“Yes, I’m the Doctor”: One Department’s Approach to Assessing and Addressing Gender-Based Discrimination in the Modern Medical Training Era

Sophia K. McKinley, MD, EdM, Linda J. Wang, MD, MBA, Rajshri M. Gartland, MD, MPH, Maggie L. Westfal, MD, MPH, Christina L. Costantino, MD, Dana Schwartz, MD, Andrea L. Merrill, MD, Emil Petrusa, PhD, Keith Lillemoe, MD, and Roy Phitayakorn, MD, MHPE, for the Massachusetts General Hospital Gender Equity Task Force

Abstract

While gender-based bias and discrimination (GBD) is known to exist in medical training, there is limited guidance for training programs on how to understand and combat this issue locally. The Massachusetts General Hospital Department of Surgery established the Gender Equity Task Force (GETF) to address GBD in the local training environment. In 2017, members of the GETF surveyed residents in surgery, anesthesia, and internal medicine at 2 academic hospitals to better understand perceived sources, frequency, forms, and effects of GBD. Overall, 371 residents completed the survey (60% response rate, 197 women). Women trainees were more likely to endorse personal experience of GBD and sexual harassment than men ($P < .0001$), with no effect of specialty on rates of GBD or sexual harassment. Patients and nursing staff were the most frequently identified groups as sources of GBD. While an overwhelming majority of both men (86%) and women (96%) respondents either experienced or observed GBD in the training environment, less than 5% of respondents formally reported such experiences, most frequently citing a belief that nothing would happen. Survey results served as the basis for a variety of interventions addressing nursing staff and patients as sources of GBD, low confidence in formal reporting mechanisms, and the pervasiveness of GBD, including sexual harassment, across specialties. These results reproduce other studies’ findings that GBD and sexual harassment disproportionately affect women trainees while demonstrating how individual training programs can incorporate local GBD data when planning interventions to address GBD.

The presence of gender inequity in academic medicine has been well documented for over 3 decades, with multiple studies demonstrating that women in all phases of medical careers are disproportionately affected by gender-based bias and discrimination (GBD) compared with their male peers. The negative consequences of GBD on the physician workforce are magnified as more women enter the field of medicine. In the United States, women now comprise roughly 50% of all medical students and approximately 40% of general surgery, anesthesiology, and internal medicine resident physicians. The original “pipeline theory” proposed that the degree of reported discrimination would abate once women achieved a critical mass of > 30% of the academic medical workforce. However, rates of women’s academic promotion continue to significantly lag behind rates of representation. The perception of a “glass ceiling” for women in academia remains highly relevant because of the degree of discrimination and harassment women continue to experience in the workplace. These experiences have recently been highlighted in national and international news as well as in the social media #metoo campaign. Yet despite the increased attention to GBD and the evidence that GBD carries significant personal and professional consequences for an increasing proportion of the physician workforce, to our knowledge, there is little to no guidance for individual departments on how to locally understand and combat GBD to provide hospitable physician learning and working environments. We describe one department’s approach to addressing GBD faced by trainees, including how a departmental gender equity task force gathered detailed local data and identified areas for interventions at both the department and hospital levels.

Formation and Activities of the Gender Equity Task Force

In 2017, the Massachusetts General Hospital (MGH) Department of Surgery encouraged the formation of the MGH Surgery Gender Equity Task Force (GETF), a group of resident physicians with faculty advisers whose purpose is to both understand the nature of GBD in surgical training and devise solutions. This task force’s initial focus on resident physicians arose as a response to a series of safety reports that were perceived by involved residents to reflect GBD in the local training environment. The GETF’s first activity was to conduct a needs assessment and identify major themes of GBD relevant to its department’s trainees. A focus group of 7 female surgical residents met twice across April and May 2017 to share anecdotes of perceived GBD and categorize experiences. Four major themes emerged. First, senior female residents reported difficulty being accepted as leaders. Second, residents commented on different...
patient expectations of female and male residents, such as being asked to bring blankets or beverages to the bedside. Third, female residents commented on the automatic assumption by patients that women residents are nonphysician members of the medical team. While residents acknowledged that patients did not mistake their role with ill intent, they reported frustration with the need to repeatedly affirm, “Yes, I am the doctor.” Finally, residents acknowledged sexual harassment in the form of both verbal and physical sexual advances.

Based on these themes, members of the GETF created a formal survey of resident perceptions of GBD in the local work and learning environment to better contextualize these anecdotes and gain further insight into patterns of GBD that could influence intervention strategies and serve as a baseline to measure change.

Survey study of GBD in the local training environment

Participants and recruitment. The survey protocol was approved by the institutional review board of Partners HealthCare. All trainees in the general surgery, anesthesia, and internal medicine residency programs at MGH and Brigham and Women’s Hospital in Boston, Massachusetts, were eligible to participate. We selected these programs because they are 3 large programs with fairly balanced representation of men and women trainees. Furthermore, residents in these departments care for patients across nearly all hospital settings, which would allow insight into GBD broadly across the health system. We sent electronic invitations with up to 4 follow-up reminders to potential participants over the course of 1 month in fall 2017. Respondents were offered a $10 gift certificate to an online merchant as incentive to complete the survey. REDCap, a secure web application for managing online surveys and databases, was used for survey administration and confidential data collection.22

Survey instrument. The GETF adapted items from a previously published survey of women surgeons along with demographic questions spanning gender, age, race/ethnicity, and postgraduate year (Supplemental Digital Appendix 1, available at http://links.lww.com/ACADMED/A703).7 Although psychometric data for the original instrument are not available, we chose to adapt this survey because of its specificity and relevance to the clinical training environment as opposed to a more general workplace bias survey instrument. With this survey, we aimed to describe sources, forms, frequency, and effects of GBD faced by resident physicians. For the initial screening questions regarding personally experienced or observed GBD, participants were permitted to interpret the phrase “gender-based discrimination or bias” freely without a fixed definition, to broadly capture resident perceptions of GBD in the training environment. Additional questions addressed specific forms of GBD to better characterize the experiences of those residents who report perceiving GBD in residency training. The original women’s surgery survey was first edited by a resident physician member of the GETF with survey research experience (S.K.M.) to include only questions relevant to resident physicians. The survey was then refined through iterative testing with a subset of 10 study participants for readability and clarity, as well as to ensure that answer choices were representative of participant experiences of GBD. This subset of study participants completed survey versions while timing themselves and noting confusing language or questions with seemingly incomplete answer choices. These individuals provided feedback in both written and verbal forms, via individual email and in group phone calls with a researcher (S.K.M.). Three survey iterations were presented to this group until creation of a final version. This final version required less than 15 minutes on average to complete.

Statistical analyses. We deidentified data before analysis and excluded incomplete surveys from analysis. Univariate analysis was performed to compare baseline demographic characteristics and training experiences between and within the 3 specialties. For each comparison by gender or specialty, χ² test was used for categorical data, and unpaired t test was used for continuous numerical variables. When comparing actual vs expected response rates by gender, we included only individuals with confirmed gender at baseline or who self-reported gender in the survey in the binomial test calculation. Baseline gender characteristics for potential participants were obtained either from each residency program or through an Internet search of physician databases such as hospital directories and professional networking sites. Statistical analysis was performed with Stata/SE statistical software, version 13 (StataCorp LLC, College Station, Texas), and significance was defined at \( P < .05 \). We dichotomized questions regarding personal experience or observation of GBD to “none” and “any.” For example, when asked to indicate the degree to which a participant perceived GBD on a 0–10 scale, participants were dichotomized to those that selected “0” (“none”) and those that selected any response from 1 to 10. Individuals who reported that they perceived any personal experience of GBD (any response from 1 to 10) were then asked more detailed follow-up questions regarding the form, source, and frequency of perceived GBD.

Given that there were no statistically significant differences between general surgery, anesthesia, and internal medicine on the 2 main variables of rates of experienced GBD and sexual harassment, the results we report are collapsed across specialties unless otherwise specified. Data were also collapsed across the 2 hospital sites because there was no effect of hospital site on rates of experienced GBD or sexual harassment.

Assessing GBD in medical training: Survey results

Response rate and demographic characteristics. The survey was completed by 371 of 616 residents (60%). Average age was 29.7 ± 2.6 years, with most participants identifying as Caucasian (67%) (Table 1). Women were overrepresented relative to the invited population (197/367 [53%] vs 299/614 [49%], \( P = .06 \)) and demonstrated a higher response rate than men (197/299 [66%] vs 170/315 [54%], \( P = .003 \)).

Perceptions of GBD. A total of 227 (61%) participants reported personal experience of GBD during residency training. Women were more likely to endorse personal experiences of GBD than men regardless of specialty (93% vs 24%, \( P < .00001 \), Figure 1).

Participants who cited any personal experience of GBD identified the following groups as frequent sources of
GBD: patients (n = 188; 83%), nursing staff (n = 182; 80%), and patient visitors (n = 161; 71%). Nearly all groups were more frequently cited by women than by men as sources of GBD (Figure 2A).

The most frequently cited form of GBD involved receiving less trust from patients (n = 184; 81%), inappropriate verbal exchange specific to gender (n = 158; 70%), and receiving less trust from other providers (n = 150; 66%). Women were more likely than men to cite diminished responsibility, diminished patient trust, diminished provider trust, inappropriate verbal exchange, being asked to perform nonmedical tasks, and sexual harassment as forms of GBD (all \( P < .04 \), Figure 2B). Seventy-six residents reported experiencing sexual harassment during training, including 34% of all female survey respondents (n = 67) and 5% of all male respondents (n = 8) (women vs men, \( P < .00001 \)). Rates of sexual harassment were no different across specialties (\( P = .65 \)). Women reported more frequent experience of GBD than men (\( P < .001 \); Supplemental Digital Appendix 2, available at http://links.lww.com/ACADMED/A703).

Survey respondents reported experience of GBD across all hospital settings in patterns that reflect each specialty’s workflow (Supplemental Digital Appendix 4, available at http://links.lww.com/ACADMED/A703). Reporting and perceived effects of experienced and/or observed GBD.

Regarding witnessing GBD happening to others, 321 (87%) participants attested to observing occurrences of GBD in the training environment. Although women respondents were more likely than men to recall witnessing such events (90% vs 83%, \( P = .04 \), Figure 3), an overwhelming majority of men indicated observation of GBD in the training environment.

Overall, 335 (90%) residents noted personal experience and/or witnessed observation of GBD in the training environment. Women were more likely than men to recall witnessing such events (90% vs 83%, \( P = .04 \), Figure 3), an overwhelming majority of men indicated observation of GBD in the training environment.

Table 1
Self-Reported Demographic Characteristics of Resident Respondents to a Survey About Gender-Based Discrimination, Massachusetts General Hospital and Brigham and Women’s Hospital, 2017

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>All residents</th>
<th>Anesthesia</th>
<th>Internal medicine</th>
<th>General surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response rate, no. (%)</td>
<td>371/616 (60.2)</td>
<td>87/156 (55.8)</td>
<td>197/339 (58.1)</td>
<td>87/121 (71.9)</td>
</tr>
<tr>
<td>Gender, no. (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>170 (45.8)</td>
<td>39 (44.8)</td>
<td>92 (46.7)</td>
<td>39 (44.8)</td>
</tr>
<tr>
<td>Female</td>
<td>197 (53.1)</td>
<td>47 (54.0)</td>
<td>104 (52.8)</td>
<td>46 (52.9)</td>
</tr>
<tr>
<td>Other</td>
<td>2 (0.5)</td>
<td>1 (1.1)</td>
<td>1 (0.5)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>Mean age, years ± SD</td>
<td>29.7 ± 2.6</td>
<td>30.1 ± 3.0</td>
<td>29.2 ± 2.3</td>
<td>30.4 ± 2.7</td>
</tr>
<tr>
<td>PGY, no. (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PGY1</td>
<td>91 (24.5)</td>
<td>0 (0)</td>
<td>76 (38.6)</td>
<td>15 (17.2)</td>
</tr>
<tr>
<td>PGY2</td>
<td>106 (28.6)</td>
<td>29 (33.3)</td>
<td>57 (28.9)</td>
<td>20 (23.0)</td>
</tr>
<tr>
<td>PGY3</td>
<td>118 (31.8)</td>
<td>25 (28.7)</td>
<td>59 (29.9)</td>
<td>34 (39.1)</td>
</tr>
<tr>
<td>PGY4</td>
<td>42 (11.3)</td>
<td>30 (34.5)</td>
<td>6 (2.5)</td>
<td>7 (8.0)</td>
</tr>
<tr>
<td>PGY5</td>
<td>14 (3.8)</td>
<td>3 (3.4)</td>
<td>0 (0)</td>
<td>11 (12.6)</td>
</tr>
<tr>
<td>Race/ethnicity, no. (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>22 (5.9)</td>
<td>5 (5.7)</td>
<td>11 (5.6)</td>
<td>6 (6.9)</td>
</tr>
<tr>
<td>White</td>
<td>255 (68.7)</td>
<td>54 (62.1)</td>
<td>143 (72.6)</td>
<td>58 (66.7)</td>
</tr>
<tr>
<td>Black</td>
<td>16 (4.3)</td>
<td>4 (4.6)</td>
<td>7 (3.6)</td>
<td>5 (5.7)</td>
</tr>
<tr>
<td>Asian</td>
<td>85 (22.9)</td>
<td>24 (27.6)</td>
<td>44 (22.3)</td>
<td>17 (19.5)</td>
</tr>
<tr>
<td>Other</td>
<td>26 (7.0)</td>
<td>7 (8.0)</td>
<td>9 (4.6)</td>
<td>10 (11.5)</td>
</tr>
</tbody>
</table>

Abbreviations: SD indicates standard deviation; PGY, postgraduate year.
Residents who indicated personal experience and/or observation of GBD identified nursing relationships (n = 236; 70%), job satisfaction (n = 215; 64%), and personal risk of burnout (n = 202; 60%) as the domains most commonly affected by GBD; female respondents were significantly more likely to note the perceived effects of GBD across all 7 domains studied in the survey (Supplemental Digital Appendix 5, available at http://links.lww.com/ACADMED/A703). Notably, nearly 50% (n = 163) of residents who reported experiencing or observing GBD indicated that GBD affected patient care.

**Addressing GBD in Medical Training**

After analysis of these findings, the GETF met with department leadership to formulate a comprehensive plan to address GBD. The GETF first created a set of action items based on committee consensus, with additional aspects of the plan contributed by department leadership based on members’ knowledge of available funds and activity of other departmental groups. Components of this plan reflected key insights generated by the survey data. The resulting MGH Department of Surgery strategy to address GBD among trainees is outlined below.

**Sharing findings to drive internal improvement and interprofessional collaboration**

The GETF shared the survey results with the leadership of all 6 participating training programs via in-person meetings, which was followed by departmental discussions to ensure active engagement.

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**Figure 2** Perceived GBD sources and forms by survey respondent residents indicating any experience of GBD, Massachusetts General Hospital and Brigham and Women’s Hospital, 2017. A. Perceived sources of GBD across residency. Women were more likely than men to cite multiple groups as a source of GBD (*P < .05). B. Perceived forms of GBD across residency training. Women were also more likely than men to cite a variety of forms of GBD across residency training, denoted by (*P < .05). Abbreviation: GBD indicates gender-based bias or discrimination; EMT, emergency medical technician.
meetings and written reports. To increase awareness broadly within the local department, survey results and resident anecdotes were presented by the GETF at a special surgical grand rounds attended by trainees and faculty from all surgical divisions. While no formal study was completed to assess reception of the data, we observed positive reception from the leadership of all 6 training programs as well as during the presentation. Many faculty publicly pledged to support further efforts of the GETF. GETF members have subsequently been invited to present this work at local departmental conferences, leadership councils, education committees, and regional and national conferences. This level of interest suggests that other groups looking to replicate this work at other institutions would likely find support from many departments at varying levels of the health care system.

The GETF has also established a close working relationship with the hospital’s chief nursing officer and with senior nursing leadership. As a result, immediate actions included close examination of key safety events, meetings with nursing leadership of all surgical floors, sharing of GBD results from nursing leadership to clinical nursing staff, distribution of nursing director contact information to surgical residents, and a sponsored guest lecture addressing GBD in the surgical working environment open to both surgical physicians and nurses. One benefit of this relationship has been identification of shared interests for nurses and physicians, such as interventions to address patients who engage in sexual harassment directed toward any member of the health care team.

The patient as a source of GBD

The Department of Surgery purchased badge supplements for all members of the department that clearly identify providers’ roles on the care team, with titles such as “Doctor” and “Nurse Practitioner” in large lettering. The cost of the badge supplements for all department members engaged in patient care was approximately $1,000. Residents were provided with the hospital-wide policy on the discriminatory patient, which included examples of language that physicians can use when encountering such patients. Faculty members were invited to a training event on how to manage inappropriate patient behavior on behalf of learners using these techniques when encountering patients who engage in GBD or sexual harassment. A research study is currently underway to assess the impact of badge supplements on patient-derived GBD.

Implicit bias testing

The Department of Surgery funded every faculty and resident surgeon to take the Implicit Association Test to allow individuals to gain insight into their own implicit biases regarding race, skin tone, and gender.23 This work was completed in collaboration with the department’s community health initiative as part of a research study on department member attitudes toward the effect of bias on patient care.24 Again, the reception of these findings was overwhelmingly positive, with many faculty members publicly stating that taking the IAT resulted in self-reflection regarding their own implicit and explicit biases.

Reporting of GBD

Department leadership made multiple announcements at department-wide events to encourage increased reporting, especially of sexual harassment. Residents were provided with contact information for nursing leadership of all surgical floors as an alternative to the formal reporting system for issues related to gender bias given that at our institution, physicians file < 5% of all safety reports. Meanwhile, the GETF formed an intermediary committee to field department member concerns when there is reluctance to file a formal report regarding instances of GBD. Trainees were also provided information on how to contact the hospital sexual harassment officer outside of the Department of Surgery as another alternative to the formal reporting system.

Institutional awareness and partnerships

The GETF formed collaborations with other groups within the hospital and broader health care system to launch coordinated events to address GBD and share study results as widely as possible. These groups include the Office of Women’s Careers, hospital-wide education committees, and resident physician groups in other departments such as Women in Medicine. The Graduate Medical Education Office was provided with survey results and has responded by including bystander training as part of intern orientation for all interns across the entire health care system to equip residents who observe GBD with the skills to positively intervene.

Active promotion of women faculty

While not directly related to GBD faced by trainees, department leadership has strongly advocated for the equitable promotion of women faculty members. From 2017 to 2018, 4 women surgeons have been promoted to the highest academic rank, professor of surgery, helping decrease the gender promotion gap at MGH. Before 2017, only 1 woman
had ever achieved this academic title since the department’s founding in the 1930s. Increasing gender equality in promotions positions more positive female surgical role models for trainees. This intervention is consistent with recommendations for academic institutions on how to create an environment that is less conducive to GBD.25

Discussion and Recommendations

This project represents a step-by-step approach that physician training programs can adopt to combat GBD faced by their trainees (List 1). In addition to documenting a process that we found useful and effective, the data generated by the MGH Department of Surgery GETF activities are consistent with those of previous work demonstrating that GBD in academic medicine is ubiquitous, disproportionately affects women, and is infrequently reported.8,9,25–27 We expect that the majority of residency programs in the United States are affected by this pattern of findings, and thus we offer 5 broad tenets for residency programs as they develop local interventions to address GBD.

First, combating GBD requires a comprehensive approach involving multiple groups ranging from nursing staff to patients to attending physicians. Interventions to address these varied groups will be different, such as better physician identification to patients and faculty training.

Second, both men and women trainees experience, observe, and are affected by GBD, and interventions to empower residents to confront GBD should be offered to both male and female residents. Bystander training may be one way to equip residents with skills to intervene in real time on behalf of colleagues who are experiencing discriminatory behavior.

Third, despite previously reported studies indicating that surgery as a field is perceived to be particularly prone to GBD, our data suggest that at least within our health care system, GBD is equally perceived by trainees across surgery, internal medicine, and anesthesia.9,28 We anticipate that trainees in other departments face similar rates of GBD. Departments should therefore cultivate multidisciplinary and
List 1

Roadmap for Assessing and Addressing GBD Among Trainees

- Establish buy-in and support from department leadership
- Form a task force to identify issues and common themes
- Survey trainees to better understand the sources and extent of GBD
- Share findings throughout department to drive internal improvement
- Collaborate with other health care provider groups across the institution
- Increase awareness of personal implicit biases through training and/or testing
- Improve formal and informal reporting mechanisms
- Longitudinally track GBD to assess effectiveness of intervention strategy

Abbreviation: GBD indicates gender-based bias or discrimination.

cross-hospital collaboration to address this common problem.

Fourth, as others have noted, the culture of academic medicine is unlikely to change without improving formal reporting mechanisms of GBD and sexual harassment.24 A first step could be for a department to publicize changes that are made in response to formal reports, giving trainees confidence that their reports are taken seriously. Additionally, a department can offer alternatives to written safety reports that may feel less intimidating for victims of GBD and/or sexual harassment. Paradoxically, an initial measure of success for improving formal reporting mechanisms will likely be an increase in the number of formal reports of GBD and sexual harassment. We acknowledge that formal reporting is not a panacea for GBD and, if not executed carefully, has potentially detrimental consequences for team dynamics or the patient–doctor relationship. Furthermore, a trainee may judge many instances of GBD too trivial to warrant the effort of a formal report. However, we believe there must be improvement to the current mechanism of formally measuring and reporting GBD so that victims and perpetrators of the most egregious and harmful forms of GBD can be quickly identified.

Finally, GBD and sexual harassment should be tracked as a departmental or hospital outcome for all department members, and any interventions should be rigorously examined and reported to widely disseminate effective strategies and best practices. While a comprehensive approach may make it difficult to isolate the effects of a single intervention, it is important to share approaches that contribute to an improved training environment.

Importantly, many of the above interventions will likely benefit groups other than resident physicians. A comprehensive strategy will likely result in reduced rates of GBD experienced by faculty, nursing staff, and others, with concomitant positive consequences for clinical care as the work and learning environments improve. Many of the suggestions noted above, such as improving transparency around consequences for GBD and measuring GBD as an explicit outcome, are consistent with National Academies of Science, Engineering, and Medicine recommendations for how academic institutions can improve their climates and cultures to reduce GBD.25

To conclude, GBD and sexual harassment in academic medicine have been recognized for over 30 years, yet there are still limited guidelines for physician training programs to combat GBD. The recommendations of the MGH GETF offer one approach that contributes to understanding GBD and provides insight into intervention strategies that could reduce the burden of GBD faced by physicians-in-training. While more work is necessary to establish the effectiveness of the interventions described here, understanding and addressing GBD on behalf of trainees is an important first step for departments in establishing gender equity in medical training. Ultimately, best practices should be identified and disseminated so that all training programs can cultivate a more optimal work and learning environment for both professional development and patient care.

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S.K. McKinley is resident physician, Department of Surgery, Massachusetts General Hospital, Boston, Massachusetts.

L.J. Wang is resident physician, Department of Surgery, Massachusetts General Hospital, Boston, Massachusetts.

R.M. Gartland is resident physician, Department of Surgery, Massachusetts General Hospital, Boston, Massachusetts.

M.L. Westfal is resident physician, Department of Surgery, Massachusetts General Hospital, Boston, Massachusetts.

C.L. Costantino is resident physician, Department of Surgery, Massachusetts General Hospital, Boston, Massachusetts.

D. Schwartz is resident physician, Department of Surgery, Massachusetts General Hospital, Boston, Massachusetts.

A.L. Merrill is a fellow, Department of Surgery, Ohio State University, Columbus, Ohio.

E. Petrusa is associate professor, Department of Surgery, Massachusetts General Hospital, Boston, Massachusetts.

K. Lillemoe is professor and chair, Department of Surgery, Massachusetts General Hospital, Boston, Massachusetts.

R. Phitayakorn is associate professor, Department of Surgery, Massachusetts General Hospital, Boston, Massachusetts.

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