Gender Matters: Internal Medicine Resident Perceptions of Gender Bias in Medical Training

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INTRODUCTION

Academic medicine has a leaky pipeline for the advancement of women.¹ Lack of role models, challenges with work–life balance, frustrations with features of the institutional environment, and the direct effect of implicit bias have emerged as possible explanations for the academic gender gap.^{1–3}

A recent study of internal medicine faculty has suggested organizational climate, including faculty's perceptions and experiences of gender inequities, may also contribute to the gender gap.⁴ Acknowledgement of such inequities and support to mitigate them has been shown to improve retention for women and minorities.⁵ This highlights the need for residency programs to better understand trainees' perceptions and experiences of gender inequities since the biggest leak in the academic pipeline occurs during residency, with women's interest in academia significantly declining.¹

The purpose of this study is to describe internal medicine residents' perceptions of gender's effect on their resident colleagues and on their own experiences during residency.

METHODS

Setting and Sample. We conducted a cross-sectional electronic survey study of the 140 residents in an academic internal medicine residency program, of which 67 identified as female.

Survey Development. Based on a literature review and informal resident focus group, we developed the survey content domains and questions. Questions focused on gender differences in communication, evaluation of clinical performance, and leadership, querying respondents' witnessing and personally experiencing either more positive or more negative treatment based on gender and gender's role in overall work experiences. Questions used Likert-type scale responses, with follow-up open-ended questions to invite elaboration. We collected respondent demographics of resident type, year, and gender. We pilot tested

the survey among 3 chief residents and 4 clinician educators incorporating their feedback into the final version.

Analysis. We calculated descriptive statistics, examined survey responses for questions about witnessing different treatment based on gender using the Wilcoxon signed rank sum test, and compared responses between males and females for questions about experiencing different treatments based on gender using the Mann-Whitney-Wilcoxon test. We used SAS (version 9.3, SAS Institute, Cary, NC) to conduct analyses. p values < 0.05 were considered statistically significant. To analyze open-ended responses, two authors independently reviewed responses to identify observations highlighting and expanding upon categories from the quantitative questions.

The University of Minnesota Institutional Review Board approved this research.

RESULTS

Seventy residents completed the survey (50% response rate) of which 47% were female ($n = 33$). Year in training and resident type were similar to overall program distribution.

Residents reported witnessing female residents being treated, on average, more negatively and reported male residents being treated more positively based on their gender in areas of communication and leadership (Table 1).

There were no significant differences between female and male residents reporting having experienced more positive treatment in any domain because of their own gender. However, there were significant differences with females reporting having been more negatively treated when compared with male respondents in all domains (Table 1).

When asked how gender affects overall work experience (response range “very negatively” = 1 to “very positively” = 5), males reported, on average, a more positive influence of gender than females (mean 3.5 [SD 0.6] vs 2.7 [SD 0.8], respectively, $p < 0.001$).

Open-ended responses illustrated these differences through descriptions of personal experience and attitudes (Table 2).

DISCUSSION

Our findings suggest that both male and female residents perceive that gender influences their experiences in the workplace. Residents reported witnessing female residents being treated more negatively compared with male residents. Female

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Table 1 Resident Survey Responses Regarding Their Perceptions of the Effect of Gender on Their Male and Female Resident Colleagues (A) and on Their Own Experiences (B)

A. Resident responses to the questions, "I have witnessed female/male residents being treated differently than male/female residents because of their gender in the following areas." * <i>n</i> = 70			
Domain	Female residents being treated differently	Male residents being treated differently	<i>p</i> value
Communication, mean (SD)			
With supervising physicians	2.7 (0.6)	3.3 (0.6)	< 0.0001
With supervisees	2.8 (0.6)	3.2 (0.6)	0.001
With consulting services	2.7 (0.6)	3.2 (0.6)	< 0.0001
With ancillary staff	2.5 (0.7)	3.5 (0.9)	< 0.0001
Leadership, mean (SD)			
Opportunities	2.8 (0.6)	3.3 (0.7)	< 0.0001
How teams respond to leadership style	2.6 (0.5)	3.4 (0.6)	< 0.0001
B. Resident responses to the question, "I have experienced being treated more POSITIVELY/NEGATIVELY than other residents based on my gender in the following areas." **			
Domain	Female residents <i>n</i> = 33	Male residents <i>n</i> = 37	<i>p</i> value
Treated more positively			
Communication, mean (SD)			
With supervising physicians	1.9 (0.9)	1.8 (1.1)	0.39
With supervisees	2.0 (1.0)	1.7 (1.0)	0.20
With consulting services	1.6 (0.7)	1.6 (0.9)	0.46
With ancillary staff	2.1 (1.0)	2.1 (1.3)	0.91
Evaluation, mean (SD)			
By supervising physicians	1.6 (0.7)	1.5 (0.7)	0.42
By supervisees	1.6 (0.7)	1.5 (0.8)	0.28
Leadership, mean (SD)			
Opportunities	1.6 (0.8)	1.6 (1.0)	0.65
How teams respond to leadership style	1.8 (0.8)	1.8 (1.1)	0.50
Treated more negatively			
Communication, mean (SD)			
With supervising physicians	2.0 (0.9)	1.3 (0.5)	0.001
With supervisees	1.7 (0.8)	1.3 (0.5)	0.01
With consulting services	1.9 (1.0)	1.2 (0.5)	0.002
With ancillary staff	2.3 (1.0)	1.3 (0.6)	< 0.0001
Evaluation, mean (SD)			
By supervising physicians	1.7 (0.9)	1.2 (0.4)	0.01
By supervisees	1.6 (0.9)	1.2 (0.5)	0.02
Leadership, mean (SD)			
Opportunities	1.7 (1.0)	1.2 (0.5)	0.01
How teams respond to leadership style	1.9 (0.8)	1.3 (0.6)	0.002

*Response categories: 1 = very negatively, 2 = somewhat negatively, 3 = no difference, 4 = somewhat positively, 5 = very positively

**Response categories: 1 = never, 2 = rarely, 3 = sometimes, 4 = often, 5 = always

residents reported experiencing being treated more negatively compared with males because of their gender in multiple

domains, while males reported a more positive influence of gender in their overall work experience.

Table 2 Representative Quotations from Open-Ended Questions

Communication
• I've seen female residents be portrayed [negatively] when they are being tough or demanding, whereas a male in the same situation acting in the same way would not be looked at negatively or might even be lauded for making things happen. – <i>M</i> , PGY2
• I frequently see [males] being given more respect from ancillary staff, but have also seen ancillary staff be less willing to approach a male resident, that is both positive and negative, and has its own drawbacks for patient care. – <i>F</i> , PGY4
• When I say something to the nurses, things get done, but for some odd reason my female counterparts have to almost "convince" them. – <i>M</i> , PGY3
• I have seen how I am treated better by ancillary staff, especially female ancillary staff, because I am a male. I have seen my female counterparts face a lot of pushback and sometimes disrespect by nursing staff because they are of the same gender, and this does not happen for me when I interact with ancillary staff of my same gender. – <i>M</i> , PGY1
• Sometimes, with codes, the staff look first for a male resident. – <i>F</i> , PGY3
Evaluation
• Generally, I think some older attendings treat males better. – <i>M</i> , PGY2
• I think as a male physician I'm sometimes treated with more gravitas and assumed to have more competence than my female colleagues. It feels a bit disgusting, but from a very practical perspective, it does benefit me at work to be a male. – <i>M</i> , PGY2
• I do not experience some of the things which my female counterparts often face: being mistaken for a nurse/therapist instead of a physician, disrespectful comments from patients, and sometimes unfair treatment from senior residents. I am often unobservant of these discrepancies until they are pointed out to me. – <i>M</i> , PGY1
• Men who are firm, direct, kind, and empathetic are viewed more favorably than women exhibiting the same behaviors. – <i>F</i> , PGY2
Leadership
• In order to get the same leadership opportunities as my fellow male colleagues, I as a woman have to show that I can already do the said skill, while they just have to show that they have the confidence to try it out, even if they have never done it. – <i>F</i> , PGY4
• Working with students and interns, assertive females tend to get more pushback and attitude than similarly mannered males, which I have directly experienced. – <i>F</i> , PGY2

F, female; *M*, male; PGY, post-graduate year

We need gender-integrated residency interventions designed to acknowledge differential experiences based on gender and to teach allyship. Such interventions may promote a positive organizational culture by contributing to a more inclusive workplace, helping to mitigate bias, improving the retention of women in academic medicine, and setting the groundwork for fairness in practice environments after residency.

The generalizability of our findings may be limited as our study is a single-site study and could be influenced by social desirability bias, though open-ended responses support our quantitative findings.

Elizabeth A. Rogers, MD, MAS^{1,2,3}

E. Kendahl Moser-Bleil, MD^{1,2}

Briar L. Duffy, MD, MS¹

Sophia Gladding, PhD¹

Qi Wang, MS⁴

Taj Mustapha, MD^{1,2}

¹Department of Medicine, University of Minnesota, Minneapolis, MN, USA

²Department of Pediatrics, University of Minnesota, Minneapolis, MN, USA

³Program in Health Disparities Research, University of Minnesota, Minneapolis, MN, USA

⁴Biostatistical Design and Analysis Center, Clinical and Translational Science Institute, University of Minnesota, Minneapolis, MN, USA

Corresponding Author: Elizabeth A. Rogers, MD, MAS; Program in Health Disparities Research, University of Minnesota, Minneapolis, MN, USA (e-mail: earogers@umn.edu).

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Compliance with Ethical Standards:

The content is solely the responsibility of the authors and does not necessarily represent the official views of the funders. All authors had access to the data and a role in writing the manuscript. E.K. Moser-Bleil has changed affiliation and is now with Fairview Health Services.

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

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