Gender Differences in Cardiothoracic Surgery Letters of Recommendation

Objective: Systemic gender bias remains prominent in cardiothoracic surgery, including inequities in the number of women in the field, compensation, mentorship, and leadership opportunities. Entry into cardiothoracic surgery, application for residency, and letters of recommendation are potential mechanisms for gender disparity. Our goal was to investigate if gender influences letters of recommendation for cardiothoracic fellowship.

Methods: From applications to an accredited cardiothoracic surgery fellowship program between 2016 and 2021, applicant and author characteristics were examined with descriptive statistics, analysis of variance, and Pearson-Chi square tests. Letters of recommendation were assessed using linguistic analysis software for differences in communication with respect to author and applicant gender, with higher-level analysis through a Generalized Estimating Equations model of linguistic differences among author-applicant gender pairs.

Results: 739 recommendation letters extracted from 196 applications of individuals were analyzed; 90% (n=665) of authors were male and 55.8% (n=412) of authors were cardiothoracic surgeons. Compared to female authors, male authors wrote more informal (p=0.03) and authentic (p=0.01) recommendation letters. When writing for female applicants, male-authored letters were more likely to display their own leadership and status (p=0.03) and discuss female applicants' social affiliations (p=0.01), like occupation of applicant's father or husband. In contrast, male authors emphasized male applicants' technical abilities (p=0.01). Female authors wrote longer letters (p=0.03) and discussed applicants' work (p=0.01) more often than male authors. They also mentioned leisure activities (p=0.03) more often when writing for female applicants.

Conclusions: Our work identifies gender-specific differences in letters of recommendation. Female applicants are potentially disadvantaged because their recommendation letters are significantly more likely to focus on their social ties, leisure activities, and the status of the letter-writer, while recommendation letters of male colleagues focus on technical skill. Our study identifies an opportunity for individual authors of recommendation letters, applicant review committees, and our professional societies to mitigate gender bias in the selection of candidates to cardiothoracic surgery.

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