

HISTORY OF MEDICINE

A panoramic view of the life of Al-Rhazes, the polymath pioneer of psychopharmacology and psychiatry

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Abstract

This work examines the life and contributions of Abū Bakr Muhammad ibn Zakariyyā al-Rāzī (865–925 AD), also known as Rhazes, a renowned Persian polymath and physician. Being famous as the father of psychiatry, psychology and pharmacology, Rhazes made significant advancements in medicine, philosophy, ethics and alchemy. His works, including influential treatises and translations of Greek medical texts, laid the groundwork for modern medical practices. As a physician and medical director in Baghdad, his humanitarian efforts were particularly aimed at aiding the poor. This biography examines Rhazes's achievements, highlighting his interdisciplinary impact on various medical fields and natural sciences. By studying and marvelling at his contributions, we gain valuable insights into the historical evolution of medical knowledge and the foundational concepts that continue to influence contemporary medical practices.

Keywords: *Abū Bakr al-Rāzī; Rhazes; history of medicine; Persian polymath*

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Brief summary

Rhazes: A foundational figure in medicine and science

Abū Bakr Muhammad ibn Zakariyyā al-Rāzī, known as Rhazes, was a pioneering Persian polymath and physician (865–925 CE). Often hailed as the father of psychiatry, psychology and pharmacology, his works spanned medicine, philosophy, ethics and alchemy. Rhazes's significant contributions include the medical encyclopaedia 'Kitab Al-Hawi', which compiled extensive case studies and clinical observations. He also made substantial strides in psychiatry by establishing humane treatment for mentally ill patients. Rhazes's philosophical writings emphasised rationalism and empirical evidence, challenging prevailing religious dogma. Despite the limitations imposed by the era's knowledge, his legacy in various medical fields profoundly influenced medieval

and modern practices, cementing his status as a foundational figure in the history of medicine.

Abū Bakr Muhammad ibn Zakariyyā al-Rāzī (865–925 CE), also known by the Latin name Rhazes, was a renowned Persian polymath and physician. He is often regarded as the father of psychiatry, psychology and pharmacology due to his significant contributions to medicine, philosophy, ethics and alchemy. Rhazes authored several treatises and translated numerous works on Greek medicine. As a distinguished physician, teacher and medical director at a hospital in Baghdad, he made exceptional contributions to medicine, driven by a humanitarian desire to care for the poor. Examining Rhazes's life and work through medical biography provides a deeper understanding of the evolution of medical knowledge and practice. His achievements offer valuable insights into the history of medicine and the



foundational concepts that continue to influence modern medical practice. Studying Rhazes's contributions highlights the complex connections between various medical fields and natural sciences, including medical humanities and the interdisciplinary progress of medical advancements throughout history [1].

Life and times

Rhazes was born in Al Rayy, near present-day Tehran, Iran, in 865 CE [2]. He received his early education in Gundeshapur, an intellectual centre of education, which was located in Iran during the Sassanid Empire era. He then studied alchemy and philosophy [3]. In his youth, he moved to Baghdad, where he studied medicine and practised at the local hospital. He began his medical and philosophical studies under Ali Ibn Rabban al-Tabari, a physician-philosopher from the ancient city of Merv in western Iran. Another of his teachers of medicine was the well-known physician Ali Ibn Sahl of the famous medical school of Tabaristan [4]. Whilst Plato and mainly Galen medical writers influenced him, he rejected and expressed criticism about some of their views [4].

He was the appointed director of the hospital of his hometown during the reign of Mansur Ibn Ishaq Ibn Ahmad Ibn Asad [5]. Al Razi's fame reached the capital of the Abbasids, and he was called upon by Caliph Al

Muktafi to be the chief director of the largest hospital in Baghdad [5]. He was a prolific writer with more than 200 books on various subjects attributed to him. His most important work is the medical encyclopaedia known as *Al-Hawi fi al-Tibb* [2]. In metaphysics, the study of religion and material things, he believed in the theory of '*the five eternal*' – God, soul, matter, time and space.

Contributions to medicine

Kitab Al-Hawi (Liber Continens), translated into English as a comprehensive book on medicine, is a compilation of Abu Bakr Al-Razi's works on Greek and Roman medicine. It is his case studies and clinical observations, as well as the treatments he administered throughout his years as a practising physician, with an estimated over 900 case studies. It covered topics ranging from intestinal worms to elephantiasis, piles, hunchback, gout and varicose veins. During the Middle Ages, this book was regarded as the most important work on medicine and served as the source from which much medical knowledge was built [6].

Most people believe that his students compiled this book after he passed away [6]. The book listed 45 names, including 19 Greek, 9 Syriac, 6 Arabic, 4 Persian and one Indian Scholar [7]. *Kitab al-Mansuri (Liber Al-Mansuri)*, which was written for the ruler of Al Rayy, Salih Al-Mansur Ibn Ishaq, in the year 903 CE, is also another comprehensive book by Abu Bakr Al-Razi, a medical encyclopaedia of about 10 volumes with a wide range of topics relating to medicine, anatomy and cardiology [8]. It was translated by Toledo Gerard in 1187 into Latin and was known as *Liber ad Almansorem*. It became one of the most widely read medieval medical manuals in Europe [9]. Rhazes was one of the first in the early Abbasid caliphs to recognise the clear-cut separation of pharmacy from medicine independently. He wrote the book *Man lā yahduruhu al-tibb*, in which he described various diets and drugs that could be easily found for home remedies, travellers and the military, making it easy to extract medications for specific illnesses. In the book, some of the remedies he recommended were opium, saffron, myrrh, oil ointments and many others [10]; he was also attributed to developing instruments such as flasks, mortars and pestles, spatulas and glass vessels [2]. He made history by becoming the first to describe smallpox in about 910 CE and to differentiate it from measles [7]. Although he had positive views in significant areas of medicine, he had a very negative view on sexual intercourse, which caused a considerable rift against his teachings in that area at that time [11]. He showed empathy and respect to his mentally ill patients and was the first to be referenced as one who gave psychiatric aftercare in the world of medicine [8].

Foundational works in psychiatry and psychology

Amongst many authors, Rhazes is considered the most outstanding Arabic-Islamic physician and one of the most famous in history [2]. Whilst his work in describing smallpox and differentiating it from Measles stands out as one of his most profound efforts, Al-Razi also made revolutionary contributions to medicine and psychiatry. He influenced several medical fields, including pharmacology, paediatrics, neurology, psychosomatic medicine and medical ethics [12]. He was one of the first known physicians to describe the concept of psychotherapy. Although his practice was dynamic, albeit primitive, it helped establish the foundations of psychiatry and psychology.

Al-Razi's interest in spiritual philosophy can be traced back to Ali Ibn Sahl Rabban al-Tabari, his teacher in Medicine. Rhazes possessed dexterous writing skills, which greatly contributed to his widespread fame. He is credited with having authored more than 224 books, including the *Kitab Al Tibb Al-Ruhani* (Book of Spiritual Medicine). It is said that in his book of Spiritual Medicine, Al-Razi offers treatment for the soul's afflictions [13]. The concept of spiritual medicine is based on the idea that there is a natural, intimate relationship between the body and the soul (or mind), on the one hand, and between the body-soul unit and ethical life, on the other hand [14]. Al-Razi extended this same thought to animals, with a central interest in treating both humans and animals well. The very first chapter of the book of Spiritual Medicine sums up all the advantages that arise from intellect in the following way: 'Without intellect our state would be the state of beasts, children, and lunatics'; with it 'we picture to ourselves our intelligible actions before they become manifest to the senses and so we see them as if we had sensed them' [15].

Abu Bakr Al-Razi is a pioneer in the treatment of mental illnesses. During his time as the director of the main hospital in Baghdad, he established a special section for the treatment of the mentally ill. His methods included treating his patients with respect, care and empathy as well as giving each patient a sum of money to help with immediate needs as part of discharge planning. This was the first recorded reference to psychiatric aftercare [2].

Pharmacological achievements

Amongst other things, Rhazes was also a pharmacist, and we should not consign those achievements of the medieval age to oblivion. He was a highly influential and significant personality in the field of science, as well as a great teacher, planner, philosopher, theologian, physician, chemist and pharmacist [13, 16]. He also demonstrated strong writing prowess. He is also considered one of the fathers of early chemistry and modern pharmacy [13, 17]. He was recognised as a scientist who had made giant strides in the

field of Pharmacy and Chemistry (also known as Alchemy by 17th-century writers) [18]. He authored over 200 manuscripts and treatises in pharmacy, medicine and other sciences. He published 26 volumes of a comprehensive encyclopaedia known as *Al-Hawi fi al-Tibb* (Liber Continens), three (3) of which were used in Western universities for many years as pharmacological references [10]. Some of his books on pharmacology include but are not limited to: *Qarabadin* (pharmacopoeia), *Fi Dava al Moshel va al Moqayye* (laxative and vomiting drugs) and *Resale Daruhaye Cheshmi* (treatise of eye medicines) [19]. Some of his other contributions to pharmacology include initiating the use of mercurial ointments and developing tools used in apothecaries (pharmacies) such as mortars and pestles, flasks, spatulas, beakers and glass vessels. He also advised that honey be used as a simple drug or an essential component in medicine production [19].

Philosophical legacy

Abu Bakr Al-Razi's contributions to science and philosophy were not only significant but also pioneering. His multidisciplinary approach, which laid the groundwork for advancements in various fields, was a testament to the era's spirit of intellectual curiosity and integration [20]. Having written over 224 books on different subjects, including *Al-Hawi fi al-Tibb*, known in Europe as *Liber Continens*, his impact on medicine, philosophy and alchemy is forever etched into human civilisation [2]. As a physician, he penned the '*Kitab al-Hawi*' (The Comprehensive Book), an extensive medical encyclopaedia compiled knowledge from Greek, Persian and Indian sources alongside his observations and discoveries [6]. This work became a cornerstone for medical education in the Islamic world and later in Europe. His techniques in chemistry, particularly his methods for refining chemicals and medicines, laid the groundwork for the development of pharmacology and therapeutics [10]. He is credited with being amongst the first to classify substances based on their chemical properties and to utilise distilled alcohol in medicine, marking significant advancements in the field of pharmacology [21].

Philosophically, Rhazes was a rationalist who fearlessly challenged the prevailing schools of thought. His works, such as '*The Spiritual Physick*' and '*The Philosophical Way of Life*', reflected his unwavering belief in reason over revelation. He critiqued religious dogma and advocated for a form of philosophical scepticism that emphasised the need for empirical evidence and rational inquiry [22]. This rationalist approach influenced later Islamic philosophers, including Ibn Sina (Avicenna) and Ibn Rushd (Averroes), and echoed through the works of medieval European scholars during the Renaissance [23]. His methodological rigour and empirical approach prefigured the scientific methods that would later be formalised in

the works of European scientists such as Roger Bacon and Paracelsus [24]. His insistence on observational data and systematic experimentation laid the early foundations for modern scientific research [24].

Pitfalls in legacy and present-day perspective

Rhazes was a remarkable physician, and the importance of his contributions to the foundation of medicine, philosophy, pharmacology and psychotherapy remains undisputed. However, viewed through the lens of modern medicine and advanced clinical acumen, he was painfully limited by the knowledge of his time, and significant portions of his contributions to pharmacology, particularly in the areas of ointments, poultices and remedies, appear outdated and archaic. His staunch stance against religion and prophecy would have also stood as a stumbling block to effective psychotherapy, removing mental anchors that patients might have otherwise utilised to cope with tragedies. Regardless, Rhazes is still widely regarded as the father of Islamic medicine and one of the greatest physicians of the Muslim World.

Conclusion

Abu Bakr Al-Razi was a renowned and influential Arabic-Islamic Physician and a prominent thinker who made significant contributions to medicine, philosophy and alchemy. Rhazes mastered the concept of psychotherapy in a primitive but dynamic form, which served as the foundation for its use in modern psychology. He was the first to elaborate that smallpox and measles are separate disease entities, comparing outcomes of blood-letting and non-blood-letting meningitis treatment in mediaeval patients, serving as a source of knowledge upon which modern medicine sought to revolutionise [20].

Competing interests

We declare no competing interests.

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Authors' contributions

Conceptualisation, Writing of Initial and Final Draft, Initial Review: P.A.

Writing, Editing, Data Collation: All authors.

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