Dear sirs, your bias is showing: Implicit bias in letters of recommendation

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A cardiothoracic fellowship program director sits down at her computer, excited to review applicant packets for the coming recruitment cycle. She has spent a decade in training and worked with passion and perseverance to earn a position at a prestigious academic institution. She spent years developing her career as an educator to obtain the role of Program Director. With enormous enthusiasm, she opens the first application, thrilled to learn more about the potential candidates for her program, eager to contribute to the growth, knowledge transfer, and skill acquisition of the cardiothoracic surgeons of the future. She opens the first file, reading the various components of the application. She arrives at the first letter of recommendation, and she notes the chosen salutation: “Dear Sir(s).” Dear Sir? Certainly, in a field that is composed predominantly of men, this isn’t a surprising assumption. However, the year is 2022, and this type of language excludes the possible notion of women in positions of leadership. Still, it represents only the tip of the iceberg. And it is time for change.

We have a problem, and we need to acknowledge it. Gender bias in letters of recommendation has been explored within the surgical realm, although data are still lacking in cardiothoracic surgery. It has been well demonstrated that surgeons do not describe men and women applicants using the same types of language or terminology. Hoffman and colleagues1,2 reviewed fellowship applicant letters of recommendation in the fields of transplant and pediatric surgery, among which the vast majority of letters were written by male surgeons (92.4% and 82.5%, respectively). Examined letters for male applicants contained more agentic words, more frequently discussed the applicant’s anticipated “future success,” and were more likely to describe the candidate’s potential as a “future leader.” In contrast, letters for women applicants more often contained sociocommunal and caring terms. Likewise, Turrentine and colleagues3 reviewed application letters of support for men candidates containing more standout adjectives and discussions of achievement, whereas letters for their female counterparts focused on general positive terms and even contained doubt-raisers. Furthermore, they reported that letters for men were notably longer than those for women.

In our experiences in cardiothoracic surgery, we have seen numerous letters highlighting the presence of such issues in our subspecialty. We have noted women applicants to be described, for example, as “fun” and “a fantastic personality in social situations.” While these comments were written with the best of intentions, they may not actually be helpful. Marianne Cooper, the lead researcher for Sheryl Sandberg’s Lean In: Women, Work, and the Will to Lead, has found that likeability and success are negatively correlated for women.4 Thus, by emphasizing likability rather than leadership, cardiothoracic surgical letter writers may force women into roles that conform to gender stereotypes. Moreover, gender biases can adversely impact men and women alike.

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Such issues are highly prevalent outside of medicine, as well, with important findings from the business world highly relevant and applicable to surgical training. When Robin Ely and Irene Padavic were asked to investigate why a company was having trouble retaining women, they found that virtually all employees attributed challenges with having
women in leadership to a “work/family narrative,” based on the understanding that high-level jobs require long hours and the assumption that women’s devotion to family renders such a commitment impossible. Ultimately, the investigators found that both men and women struggled with meeting the demands of balancing work and home life, but men advanced because women were encouraged to take accommodations. We have seen parallel connotations reflected in letters of recommendation, in which women applicants are praised for being “extremely well rounded with a solid marriage and home life.” Meanwhile, one letter for a male applicant noted that “during his vacation week, he actually came and spent a week with me in the operating room, as opposed to going on vacation with his family.” This comment was made with the intent of commending the applicant’s work ethic. However, it is apparent that support of family responsibilities is integral to job satisfaction for both men and women in surgical fields.

Another area in which implicit bias is readily apparent centers around letter writers’ association of “male-ness” with leadership. In one letter, the following was described: “he was too reserved and not aggressive enough in the rotation. I counseled him in becoming more aggressive, since his quiet demeanor would be interpreted as being lazy or not interested in learning. When he again rotated on our service during his postgraduate 4 year, I was truly amazed to see the transformation that had taken place.” “Aggressive” is an ambiguous term that is synonymous with negative descriptors such as “combative, contentious, destructive and threatening” as well as positive attributes like “assertive” or “determined.” Regardless of the intended meaning, the term always implies a certain dominance. When a panel of senior chairs (all of whom were men) were asked to list tenets of good leadership, they included: cooperativity and collaboration; emotional intelligence; and effective engagement in administrative operations such as retention and recruitment. The “aggressiveness” demanded of this trainee is no longer considered an attribute of a good leader, nor should it have been required as an indicator of engagement by the faculty letter writer.

Clearly, we see that there is a problem in cardiothoracic surgery, and research in this realm is underway. Our work examining the presence of gender bias in letters of recommendation within the cardiothoracic space is ongoing. It is important to note that these studies rely on the pronouns used to describe candidates and are centered around comparing letters written for applicants using pronouns she/her/hers to those who use he/him/his. However, we acknowledge the nonbinary nature of gender as a limitation to such investigations and hope to see future work that evaluates letters for individuals who use nonbinary pronouns. Ultimately, substantially more research should be performed to explore the impact that gender-based biases may have on recommendations for applicants. In the interim, based on our collective experience and the existing relevant literature, we wish to put forth recommendations for best practices (Figure 1):

- Use a similar outline for all letters that you write, touching on the same key topic areas. Provide information such as academic accomplishments (without repeating the curriculum vitae in its entirety), communication skills, maturity/ emotional intelligence, work ethic, resilience, leadership, teamwork, and honesty/integrity. By incorporating information relating to all of the aforementioned attributes for ALL candidates, it is our hope that we reduce the observed discrepancies based on gender.
- Do NOT agree to write a letter on behalf of a candidate whom you do not know or for whom you would have concerns about recommending. The presence of doubt-raisers is more common in letters about women candidates.
- Do not discuss family or home life for any candidates, regardless of gender. If they wish to discuss this in an interview or application, that is their prerogative.
- Certainly, we are a long way from gender equity in our specialty. Ongoing issues include increased incidence of sexual harassment experienced by women cardiothoracic surgeons and trainees, less operative autonomy granted to female trainees, and bias in evaluation of surgical performance. These examples represent only a small component of the adversity that women trainees and faculty may face when they enter this specialty. Unfortunately, surveys completed by members of the Society of Thoracic Surgeons and Women in Thoracic Surgery revealed that many colleagues and leaders in cardiothoracic surgery are unable to perceive or empathize with the disadvantages that women colleagues face in the current system. Improving the balance requires improving the pipeline and providing role models, mentors, and sponsors for women at all stages of their career. There are well-established benefits of creating a more diverse workforce, for patients and providers alike. We want to recruit the best candidates and doing this requires fair evaluation of the entire applicant pool. Letters of recommendation play a key role in this assessment process, and we do the field a disservice by losing out on female applicants due to biases present in letters of recommendation. It is our hope to raise awareness in our field by providing evidence from other areas and showing that these biases can be identified in letters we have seen in our review, and to justify the need for data-driven analysis to quantify the problem in this field. This will set the foundation for ongoing studies, such as our present investigation wherein we are using natural language processing to evaluate letters of recommendation written for applicants to an academic fellowship program from 2015 to 2020. This work is ongoing, but the need for change is urgent. This editorial enables us to initiate a discussion, highlight the problem, and provide evidence for why this is important.
The transition to cardiothoracic training from medical school or general surgery is a pivotal time in one’s career, often determining the trajectory of the subsequent path. Combating inequities at this stage are mandatory to ensure that our future workforce is able to best serve the diversity of patients with diseases in the chest.

Conflict of Interest Statement
The authors reported no conflicts of interest.

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