Gender equity in medicine: an urgent need for education and reform

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Abstract

Despite measurable gains, gender equity in the medical profession remains elusive, with women physicians facing persistent disparities in compensation, leadership, and advancement. These inequities, present across all World Health Organization (WHO) regions, are rooted in systemic bias and institutional culture rather than individual deficiencies. Women continue to earn significantly less than men—even after adjusting for specialty and experience—and remain underrepresented in senior leadership roles. However, evidence shows that gender-diverse leadership improves patient outcomes, institutional effectiveness, and mentorship opportunities. Programs such as targeted negotiation workshops, structured leadership development, and mentorship networks have demonstrated success in reducing gaps. Regulatory bodies, including the UK's General Medical Council (GMC) and Australia's Medical Deans, now require demonstrable equity plans, and global standards are evolving accordingly. However, true equity requires structural reform: salary transparency, bias education, and institutional accountability must be embedded across medical training and practice. Achieving gender equity is not only a moral imperative but a strategic necessity for high-quality, inclusive healthcare delivery.

Keywords: Gender, Equity, Medicine, Education, Leadership, Reform, Bias, Disparities, Mentorship, Inclusion pharmacy, Education, Obstetric, Women Health, Clinical Pharmacy

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Despite progress in recent decades, women working in medicine still face systemic barriers that limit their advancement, leadership, and equitable compensation. Although the exact figures differ from place to place, studies from every World Health Organization (WHO) region confirm that the same patterns of disadvantage keep showing up.[1] These inequities stem not only from individual barriers but also from pervasive gender bias and entrenched institutional norms, reflected in pay gaps and underrepresentation in leadership across clinical and academic settings.[2] Diversifying the medical profession throughout the continuum of leadership serves to improve the quality of healthcare for all. According to the Association of American Medical Colleges' (AAMC) *The State of Women in Academic Medicine 2023-2024*, women have consistently demonstrated improved patient outcomes, higher scores on leadership competencies, increased engagement as mentors, and a greater commitment to serving their institutions.[3] A joint 2021 report by the WHO and the International Labour Organization (ILO) found that, across 54 countries, women in health care still earn about one-quarter less than men doing the same work.[1] Gender diversity in clinical and academic leadership improves patient outcomes, especially for women, as increased representation of women

physicians has been shown to enhance care quality. For example, research by Greenwood et al.[4] found that female heart attack patients experienced higher mortality rates when treated by male physicians. Miyawaki et al.[5] similarly found that gender concordance between physicians and patients improved outcomes in areas such as postoperative recovery and chronic disease management. Achieving gender equity in medicine is crucial for improving healthcare quality and creating an inclusive, effective workforce. This requires addressing structural disparities through systemic reforms in education, policy, and culture.

A key issue here is the persistent gender pay gap. Reports indicate that women physicians earn significantly less than their male counterparts, even when accounting for factors such as specialty, location, and experience.[6-7] According to a 2018 study, women physicians in the United States earn, on average, $102,000 less per year than men in similar positions,[8] and a 2024 study found that these differences exist even when women negotiate for higher salaries.[9] In Ontario, Canada, female surgeons earn 24% less per hour than their male counterparts in a fee-for-service system.[10] This gap remains even after adjusting for specialty, with the largest disparities in cardiothoracic and orthopedic surgery. A review of 46 studies found that women physicians consistently earn less than men across specialties, countries, and time.[11] The issue lies not in a lack of willingness to negotiate, but in systemic biases that affect how negotiations are received and rewarded. Addressing pay gaps requires a cultural shift toward transparent salary structures, challenging these biases, and providing education on effective salary negotiation strategies to empower women in advocating for fair compensation.

To further help with establishing more equal compensation levels, institutions should implement gender-neutral pay scales and provide salary negotiation training to equip women with the tools needed to close compensation gaps. For example, the Donald and Barbara Zucker School of Medicine at Hofstra/Northwell designed a learner-centered workshop titled "Contract Negotiation Skills: A Workshop for Women in Medicine".[12] This program included a mini-lecture on negotiation principles, a Q&A session with an attorney, interactive role-playing, and guided reflections. The workshop, aimed at women physicians from medical students to professors, showed significant improvements in participants' comfort with contract negotiation and increased confidence in their skills and strategies. Comparable, faculty-run negotiation boot camps now operate at the Royal College of Physicians and Surgeons of Canada and at Japan's National Center for Global Health and Medicine, both reporting sharp jumps in participants' starting salaries.[13-14] Institutions should also provide anti-sexism training to Human Resources departments to ensure competitive salary offerings for women from the start, eliminating biases that contribute to pay disparities. This dual support—advocacy skills and equitable practices—will help women receive compensation that reflects their contributions.

A key barrier to gender equity in medicine is the underrepresentation of women in leadership roles. Despite women making up over 50% of medical school graduates, they remain significantly underrepresented in supervisory positions. A 2024 study found that women hold only 18% of department chairs and 25% of deanships in U.S. medical schools.[15] These low rates may cause the perpetuation of long-term practices related to gender-specific barriers such as caregiving responsibilities, unequal compensation, and lack of flexible work arrangements.[16] In contrast, institutions with women in leadership positions are more likely to implement inclusive policies, prioritize equity-focused initiatives, and foster environments that support more favorable work-life integration.[17] Initiatives such as the UK National Medical Director's Clinical Fellows Scheme and Australia's Franklin Women Carer's Networking Grants show that well-designed accelerators can flourish in very different health care settings.[18,19]

Research dispels the myth that women are less likely to pursue leadership training. Women's underrepresentation in leadership is not due to a lack of ambition, but rather biased evaluations and structural barriers.[20,21] Women's leadership styles, while different from men's, are equally effective and potentially more suited to modern organizational structures.[22] The perception of women being less effective leaders is driven by socialization rather than facts.[22] Traditional candidate training programs often fail to address systemic barriers and reinforce the notion that women must overcome deficiencies.[21] However, perceptions of ideal leaders are evolving to include more communal attributes traditionally associated with women.[23] These findings suggest that efforts to increase women's representation in leadership should focus on addressing institutional and organizational barriers rather than perceived individual shortcomings.

Women leaders also serve as critical role models and mentors for junior faculty and trainees. Their presence can help counteract the effects of the "leaky pipeline" where women disproportionately exit academic medicine at each successive career stage.[24-26] Increased mentorship by women in leadership has been linked to improved career satisfaction, higher retention rates among women faculty, and greater scholarly productivity among mentees.[25] Leadership representation also has downstream effects on patient care. Studies suggest that gender-diverse leadership teams are more likely to champion patient-centered practices, improve communication within healthcare teams, and support initiatives that reduce health disparities.[27] The Kenya Medical Women's Association runs a distance mentoring network for early career doctors while Pakistan's Women in Cardiology forum pairs junior trainees with senior consultants for regular virtual coaching. [28,29] Information about the efficacy of the program is however unavailable.

Creating programs in leadership training would be beneficial in addressing these gender inequities. A review in the *Australian Journal of Psychology* found that structured leadership training significantly improves career advancement opportunities for women,[30] with these programs helping to attain leadership positions, providing improved salary negotiation skills, and building professional networks. Increasing the representation of women in leadership, then, is not just a matter of fairness, it is also necessary for improving mentorship opportunities, institutional effectiveness, and health outcomes. One successful example is the Brigham and Women's Hospital Center for Diversity and Inclusion, which launched the Women's Leadership Program to support early- and mid-career female faculty through structured mentorship, leadership training, and career development resources.[31] The program has been credited with increasing the number of women in leadership roles and improving retention rates among female faculty.

Enhancing mentorship opportunities is crucial, as women are significantly more likely than their male counterparts to report lacking a mentor—an absence that can impede career advancement.[32] Also, structured mentorship programs have been shown to improve career satisfaction, increase productivity, and enhance opportunities for promotion among women physicians which can lead to reduced employee turnover and allow for continuity for patients.[27] Access to mentorship remains limited, particularly for women from underrepresented racial, ethnic, and socioeconomic backgrounds. Medical institutions should prioritize mentorship programs tailored to women's needs, particularly those facing intersectional barriers, to support their professional growth. For example, the Dutch Nursing Science Faculties developed the Leadership Mentoring in Nursing Research program to expand the numbers of nurse scientists, strengthen nursing research in universities, and support postdoctoral nurses' career development. The program further supported academic leadership development, with participants poised to advance research, clinical practice, and education in healthcare.[33]

Another important area is that of networking. Expanding these valuable opportunities should also be considered to ensure that women are not omitted from the informal networks that often serve as pathways to career mobility, leadership roles, and funding opportunities, as found within a 2022 study.[32] The potential benefit here for women could be large because research suggests that informal networking practices may tend to benefit men disproportionately.[34] To help mitigate these unfair practices, professional societies and academic institutions should actively create forums for women to connect with mentors, sponsors, and allies who can provide the guidance and support necessary for career advancement. Institutions can help create networking opportunities that provide women with access to influential professional circles.

Implicit and explicit gender biases further constrain women's academic advancement in medicine, despite a commitment to meritocracy. Regulatory bodies are increasingly prioritizing gender equity: the UK's GMC has integrated equality, diversity, and inclusion (EDI) into its corporate strategy for 2021–2025, emphasizing the creation of supportive and inclusive working and training environments.[35] Similarly, Australia's Medical Deans have advocated for the inclusion of sex and gender equity in medical curricula and research, highlighting the need for deliberate efforts to counteract historical and ongoing biases.[36] Additionally, the World Federation for Medical Education (WFME) encourages the adoption of global standards that promote equity in medical education worldwide.[37] A 2019 review in *JAMA Surgery* highlighted that women frequently encounter microaggressions, exclusion from informal professional networks, and undervaluation of their contributions, all of which

hinder career progression and increase the risk of burnout.[38]

Plus, bias-driven discriminatory practices negatively impact multiple aspects of medicine, from patient care and medical training to workforce diversity, research funding, and career advancement. An article in the *New England Journal of Medicine* emphasizes the need for structured bias awareness training to disrupt these patterns.[39] This requires comprehensive education on gender equity to be embedded throughout medical training and continuing professional development to ensure that bias does not continue to influence hiring, promotion, or funding decisions. Equally important is institutional accountability—organizations and their Human Resources departments must recognize the unique skills and value women bring to medicine and commit to compensating and retaining them equitably. One training study demonstrated significant improvements in gender bias awareness, self-efficacy, and gender equity actions.[40]

Medical schools, residency programs, and health system employers should tailor gender equity initiatives to their local laws and cultures, with the goal of eliminating gender-based disparities in pay, promotion, and respect. Institutional policy reforms are essential to ensure these efforts are sustained. Accrediting bodies and medical licensing organizations should require gender equity education as a core competency, with measurable outcomes. Policies should mandate evidence-based modules on salary negotiation, bias recognition, leadership development, and mentorship across all training levels. Equity-centered leadership training for hospital administrators should also be prioritized. Embedding these elements into institutional standards and promotion criteria reinforces their importance and signals commitment to culture change.

By adopting evidence-based strategies—such as salary negotiation training, leadership development, structured mentorship programs, and bias awareness initiatives—medical institutions can create an environment that supports women's career success. Gender equity is not just about fairness; it's crucial for a healthcare system that serves all patients. Institutionalizing equitable pay structures, investing in women's leadership, and integrating gender equity education into medical training should be policy-based priorities. Without meaningful reform, barriers to women's professional advancement will persist, hindering institutional progress and patient care. Incremental change is insufficient—systemic transformation is essential. The medical community must turn gender equity from an aspiration into a reality, as the future of medicine depends on it.

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