

# Bimaristan

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**Bimaristan** is a middle Persian and modern Persian (بیمارستان *bÄ«mÄrestÄn*) word meaning hospital, with *Bimar-* from Pahlavi of *vÄ«mÄr* or *vemÄr*, meaning "sick" plus *-stan* as location and place suffix.

In the medieval Islamic world, the word "Bimaristan" was used to indicate a hospital in the modern sense, an establishment where the ill were welcomed and cared for by qualified staff. In this way, Muslim physicians were the first to make a distinction between a hospital and other different forms of healing temples, sleep temples, hospices, assylums, lazarets and leper-houses, all of which in ancient times were more concerned with isolating the sick and the mad from society "rather than to offer them any way to a true cure." The medieval Bimaristan hospitals are thus considered "the first hospitals" in the modern sense of the word.<sup>[1]</sup> The first public hospitals,<sup>[2]</sup> psychiatric hospitals<sup>[3]</sup> and medical universities<sup>[4]</sup> were also introduced by medieval Muslim physicians.

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## History

The oldest recorded Bimarestan is of Gundishapur, established in 3rd century by Shapur I the Sasanian emperor, in present day Khuzestan province of Iran. After Sassanian Iran was conquered by Muslim Arab armies in 638, the Bimaristan survived the change of rulers and evolved into a public hospital with medical university and psychiatric facilities over the centuries under Muslim physicians.

During the Muslim conquests themselves, the Muslim armies during the time of Muhammad were reported to have had a mobile dispensary following them for the treatment of soldiers on the battlefield.

The first Bimaristan after the Gundishapur was founded in 707 by the Muslim caliph al-Waleed bin Abdel Malek in Damascus. At the time, most Islamic hospitals had doctors that diagnosed and treated all patients, but the Bimaristan was unique in that it had doctors that specialized in certain diseases. Originally, these health centers were specifically for patients with specific afflictions such as pestilence and blindness, and all services were free of charge.

According to Sir John Bagot Glubb:

"By Mamun's time medical schools were extremely active in Baghdad. The first free public hospital was opened in Baghdad during the Caliphate of Haroon-ar-Rashid. As the system developed, physicians and surgeons were appointed who gave lectures to medical students and issued diplomas to those who were considered qualified to practice. The first hospital in Egypt was opened in 872 AD and thereafter public hospitals sprang up all over the empire from Spain and the Maghrib to Persia."<sup>[4]</sup>

The largest hospital of the Middle Ages and pre-modern era was built in Cairo, Egypt, by Sultan Qalaun al-Mansur in 1285. According to Will Durant, the hospital had a spacious quadrangular enclosure with four buildings around a courtyard "adorned with arcades and cooled with fountains and brooks." The hospital had "separate wards for diverse diseases and for convalescents", and had laboratories, a dispensary, out-patient clinics, kitchens, baths, a library, a religious place of worship, lecture halls, and "pleasant accommodations for the insane." Treatment was given for free to patients of all backgrounds, regardless of gender, ethnicity or income, while convalescents were offered disbursements on their departure so that they wouldn't need to return to work immediately. "The sleepless were provided with soft music, professional story-tellers, and perhaps books of history."<sup>[5]</sup>

## Organization

The Bimaristans were organized into two sections, one for men and one for women. Within those sections were halls, each for a specific disease and monitored by one or more doctors. Some examples of the specialized halls are the ones for internal diseases, patients that were splinted, delivery, and communicable diseases. The administration of the hospital was based on the employment of health workers that cleaned the hospital and took care of the patients, physicians; and the head doctor, called Al Saor. The employees took shifts both day and night to ensure they were all well-rested. An extra wing, called Al Sharabkhana, also known as a pharmacy, was added to enable doctors to easily distribute medication. Bimaristans mainly had two goals: the welfare of their patients and to educate new physicians. An excerpt from Ibn Al-Ukhwah's book, *Al-Hisbah* reveals how the Bimaristan system made sure their patients were taken care of:

"The physician asks the patient about the cause of his illness and the pain he feels. He prepares syrups and other drugs, then writes a copy of the prescription to the parents attending with the patient. The following day he re-examines the patient and looks at the drugs and asks him how he feels, and accordingly advises the patient. This procedure is repeated every day until the patient is either cured or dies. If the patient is cured, the physician is paid. If the patient dies, his parents go to the chief doctor and present the prescriptions written by the physician. If the chief doctor judges that the physician has performed his job without negligence, he tells the parents that death was natural; if he judges otherwise, he informs them to take the blood money of their relative from the physician as his death was the result of his bad performance and negligence. In this honorable way they were sure that medicine was practiced by experienced, well trained personnel."

Once admitted into a Bimaristan, the patient can stay for as long as she/or he needed; there was no time limit. Once the patient has fully recovered, they were provided, not only with clean clothes, but with pocket money.

## Staff

The earliest recorded hospitals in the medieval Islamic world were more general than previous Bimaristans as they extended their services to the lepers and the invalid and destitute people. All treatment and care was free of charge and there was more than one physician employed in this hospital.<sup>[6]</sup> Between the 8th and 12th centuries, Muslim hospitals developed a high standard of care. Hospitals built in Baghdad in the ninth and tenth centuries employed up to twenty-five staff physicians and had separate wards for different conditions. Al-Qairawan hospital and mosque, in Tunisia, were built under the Aghlabid rule

in 830 CE and was simple but adequately equipped with halls organized into waiting rooms, a mosque, and a special bath.

Another unique feature of medieval Muslim hospitals was the role of female staff, who were rarely employed in ancient and medieval healing temples elsewhere in the world. Medieval Muslim hospitals commonly employed female nurses, including nurses from as far as Sudan, a sign of great breakthrough. Muslim hospitals were also the first to employ female physicians, the most famous being two female physicians from the Banu Zuhri family who served the Almohad ruler Abu Yusuf Ya'qub al-Mansur in the 12th century.<sup>[7]</sup> This was necessary due to the segregation between male and female patients in Islamic hospitals. Later in the 15th century, female surgeons were illustrated for the first time in Arafeddin Sabuncuoğlu's *Cerrahiyyetu'l-Haniyye* (*Imperial Surgery*).<sup>[8]</sup>

In addition to regular physicians who attended the sick, there were *Fuqaha al-Badan*, a kind of religious physio-therapists, group of religious scholars whose medical services included bloodletting, bone setting, and cauterisation. During Ottoman rule, when hospitals reached a particular distinction, Sultan Bayazid II built a mental hospital and medical madrasa in Edirne, and a number of other early hospitals were also built in Turkey. Unlike in Greek temples to healing gods, the clerics working in these facilities employed scientific methodology far beyond that of their contemporaries in their treatment of patients.<sup>[9]</sup>

## Funding

After the Islamic waqf law (a precursor of the trust law) and madrasah foundations were firmly established by the 10th century, the number of hospitals multiplied throughout Islamic lands. In the 11th century, every Islamic city had at least several hospitals.<sup>[10]</sup> Córdoba, Spain alone was reported to have had as many as 50 hospitals at the time of Abu al-Qasim al-Zahrawi (Abulcasis).<sup>[11]</sup>

The waqf trust institutions funded the hospitals for various expenses, including the wages of doctors, ophthalmologists, surgeons, chemists, pharmacists, domestics and all other staff, the purchase of foods and remedies; hospital equipment such as beds, mattresses, bowls and perfumes; and repairs to buildings. The waqf trusts also funded medical schools, and their revenues covered various expenses such as their maintenance and the payment of teachers and students.<sup>[10]</sup>

## Medical facilities

Muslim physicians set up some of the earliest dedicated hospitals. In the medieval Islamic world, hospitals were built in all major cities; in Cairo for example, the Qalawun Hospital could care for 8,000 patients, and a staff that included physicians, pharmacists, and nurses. One could also access a dispensary, and research facility that led to advances, which included the discovery of the contagious nature of diseases, and research into optics and the mechanisms of the eye. Muslim doctors were removing cataracts with hollow needles over 1000 years before Western physicians dared attempt such a task. Hospitals were built not only for the physically sick, but for the mentally sick also. One of the first ever psychiatric hospitals that cared for the mentally ill was built in Cairo. Hospitals later spread to Europe during the Crusades, inspired by the hospitals in the Middle East. The first hospital in Paris, Les Quinze-vingt, was founded by Louis IX after his return from the Crusade between 1254-1260.<sup>[12]</sup>

Hospitals in the Islamic world were secular institutions which treated patients of all ethnic backgrounds and financial statuses, including patients who were male and female, civilian and military, child and adult, rich and poor, and Muslims and non-Muslims. Like modern hospitals, medieval Muslim hospitals were often large urban structures which served a variety of different purposes, including its roles as a centre of medical treatment, a home for patients recovering from illness or accidents, an insane asylum for patients suffering from mental illness, a retirement home for the elderly, a medical school for students, and an outpatient clinic dispensing medical drugs.<sup>[13]</sup>

Muslim hospitals were the first to feature competency tests for doctors, drug purity regulations, nurses and interns, and advanced surgical procedures.<sup>[14]</sup> As the pathology of contagion was better understood by Muslim physicians, hospitals were created with separate wards for specific illnesses for the first time, so that people with contagious diseases could be kept away from other patients.<sup>[15]</sup>

## Medical schools and universities

The first medical schools and universities were founded in the medieval Islamic world, where academic degrees and diplomas (*ijazah*) were issued to students who were qualified to be a practising Doctor of Medicine.<sup>[4]</sup><sup>[16]</sup><sup>[17]</sup>

The hospitals and medical schools and universities had systems for the nomination and elections of a head doctor or deans who would have "led the jihad" of teaching the sciences of Islamic medicine, Fiqh, Hadith and Qur'an to medical students.<sup>[18]</sup>

Al-Nuri hospital in Egypt was a famous teaching hospital built by Nur ad-Din Zangi, and was where many renowned physicians were taught. The hospital's medical school is said had elegant rooms, and a library which many of its books were donated by Zangi's physician, Abu al-Majid al-Bahili. A number of Muslim physicians and physicists graduated from there. Among the well-known students are Ibn Abi Usaybi'ah (1203-1270) the famous medical historian, and 'Ala ad-Din Ibn al-Nafis (d. 1289) whose discovery of pulmonary circulation and the lesser circulatory system marked a new step in the better understanding of human physiology and was the earliest explanation until William Harvey (1628).<sup>[19]</sup>

## Psychiatric hospitals

The first psychiatric hospitals and insane asylums were built in the Islamic world as early as the 8th century. The first psychiatric hospitals were built by the Muslim Arabs in Baghdad in 705, Fes in the early 8th century, and Cairo in 800. Other famous psychiatric hospitals were built in Damascus and Aleppo in 1270. Many other Bimaristian hospitals also often had their own wards dedicated to mental health.<sup>[20]</sup>

## Medical ethics

*See also: Islamic ethics*

One of the features in medieval Muslim hospitals that distinguished them from their contemporaries was their higher standards of medical ethics. Hospitals in the Islamic world treated patients of all religions, ethnicities, and backgrounds, while the hospitals themselves often employed staff from Christian, Jewish and other minority backgrounds. Muslim doctors and physicians were expected to have obligations towards their patients, regardless of their wealth or backgrounds. The ethical standards of Muslim physicians was first laid down in the 9th century by Ishaq bin Ali Rahawi, who wrote the *Adab al-Tabib* (*Conduct of a Physician*), the first treatise dedicated to medical ethics. He regarded physicians as "guardians of souls and bodies", and wrote twenty chapters on various topics related to medical ethics, including:<sup>[21]</sup>

- What the physician must avoid and beware of
- The manners of visitors
- The care of remedies by the physician
- The dignity of the medical profession
- The examination of physicians
- The removal of corruption among physicians

On a professional level, al-Razi (Rhazes) introduced many practical, progressive, medical and psychological ideas in the 10th century. He attacked charlatans and fake doctors who roamed the cities and countryside selling their nostrums and 'cures'. At the same time, he warned that even highly educated doctors did not have the answers to all medical problems and could not cure all sicknesses or heal every disease, which was humanly speaking impossible. To become more useful in their services and truer to their calling, Razi advised practitioners to keep up with advanced knowledge by continually studying medical books and exposing themselves to new information. He made a distinction between curable and incurable diseases. Pertaining to the latter, he commented that in the case of advanced cases of cancer and leprosy the physician should not be blamed when he could not cure them. To add a humorous note, Razi felt great pity for physicians who took care for the well-being of princes, nobility, and women, because they did not obey the doctor's orders to restrict their diet or get medical treatment, thus making it most difficult being their physician. He also wrote the following on medical ethics:

"The doctor's aim is to do good, even to our enemies, so much more to our friends, and my profession forbids us to do harm to our kindred, as it is instituted for the benefit and welfare of the human race, and God imposed on physicians the oath not to compose mortiferous remedies."<sup>[21]</sup>

## Drugs

The earliest known prohibition of illegal drugs occurred under Islamic law, which prohibited the use of Hashish, a preparation of cannabis, as a recreational drug. Classical jurists in medieval Islamic jurisprudence, however, accepted the use of the Hashish drug for medicinal and therapeutic purposes, and agreed that its "medical use, even if it leads to mental derangement, remains exempt" from punishment. In the 14th century, the Islamic scholar Az-Zarkashi spoke of "the permissibility of its use for medical purposes if it is established that it is beneficial."<sup>[22]</sup>

According to Mary Lynn Mathre, with "this legal distinction between the intoxicant and the medical uses of cannabis, medieval Muslim theologians were far ahead of present-day American law."<sup>[23]</sup>

## Neuroethics

Most ancient and medieval societies believed that mental illness was caused by either demonic possession or as punishment from a god, which led to a negative attitude towards mental illness in Judeo-Christian and Greco-Roman societies. On the other hand, Islamic neuroethics and neurotheology held a more sympathetic attitude towards the mentally ill, as exemplified in Sura 4:5 of the Qur'an:<sup>[24]</sup>

"Do not give your property which God assigned you to manage to the insane: but feed and cloth the insane with this property and tell splendid words to him."<sup>[25]</sup>

This Quranic verse summarized Islam's attitudes towards the mentally ill, who were considered unfit to manage property but must be treated humanely and be kept under care by a guardian, according to Islamic law.<sup>[24]</sup> This positive neuroethical understanding of mental health consequently led to the establishment of the first psychiatric hospitals in the medieval Islamic world from the 8th century,<sup>[26]</sup> and an early scientific understanding of neuroscience and psychology by medieval Muslim physicians and psychologists, who discovered that mental disorders are caused by dysfunctions in the brain.<sup>[27]</sup>

## Peer review

The first documented description of a peer review process is found in the *Ethics of the Physician* written by Ishaq bin Ali al-Rahwi (854â931) of al-Raha, Syria, who describes the first medical peer review process. His work, as well as later Arabic medical manuals, state that a visiting physician must always make duplicate notes of a patient's condition on every visit. When the patient was cured or had died, the notes of the physician were examined by a local medical council of other physicians, who would review the practising physician's notes to decide whether his/her performance have met the required standards of medical care. If their reviews were negative, the practicing physician could face a lawsuit from a

maltreated patient.<sup>[28]</sup>

## Public health care

Islamic cities also had an early public health care service. "The extraordinary provision of public bath-houses, complex sanitary systems of drainage (more extensive even than the famous Roman infrastructures), fresh water supplies, and the large and sophisticated urban hospitals, all contributed to the general health of the population." Competency tests were also carried out by medical authorities visiting hospitals and clinics "to regulate, in one way or another, the performance and competency of those providing medical care or active in the medical market-place."<sup>[29]</sup>

## Notes

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- <sup>7</sup> ^ The Art as a Profession, United States National Library of Medicine
- <sup>8</sup> ^ G. Bademci (2006), First illustrations of female "Neurosurgeons" in the fifteenth century by Serefeddin Sabuncuoglu, *NeurocirugÃ-a* 17: 162-165.
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- <sup>19</sup> ^ al-Hassani, Woodcock and Saoud(2007),'Muslim Heritage in Our World', FSTC Publishing, p.158-59
- <sup>20</sup> ^ Ibrahim B. Syed PhD, "Islamic Medicine: 1000 years ahead of its times", *Journal of the Islamic Medical Association*, 2002 (2), p. 2-9 [7-8].
- <sup>21</sup> ^ <sup>a</sup> <sup>b</sup> Islamic Science, the Scholar and Ethics, Foundation for Science Technology and Civilisation.
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## See also

- Dar al-Shifa
- Islamic medicine
- Gundishapur

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