

HISTORICAL RESEARCH ARTICLE 8

The functions, training, and extinction of bloodletters in Portugal

As funções, a formação e a extinção dos sangradores em Portugal
Las funciones, la formación y la extinción de los sangradores en Portugal

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Abstract

Background: The 19th century was characterized by profound changes in health care. The development of hygiene standards and bacteriology reorganized health services. In Portugal, the job of bloodletters, regulated for almost four centuries, officially became extinct in 1870.

Objectives: To understand bloodletters' presence in society and healthcare institutions and how their gradual disappearance accompanied the professionalization process of nursing in Portugal.

Methodology: Historical inference based on the survey and critical analysis of primary sources, such as a contemporary manual and the minutes of parliamentary sessions, and secondary sources, such as articles, books, and theses. Analyzing the data collected from these sources produced a final interpretative synthesis.

Results: While the humoral theory persisted, bloodletting was considered a remedy for everything. However, from the end of the 18th century, the development of modern medicine led to the progressive decline of this health-related practice.

Conclusion: The official disappearance of bloodletters coincided with the intensification of nurses' professionalization process, particularly with the emergence of formal nursing training.

Keywords: bloodletting; nurse; history of nursing

Resumo

Enquadramento: O século XIX caracteriza-se por profunda alteração no campo assistencial. O higienismo, a bacteriologia, impulsionam a reorganização dos serviços de saúde. Os sangradores, ofício que subsistiu regulado ao longo de quase quatro séculos é oficialmente extinto em 1870.

Objetivos: Compreender de que forma os sangradores estiveram presentes na sociedade e instituições assistenciais e como o seu lento desaparecimento foi acompanhado pelo desenvolvimento do processo de profissionalização dos enfermeiros em Portugal.

Metodologia: Inferência histórica com base no levantamento e análise crítica de fontes primárias, como seja um manual coevo e atas dos debates parlamentares; e de fontes secundárias, nomeadamente material editado (artigos, livros, teses), que no seu conjunto levem à produção de uma síntese final interpretativa.

Resultados: Enquanto perdurou a teoria dos humores, sangrar era remédio para tudo. Com o despertar da nova medicina assiste-se ao ocaso progressivo dos sangradores a partir do final do séc. XVIII.

Conclusão: O desaparecimento oficial dos sangradores coincide com o acentuar da profissionalização dos enfermeiros, nomeadamente com o surgimento de formação estruturada.

Palavras-Chave: sangria; enfermeiro; história da enfermagem

Resumen

Marco contextual: El siglo XIX se caracteriza por un profundo cambio en el campo de la salud, con el higienismo, la bacteriología y la reorganización de los servicios de salud. Los sangradores fueron uno de los oficios que permaneció reglamentado oficialmente durante casi cuatro siglos hasta su extinción oficial en 1870.

Objetivos: Comprender cómo las hemorragias estuvieron presentes en la sociedad y en las instituciones asistenciales y cómo su lenta desaparición fue concomitante con el desarrollo del proceso de profesionalización de los enfermeros en Portugal.

Metodología: Inferencia histórica basada en el levantamiento y análisis crítico de fuentes primarias, tales como uno manual antiguo y debates parlamentarios, y fuentes secundarias, a saber, material editado, artículos, libros, tesis que en conjunto conducen a la producción de una síntesis interpretativa final.

Resultados: mientras duró la teoría de los humores, sangrar fue una cura para todo. Con el despertar de la nueva medicina asistimos al progresivo declive de los sangradores a partir de finales del siglo XVIII.

Conclusión: La desaparición oficial de los sangradores coincide con el acentuar de la profesionalización de los enfermeros, es decir, con el surgimiento de la formación estructurada.

Palabras clave: venodisección; enfermero; historia de la enfermería

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Introduction

Based on the humoral theory, bloodletting was a dominant health care procedure in medicine since Ancient Greece (Sousa, 2013). Similar to what happened in the rest of the world, the presence of bloodletters in Portugal (and their continuity) was substantial. Grounded on the medical theories of the time, viewed as a business opportunity, or motivated by exaggeration, bloodletting was considered a remedy for everything. Communities and (often) care institutions paid bloodletters according to the number of bloodletting procedures performed (Sousa, 2013). Rocha (2019) reports, “the case of the hospital founded by Bartolomeu Joanes, in Lisbon, in 1324, where each poor person received five *soldos* to pay for bloodletting. Even if these procedures were not performed inside the hospital premises” (p. 70).

However, information on the bloodletters’ functions, who they were, what they did, how they did it, why they did it, what their training was, and their relationship with other health professions is scarce and demands clarification. Also, it would be worth understanding how this health-related profession existed throughout the centuries in Portugal and what caused its progressive decline from the end of the 18th century to its official extinction in 1870 (Barradas, 1999).

The present study aims to understand the presence of bloodletters in the communities and care institutions and how their gradual disappearance accompanied the nurses’ professionalization process. In this sense, this study formulated the following research question: as the functions and areas of action of medieval professions, such as bloodletters, disappeared, were other professions, such as nurses, able to make room for their affirmation and professionalization?

This study’s relevance lies in clarifying the bloodletters’ role among the medieval health-related trades and professions that were reconfigured or disappeared throughout the 19th century and in understanding the relationship between this historical process and nurses’ professionalization process.

Methodology

This study conducted a data survey and interpretative analysis of primary and secondary data sources from a historical perspective to achieve its objective and respond to its research question. The first source to be analyzed was a *manual dos sangradores* (manual for bloodletters), published by Manuel Leitão in 1849. Next, the study focused on the Minutes of the Parliamentary Sessions of the Portuguese Constitutional Monarchy, First Republic, New State, and Third Republic. These were retrieved from the digital archive of the Portuguese *Assembleia da República* (Parliament). Using the descriptor *sangrador/es* (bloodletter/s), the *Assembleia’s* digital archive search yielded 39 session minutes. The primary sources were confronted with the existing historical production and evaluated as relevant according to the authors’ criteria and

this study’s objective and research question. By analyzing the document sources, this study established lines of continuity and rupture, considering the diachrony and the synchrony and drawing historical inferences, which were subsequently translated into an interpretative synthesis.

Results and discussion

The bloodletter, barber-surgeon, or even nurse surgeon, was a job dedicated to bloodletting as a way of curing the illnesses affecting the body’s balance, based on the humoral theory, initially developed by Hippocrates and elaborated by Galen. Bloodletters used leeches, suction cups, or puncture and cutting instruments to withdraw blood from their patients according to their needs. In addition, they shaved and cut their patients’ hair and beards, which is why they were also called *barbeiros-sangradores* (barber bloodletters). Some were also *açacaladores* (blade polishers), *saca-molas* (tooth-pullers), and *algebristas* (those who treated joint and bone injuries).

As Barradas (1999) mentions, the bloodletter trade existed even before the constitution of Portugal as an independent kingdom. It was officially regulated for more than three centuries until being extinct by decree in 1870. The publication of the *Regimento do Hospital Real de Todos os Santos* (Royal Hospital of All Saints Regulation) in 1504 shows the existence of the position of the hospital’s *barbeiro-sangrador*, which remained active for 366 years. Despite the profession’s extinction, at the beginning of the 20th century, some bloodletters maintained their activity mainly in small villages where they were the only type of care populations had access to due to the lack of assistance and structured healthcare services in Portugal. At the beginning of the Kingdom of Portugal, health care was primarily provided by the sick person’s family. In the family’s absence or due to their incapacity, health care was provided by religious orders that, this way, assumed a relevant social role. In the Middle Ages, religious orders and royal and private initiatives created small hospitals, which, despite their efforts, were insufficient to assist all those in need. These small hospitals were almost always overcrowded.

As mentioned by Barradas (1999), “the few beds available in the small hospitals were not primarily intended to treat the sick but to provide shelter for beggars, pilgrims, and then to the sick ... churches were built wherever a more significant populational settlement emerged” (p. 130). In the Middle Ages, medical knowledge was mainly transmitted orally and through ancient medical texts, many of which were copied and transcribed by monks. Barradas (1999) states that monks were dedicated to translating and copying the ancient manuscripts that contained the most important writings of the past, including relevant medical treatises.

The religious orders had access to these original texts, from the time of ancient Greece and the Roman Empire, such as those left by Hippocrates (460-377 BC) and Galen (129-200 AD), sometimes through Arab intermediaries, as is the case of the Persian Avicenna (980-1037 AD). “The

Canon of Medicine,” Avicenna’s treatise on medicine, was known and used in Portugal’s and European schools and universities until the end of the 18th century.

In the 12th century, during the formation of the Kingdom of Portugal, religious monasteries were the custodians of medical knowledge and were responsible for providing health care. At the time, health care practices were based on the humoral theory, which explained people’s illnesses and practiced bloodletting to restore their health. Santos (2015) details that

bloodletting (*minuti sanguinem*) or phlebotomy was one of monastic medicine’s most documented preventive health practices since it was part of the annual health routines of the communities. It is recorded in all the customs and expense books of the most different medieval religious orders, both male and female. (p. 82)

However, regarding bloodletting in the monastic context and monks’ direct participation in the practice, Silva (2015) considers

it is unlikely that this task was assigned to another monk. There was possibly a group of laymen fitting the medieval barber’s stereotypical profile - distinct, however, from the typical medieval surgeon - connected or not to each monastery and who, periodically, performed in the *cenobium* the bloodletting of monks who wanted or were required to do it. (p. 43)

Hippocrates’s humoral theory was based on the balance between health and disease, considering the four natural elements: earth, fire, air, and water. This theory was strongly influenced and promoted by Galen during the Roman period and improved by Avicenna in the late post-Roman period, who further developed and structured its principles. These two philosophers are considered responsible for consolidating Hippocrates’s humoral theory.

The humoral theory considers that all body fluids, or *humors*, result from the four natural elements - earth, water, fire, and air. Thus, the human body consists of four *humors*: blood, yellow bile, black bile, and phlegm. A person was healthy if all four *humors* were in perfect balance and well-being, coexisting in dry, cold, humid, and hot environments. Blood was the most important of all the four *humors* (Barradas, 1999). It was considered the noblest *humor*, distinguished by its red color, and was frequently observed in wounds and hemorrhagic diseases. Blood was believed to form in the liver, where it was kept pure before combining with the other *humors*. However, according to Sousa (2013), other interpretations of the humoral theory believed blood came from the heart. Bloodletting was assumed as the best healing process for illnesses and imbalances affecting sick people. Initially, it was performed by religious men who practiced medicine. These were assisted in bloodletting procedures by *barbeiros-sangradores* (Barradas, 1999). At the time, the belief was that bloodletting (phlebotomy) was the best way to restore the body’s balance. According to Galen, blood moved towards the tissues (Santos, 2005), not in a circular movement, but a centrifugal one, converging to the tissues without returning to its point of origin. Thus,

in a disease scenario, bloodletting removed the excess blood, causing the unbalance of humors, and restored the person’s harmonious balance of humors and health. Around 1169 A.D., the increase in bloodletting practices throughout Europe fueled the suspicions that these medical procedures were being considered more and more a business opportunity, thus corrupting the Church’s purpose of service to others. Furthermore, the theological principles argued for the primacy of the human soul over the human body, leading Pope Alexander III to prohibit monks from having direct contact with blood or performing surgeries (Barradas, 1999). Thus, the end of the religious orders’ monopoly in the art of healing allowed transferring the performance of bloodletting to the barbers who already were experts in handling blades. (Barradas, 1999).

During this period, there was almost no regulation regarding health care providers. Those who provided care were predominantly laymen, interested but uneducated, and illiterate, whose knowledge was based on practice and acquired through oral and informal transmission or observation. The bloodletter’s job began to be regarded as an opportunity to obtain good profits, and barber-surgeons began to proliferate in the Portuguese Kingdom, many with dubious scruples. This period was unregulated and marked by the coexistence of real *barbeiros-sangradores* with amateurs, swindlers, and charlatans, whose main goal was to obtain an easy profit. Considered a means to earn a living, anarchy took over bloodletting practices, which became abusive (Sousa, 2013). Nevertheless, several attempts were made to regulate the practice throughout the Middle Ages.

In the Monastery of Santa Cruz, the first physicians of the Portuguese Kingdom began receiving training under the aegis of King Sancho I, and in 1290, the Pope ordered physicians’ training to be integrated into universities (Vasconcelos, 2014). However, the high social status of university students (some noble and/or linked to the clergy) and the training based on the Hippocratic-Galenic principles determined that physicians should have minimal physical contact with their patients, as manual practices were considered minor and unworthy. Thus, low-class trades such as bloodletters continued to provide actual health care. In this sense, it is worth noting that the Monastery of Santa Cruz, in Coimbra, and its Hospital de S. Nicolau “included the bloodletting room, the baths room and the vegetable garden where the medicinal plants were planted” (Santos, 2015, p. 82). Bloodletting practices in a monastic context also had a preventive function, as confirmed by the prescription of three to five bloodletting procedures per year during the medieval period (Yearl, 2007).

Attempts were also made to control the unruly increase of bloodletters without qualifications. The creation of the position of *Físico-mor* (Principal Physician), and later the position of *Cirurgião-mor* (Principal Surgeon) aimed to control and regulate bloodletting practices as they were responsible for issuing *cartas de sangradores* (official bloodletter certificates) to whoever requested them. However, this measure was insufficient to guarantee that bloodletting

was performed only by those with the proper skills and knowledge. While maintaining its humble nature and low-class background, bloodletting practices increased in the Portuguese Kingdom. The ease of obtaining blood-letter certificates led to the proliferation of tents where bloodletting was performed alongside the craft of cutting hair and beards and to which the entire community resorted. Anyone minimally skilled in handling blades, with or without knowledge (swindlers, healers), performed bloodletting, applying suction cups and leeches without formal training, only to make money.

Inaugurated in 1504 by King Dom Manuel I, the Royal Hospital of All Saints was paramount in the development of formal and official training in bloodletting procedures (Barradas, 1999). At the time, this healthcare institution attracted the majority of medical practitioners by providing them with good salaries. This concentration of healthcare providers allowed the monitoring of the care provided (Ramos, 1993) and promoted the creation of a regulation describing all the hospital's professions and positions, with the respective functions, obligations, rights, and duties. Bloodletters were among the hospital's professions and positions described in this regulation. Ramos (1993) points out that the Regulation of the Royal Hospital of All Saints copied the model of the Santa Maria Nuova Hospital in Florence, concentrating the small hospitals' rents and being placed under the King's direct authority and responsibility. As such, the King nominated the hospital's highest positions, such as the *Provedor* (Director) and the Kingdom's Principal Physician, and later on, the Principal Surgeon, responsible for managing and deciding who was qualified or not to work in the hospital. Physicians, apothecaries, and nurses worked at the Royal Hospital of All Saints like in other European hospitals. Nevertheless, the Royal Hospital distinguished itself from other healthcare institutions by creating training schools for surgeons and *barbeiros-sangradores* (Barradas, 1999). In the early 16th century, the *barbeiros-sangradores* had a status inferior to all other hospital employees except for slaves (Barradas, 1999). Ramos (1993) points out that they were on the same level as the apothecary's assistants, women's nurses, or kitchen helpers. They were tasked with cutting all patients' beards and hair and withdrawing blood whenever the physicians requested. The *barbeiros-sangradores* carried the tools of their trade, such as lancets, scissors, razors, and other necessary materials, in a suitcase (Barradas, 1999).

It is worth highlighting the work of Manuel Leitão, surgeon of the Royal Hospital of All Saints and author of the manual *Prática dos Barbeiros* (The Practice of Barbers), first printed in 1604 and reprinted several times, and considered a bible for bloodletters (Santos, 2005). Manuel Leitão was responsible for the four treatises constituting this manual, in which he defended the humoral theory and its benefits for almost all illnesses. Nevertheless, the manual focuses on the precision with which bloodletting should be done to avoid complications from poorly done cuts (Leitão, 1849). Santos (2005) reports that, according to the manual, 42 veins could be bled with precision. For this, the barber had to be a young man, so his hands would

not shake, and have a keen eye. They were also required to understand the difference between veins and arteries and to have suitable lancets. According to Santos (2005), the manual also explained the preliminary procedures considered essential to perform a good bloodletting: the barber should tie a bandage above the bloodletting site to engorge the vein; next, he should prick the vein with a single movement, never too deep, to avoid any artery, nerve or tendon. After withdrawing the recommended amount of blood, the barber had to dress the wound with a cloth and tie it with a bandage. These materials were provided by the head nurse (Brochado, 2019). The bloodletting should always be performed with the patient lying down, followed by rest and a light diet.

According to Barradas (1999), in the Royal Hospital of All Saints, master bloodletters, experts in bloodletting, were accompanied by apprentices learning the trade. However, the number of apprentices often exceeded what was considered reasonable, and consequently, the quality of the teaching/learning was below the required. The *Regimento do Barbeiro* (Barber's Regulation) was established in 1620 to regulate and control anarchical and poorly performed bloodletting procedures, which resulted in the loss of lives (Barradas, 1999). This Regulation limited the number of apprentices to six. These became the master bloodletter's assistants after passing the physicians' test on bloodletting fundamentals and receiving the Hospital's *Provedor* final approval. According to Manuel Leitão, bloodletting required a firm hand, a very well-sharpened lancet, and the exact knowledge about where to cut. Therefore, some notions of anatomy were necessary. In addition, the applicants to barber-surgeon positions had to be old Christians with good reputations and charitable (Santos, 1921). However, the number of master bloodletters was insufficient for the number of bloodletting procedures performed daily (40 to 50 per day) and the exceeding number of patients (Barradas, 1999). The master bloodletter's assistants were used to make up for this deficit, and, as a result, accidents were frequent and sometimes fatal. This lack of human resources led to the introduction of a new regulation for the admission of surgery and bloodletting apprentices (Santos, 1921). It is worth noting the inclusion of surgery and bloodletting apprentices in the same regulation, as the two positions differed little at this time. Although the number of vacancies for bloodletting apprentices was higher, both positions had identical admission regimes. The applicants had to identify their filiation and land of origin and know how to read and write. Santos (1921) confirms that "no one who [did] not know how to read and write very well [was] admitted as a barber" (p. 41). The applicants had to undergo a five-year practical apprenticeship to obtain the certificate qualifying them for the Principal Surgeon's examination.

In the 18th century, during the Pombaline period and following the Lisbon earthquake of 1755, the Royal Hospital of All Saints was in ruins but still operating precariously. In 1760, it introduced a regulation imposing limitations on the entry of bloodletting and surgery apprentices into the wards, demanding that the masters

accompanied them. The apprentices also had to pay a *propina* (fee) to the *Casa da Fazenda* (in charge of the financial and economical administration of the Kingdom). In the last quarter of the 18th century and the beginning of the 19th century, the advancement of the knowledge of anatomy and physiology surpassed the rudimentary medical knowledge practiced over the previous centuries, being integrated into the manuals used at the university and in the recently established medical-surgical schools of Lisbon and Porto (created in 1836). Medical manuals began to incorporate concepts of human anatomy developed through the cadaver dissections conducted by Andreas Vesalio, still in the 16th century, or of the circulatory system, according to William Harvey, who disproved Galen's theory of blood's centrifugal movement. Although this discovery in the area of physiology was made in the 17th century, only two centuries later, its value was recognized and associated with the beginning of experimental medicine (Barradas, 1999), established by Claude Bernard, a research physician who conducted numerous experiments of great importance for the development of medical sciences, along with Pasteur. As Santos (1919) points out, "two or three experiments by Pasteur or Claude Bernard were more useful to science than fifty years of cellular pathology" (p. 14). The advances

in bacteriology made by the already mentioned Pasteur or Koch are other examples of fundamental contributions to advancing medicine.

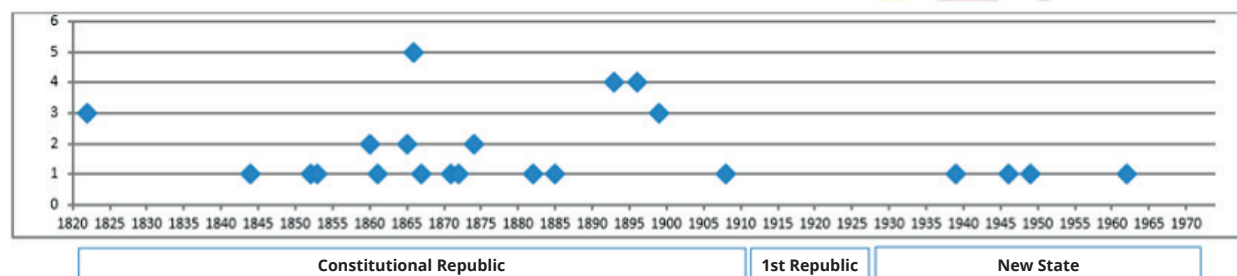
This eruption of medical knowledge refutes the humoral theory and calls into question bloodletting as the cure for all illnesses, causing it to suffer a setback and limiting its prescription (Barradas, 1999).

After the French invasions and the civil war between liberals and absolutists, Portuguese society went through a period of calm that allowed searching for solutions to improve the health care provided to the population and the qualifications of health care professionals. The medical-surgical schools of Lisbon and Porto were created in 1836, providing education in medicine and surgery (Barradas, 1999). Bloodletters and their practices began to be ostracized and the target of criticism, even mockery, by the political class of the time, generating heated discussions in the first Chamber of Representatives elected after the Portuguese Liberal Revolution of 1820. Discussions that endured for many years in several parliamentary debates.

A search on the digital archive of the Portuguese *Assembleia da República*, with the descriptor *sangrador/les* (bloodletter/s), allowed this study to identify 48 pages in 39 session minutes from 1822 to 1962 (Figure 1).

Figure 1

Number of session minutes by year responsive to the descriptor sangrador/les (bloodletter/s)



Source: Authors' graphic designed with data from "Assembleia da República Portuguesa." Minutes from the Chambers from 1820-1974." Retrieved in January 2020, from *Assembleia da República* website: <http://debates.parlamento.pt/>

In the session minutes of the successive chambers from the Constitutional Monarchy to the present day (considering the periods of the Constitutional Monarchy, First Republic, New State, and Third Republic), there are references to bloodletters in thirty five session minutes in the Constitutional Monarchy. No references to bloodletters were found in the session minutes of the first and third republics, but four references were found in the New State period. The latter are previous references, one from the National Assembly Diary, no. 43, of February 28, 1939 (Session 43/1939 of the Assembly of the Republic, 1939) regarding the law for the practice of medicine by international doctors, presented as follows in the *Assembleia da República* webpage,

the invasion of foreign doctors in our country that we are currently seeing, [is] identical, naturally

taking into account the proportions of the time and the category, to those observed during specific periods in Portugal: dentists, virtuous women, *algebristas*, bloodletters, *postemeiros* (abscess removers), *extratores de lobinhos* (cyst removers), and so many others of not very fond memory. (p. 401).

In 1962, a last reference to the physician-surgeon and the bloodletter of the *Casas dos Pescadores* (Fishermen's professional associations) can be found in the minutes of session n° 46 of the Secretariat of the National Assembly (Sessão n° 46/1962 da Secretaria da Assembleia Nacional, 1962).

The data found referring to the period of the Portuguese Constitutional Monarchy are relevant. In 1822, the *Cortes Gerais e Extraordinárias da Nação Portuguesa* (General and Extraordinary Courts of the Portuguese Nation) decla-

red no more differences between a bloodletter, a minor surgeries surgeon, and an operating surgeon. From then on, there were only *cartas de cirurgia* (official certificates attesting to the holder's qualification as a surgeon) (Session no. 56/1822, 1822). In 1861, the Count of Samodães, Peer of the Realm, advocated for the existence of more *facultativos* (physicians), as documented in the minutes of session 15 of the Chamber of the Most Worthy Peers of the Realm (Diário da Câmara do Pares do Reino, nº 15, 19 de fevereiro de 1861), "so that they may provide better care than those barbers and bloodletters of the small villages, who are the country's greatest disgrace, as when they are called to a sick person's bedside, it is almost always to bring death" (p. 501).

In 1899, the minutes of session 72 of the Chamber of Deputies (Diário da Câmara dos Senhores Deputados da Nação nº 72/1899, 1899) recorded the intervention of the Peer of the Realm, the Count of Restelo, appealing "to the competent authorities to put an end to the considerable amount of healers, bloodletters, and even barbers who ruin public health more than the illegal pharmacies." (p. 714).

Estevão Pedroso, the last bloodletter, performed his job until his position was extinct at the S. José Hospital. Pedroso requested to be considered an extraordinary surgeon, which was granted by royal authorization in 1851 (Barradas, 1999). At this time, although some more conservative doctors still prescribed it, bloodletting procedures were scarce and did not exceed two per day. This substantial reduction in bloodletting, particularly when compared to past numbers, precipitated the signing in 1870 of the decree extinguishing the bloodletter's trade (Barradas, 1999). However, despite being officially extinct, bloodletters' good reputation in the eyes of the populations and the authorities' complacency allowed them to remain active for many years beyond the 19th century. The high deficit in health care, particularly in small rural areas, contributed to the continuity of bloodletters' more or less covert activity. The local barbers often took on this role of assistance, being available whenever someone was ill and sought their services of easy and immediate health care. A monograph of Vilar de Amargo, a small village in the interior north of Portugal, gives highlight to Dário Gouveia, the son, and grandson of barbers from Vilar de Amargo, who, after having fought in the 1914-18 war, inherited from his father a kit with instruments that allowed him to extract teeth and perform bloodletting in patients he diagnosed with pneumonia (Eurico, 1988). Today, it is still possible to find the remnants of this past procedure based on Ancient Medicine's dogmas, as it continues to be performed in certain specific situations by other health care professionals that have emerged in the meantime and continued its process of evolution. It is the case of nurses whenever they collect blood from their patients for analysis or perform controlled bloodletting (phlebotomy) prescribed by physicians to treat certain diseases such as hemochromatosis or polycythemia vera.

Conclusion

Bloodletting persisted over the years as a medical procedure due to several factors. Its continuity was primarily due to being grounded on the ancestral Hippocratic-Galenic humoral theory, later recovered and renewed by Avicenna, which dominated medical science for centuries. Unchallenged by science, protected by the Church, and validated by the ancient writings disseminated and taught by the religious orders, bloodletters and *barbeiros-sangradores* experienced a period of relative success and apogee in the healing arts, conducting their activity not only in care institutions but also in their private stores and tents. The regulation developed with the creation of the training school of the Royal Hospital of All Saints maintained the position of minor surgeries surgeon, little differentiated from the *barbeiros-sangradores*, based on the simple cutting or puncturing of veins learned through imitation and practice over generations with master bloodletters and under the physicians' or surgeons' strict prescriptions.

The advancement of society, science, medicine, anatomical and physiological knowledge, and new healthcare methods and theories challenged bloodletting as a health care procedure and its methods and practical applicability, leading to significant political discussions in the Portuguese parliamentary sessions over the years. Such discussions led to the extinction by decree in 1870 of the bloodletter's trade, almost four centuries after the first barbers' regulation was approved. With the limits imposed on its training, the evolution of medical science, and the progressive reduction of physicians' prescriptions of bloodletting, the procedure began to die out progressively. Nonetheless, it persisted as a more or less covert activity in Portugal until the first quarter of the 20th century, a long time after its formal extinction. This was due to the enormous lack of health care assistance in Portuguese rural areas, whose populations were primarily illiterate and highly devoted to God and ancient beliefs. These factors and the lack of physicians to cover the Portuguese territory contributed to maintaining bloodletters' status and social position in these areas over several years after the official extinction of the bloodletting activity. Nevertheless, the profession's fate was sealed. At the end of the 19th century, the new needs in health care boosted the nurses' profession evolution and professionalization process, which materialized in the creation of the first school for nurses in Coimbra, Portugal, in 1881. In the transition from the 19th to the 20th century, the evolution and development of nursing led nurses to occupy new spaces and perform new functions.

In the dawn of modern medicine, with new medical theories, new therapeutic approaches, and the progressive transition of care institutions from places of accommodation to places of treatment, there was a need for new health care professionals that were prepared to face the new demands. In this sense, medieval occupations, trades, or professions, such as bloodletters and *barbeiros-sangradores*,

algebristas, cristaleiros (those who administered enemas and other forms of purging), and nurses (already present) disappeared, were reconfigured, or evolved, occupying new social spaces and assuming different functions, particularly within healthcare institutions. The present study considers that this was the strong driving force behind the professionalization of nurses. Already existing for many centuries, nurses saw the possibility of accelerating their professionalization through the increase of their numbers in healthcare institutions, the more significant differentiation of their functions, the implementation of regulation, and, no less important, the beginning of formal nursing training in the work context and specific schools, such as the School of Nurses of the Hospitals of Coimbra, created in 1881.

Author contributions

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Methodology: Queirós, P., Costa, N.

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