



Gender differences amongst board members of endocrinology and diabetes societies

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Abstract

Purpose Although women's status has shown marked improvement over the years in many areas, women still face a gender bias, especially in the workforce. Despite the best efforts of organizations to promote diversity and equality, women still dominate the lower-paying administrative ranks while men continue to dominate at the executive level. The present study examines gender disparity in the leadership positions in the national and international endocrinology and diabetes societies across the globe.

Methods We first composed a list of Diabetes and Endocrinology societies from online databases, including the International Diabetes Federation, European Society of Endocrinology, and other similar online directories. The Scopus database author search was used to find the total number of publications, publication range (in years), h-indices, number of citations, and years of active research of each member.

Results Our study included 524 board members of whom 31.3% (164/524) were women. The institutional academic rank of 310 of the total board members was found. The proportion of women in higher-faculty ranks (Assistant Professor, Associate Professors, and Professors) is much lower than males. Female endocrinologists also have fewer publications, citations, and years of active research.

Conclusions Endocrinology is becoming a female-predominant subspecialty of internal medicine. As women are becoming a more significant portion of the endocrinology workforce, it is imperative to study and mitigate gender differences and disparities to optimize the endocrinology workforce.

Keywords Diabetes · Endocrinology · Gender · Female · Gender disparity

Introduction

Women continue to be underrepresented in the high tiers of leadership in academic medicine, despite the increase in participation of women in the medical field [1]. Only 10% of female faculty members are full professors, compared with 28% of male clinical faculty members [2]. In 2016, it was shown that females make up 70% of fellows in

endocrinology, indicating that endocrinology is likely to become a female dominant specialty in the near future [3]. Although it is known that female representation in the endocrinology workforce is increasing, it remains unclear whether this is reflected in leadership positions within committees of endocrinology. The present study examines gender disparity in the leadership positions in endocrinology and diabetes societies across the globe, aiming to study the relationship between gender, academic rank, and research productivity with leadership roles.

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Methodology

We compiled a list of diabetes and endocrinology societies from online databases. Only those societies that had publicly available data via accessible websites were selected. A total of 142 societies were chosen and data regarding the board of directors were taken from their websites. Only physicians with an MD (Doctor of Medicine) or DO (Doctor of Osteopathic Medicine) and those with a medical or research background were chosen for the study. A list of 524 board members across all the societies was compiled. The committee ranks of the relevant members were obtained using the society website. The institutional affiliations of the relevant members were used to find information regarding their research publications. The Scopus database was used to find the total number of publications, publication range (in years), h-indices—number of citations and years of active research of each member—the latter defined as, the number of years that an individual has been involved with research work, as shown by their publications during that time. The years since first publication was calculated using the publication range.

A member's sex was determined by inspection of his or her first name. In cases where this could not be done, attempts were made to discern the sex by visiting the society website and performing Internet searches. The tabulated data were analyzed with the use of SPSS Version 23. Relevant figures and graphs were made on Microsoft Excel and SPSS.

Results

Our study included 524 board members, of whom 31.3% (164/524) were women. The institutional academic rank of 310 of the total board members was found. Overall 73.9% (229/310) of these board members were full professors. Female board members were less likely than male board members to be full professors (23.6% [54/229] versus 76.4% [175/229]) and associate professors (35.3% [18/51] versus 64.7% [33/51]) as well as assistant professors (26.7% [4/15] versus 73.3% [11/15]). Women were more likely to be lecturers (86.7% [13/15] versus 13.3% [2/15]).

Female board members had fewer publications compared to male board members (mean total 10.5 versus 13.9; difference -3.4 , $p = 0.003$). Female board members had a lower h-index value (mean total 10.7 versus 14.9; difference -4.2 , $p = 0.013$) and lower number of total citations as well (mean total 1136.7 versus 2213.8; difference -1077.1 , $p = 0.009$). Women had published research for a shorter period in comparison and had a lesser number of years since their 1st publication (mean 15.4 versus 19.1; difference -3.7 , $p = 0.005$). Additionally, female board members had lower

number of years of active research. (mean 10.5 versus 13.9; difference -3.4 , $p = 0.004$). Regarding the committee ranks, there was no significant difference between male and female board members ($p = 0.213$).

Amongst the 163 presidents of all the societies, there were fewer women holding this position compared to men (25.8% [42/163] versus 74.2% [121/163]). Women leaders had a lower number of total publications (mean 44.5 versus 93.8; difference -49.3 , $p = 0.022$). There was no significant difference in the h indices of females and males (mean 12.1 versus 16.9; difference -4.8 , $p = 0.055$), the total number of citations (mean: 1483.3 versus 2674.9; difference -119.6 , $p = 0.099$), years since 1st publication (mean 17.6 versus 22.3; difference -4.7 , $p = 0.074$) or years of active research (mean 12.1 versus 15.4; difference -3.3 , $p = 0.092$).

Table 1 summarizes the aforementioned findings.

Discussion

Women surveyed at all levels of education and academic practice reported a greater need for leaders, mentors, and role models [4, 5]. According to recent analyses, over 70% of early-career trainees in endocrinology are women, while majority (56%) of the practicing endocrinologists are male. This is an unsurprising consequence of the current medical student gender ratio (significantly skewed towards the female gender) [3], indicating that female physicians will dominate the endocrinology workforce in decades to come and thus, raising concerns regarding the biases faced by women in medicine and their impact on this specialty [3].

Our study concluded that there was indeed a disparity in roles of leadership and representation of women in endocrinology and diabetes societies worldwide—female board members were less likely than male board members to be professors. This was in line with similar trends echoed by disparities in the fields of dermatology and neuroradiology and may be attributed to more women working part-time due to the calling of their social roles—naturally resulting in pay inequity, slower career growth, and serving to further discourage upcoming female physicians [6, 7].

Female board members had fewer total publications, lower h indices, and total citations. Interestingly, the existent literature suggests that this may be due to fewer females breaking through the “glass ceiling” and making it to higher leadership posts. One of the major criteria for selection and promotion within academic medicine is research productivity and slower research-based faculty tracks find more women working as clinicians and educators instead [6, 8, 9].

Previous work has identified several drivers of sex differences in academic medicine, including asymmetrical home and childcare responsibilities between men and

Table 1 Characteristics of society members and research differences in male and female leaders

	All (<i>n</i> = 524)	Males		Females		<i>p</i> -Values for comparison by sex
		Count	%	Count	%	
BOARD MEMBERS (<i>n</i> = 310)						
Faculty rank						
Full Professor	229	175	76.4	54	23.6	
Associate Professor	51	33	64.7	18	35.3	
Assistant Professor	15	11	73.3	4	26.7	
Lecturer	15	2	13.3	13	86.7	
Data missing	214					
Research						
Average Publications (SD)		13.9		10.5		0.003
Average Citations (SD)		2213.8		1136.7		0.009
Average H-Index (SD)		14.9		10.7		0.013
Years since 1st publication		19.1		15.4		0.005
Years of active research		13.9		10.5		0.003
LEADERS (<i>n</i> = 163)						
Research						
Average Publications (SD)		93.8		44.5		0.022
Average Citations (SD)		2674.9		1483.3		0.099
Average H-Index (SD)		16.9		12.1		0.055
Years since 1st publication		22.3		17.6		0.074
Years of active research		15.4		12.1		0.092

women, child bearing and rearing phases working as an added obstacle for female research productivity [6], lack of effective mentorship, sponsoring and role models for women [10–12], lack of institutional support for early-career female researchers [13], attrition of female academics at higher levels in the academic hierarchy [14], a noteworthy gender pay gap (known to amount to \$38,000–\$66,000 annually, amongst full-time endocrinologists) [3], overt sex discrimination, and an unconscious sex bias [15–17].

In an effort to bring about change, the field of endocrinology and its transition towards emerging as a female-predominant subspecialty of internal medicine could be used to ascertain the lead role in advocating for changes that support the academic success of female physicians. Apart from increasing awareness of and counselling regarding the changing work environment, other suggestions to augment female recruitment and academic proportion would include increasing mentorship for female trainees and encouraging women to be more proactive at seeking career opportunities early on in their training, facilitated by slightly flexible working hours for them [18].

There are several limitations to this study. All the information collected was from publicly accessible

websites. The information available on these may not have been complete or up to date. Our method of determining gender, although conclusive in most instances, may have led to misattributions in a few places. We were not able to ascertain age, career stage, or the length of time each person had been in his or her current role. It is possible that the gender disparity and trend of lower academic rank were due to the shorter career duration of women in medicine overall. We lacked information about faculty career track, which could confound our results if women are less likely to be full professors and leaders because they disproportionately pursue non-research tracks in which full professorship is less common [19].

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

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