EDITORIAL
Disparity in worldwide neurosurgery

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In the current issue of the Journal of Neurosurgery, Forster and colleagues¹ evaluate gender disparity in leading positions of neurosurgery departments in Germany. To perform this assessment, the authors analyzed the sex of all faculty in 140 neurosurgery departments. They found that 9 (6.3%) of 143 chairs, 1 (2.4%) of 42 vice-chairs, 17 (14.5%) of 117 chief senior physicians, and 4 (12.5%) of 32 senior physicians were women. Approximately 19% of neurosurgeon specialists in Germany are women.² Although most women neurosurgeons in Germany work in academic hospitals, the highest proportion of senior positions (15.6%) was found in private hospitals.

The authors provide a thoughtful discussion, reviewing the different explanations for sex disparity in neurosurgery. The authors conclude that the number of women in leadership positions in German neurosurgical departments is low, and disparity increases as rank increases.

Similar disparities have been noted in North America, in which women account for only 12% of practicing neurosurgeons.³ Of 105 academic neurosurgery departments in 2011, there was 1 female neurosurgical department chair, which only increased to 3 in 2018⁴ and to 4 in 2021.⁵ Notably, the position is still often referred to as “chairman,” which in itself institutes unconscious bias. Furthermore, only 1 woman has been elected as President of the American Association of Neurological Surgeons, which occurred in 2019.⁴ The Congress of Neurological Surgeons has yet to be led by a woman.

Several causes for inequality have been suggested. First, there are societal expectations for women to serve as caregivers for children, elderly relatives, and/or the home itself. Second, there is a false general concept of how a (male) neurosurgeon should look, talk, and act (see the recent Dr. Glaucomflecken neurosurgeon imitation on Twitter⁶). These perceptions, combined with a lack of mentorship and sponsorship, can be detrimental to selecting neurosurgery as a career across the training continuum.¹⁰ We as a group need to examine the reasons for attrition and ensure that female trainees have similar surgical volume, which is not currently the case.¹¹ Moreover, inappropriate behavior by superiors is still reported at alarming rates.¹² Recently, Benzil et al. reported that 62% of their survey respondents witnessed sexual harassment and 55% reported that the harassment had been directed against them during their career.¹² Disappointingly, 37% reported that they had experienced sexual harassment more than 10 times.¹²

Racial disparity in neurosurgery is even more staggering. Of the 5645 active neurosurgeons in the United States in 2018, only 3.8% identified as Black.¹³ As of 2019, only 4.5% of neurosurgery residents are Black,¹⁴ and 0.8% are Black women.¹³ In the Society of Neurological Surgeons, which recognizes leaders in neurosurgery, only 4 members (0.54%) have been people of color.¹³ The challenges for people of color in being accepted into universities, pursuing higher degrees, becoming professors, being consulted for peer review, obtaining grants, getting into residencies, and advancing their careers are all part of the systemic (unconscious and conscious) racism of society and medicine,¹⁵ and neurosurgery is no exception.

How to reduce these disparities is complex. Early exposure to our field for women and people with backgrounds historically underrepresented in medicine should be a key initiative for all programs.¹⁰ Both residency training programs and faculty should be required to undergo diversity training and document how diversity was considered in hiring/promotion practices. The high attrition rates during and after residency requires individual-, institutional-, na-
tional-, and societal-level solutions. Structured mentorship programs with frequent interactions as well as available appropriate role models are crucial. Sponsorship by male colleagues is necessary. These interventions can help reduce feelings of isolation and help to overcome unfair scrutiny on the basis of sex or race. Institutions must strongly support paid parental leave times and adjustments in surgical training to assist parenthood during residency, fellowship, and faculty positions. Meetings should ensure solutions for mothers including childcare, mother’s room resources, etc., to increase participation. Intolerance toward sexual harassment must be adopted and fiercely acted upon.

We must continue to systematically track equity statistics for our profession. Incentives for department chairs should be coupled to diversity efforts. The impact factor of department chairs for our profession. Incentives for department chairs should be challenged to select diverse leaders and penalized when they do not. This problem is not a problem just for women or for people historically underrepresented in medicine, but for our whole field and for the patients we serve, who want to see a physician that looks like them.


Disclosures

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Response

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We would like to thank Dr. Pilitsis and Dr. Hadanny for their editorial commending our study, and we are grateful to them for highlighting the importance of this topic.

Considering North American and European countries to be highly developed, with gender equality being one of their fundamental values, the proportion of female neurosurgeon specialists and chairs in leadership positions in North America and Europe is simply sobering. Equally, as emphasized by Drs. Pilitsis and Hadanny, neurosurgical associations and neurological congresses remain male-dominated. Thus, it is essential that implemented programs such as “Promoting Gender Equality in Research and Innovation” by the European Union or the “Equal Opportunities for Women Program” in Germany, as well as calls for women to apply for medical leadership positions across European countries, will finally be put into practice.

In recent years an increasing number of publications and initiatives have suggested a plethora of measures for increasing the proportion of women in neurosurgery and decreasing their attrition rates. However, procedures such as those proposed by Drs. Pilitsis and Hadanny are needed to achieve these goals. Thus, diversity efforts should be mandatory, tracked, and coupled to incentives for chairs, departments, and each scientific organization. Hopefully, we will be able to provide further data on a rising proportion of women in neurosurgery in the near future.

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