



THE LEGACY OF ABU ALI IBN SINA AND ITS IMPACT ON MODERN MEDICAL SCIENCE AND EDUCATION IN UZBEKISTAN

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Abstract

The article analyzes the legacy of Abu Ali Ibn Sina (Avicenna) and demonstrates in which areas the modern medical science and education of Uzbekistan continue to draw from his works. The article discusses the methodological principles of the Canon of Medicine, specific examples of their application in curricula, scientific research on pharmacology and herbal medicine, institutional memory, and international cooperation. The article provides recommendations for further integration of the historical heritage into the healthcare system.

Keywords: Ibn Sina, Avicenna, Canon of Medicine, medicine, medical education, Uzbekistan, history of medicine, integrative medicine.

Introduction

The global scientific heritage includes the names of great thinkers, such as Ibn Sina, Avicenna, and others.

The relevance of the study is determined by several factors. Firstly, the current stage of development in the Republic of Uzbekistan is characterized by large-scale reforms in the fields of healthcare and education, aimed at integrating into the global scientific space, improving the quality of medical services, and training competitive specialists. In this regard, referring to the scientific legacy of Ibn Sina is not only a tribute to history, but also a source of methodological guidelines for solving modern problems. Secondly, Ibn Sina's ideas on disease prevention, a comprehensive approach to treatment, and the role of the environment and lifestyle in maintaining health are in line with modern strategic documents and concepts implemented in Uzbekistan.



An important reason for their relevance is the growing interest in integrating traditional and modern medicine. In recent decades, the World Health Organization has placed a strong emphasis on preserving and promoting traditional medicine. Thus, addressing the legacy of Ibn Sina and analyzing its impact on modern medical science and education in Uzbekistan is not only a scientific task, but also a practical necessity related to the development of an innovative, competitive, and culturally rooted healthcare system and medical personnel training.

Methodology

To achieve the set goals, the study used a range of methods that are appropriate for the interdisciplinary nature of the topic. By employing diverse approaches, it was possible to identify not only the historical and cultural significance of the legacy of Abu Ali ibn Sina, but also its impact on contemporary processes in medicine and the education system in Uzbekistan.

Historical and comparative method. This method was used to analyze Ibn Sina's works in comparison with modern scientific sources. Comparing the ideas presented in the Canon of Medicine with modern medical concepts allowed us to identify the continuity and relevance of his views.

1. Historical and methodological significance

Avicenna's "Canon" is a systematic textbook that includes sections on general therapy, private therapy, pharmacological properties, and toxicology. Avicenna's methodological principles include strict classification, cause-and-effect analysis, and attention to empirical data. These principles anticipate many elements of the modern scientific method and clinical thinking.

For example, Avicenna described approaches to the differential diagnosis of fevers and respiratory diseases, which is comparable to modern algorithms that distinguish between infectious and non-infectious causes and assess the course and complications.

2. Education: Specific Practices in Universities in Uzbekistan

The Tashkent Medical Academy (Tashkent Medical Academy) and the Bukhara State Medical Institute named after Abu Ali ibn Sina include modules on the history of medicine and humanities in their curricula, where the works of Avicenna and the



historical context of their creation are discussed. In practice, this is expressed in seminars, term papers, and project assignments aimed at comparing historical methods with modern clinical protocols. In Bukhara, there is a faculty and educational units named after Ibn Sina, and in Afshona (the scientist's homeland), there is a medical complex and memorial sites associated with educational programs.

3. Pharmacological Research and Phytotherapy: The Example of the Institute of Plant Chemistry

The Institute of Plant Substances Chemistry named after Academician S.Yu. Yunusov (Institute of Plant Substances Chemistry of the Academy of Sciences of the Republic of Uzbekistan) conducts research on the study of biologically active plant substances, many of which are mentioned in medieval treatises. The research uses modern methods of chromatography, mass spectrometry, and bioanalysis to verify the activity of traditional preparations.

An example of practical development: studies of aromatic and turpentine compounds in licorice root and aloe juice, which are compared with Avicenna's descriptions of the treatment of inflammatory processes in the respiratory tract. These studies provide a basis for the development of standardized herbal remedies and clinical trials.

4. Clinical training and application of diagnostic principles

Clinical departments in medical universities integrate elements of Avicenna's clinical thinking into the teaching methodology: the establishment of a clinical diagnosis through a detailed collection of medical history, objective status, and systematic analysis of data. Students perform clinical case studies (case-based learning), where the emphasis is on the logical construction of a diagnosis and the selection of therapy — approaches that are directly in line with Avicenna's methods.

5. Institutional memory: museums, monuments and conferences.

The memorial museum of Abu Ali ibn Sina in Afshona and memorial complexes in Bukhara and Tashkent are centers of educational and scientific activity.



Avicenna's Readings conferences and scientific and practical forums are regularly held, bringing together historians of science, pharmacologists and clinicians. For example: international scientific and practical conferences help to form scientific networks and heritage research projects, which gives impetus to joint publications and grant initiatives.

6. International cooperation and comparative analysis.

Avicenna's legacy acts as a bridge for international cooperation between Uzbekistan, Iran, Turkey and European countries. In Iran and Turkey, there are academic centers where Avicenna is studied as the foundation of traditional medicine and philosophy. European universities have historically used the Canon until the early modern period, creating a common basis for comparative scientific dialogue.

For comparison, Iran has established interdisciplinary faculties dedicated to the history of medicine and research on traditional methods, while Turkish universities are implementing international projects for the translation and commentary of manuscripts. Uzbekistan can use these models to develop its own research teams and academic mobility programs.

7. Practical examples of incorporating heritage into research and healthcare

— Research projects on the standardization of herbal remedies based on traditional recipes (followed by clinical evaluation).

— Introducing modules on the history of medicine into master's programs to enhance the professional identity of doctors.

— Creation of digital databases of traditional prescriptions and descriptions in Canon in order to integrate them into modern systems of pharmacological information.

8. Recommendations for science and education:

1) Formalize educational modules on Ibn Sina's legacy as part of the mandatory humanities courses for medical faculties.

2) Support applied research on phytopharmaceuticals in collaboration with the Institute of Plant Chemistry and the clinical bases of the Tashkent Medical Academy.



- 3) Develop international research networks with universities in Iran and Turkey, as well as European centers interested in the history of medicine.
- 4) Invest in the digitalization of manuscripts and the creation of open scientific databases, which will increase the accessibility and quality of research.

Discussion

1. Ibn Sina's Historical and Scientific Legacy:

Abu Ali ibn Sina is rightfully considered one of the greatest physicians and thinkers of the East. His "Canon of Medicine" (al-Qanun fi-t-Tibb) served as the primary medical guide not only in the Eastern countries but also in European universities, including Bologna, Montpellier, and the Sorbonne. The work provides a comprehensive overview of anatomy, physiology, pharmacology, hygiene, and therapy. It is especially important that Ibn Sina emphasized a comprehensive approach to human health, including the role of nutrition, lifestyle, climate, and psychoemotional state.

These ideas, which were developed almost a thousand years ago, largely anticipated the modern concept of preventive medicine, which focuses on maintaining health rather than just treating diseases. Today, these approaches are being re-emphasized in the healthcare system of Uzbekistan.

2. Influence on modern medical science in Uzbekistan

Modern medical science in Uzbekistan actively refers to the works of Ibn Sina in search of scientific foundations for the integration of traditional and innovative methods. Several areas stand out:

Preventive medicine. Modern strategic documents of the Ministry of Health of the Republic of Uzbekistan emphasize the prevention of diseases. This idea directly resonates with the approaches of Ibn Sina, who associated health not only with the treatment of diseases, but also with a healthy lifestyle. Today, national preventive medicine centers are developing educational programs aimed at promoting a healthy lifestyle among the population.

Pharmacology and herbal medicine. Ibn Sina systematized knowledge about medicinal herbs, minerals, and substances, describing their medicinal properties in detail. This information is still relevant for pharmacists and researchers today. In Uzbekistan, ongoing research focuses on local plants (such as ginseng, wormwood,



and licorice) and their comparison with the descriptions in the Canon of Medicine. The findings are being incorporated into traditional medicine practices and the pharmaceutical industry.

Clinical diagnostics. Ibn Sina proposed a comprehensive approach to diagnosis, which includes observation, patient interview, and lifestyle analysis. These principles are reflected in modern medical standards in Uzbekistan, where the importance of a doctor's clinical thinking and ability to consider social and psychological factors is emphasized.

3. Impact on medical education in Uzbekistan

Ibn Sina's ideas are actively integrated into the country's medical education system. Medical universities, including the Tashkent Medical Academy and the Samarkand State Medical University, have included the study of medical history in their curricula, with a particular focus on Ibn Sina's legacy.

The development of clinical thinking. Future doctors are not only taught specific diagnostic and treatment methods but also the principles of observation, consistency, and humanism that Ibn Sina's works promote.

Ethics and Humanism. The thinker's legacy also has an impact on medical ethics. He viewed a doctor not only as a specialist but also as a bearer of moral qualities that must serve the well-being of the individual. These ideas are integrated into programs on bioethics and medical deontology.

Innovative teaching methods. In recent years, modern pedagogical technologies, such as simulation training, problem-based learning (PBL), and the use of digital platforms, have been introduced in medical universities in Uzbekistan. However, in terms of methodology, there is a continuity with Ibn Sina's ideas about the need for a systematic and practical approach to learning.

4. Practical examples of the influence of Ibn Sina's legacy

To confirm the relevance of Ibn Sina's ideas, a number of specific examples of their application in modern practice can be given:

The Republican Specialized Center for Therapy and Medical Rehabilitation actively applies the principles of a comprehensive approach to the patient, taking into account the psych emotional state and lifestyle of the patient, which goes back to the recommendations of Ibn Sina.



At the Samarkand Medical University, a course of lectures is held on the "Canon of Medical Science" as part of the history of medicine. Students analyze the diagnostic and treatment methods described by Ibn Sina, comparing them with modern clinical standards.

Researchers at the Institute of Plant Substances Chemistry of the Academy of Sciences of Uzbekistan are working on the pharmacological analysis of plants mentioned in Ibn Sina's works in order to develop new phytopharmaceuticals.

As part of the Ministry of Health's initiatives to promote a healthy lifestyle, work is being carried out with the population based on Ibn Sina's idea of the harmony between humans and the environment.

5. The significance of Ibn Sina's legacy for international cooperation

Ibn Sina's rich legacy also plays an important role in strengthening Uzbekistan's international relations in the fields of science and education. In recent years, joint projects have been actively developed with Turkey, Iran, and other countries, where the thinker's ideas form a common cultural and scientific foundation. For example, joint conferences on the history of medicine and pharmacology allow for the integration of scientific achievements and the exchange of experience.

Conclusion

The legacy of Abu Ali ibn Sina holds a special place in the history of world science and culture. His fundamental ideas about health, a comprehensive approach to human beings, and the importance of disease prevention have not lost their relevance in the 21st century. The analysis shows that the influence of the thinker on modern medical science and education in Uzbekistan manifests itself in several key areas:

- the development of preventive medicine and the formation of a healthy lifestyle culture;
- the active use of herbal medicine and pharmacological research based on plants mentioned in the works of Ibn Sina;
- forming medical ethics and humanistic values in future specialists;
- implementing the principles of systemic and practical training in medical universities;



-strengthening international cooperation in science and education based on common cultural roots.

Thus, Ibn Sina's ideas serve not only as a part of Uzbekistan's cultural heritage but also as a real methodological guideline in the process of modernizing the national healthcare system and training medical personnel. His works continue to be a link between the past and the future, tradition and innovation, science and humanism.

References:

1. Ibn Sina. The Canon of Medicine. – Tashkent: Fan, 1980.
2. Aripov Sh.Sh. The Legacy of Abu Ali Ibn Sina and Modern Medicine. – Tashkent: TMA, 2019.
3. Rahmonov B. The role of Avicenna's medical heritage in Uzbekistan's healthcare reforms // Central Asian Journal of Medicine. – 2021. – №2(4). – P. 45–57.
4. Otabekov H. Ibn Sina and modern preventive medicine: Uzbekistan's perspective // Medical History Review. – 2022. – Vol. 18. – P. 87–103.
5. World Health Organization. Traditional Medicine: A Global Report. – Geneva: WHO, 2019.
6. Normatov F., Karimova D. Avicenna's philosophy of health and its application in medical education of Uzbekistan // Journal of Medical Ethics and Education. – 2020. – №3. – P. 112–125.
7. Ministry of Health of the Republic of Uzbekistan. Concept of Health Care Development until 2030. – Tashkent, 2020.
8. Tashkent Medical Academy – official website. <https://tma.uz/> (access 2025).
9. Bukhara State Medical Institute named after Abu Ali ibn Sino — official website. <https://bsmi.uz/> (access 2025).
10. Institute of the Chemistry of Plant Substances named after acad. S.Yu. Yunusov — <https://uzicps.uz/> (access 2025).
11. Avicenna Public Foundation / Avicenna's Readings — conference archives (Bukhara). <https://aouz.uz/> (access 2025).
12. Abu Ali Ibn Sino Memorial Museum (Afshona, Bukhara) — museum catalogs and descriptions. (access 2025).