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CORRESPONDENCE

Gender distribution in awarded Canadian Institutes of Health Research grants among anesthesiologists: a retrospective analysis between 2008 and 2020

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To the Editor,

Gender disparities among anesthesiologists have been identified in various areas including leadership, authorship, and academic rank;[1,2] however, little investigation has been conducted on grant funding. It is well-known that funding by prestigious agencies, such as the Canadian Institutes of Health Research (CIHR), offer career advancement opportunities in academic medicine and funding disparities may limit career growth for affected researchers.[2,3] Accordingly, we investigated the gender distribution in the number of awarded CIHR grants among anesthesiologists.

We retrospectively analyzed CIHR grant data among anesthesiologists from the CIHR Funding Decisions Database (https://webapps.cihr-irsc.gc.ca/decisions). Ethical approval was not required as we used publicly available data. Firstly, the database was searched by department to obtain a list of grants awarded to anesthesiology departments between 2008 (earliest identified grant) and 2020. Principal investigator (PI) name, institution, and competition year for each grant were extracted and catalogued. Secondly, an investigator search was conducted using PI names to identify grants that may not have been assigned a department. Thirdly, departmental sites were searched using identified PI names and institutions to determine which investigators were anesthesiologists. Grants awarded to non-anesthesiologist researchers were excluded. Provincial/Territorial College of Physicians and Surgeons directories provided sex-related terminology (e.g., male/female) for collected gender of anesthesiologists. We reported results using gender-related terminology (e.g., man/woman). Data are presented as median [interquartile range] and percentage. Awarded grants per gender were compared with the Mann–Whitney U test (5% two-tailed significance).

We identified 72 CIHR grants awarded to anesthesiologists in our study: 81% (58/72) and 19% (14/72) were awarded to men and women, respectively. Men comprised 72% (23/32) of the total recipients and women made up the remaining 28% (9/32). Over the 12-year period, men received 4 [3–6] grants per year, compared with 1 [0–2] among women ($P < 0.001$). Forty-eight percent of men (11/23) and 22% of women (2/9) received more than one grant. The proportion of awarded grants among women ranged from 0% (2008, 2011, 2017, and 2019) to 50% (2016 and 2018) (Figure).

The reasons behind these gender differences in awarded grants are likely multifactorial and may include anesthesiology research participation and systemic barriers affecting women. A recent investigation shows that women submit fewer CIHR grant applications than men as they accounted for only 31.1% (17,333/55,700) of submitted applications between 2000 and 2015.[4] Although

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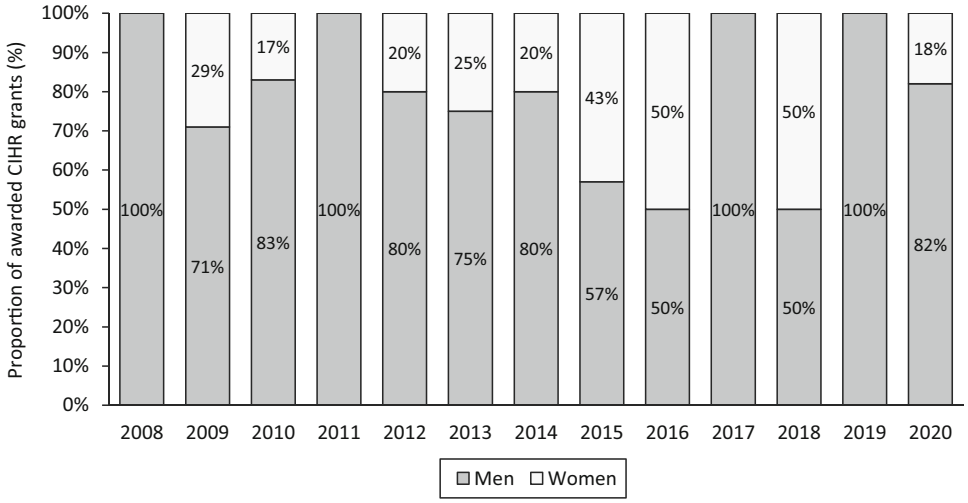

Figure Proportion of awarded CIHR grants among anesthesiologists stratified by gender from 2008 to 2020. CIHR = Canadian Institutes of Health Research.

anesthesiologist-specific application data were not accessible, women in anesthesia may possibly submit fewer applications leading to fewer awarded grants. Many women also face barriers that may limit research participation, including family responsibilities, and greater involvement in internal department services than men, including teaching and administration.[2] Women, and those with intersectional identities (e.g., women of colour), may also be asked to participate in time-consuming equity, diversity, and inclusion initiatives (e.g., committees/working groups), limiting research time.[2]

Investigations in academic medicine suggest gender bias in grant review processes, which may contribute to lower grant success among women. Funding agencies, such as the CIHR, have access to applicant personal information (e.g., gender) and track record (e.g., productivity and funding history), which may influence funding decisions, although the implicit or explicit extent of this cannot be determined objectively.[3,4] In fact, previous studies have demonstrated that while the "quality of proposal" for grant applications do not differ between genders, applications by women are rated lower for "quality of researcher".[3,5]

Many solutions may address the lower number of awarded grants among women found in our study. Considering the importance of mentorship, sponsorship, and coaching for research advancement, encouraging diverse faculty (e.g., senior women) participation in these activities may benefit women in research.[1,2] Additionally, an equal gender representation among grant reviewers and training to reduce implicit bias may help reduce disparities in grant funding.[3,4]

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