Why Aren't More Women in Academic Medicine Reaching the Top?

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For the first time in history, women constitute more than half – 50.7% to be exact – of the United States medical student population.[1,2,3] Despite strides made towards gender equality in the student body of medical schools, significant gender disparities remain in various fields of medicine. Disparities are particularly notable in academic medicine and medical leadership. Female physicians are less likely to hold full-time academic medicine positions compared to males, comprising only 37% of these roles.[1] Among those who hold full professor positions in academic medicine, only 13% are women.[4]

Several studies have found that women in academic medicine have lower incomes than their male colleagues, even when adjusted for factors such as age, specialty, education, experience level, and geography.[5,6] A 2004 study conducted with 1,814 full-time medical faculty across 24 medical schools in the United States reported that the higher the position in academic medicine that a woman achieved, such as chair specifically, the more substantial the wage gap compared to male counterparts.[6,7]

Even greater disparities in academic medicine exist for underrepresented minority (URM) groups. A recent study conducted in 129 national allopathic medical schools found that minorities are underrepresented in medical education, making up less than 17% of the total medical student population.[8] These disparities are worse in academic medicine where URMs make up only 8% of medical faculty. Furthermore, women of minority races are less likely to be promoted to leadership positions in academic medicine as compared to women of other races, even when adjusting for factors including productivity, experience level, and education.[8,9] The first appointment of an African-American woman to dean of a US medical school occurred in 1993 (Barbara Ross-Lee, DO, College of Osteopathic Medicine of Ohio University), 127 years after the first white woman was named dean of medicine in the US (Ann Preston, MD, Woman's Medical College of Pennsylvania) and almost 130 years after the first African-American woman graduated from a US medical school (Rebecca Lee Crumpler, MD, graduate of New England Female Medical College).[10] Other factors that could contribute to stalled advancement in female medical school leaders such as gender and sexual identity, and speaking English as a first language, remain virtually unexamined.

There are additional disparities in representation for women who pursue leadership roles in academic medicine. In 2013–2014, women comprised only 16% of medical school deans and 15% of medical school department chairs.[2] A longitudinal study conducted over a 27-year span of the appointed medical school dean sample in the United States found that 38 of the total appointed individuals in deanships were women and 496 were men.[11] According to the latest report on "The State of Women in Academic Medicine" from the Association of American Medical Colleges (AAMC), women are underrepresented in all department chair positions, and there were additional disparities in certain specialties.[5] For example, only 1% of surgery chairs were women in 2013–2014, even though 22% of surgical medical residents were female. Similarly, as illustrated in **Figure 1**, the highest proportion of women in chair positions was in the field of obstetrics and gynecology; 22% of women filled obstetrics and gynecological department chair positions. However, 83% of obstetrics and gynecology medical residents were women.[5]

Women climbing the career ladder in academic medicine face special challenges compared to other professions. Fewer medical school deans are female (16%) as compared to law school deans (20%), pharmacy deans (28%), university provosts (23.5%) and even university presidents (23%).[12,13] Of the eight Ivy League medical schools, there are no female medical deans; however, half of the Ivy League universities have female presidents. Nancy Andrews, MD, made headlines for becoming the only female dean of a national Top 10 medical school in 2007 (Duke University School of Medicine), and out of 173 active medical schools in the United States (143 allopathic and 36 osteopathic medical institutions), only 14 deans were female in 2009.[14,15]

Many theories have been proposed as to why disparities exist in academic medical leadership. A cohort shift may be a primary reason for why female physicians have not become academic medical leaders as frequently as men.[16] The feminist revolution in the 1970s transformed the field of medicine.[19] By the end of that decade, women made up 30% of their medical school classes, compared to 5% in 1950 and 7% in 1960.[16,17] From then on, trends in the United States

Figure 1. Gender Disparities in Women's Leadership Vary by Specialty

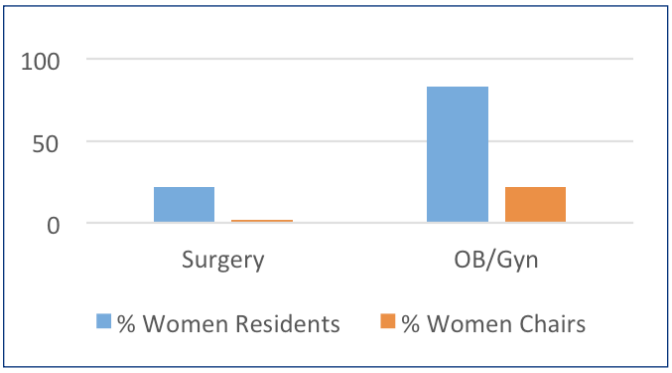

Figure 1 shows the disparities not only regarding gender in specialty selection, but where women leaders are present in these specialties.

towards accepting women into medical schools have shown a steady increase. However, even though numbers of female students were increasing in schools, disparities were prevalent for women in medicine achieving leadership positions. Some schools appointed their first female department chairs of medicine in the 1970s or 1980s; however, there are still schools that have never had a female department chair.[16,18] In the 1980s, only two women (1.1% of deans) were deans of medicine, compared to 12 women in the 1990s (7.5%).[19] Because physicians enter leadership positions somewhat later in their careers, there is an expected time lag, that may explain some, but not all, of the observed gender inequity in leadership. This time lag or cohort shift effect should diminish over time.

The leaky pipeline theory suggests that women are more likely to 'fall out' at various stages of the career ladder compared to men and therefore do not have the opportunity to pursue leadership positions.[20] Reasons that women may leave the career ladder at disproportionate rates include taking time off to start and grow a family, a limited number of adequate childcare options, and lack of schedule flexibility factors that disproportionately affect women.[20] The glass ceiling theory, while not specific to the field of medicine, states that women face barriers with advancement and hiring that grow out of the institutionalized culture of medicine itself. These systemic barriers may also include lack of equal support for women in regards to work and life balance.[13]

It is theorized that both unconscious and conscious biases against women contribute to disparities.[21] As women are underrepresented in medical leadership, there are biases towards the notion that male colleagues may simply 'do the job better,' rather than that women may not have had appropriate support in the processes of hiring, promotion, and in maintaining leadership positions. Others posit that leadership disparities exist because women may simply not desire to achieve these positions in the same way men do.[13]

Where do things stand in Rhode Island? In the state's only medical school, The Warren Alpert Medical School of Brown University, women have comprised approximately 45% of the entering medical school classes since 1993, and 49% of the 8-year Brown University Program of Liberal Medical Education PLME classes.[22] In 1991, the Warren Alpert Medical School of Brown University became one of the first eight schools in the country to create an Office of Women in Medicine and Science (OWIMS), dedicated to the advancement of female students and faculty in medicine and science throughout the school. In 1987, only 1.3% of professors at the Brown Medical School were women.[22] By 1993, 5% of full professor positions were held by women, and as of November 2017, 26.4% of professors and 28.6% of clinical professors in Brown's BioMed division were women (**Table 1**).[22] There has never been a female dean at the Warren Alpert Medical School of Brown University, and three current chairs of medicine are female; Dr. Karen Furie, MD, MPH, of the Department of Neurology, appointed 2012, Dr. Maureen Phipps, MD, MPH, of the Department of Obstetrics and Gynecology, appointed 2013, and Dr. Phyllis Dennery, MD, of the Department of Pediatrics, appointed 2014. Clearly, progress has been made over the past 24 years, but there is work to be done.

How to we improve diversity of academic leadership, to include more women and more under-represented minority women? Recommendations that facilitate encouraging and promoting women include appointing diverse hiring committees, creating Offices of Diversity in medical schools, ensuring adequate representation of minority medical women in medical classes, and policies that support women and minorities in institutions. In addition, promulgating policies that

Table 1. The Warren Alpert Medical School of Brown University BioMed Academic and Clinical Faculty by Gender and Rank

	Female		Male	
Rank	**N**	**%**	**N**	**%**
Professor	51	5.2%	142	12.2%
Associate Professor	103	10.4%	157	13.5%
Assistant Professor	265	26.8%	204	17.5%
Instructor	7	0.7%	10	0.9%
Clinical Professor	10	1.0%	25	2.1%
Clinical Associate Professor	44	4.5%	112	9.6%
Clinical Assistant Professor	339	34.3%	392	33.7%
Clinical Instructor	68	6.9%	56	4.8%
Research	101	10.2%	65	5.6%
Total	**988**	**100.0%**	**1,163**	**100.0%**

Table 1 shows the current (November, 2017) distribution of academic and clinical faculty, and subsequent remaining disparities, at the Warren Alpert Medical School of Brown University in Providence, Rhode Island. Data as of 11/01/2017

improve the work-life climate for all students, but particularly for women students, will also encourage female physicians to seek, achieve and maintain leadership positions.

Understanding the factors that contribute to the lack of gender equity in academic medicine leadership is important, both to improve the environment for women training to be physicians and junior faculty, as well as to help mitigate disparities in medical treatment and healthcare outcomes between men and women.[23] Women in leadership positions are particularly well positioned to identify and address the needs of women physicians and medical students and to help them progress to leadership positions. It is imperative to establish support and resources, and to encourage connections between medical students and young physicians and academic leadership to help them "climb the ladder." Entities focused on women in medicine, such as the Office of Women in Medicine and Science at the Warren Alpert Medical School of Brown University can contribute mentoring programs for young medical students and resident physicians, and relevant training seminars on topics such as promotion in medicine.[24] Ultimately, advocating for mentorship is essential because empowered women empower women.

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