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Original article

The Moral Responsibility of the Medical Professional: Religious Lessons from Thomas Browne's *Religio Medici*

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As Sir William Osler (1849-1919) laid in his coffin in 1919, atop of him was a copy of Sir Thomas Browne's (1605-1682) *Religio Medici ("The Religion of a Doctor")*– a beloved piece of literature (1). Today, Osler is regarded as an astute clinician. He not only relied on history gathering and physical exams to diagnose his patients, but Osler also emphasized the importance of patient-centered care– one that considered the well-being of an entire person beyond their physical ailments. Despite being regarded as a religious skeptic by the end of life, Osler's ethical view can be traced back to Browne's deeply reflective writings. *Religio Medici* blends science, spirituality, and ethical inquiry in a way that continues to resonate today.

This article explores the historical development of public health in the United States and examines how Thomas Browne's medical ethics, filtered through the life and legacy of William Osler, laid the groundwork for a moral approach to medicine that includes—but also transcends—clinical care. It argues that today's physicians, inspired by Browne's call to moral responsibility, have a vital role to play not only at the bedside but also in the broader public health arena.

Sir Thomas Browne was a physician, writer and philosopher. His first love, medicine, prompted him to study at Oxford and the Universities of Padua, Montpellier and Leiden and eventually practice medicine for 40 years (2). Fascinated by science as well as theology, Browne sought out to investigate the question of morality, religion and the human condition as it pertained to suffering. *Religio Medici* became a literary escape for Browne and a way to express his thoughts as well as explore the interplay between his Christian faith and his professional identity as a physician(1). What started out as an introspective essay that Browne never intended to publish, went on to become a paper with profound literary and philosophical influence. *Religio* was published in 1643 and was seen as a bit heretical for Browne's time. His reflections on death, human suffering, the soul, and the physician's moral obligations would go on to influence generations of medical thinkers—including Sir William Osler, who considered it one of the most spiritually rich works ever written by a doctor.

During the 17th century, medicine was evolving but it was also tethered to the mainstay theological and classical philosophies of the time. Physicians had to find a way to intertwine their faith, as most were Christians, with sound empirical judgement. However, given the tragedies of the time such as the Great Plague of the 1660s, Browne as well as other physicians were burdened with understanding morality and human vulnerability. Though *Religio Medici* was written at a time marred by grave human suffering, it was not a grim text but rather one that is contemplative, hopeful, and infused with a sense of reverence for both divine creation and human dignity.

Many times throughout *Religio Medici,* Browne asserts that physicians bear a spiritual responsibility to not only heal but also advocate, serve, and elevate the human condition. He wrote, "I have resolved to pray more and to do more good," a sentiment that reflects a calling beyond diagnostics. Browne recognized that health is not solely a bodily state, but a condition that "runs through all degrees and estates of men," one that medicine alone cannot fully reach.

This began to set the stage for the public health school of thought that health is not solely dependent on physical wellbeing or merely the absence of disease in an individual but rather, it must be viewed as a collective, societal pursuit. Browne's writings, though far preceding the official birth of the public health discipline, illuminated the core values of the field: prevention, equity, and service to the under-

served. His religious convictions led him to see each patient as a reflection of the divine, thus rejecting any form of social or moral neglect. This shift was most evident in Sir William Osler and his legacy as a great clinician and compassionate physician. In his youth, Osler was committed to the Christian faith with hopes of even entering Christian ministry. Although Osler ultimately chose medicine, he applied lessons from his faith and Browne's teaching to his practice. His life's work represented a secularization of Browne's religious vision, preserving the essence of moral responsibility while adapting it to a pluralistic and increasingly scientific world.

The fundamental principles of Oslerian medicine include providing compassionate, personalized medical care that emphasizes the patient-physician relationship; a sound scientific basis for care; and professionalism. Osler summarized this with the statement, "The good physician treats the disease; the great physician treats the patient who has the disease (4)." Like Browne, Osler emphasized that the physician's duty extended beyond the clinic—into the community, into public service, and into advocacy for the vulnerable. Yet, Osler did so through a lens of secular humanism rather than religious doctrine. In his article *The Faith that Heals,* Osler states, "Never before in a history… has so monstrously puerile a belief [Christian Science] been exploited. To deny the existence of disease, to deny the reality of pain, to disregard all physical measures of relief… in a return to Oriental mysticism– these indeed, expressed a revolt from the materialism of the latter half of the nineteenth century at once weird, perhaps not unexpected, and, to a student of human nature, just a bit comic"(5). This quote clearly exemplifies Osler's declaration that ignoring sound scientific discovery for a purely religious understanding of medicine is strange and quite comical. However, the moral core remained. This interplay between medicine and religion defined by Osler helped embed moral duty into a physician's identity.

To fully understand the physician's role within public health, the history and relevant context of the field must be examined. Public health, at its core, is focused on preserving the health of populations and communities rather than the sole individual. It emphasizes the importance of collective responsibility to promote better physiological, psychological, emotional and social health. This is in direct contrast to traditional medicine that focuses on the individual and restoring health in that one person. This moral and civic vision of health has deep historical roots in the United States, emerging long before public health became a formal profession and was surprisingly – begun by physicians.

In colonial America, infectious diseases ran rampant. Outbreaks of smallpox, yellow fever, and the plague riddled cities like Boston and Philadelphia showing people that there was a need to not just protect individuals but the larger community. By the 19th century, America had ushered in the Sanitary Movement. As the country grew, overcrowding and lack of disease control perpetuated a continuous state of sickness in America. In response, reformers like Lemuel Shattuck called for a more structured approach. His 1850 *Report of the Sanitary Commission of Massachusetts* advocated for comprehensive public health systems: clean water, waste disposal, vaccination programs, and systematic data collection through vital statistics. Though largely ignored at the time, the report became a foundational document, shaping the development of state and local health departments as well as laying the groundwork for population-level prevention (6).

By the late 1800s, public health had begun to institutionalize. The Marine Hospital Service, established in 1798 to care for sick seamen, gradually evolved into the U.S. Public Health Service (USPHS), taking on responsibilities like quarantine enforcement and disease surveillance. Breakthroughs in bacteriology and germ theory transformed sanitation from a purely moral imperative into a scientifically grounded public health strategy. The long-held belief that "cleanliness is next to Godliness" shifted from a focus on individual hygiene to a community-wide initiative, catalyzing the growth of health departments and expanding immunization efforts nationwide.

During the Progressive Era (1900–1930s), public health expanded to address the social determinants of disease. Reformers, mostly physicians, focused on improving maternal and child health, workplace safety, and housing conditions. This era focused on the country's most vulnerable– the poor and immigrant communities– and developed programming and organizations that were rooted in social equity and ethical concern, echoing Browne's insistence that health and dignity are inseparable. By the mid 20th century, the advent of the Centers for Disease Control and Prevention (CDC) in 1946 marked the federal government's commitment to disease surveillance, outbreak response, and immunization on a national scale. Out of this came victories such as the polio vaccine and widespread dissemination of penicillin championed by individual physicians who saw the importance of public health. Throughout its evolving history, public health has maintained a clear ethical through-line: a commitment to justice, prevention, and the dignity of all people. These principles are not new. Long before public health became a codified field,

Thomas Browne's writings reflected this same ethos. In this light, Browne stands as an early moral architect of public health thought, his legacy continuing in the hands of physicians who see beyond the clinic to the wider world in need of healing.

Fortunately, there are many physicians heeding to the call of Sirs Browne and Osler to cater to the "collective well-being." During the COVID-19 pandemic, for example, doctors served not only as frontline caregivers but as scientific communicators, advocates for vaccine equity, and leaders in policy reform. Many used their platform and position in society to speak out publicly against misinformation. In the world of social media, physicians have used this unconventional, yet profoundly influential, mode of communication to spread awareness about different policies that affect patients, different advancements in healthcare, and to inform the general public with sound medical advice.

Internationally, physicians are also harking to the call from Thomas Browne to put the patient's needs above their own. Specifically, the Yemen Famine crisis demonstrates how extreme famine, breakdown of systemic protections, and warfare can quickly become a public health emergency, necessitating the moral vision of a physician. In Yemen, more than 24 million people, including 13 million children, remain in need of humanitarian assistance. Physicians have dedicated themselves to not just treating the disease, but treating the patient. In addition to addressing infectious diseases like cholera, physicians have, through organizations like Doctors Without Borders and the International Medical Corps, formed the backbone of the country's emergency health response. They have helped reestablish basic vaccination services, and conduct nutritional surveillance for at-risk populations all contributing to preventing disease rather than just reacting to it. These physicians champion public health by addressing water contamination, coordinating contact tracing and advocating for food, water, and medical assistance from world superpowers. The commitment of these physicians and other healthcare professionals in these settings clearly represents an extension of Thomas Browne's belief that a physician's duty is not limited to physical healing but includes moral and social stewardship. In Yemen, health is not only about restoring function to the individual body but restoring justice, infrastructure, and dignity to entire communities.

The love story of public health and the physician does not have to end there. The current healthcare landscape has become increasingly more complex. Populations are growing and living longer resulting in more individuals with chronic diseases. Thanks to technological advancement and discovery, diagnosing and treating a plethora of conditions has become more sophisticated and attainable. Despite physicians' capabilities to treat patients when they present in hospitals and clinics, the growing burden of preventable disease, structural inequities, and global health crises has made it increasingly clear that modern physicians must also be public health advocates. Physicians trained exclusively in hospital-based or outpatient care may not always be prepared to tackle the broader determinants of health: food insecurity, housing instability, racism, pollution, or legislative neglect. A 2019 survey of Chicago physicians—serving a population heavily impacted by social determinants of health—found that only 45% had interacted with public health in the past two years, and just 46% were aware of local public health organizations (7). This may be partly attributed to medical curricula that often lack sufficient emphasis on public health. While recent advancements—such as dual MD/MPH programs—reflect growing efforts to integrate public health into medical education, a significant gap remains. In practice, many physicians face the difficult choice between focusing solely on traditional clinical care or incorporating broader public health approaches into their work—often without clear guidance on how to effectively bridge the two. Additional solutions may include administration buy-in to encourage a multidisciplinary approach to healthcare that optimizes care for all aspects of a person's life.

The physician's duty has always extended beyond the body and the four walls of the patient room. From Thomas Browne's spiritually grounded vision of care to William Osler's humanistic ethics, medicine has been understood not simply as a science, but as a moral calling. In today's current healthcare climate where misinformation runs rampant, preventable chronic diseases have plagued millions, and there is an ever-growing divide between physicians and public health officials– there needs to be an evolution in the boundaries of medicine. The modern physician cannot be content with a reactive approach to illness. Rather it is imperative physicians incorporate a public health centered approach to medicine. The writings of Thomas Browne, particularly *Religio Medici*, offers hope and guidance as to how physicians can heed to the call to preserve life as opposed to just preserving health. Similar to public health, Browne underscores the ethical duty of doctors to "place the patient's interests above his or her own self-interest."(1) Osler's reinterpretation of Browne's ethos into a secular, professional identity demonstrates how such moral commitments can flourish even outside of religious contexts.

To address this challenge, seamless and significant inclusion of public health curricula into medi-

cal education can serve as a stepping stool to prepare future physicians to bridge this divide. Public health courses should not just be optional add-ons, but rather a core of one's education. Institutions must support and reward physician engagement in advocacy, policy, and community outreach. Similarly, for practicing physicians, they must push and advocate for public health initiatives to be heavily integrated into healthcare systems. These initiatives must then be celebrated and rewarded by administration to encourage even more physicians to continue to serve their patient populations.

Ultimately, the health of a community is the true measure of medicine's success. If we are to live up to the highest ideals of our profession, we must embrace the truth that healing is not only an act of care—but of courage, conscience, and collective responsibility. In the spirit of Browne and Osler, modern physicians are called not just to treat the sick, but to shape a world in which fewer people become sick to begin with, because as Sir William Osler put it, "to serve the art of healing, one must love mankind (8)."

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Original article

Nunca Vamos a Rendirnos: The Enduring Legacy of Dr. José Celso Barbosa in Medicine and Social Justice

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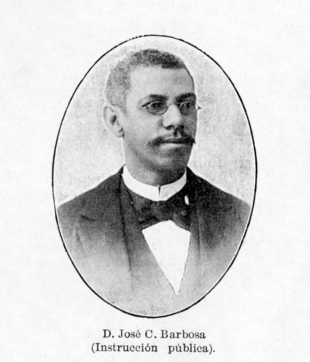

Portrait of Dr. José Celso Barbosa Alcalá, May 30th, 1898. (Public domain image)

Introduction

In the grand tapestry of Puerto Rican and Afro-Latinx history, Dr. José Celso Barbosa Alcalá (1857-1921) stands out as a figure of unyielding determination, intellectual brilliance, and moral courage. Widely recognized as the "Father of Puerto Rican Statehood," Barbosa's life intertwined medicine, social justice, and political advocacy in unprecedented ways.

Born in 1857 in Bayamón, Puerto Rico, during a period when slavery was still legal on the island, Barbosa grew up amidst the hierarchical structures that Spanish colonialism created and which placed Black Puerto Ricans at the bottom of social, economic, and educational systems. Despite this, he was exceptionally intelligent and demonstrated a fierce commitment to challenging these limitations early on. His rise from poverty to become the first Puerto Rican to graduate from a U.S. medical school, and later one of Puerto Rico's most influential political leaders, illustrates the transformative potential of education, perseverance, and moral conviction.

This manuscript explores Barbosa's biography beginning from his early life under Spanish colonial rule and his educational struggles in the United States to his contributions to public health and his leadership in Puerto Rican politics.

Growing Up in Colonial Puerto Rico

José Celso Barbosa Alcalá was born on July 27, 1857, in Bayamón, Puerto Rico, during a time when slavery remained legal and racial hierarchies structured daily life. He was the son of Hermógenes Barbosa, a brick mason and overseer of the San Antonio sugar mill, and Carmen Alcalá, a seamstress (1).

Barbosa's birth occurred during the height of sugar plantation economies that dominated Puerto Rico and the Caribbean. More importantly, slavery was not abolished in Puerto Rico until March 22, 1873, therefore Barbosa spent his formative years witnessing firsthand the dehumanizing effects of slavery and

racialized systems. As a Black child born free but surrounded by enslaved people, Barbosa lived at the intersections of racial caste systems that defined social mobility in the Spanish colonial empire. While his access to advanced education was limited by his family's poverty, his maternal aunt, Lucia Alcala, whom he called "Mama Lucia", ensured he would not be confined by these limitations. Her unbreakable faith in his potential and the sacrifices she made for his schooling became the foundation that shaped his life.

Seminary Education Amidst Racial Hierarchies

In 1870, at the age of thirteen, Barbosa enrolled in the Seminario Conciliar de San Ildefonso in Old San Juan, the only secondary institution on the island. He broke a longstanding racial barrier in an institution traditionally reserved for the white criollo elite by being the first mulatto student admitted (2). Although he overcame the challenge of being admitted to this institution as a Black Puerto Rican, his years there were marked by social isolation due to pervasive racism and a society that did not recognize the right of the children of workers to become professionals (3). Teachers and classmates frequently belittled him for his dark skin and poor background, reinforcing the colonial caste system that sought to limit the aspirations of Black Puerto Ricans.

Despite this hostile environment, Barbosa excelled academically, mastering subjects such as Latin, philosophy, rhetoric, and classical literature. He graduated in 1875, at the age of eighteen, with honors. These formative years convinced him of the power of education as a tool for liberation and personal dignity. Yet they also made him acutely aware that intellectual achievement alone could not erase the entrenched racism of colonial society, a tension that would remain central throughout his life.

Facing Racial Discrimination in Higher Education

After graduating, Barbosa saved enough money to pursue a higher education in the United States by working as a private tutor for the children of Mr. José Escolástico Berríos, owner of the San Antonio Sugar Mill (3). On October 19, 1876, he traveled to New York City and enrolled at the Fort Edward Collegiate Institute to master English. He was initially inspired to pursue a degree in Law or Engineering by Puerto Rican intellectuals who advocated for legal reforms against Spanish colonialism (4). However, his plans changed after suffering through a severe case of pneumonia. His physician, Dr. Wendell, recognized Barbosa's analytical mind and relentless desire to serve others and suggested he pursue medicine.

It was this pivotal moment which led Barbosa to apply to Columbia University's College of Physicians and Surgeons in 1877. Despite his academic brilliance and recommendations, Columbia rejected his application solely due to his race. The minutes from a faculty meeting discussing Barbosa’s application stated, “Resolved, that from this date forward this College will decline to receive ‘colored’ applicants for matriculation,” (5). This blatant discrimination exemplified the exclusion African and Latinx students faced in American educational institutions, a legacy that continues to impact underrepresented minorities today.

Undeterred, Barbosa applied to the University of Michigan Medical School. After initial hesitation, the institution accepted him, marking him as its first Puerto Rican student and one of its earliest Afro-Latino medical students (6). His admission received mixed reviews but surprisingly a student publication, *The Chronicle*, praised his admission and emphasized merit over racial background, stating, “We have no hesitancy in saying that Mr. Barbosa will have the right hand of fellowship extended to him from every side…young gentlemen of sufficient ability are admitted on equal footing irrespective of complexion. It not being the amount of pigment matter deposited in the skin that is sought after; but the quantity and quality of the brains in the cranium” (5).

During his years from 1877 to 1880, Barbosa excelled academically despite enduring racial segregation in housing and social life. On July 1st, 1880, Barbosa graduated as valedictorian, becoming the first Puerto Rican to earn a U.S. medical degree and solidifying his place as a pioneer in Afro-Latinx medical history.

Returning to Puerto Rico: Contributions to Medicine and the Structural Barriers

Upon his return to Puerto Rico in late 1880, Dr. José Celso Barbosa faced three immediate barriers to practicing medicine. The first was being a working-class man, the second was being the first black physician, and the third was holding a diploma from an American university (3). Spanish colonial authorities refused to recognize his U.S. medical degree, asserting that only European credentials were valid for licensure. It was only through direct intervention by the American consulate that Barbosa's degree was eventually recognized, allowing him to begin clinical work (4).

Once he was allowed to practice medicine, Barbosa immediately established his own medical practice in San Juan which focused on Afro-Puerto Rican and impoverished communities that were historically excluded from healthcare systems. He quickly gained recognition for his innovative treatment protocols, particularly during a smallpox epidemic where his American-based vaccination and isolation practices saved countless lives. It was at his clinic where patients, regardless of their ability to pay, were treated with dignity and received the care they desperately needed. Barbosa recognized that healthcare was a human right and this strong conviction to provide care for all patients, regardless of social or economic status, was what drove his professional life.

His contribution to healthcare did not stop at his clinic. Perhaps his most revolutionary contribution to public health was his advocacy for employer-supported health insurance. Under this model, employers paid a fixed fee in advance to cover future medical care for their workers and families. This concept, introduced decades before similar systems in Europe and the U.S., reflected Barbosa's vision for structural solutions to health disparities (2).

Barbosa also advanced medical education in Puerto Rico by joining the faculty at the Ateneo Científico y Literario. He taught natural history, anatomy, obstetrics and midwifery, fields central to public health and maternal-child care at the time (1). His lectures integrated American clinical innovations with local traditional knowledge. His insistence on rigorous science coupled with community-centered ethics left a lasting mark on generations of Puerto Rican physicians.

Early Political Involvement: Liberal Reformist and Autonomist Movements

Barbosa's involvement in politics began in 1883 with the Liberal Reformist Party, advocating for moderate reforms within the colonial government. He later joined the Autonomist Party, working alongside Puerto Rican intellectuals who sought greater local governance while still under Spanish rule (7). In 1897, Barbosa co-founded the Orthodox autonomist party which believed in expanding autonomy while rejecting political compromises that helped the Spanish maintain dominance. Although Barbosa understood that colonial rule denied many of the goals of the Orthodox Autonomist Party, he continued to argue for policies which would uplift Puerto Ricans economically and socially (1).

Founding the Republican Party and Advocacy for Statehood

The U.S. invasion of Puerto Rico in 1898 during the Spanish-American War presented new possibilities and contradictions. On December 10, 1898, the Treaty of Paris was signed effectively bringing the end to the Spanish-American War. With this, Puerto Rico was acquired by the United States along with Guam, the Philippines and Cuba from Spain. For Puerto Rico, this marked the beginning of a new prolonged struggle to secure democratic rights and political representation under the United States. While the American Republican system held its own racial flaws, Barbosa believed it offered a pathway to civil rights and social advancement for the people of Puerto Rico. Therefore, he founded the Republican Party of Puerto Rico on July 4, 1899 to advocate statehood as the path to constitutional rights and full political participation for Puerto Ricans (7). As Barbosa declared, "We aspire to be another State within the Union in order to affirm the personality of the Puerto Rican people" (7). This was not a call for assimilation but rather a demand for full constitutional rights and political power for Puerto Ricans (7).

Service in the Executive Cabinet and Senate

In 1900, the Foraker Act established a civil government in Puerto Rico, marking a new chapter in

the island's political landscape. Under this system, Dr. Barbosa was named by President William McKinley to serve as part of an Executive Cabinet under U.S-appointed Governor Charles H. Allen. In this role, he oversaw public health, education, and county administration (8). Once again, his experience was marked by tension, this time by Americans and local elites who were skeptical of Puerto Rican leadership and threatened by his advocacy for Afro-Puerto Rican rights.

In 1917, the Jones-Shafroth Act granted U.S citizenship to the people of Puerto Rico and restructured the island's government. The act established a bicameral legislature composed of a Senate and a House of Representatives, and divided the government into executive, legislative, and judicial branches. Dr. Barbosa would be elected as a Senator and became the first minority leader in the Puerto Rican Senate, a role he held until his death in 1921. During his time in the Senate, he focused on universal suffrage, public education, healthcare expansion, and labor protections.

Final Years and Death

Dr. José Celso Barbosa passed away on September 21, 1921, in San Juan, while still serving as a Senator. He made such an immense effort to make change that his loss was felt by supporters and opponents alike, who recognized his lifelong dedication to Puerto Rico's advancement (2). Newspapers across political lines published obituaries commemorating his contributions as a physician, educator, and leader.

Dr. José Celso Barbosa was survived by his wife, Jacinta Belén Sánchez Jiménez De Barbosa (1863-1928), who together had eleven children, several of whom followed paths in education, medicine, and public service (4). Their daughter Pilar Barbosa de Rosario (1898-1997) emerged as a leading figure in Puerto Rican intellectual and political life, becoming the island's first female Official Historian in 1993 and a lifelong advocate for statehood and civic education (4). Among their sons, Robert C. Barbosa (1895-1984) pursued a career in dentistry, and Guillermo H. Barbosa (1889-1972) became a surgeon (4). While detailed records of their remaining eight children are limited in the historical archive, the Barbosa family reflects a legacy of service, professionalism, and commitment to the values Dr. Barbosa championed throughout his life.

Today, Barbosa's memory is honored through a public holiday on July 27th which is declared José Celso Barbosa Day and his childhood home in Bayamón which serves as a museum to preserve his achievements. Additionally, there are several named sites such as highways (PR-53), Third Millennium Park, schools and public buildings, as well as a U.S. Post Office appointed under Public Law 109-253.

Critical Reflections on Barbosa's Views of Race and Meritocracy

Barbosa actively supported racial equality, but his approach was rooted in meritocracy. He strongly believed that Afro-Puerto Ricans could overcome prejudice through education, moral character, and professional achievements. He stated, "Black! Black! Black! I am proud of being a Negro. Nor have I ever tried to beg tolerance from anyone. Superiority is not proved by color, but by the brain, by education, by willpower, by moral courage" (5).

Modern scholars argue that while his focus on individual excellence challenged stereotypes, it did not address the structural issues of racism at a systemic level (6). His life thus reflects both an inspiring model of Afro-Latinx achievement and of using an approach like colorblind meritocracy in dismantling racial hierarchies.

Why His Legacy Matters Today

Barbosa's journey displays the experiences of Afro-Latinx students who continue to navigate a system and institutions that were historically structured to exclude them. Barbosa was listed merely as a "Negro man" at the University of Michigan Medical School, erasing his Puerto Rican identity in official records despite his academic excellence (6). Afro-Latinx students today continue to experience racial microaggressions, systemic bias, and remain underrepresented. Barbosa's life demonstrates that an individual can challenge stereotypes within a society, but true equity requires transformation at a systemic level.

Moreover, Barbosa's rejection from Columbia University on the basis of his race reflects barriers that persist in elite academic institutions. Afro-Latinx scholars continue to advocate for equity in admissions, inclusive curricula, and anti-racist policies to dismantle legacies of exclusion that date back centuries. Barbosa's perseverance despite the barriers he faced remains an everlasting model of resilience, but it highlights the moral need to change systems so that resilience is not required for marginalized students to succeed.

Public Health Leadership and Structural Interventions

Barbosa's vision for employer-supported health insurance prefigured modern concepts of occupational health coverage, a model that expanded globally in the 20th century (2). His work continues to make an impact by challenging current healthcare systems to design policies that not only address treatments but also places an emphasis on prevention and social determinants of health. His approach aligns with modern ideas of competency within medicine, which calls on physicians to not only have knowledge of the complexities of the diseases which afflict their patients, but also to understand how socioeconomic systems create and perpetuate these diseases.

His dedication to serving Afro-Puerto Rican laborers, who were disproportionately affected by infectious disease outbreaks and poor working conditions, remains relevant today. Afro-descendant populations continue to face disproportionate burdens of chronic illness, infectious disease, and limited access to culturally competent care. Barbosa's integration of clinical innovation with community advocacy serves as an example of how effective public health requires addressing the root cause of these inequalities within medicine, education, and labor practices.

Political Status Debates, Decolonization, and Racial Democracy

There continues to be debates about Barbosa's advocacy for Puerto Rican statehood and the island's political future. His vision of using statehood as a pathway to civil rights was rooted in his belief that American Republicanism would offer greater constitutional rights. However, modern scholars critique his vision as they believe he underestimated the racism of the U.S. as well as imperialism within the states. Statehood could theoretically secure rights for Puerto Ricans, but at the cost of assimilation without addressing the colonial exploitation that Puerto Ricans underwent. (1).

Furthermore, Barbosa embraced racial democracy believing education and moral character could overcome racism. This was a reflection of ideas common amongst Black leaders in this time, such as Booker T. Washington. Yet his vision did not fully address the extent to which racism was embedded within the law, economics, and political institutions. Today, movements directed towards dismantling racism build off his work while also recognizing that there needs to be change within oppressive systems to combat racism.

A Call to Medical Professionals

For current and future physicians, Barbosa's life offers a framework of inspiration. His story exemplifies the power of perseverance, education, and advocacy to drive social change and improve community well-being. His work as a clinician, politician, and public health advocate serves as a blueprint for holistic care within medicine. His journey cautions us from relying on meritocracy as a solution to systemic issues and allows us to incorporate competency, humility, and advocacy to transform healthcare systems that continue to marginalize poor, black, Indigenous, and immigrant communities.

Conclusion

"Nunca vamos a rendirnos" translates to "we will never surrender". This statement is an embodiment of Dr. José Celso Barbosa's life. His journey is a testament to how intelligence, compassion, and resilience can overcome the barriers of oppression. Yet his story also reminds us that true justice is never fully achieved through individual success alone; it demands collective action to dismantle structural racism, economic injustice, and colonial domination.

In the words of Sir William Osler, "The practice of medicine is an art, not a trade… a calling in which your heart will be exercised equally with your head" (9). Dr. José Celso Barbosa experienced this truth in his daily life. He saw medicine not merely as a career but as a calling to advance justice, to empower the disenfranchised, and to build institutions that protect and uplift human dignity.

At a time when healthcare inequities continue to affect marginalized communities and Puerto Rico struggles for political and economic justice, Barbosa's enduring legacy calls for each of us to take action. May his life and the path he paved for us give us the courage to challenge oppressive systems, instill in us the compassion to heal beyond the bedside, and fill us with conviction to create a more equitable world.

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Original article

The Untold Life of Anna Morandi Manzolini: The Mother of Anatomy

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Historical narratives have traditionally reflected predominately male perspectives and exploits (1). This, unfortunately, has led to the overlooking and minimizing of women's contributions, a phenomenon particularly evident in academic settings (2). Historian Margaret Rossiter (1944-present) describes this historical erasure of women as the "Matilda Effect" (3). Yet even in these restricted spaces, many women overcame the barriers to join the ranks of scientists, artists, and more. Anna Morandi Manzolini (1714-1774), hereafter referred to as Morandi, was one such figure. By reconstructing Morandi's story from the limited sources available, we can appreciate her profound contributions to the field of anatomy, a critical part of the foundation for modern medicine.

Anna Morandi lived during the Enlightenment Period, an intellectual and cultural movement in seventeenth- and eighteenth-century Europe that emphasized reason, science, individualism, and skepticism of traditional authority. The Enlightenment also sparked reform movements beyond Europe, influencing developments in Russia, China, Japan, and the Ottoman Empire. While France is often regarded as the heart of the Enlightenment, just southeast of France lies Bologna – a northern Italian city that emerged as an intellectual hub.

At this time, Italy was made up of numerous independent states and territories, with much of the central region, including Bologna, governed by the Papal States (4-5). The Catholic Church maintained a complex and often tense relationship with the Enlightenment and the novel ideals and philosophies emerging from it; many of these directly challenged the Church's authority. In response to the rise of secular thought, the Church condemned various philosophies and upheld the *Index Librorum Prohibitorum* (Index of Forbidden Books) (6-7). This conflicted stance persisted throughout the Enlightenment era. Bologna, as part of the Papal States, had a strong presence of the Church, yet it still flourished during the Enlightenment, primarily due to the work of Pope Benedict XIV (1675-1758) (8-9). He was a strong supporter of both the city of Bologna and scientific advancement. In opposition to the Church's views, he argued against the creation of the *Index Librorum Prohibitorum.* The unsuspecting city of Bologna advanced under Pope Benedict's guidance, as he promoted a series of reforms and innovations (8-9).

Working with Luigi Ferdinando Marsili (1658-1730), Pope Benedict helped establish the Institute of Science in Bologna just three months after Anna Morandi was born (9). He believed that Bologna's past glory could be revived through academic success, so he invested time and money into the creation of the Institute. Historically, Bologna had a strong presence of scientists and artists, creating the perfect environment for collaboration between the two. Reviving this glory allowed people who stood at the border between science and art to flourish, such as Anna Morandi. Her success, however, remained constrained by the social limitations placed on women during the Enlightenment.

While the world underwent dramatic evolution during the Enlightenment, women still had finite opportunities. Women were excluded from academic institutions, which remained exclusively male (10-11). Their roles were largely restricted to the domestic sphere, and many who contributed to intellectual life were marginalized and ultimately forgotten by history. Across all social classes, from the affluent to the working poor, the primary goal for women was to secure a suitable marriage (10). Consequently, their education was narrowly tailored to serve this end, focusing on letter writing, needlework, basic literacy, and art history to enable polite conversation with men. Women of higher social status typically received an expanded education, including the basic sciences, whereas women from lower social classes would

have had little to no formal education.

From humble beginnings, Morandi forged her path to become a preeminent artist and scientist. She was born on January 21, 1714, into the lower-middle-class family of Rosa Giovannini and Carlo Morandi. Little is known about her early life due to a lack of historical documents prior to her marriage in 1736. However, historians have found her referenced in other documents, letters, and articles. From these, her artistic talent is presumed to have predated her marriage, but the origins of her familiarity with science and anatomy are unclear. Given Morandi's social standing, she likely had some exposure to basic reading, writing, and the arts. One document from the Bolognese senator Marcello Oretti (1714-1787) indicates that Morandi was an artist before her marriage, as he references her early artwork as "storiated paintings and excellent copies of the masters" (9). Another source reports that she studied drawing and sculpture under local artists Giuseppe Pedretti (1697-1778) and Francesco Monti (1685-1768), in whose studio she met Giovanni Manzolini (1700-1755), her future husband (12-13).

Before the popularization of wax sculpting, anatomical illustration was the preferred method for recording dissections. Notable figures such as Vesalius (1514-1564) and Gerolamo Fabrici d'Acquependente (1533-1619) published numerous anatomical illustrations that guided dissections and were used to teach medical students (14-16). However, the complex history of surgery, coupled with widespread unease regarding the subject, caused many to completely discount the illustrations as well (17). Moreover, despite their realism, anatomical drawings could not replicate the spatial depth that three-dimensional models offered. Anatomical illustrators often relied on captions to overcome the limitations of their two-dimensional medium. In contrast, wax modeling, free from these constraints, gained recognition for its educational value, particularly at a time when the preservation of dissected tissue was not possible. In the late 16th century, the evolution from illustrations to sculptures began. Pope Benedict promoted the transition in Bologna by erecting wax sculptures created by Ercole Lelli (1702-1766) in the Institute of Science (9,13,18). Their partnership laid the foundation for anatomical sculpting in Bologna.

Image 1. Anna Morandi, Apparto Genitale Femminile, 1746, Sistema Museale di Ateneo

Image 2. Anna Morandi, Feti Gemelli Nel Sacco Amniotico, 1746, Sistema Museale di Ateneo

Following the revolution in wax sculpting, Pope Benedict launched a campaign to reform Bologna. He prioritized anatomy, of which Ercole Lelli was the most prominent sculptor. Working alongside Lelli was Giovanni Manzolini, Morandi's husband. Abruptly, Manzolini left the studio after a dispute over credit for a body of work (12-13). He then created a home studio that contrasted Lelli's stylized work by focusing on realistic pieces that emphasized educational accuracy. Anna Morandi became his assistant and student; this marriage served as a catalyst for her career. Working as partners, they gave lectures, public demonstrations, and created hundreds of sculptures for varying purposes. Medical students and curious bystanders were enthralled with their work as it was both beautiful and informative. With a focus on the reproductive organs, the Manzolinis worked with the obstetrician Giovanni Galli (1708-1782). They created 20 different models depicting the womb during an active birth, a one-of-a-kind collection that was displayed in Galli's school (9,19-21; Images 1-2).

As time passed, Morandi's natural talents for sculpting and teaching were increasingly evident, and she became the public face of their studio, while Manzolini worked in the background. Her skill as an orator was matched by her growing artistic precision, which enhanced her reputation. Hundreds flocked to the Manzolini home studio to witness the work of the "Lady Anatomist," whose talent, presence, and position as a woman made her a notable figure in Bologna.

Although her presence in a male-dominated field may initially have drawn attention, it was her technical expertise that ultimately established her in the field. Unlike many of her counterparts, Morandi prioritized anatomical accuracy. Anatomical sculpting lies at the intersection of art and science, yet artists commonly favored aesthetic interpretation over strict anatomical accuracy. Ercole Lelli serves as a typical example of this approach. In his eight-piece series depicting Adam and Eve, Adam is portrayed with a tall, muscular build and powerful posture, while Eve appears slender and reserved, positioned as if withdrawing from the viewer (Image 3-4). While anatomically accurate, Lelli depicted these idealized archetypes of

man and woman, favoring an aesthetic depiction. "The works by Ercole Lelli represented the artistic gold standard of the Bolognese wax modeling school, while those of Anna Morandi Manzolini attained an absolute anatomical accuracy" (23). Morandi's approach to anatomy allowed her to create pieces with precision and intricacy while maintaining their lifelike beauty. Together with her husband, they used human bones as a base for their sculptures, focusing on individual organs or body parts, which enabled them to create more precise renditions (9,22; Image 5-6). This allowed their wax re-creations to take on incredibly realistic forms. After a careful dissection, the bones would be cleaned and then used as a base for the multiple layers of wax. In some pieces, the bones were left visible to showcase specific intrinsic muscles (Image 6). This technique garnered the Manzolini studio fame in the medical and artistic community. Their studio became a place where individuals could witness informative dissections and learn anatomy from varying sculptures.

Image 3. Ercole Lelli, Adam and Eve, 1742, Sistema Museale di Ateneo

Image 4. Ercole Lelli, Adam and Eve, 1742, Sistema Museale di Ateneo

Image 5 Anna Morandi, Avambraccio, 1775, Sistema Museale di Ateneo

Image 6. Anna Morandi, Avambraccio, 1775, Sistema Museale di Ateneo

Morandi was exceptionally methodical, tediously dissecting each layer and recreating it as a lifelike sculpture. A fellow Italian scientist, Luigi Galvani (1708-1782), commented that her models "perfectly imitated nature" (13). To obtain this level of detail, she would focus on a single anatomical structure, adding depth and precision that mirrored surgical practice. Her sculptures included distinctive bodily features, such as veins and birthmarks, capturing the individuality of the human form. Due to her expertise, the University of Bologna asked her to lecture in her husband's place when he fell ill (9,12).

The 18th century was a time when women learned needlework, not dissection. Defying gender stereotypes, Anna Morandi forged a future for herself and helped pave the way for women in science. Her difficulties were compounded by tragedies in her family; only two of her eight children survived to adulthood, and upon the death of her husband, Morandi's financial circumstances sharply declined. Although Morandi lectured at the University, she was never granted the title of professor. No university offered her tenure, and positions at prestigious institutions were not available to her. Instead, she continued teaching students from her home and relied on private commissions.

Following her husband's death in 1755, Morandi was offered a position abroad but was reluctant to leave Bologna, so she appealed to Pope Benedict. Knowing her reputation and potential, Pope Benedict offered Morandi an annual salary of 300 lire to remain in Bologna and continue her work (19). Although this support allowed her to stay in her hometown, the modest compensation still left her in a con-

stant struggle against poverty. As the Lady Anatomist, Anna Morandi, gained recognition for her work, Pope Benedict granted her the title of *accademico d'onore* (honorary professor) at the University of Bologna (13). Additionally, she was awarded an honorary membership to the University of Clementine's Institute of Art and inducted into the Florentine Academy of Design (21-22). Notably, Morandi's positions were all 'honorary'. An official teaching role with proper compensation was never offered. Despite her international recognition and exceptional skill, Morandi remained constrained by the societal expectations of her time. Though she was permitted to engage with the scientific community, she was never regarded as an equal.

With her limited income, Morandi was unable to support herself and her two sons. Out of desperation, she entrusted her son, Giuseppe, to the Oratorio di S. Bartolomeo di Reno, a religious complex that functioned as a children's home. Giuseppe was later adopted by Count Flaminio Solimei (n.d.-1758), who sought an heir to continue his lineage (9, 12). Morandi's continued efforts to improve her financial situation led her to sell her sculpture collection to Count Girolamo Ranuzzi (1724-1784) and accept his offer to reside and work in his palace. He would eventually purchase her entire collection of wax figures, her library of anatomical atlases and texts, as well as her personal dissection and sculpting tools. Morandi continued lecturing in her new apartment and to notable international figures, including Joseph II, Holy Roman Emperor (1741-1790), Catherine II of Russia (1729-1796), and the Royal Academy of London, until her death in 1774 (9, 12-13). Shortly after Morandi's passing, her collection was scattered: sculptures were donated to the Institute of Science or the Bolognese Senate, others collected by her sons, and some lost to time.

Anna Morandi pioneered a new standard of precision in anatomical sculpture, profoundly shaping the future of medical modeling. Her work informed and educated medical students, physicians, and scholars, many of whom benefited from her expertise without ever knowing her name. Though her story remains largely untold, her legacy endures through the sculptures she left behind.

In her self-portrait, Morandi creates a striking image: she looks directly at the viewer, adorned in a pink gown and pearls while confidently wielding a scalpel over the brain–the body's most vital organ. This image captures both elegance and authority, standing as a powerful testament to her life and legacy as the Lady Anatomist.

Image 7. Anna Morandi, Nessun Titolo, 1755, Opificia delle Pietre Dure, Florence

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