkiller and effective antitussive; thebaine, which is not analgesic itself but is a crucial precursor for synthesizing opioids such as oxycodone and naloxone; and papaverine, a vasodilator and smooth

muscle relaxant [11].

Recent Studies on Opium's Analgesic & Anesthetic Properties

Since ancient times, opium poppy (Papaver somniferum L.) is known for its medicinal properties, related to its secondary metabolite content. Its most important secondary metabolites, called benzylisoquinoline alkaloids (BIAs), are still essential in pharmaceutical field. Few of them, like morphine, have specific clinical application but also effects on CNS. Not all poppy cultivars are able to biosynthesize morphine in high amount, making this plant useful for other purposes like food uses. For this reason it is crucial to deeply understand the origin of poppy, its possible use and have a deep knowledge of the BIA biosynthesis. These aspects are crucial for the final use of P. somniferum [11]. The mechanism of action for its primary analgesic components, namely morphine and its analogues, is fundamentally different from that of cannabis. Rather than acting on the endocannabinoid system, these compounds are potent agonists of the body's endogenous mu opioid receptors (MORs) primarily within the central nervous system. Activation of these receptors alters the perception and emotional response to pain by inhibiting neurotransmitter release and hyperpolarizing neurons. Despite the well documented risks of tolerance, dependence, and respiratory depression associated with its use, the opium poppy remains an irreplaceable cornerstone of modern pain management, particularly for acute and severe pain. Consequently, contemporary research is intensely focused on developing safer alternatives, such as biased opioid agonists that selectively target pain pathways with reduced side effects, alongside advances in targeted drug delivery systems and the application of synthetic biology to engineer novel analgesics [12].

Medicinal Plants in Anesthesia and Analgesia: Mandrake and belladonna

European mandrake (Mandragora officinarum L. and M. autumnalis Bertol.) roots and rhizomes, which are a source of tropane alkaloids, have been used medicinally for centuries [13]. European mandrake is a legendary plant with a long history of use in herbal and Persian medicine due to its potent therapeutic properties. Its effects are derived from tropane alkaloids such as scopolamine and hyoscyamine found mainly in the root, which act as narcotics, sedatives, and psychedelics.

However, these compounds also cause significant toxicity, leading to anticholinergic effects like dry mouth, drowsiness, visual disturbances, tachycardia, hallucinations, urinary retention, and in severe cases, respiratory failure or death. Its use requires extreme caution and medical understanding due to these risks [14].

Atropa belladonna, commonly known as deadly nightshade or belladonna, is a perennial plant characterized by its large, dark green leaves and distinctive, often branched roots. Despite its visually appealing appearance, the plant is a prolific source of potent tropane alkaloids, which constitute its primary active and toxic compounds. The most pharmacologically significant of these are atropine, a competitive anticholinergic agent; scopolamine (hyoscine), known for its sedative and antiemetic properties; and hyoscyamine, which exerts pronounced psychotropic and peripheral anticholinergic effects. It is critical to note that all parts of the plant are highly toxic; oral ingestion can lead to a characteristic toxidrome including delirium, hallucinations, tachycardia, hyperthermia, and potentially fatal respiratory depression [15].

The historical use of belladonna and related solanaceous plants for anesthesia and pain relief is deep rooted and spans numerous cultures. Its application was documented in ancient Egypt and Greece, where

it was utilized as a sedative and to aid in surgical procedures. This practice evolved during the medieval period in both Islamic and European medicine, where it was famously combined with opium and wine to create a "soporific sponge" inhaled by patients to induce unconsciousness. The plant's potent hallucinogenic effects, coupled with the humanoid shape of its root, also entrenched it in folklore and mythology, where it was frequently associated with magic, witchcraft, and rites of transformation, reflecting a long standing cultural understanding of its powerful and dangerous psychoactive potential [16].

Recent Studies

Within the context of anesthesiology and pain management, scopolamine holds particular importance. It is routinely employed as a preoperative sedative, most commonly via a transdermal patch, to effectively reduce postoperative nausea and vomiting (PONV). Furthermore, it serves as a valuable adjunct to anesthesia due to its ability to enhance the amnesic effects of benzodiazepines and other agents, a practice supported by modern clinical research. While its direct analgesic properties are not its primary function, the anticholinergic action of these alkaloids may indirectly modulate pain perception by affecting central nervous system pathways [16].

Conclusion

Abu Bakr Muhammad Ibn Zakariya Al-Rhazes was a pioneer in medicine. Centuries ago, he meticulously documented how natural substances derived from plants and minerals could relieve pain and induce anesthesia for surgery. Remarkably, many of his observations on pain relief, from cannabis to opium, have hold up under recent scientific scrutiny. His emphasis on physician supervision and innovative techniques facilitated surgical procedures .By bridging traditional knowledge with recent scientific methods, researchers can harness this ancient wisdom to develop safer, and more effective analgesic and anesthetic agents, honoring Persian medicine while advancing future medical innovation.

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Note

Entangled Histories: Contribution of Iran & Türkiye to the Development of Medical Sciences

Iran and Türkiye, neighbors with civilizations that date back thousands of years, have significantly contributed to the field of medical science. This event explores their deep and interconnected legacy, spanning from the pioneering insights of Persian scholars like Avicenna and Rhazes to the groundbreaking work of Ottoman physicians such as Şerafeddin Sabuncuoğlu.

By tracing centuries of scientific and cultural exchange, the event highlights how their collaboration established important medical paradigms. "Entangled Histories" invites you to explore a shared heritage that has profoundly influenced the art of healing across continents and throughout history.

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