Sex Differences in Commercial Patient Reviews of Women and Men Urogynecologic Surgeons

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Objective: The objective of our study was to describe differences in commercial patient reviews of women and men urogynecologic surgeons.

Materials and Methods: Reviews of surgeons on Healthgrades.com in 4 metropolitan areas were included. Based on the qualitative assessment using qualitative content analysis of major and minor elements, we defined 4 theme categories: global experience, social interaction, technical skills, and ancillary aspects, each embedded with discrete elements. Differences in proportions of mentioned themes as well as quantitative ratings were evaluated by sex with the appropriate statistical tests.

Results: Three hundred sixty-four patient reviews (51% for women surgeons and 49% for men surgeons) were identified for 141 gynecologic surgeons self-identifying as "urogynecologists." The majority of the cohort (77%) held subspecialty certification in female pelvic medicine and reconstructive surgery. Reviews of women demonstrated a lower mean quantitative "likelihood to recommend" score compared with men (4.0 vs 4.3, $P = 0.002$) on the 5-point scale. Women received more mention in comfort (52% vs 40%, $P = 0.023$) and professionalism (19% vs 9%, $P = 0.007$) themes and less mention with respect to surgical outcomes (28% vs 53%, $P < 0.001$) and technical skills (5% vs 15%, $P = 0.011$) compared with men.

Conclusions: Commercial online patient reviews for urogynecologic surgeons reveal sex bias with women receiving lower scores overall and more comments related to social interaction and fewer comments related to surgical outcomes and technical skill compared with men.

Key Words: urogynecology, implicit bias, sex discrimination

(*Female Pelvic Med Reconstr Surg* 2022;28: 173–176)

Sex disparities exist for women surgeons in academic medicine. Specifically, women surgeons are underpaid,[1] underrepresented in leadership positions,[2,3] underrepresented in publications,[4,5] judged more harshly for complications,[6] and are more likely to experience sexual harassment and discrimination compared with their male counterparts.[7]

Implicit sex bias among health care workers has been previously identified.[8] In a cross-sectional study, Salles et al[8] collected implicit bias information from self-described surgeons using 2 implicit association tests, validated to measure implicit bias. Their study demonstrated that health care providers had a tendency to associate men with the discipline of surgery and women with the discipline of family medicine.

Sex differences also have been encountered in evaluations of women training in surgical specialties.[9] Antonoff et al[9] revealed that general surgery trainee performance evaluations were skewed by sex bias. Although obstetrics and gynecology is a surgical subspecialty represented by majority women, recent investigations have uncovered sex bias and discrimination even in this discipline[10]; a call to action to address this was recently published.[11]

Given these examples of sex bias among colleagues in the health care setting, it is not surprising that patient evaluations of surgeons are also vulnerable to implicit sex bias. Recently, an analysis of commercial patient reviews of 238 female and male surgeons demonstrated that women received more comments about personality, whereas men received more comments regarding technical skill.[12] Therefore, the objective of our study was to uncover whether there were any differences in the commercial patient reviews written by patients of women and men identifying as urogynecologic subspecialty surgeons.

METHODS

We performed both quantitative and qualitative content analyses of commercial patient reviews of urogynecologic subspecialists. We used a search strategy previously described by Marrero et al.[12] Urban locations were used due to a high density of urogynecologic surgeons, yielding a high number of available reviews. We included large metropolitan urban areas from 4 distinct geographic locations, including New York, Houston, Los Angeles, and Chicago. Only reviews of provider-reported subspecialty designation as "urogynecologist" to the commercial site were included in the analysis.

The search strategy was intended to mimic strategies patients might use to research physicians over the internet. We selected the most widely used internet search engine, Google. We entered the phrases "rate ob gyn" and "find ob gyn," and the top results linked to Healthgrades.com, a commonly used physician rating website. For this reason, we elected to pull all of our reviews from Healthgrades.com.

To obtain the reviews, we entered "urogynecology" in the "search doctors" bar of the Healthgrades.com website and entered the 4 cities listed previously in the "location" search bar. The search results were organized in the order of relevance to the subspecialty and vicinity to the locations entered. Reviews from all physicians searched were included. Up to 3 reviews of each physician were included (to limit overrepresentation of a single surgeon), and we assumed that each review represented a unique patient experience. When there were more than 3 reviews for 1 physician, we used a random number generator to select which 3 reviews to analyze. We included reviews of all identified urogynecologists in a specific metropolitan area.

Physician sex was obtained by reviewing publicly available data for each physician from their own practice websites by 2 independent investigators. If sex was not explicitly posted on the physician's profile, it was assigned based on analysis of physician available information, including name and portrait photo. Physicians whose public profiles did not allow for determination of perceived sex were excluded. Physician age and academic rank were obtained by reviewing publicly available data. Subspecialty board

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The authors have declared they have no conflicts of interest.

DOI: 10.1097/SPV.0000000000001155

certification was confirmed on the American Board of Obstetrics and Gynecology website (abog.org).

We used themes and elements identified by Marrero et al[12] in their analysis of men and women surgeons. Based on their grounded theory content analysis, we used 4 specific themes, each with discrete elements, in our qualitative content analysis (Table 1).

1. Global experience: overall experience, would return to provider, would recommend to others
2. Social interaction: professional, welcoming, lack of hostility, honesty, made comfortable, bedside manner
3. Technical skills: outcomes, attention to detail, healing process, informative, technical skill, safety
4. Ancillary elements: staff interactions, wait time, insurance issues, scheduling, litigation

If present in each review, comments about these elements were recorded as positive or negative based on the review contents. Each patient review was coded in this way by 2 independent reviewers who were blinded to physician name and practice location. Blinding to physician sex was impossible because sex pronouns were frequently used in patient reviews. A rating out of 5 stars also was reported for each physician on Healthgrades.com based on an average of all patient reviews. This rating was obtained for quantitative analysis.

The percentage of times a theme or element was mentioned was assessed by sex by independent reviewers. Themes and elements also were characterized as positive, negative, or neutral and analyzed according to sex. Difference in proportions of mentioned themes and elements as well as their positive and negative connotations were evaluated. Quantitative scores (likelihood to recommend) were evaluated with independent samples tests. Differences in the proportion of mentioned themes and elements according to surgeon sex were evaluated with χ^2 statistics with significance of $P < 0.05$.

RESULTS

Patient reviews were collected from April 27, 2020 to May 29, 2020. Three hundred sixty-four patient reviews were identified for 141 gynecologic surgeons identifying as "urogynecologists." Fifty-two percent (n = 73) were identified as women, and 48% (n = 68) were identified as men. The number of reviews that evaluated women surgeons (51%) was similar to the number of reviews for men surgeons (49%). The majority of the cohort (77%) held subspecialty certification in female pelvic medicine and reconstructive surgery. There was no difference in the mean ± standard deviation age of men (50.3 ± 6.1 years) and women (49.0 ± 7.8 years) ($P = 0.075$). The majority of the reviews came from patients reviewing urogynecologists in New York (49.6%), followed by Chicago (21.3%), Los Angeles (23.4%), and Houston (5.7%).

TABLE 1. Themes and Elements Identified in Surgeon Reviews

Themes	Elements
Global experience	Overall experience, would return to provider, would recommend to others
Social interaction	Professional, welcoming, lack of hostility, honesty, comfort, bedside manner
Technical skills	Outcomes, attention to detail, healing process, informative, technical skill, safety
Ancillary elements	Staff interactions, wait time, insurance issues, scheduling, litigation

TABLE 2. Proportion of Comments Per Domain by Sex

Domain	Women, n = 187	Men, n = 177	*P*
Global	116 (62%)	120 (68%)	0.192
Social	143 (76.5%)	131 (74.0%)	0.587
Technical	137 (73%)	145 (82%)	**0.048**
Ancillary	51 (27%)	57 (32%)	0.303

Women urogynecologists had a lower mean quantitative "likelihood to recommend" score compared with men (4.0 vs 4.3, $P = 0.002$). Frequency of domain themes mentioned in reviews varied between women and men, with men having more frequent mention of technical domain themes (Table 2). Frequency of each theme element mentioned for women and men surgeons is detailed in Figure 1. Women received more mention in comfort (52% vs 40%, $P = 0.023$) and professionalism (19% vs 9%, $P = 0.007$) themes and less mention with respect to surgical outcomes (28% vs 53%, $P < 0.001$) and technical skills (5% vs 15%, $P = 0.011$) compared with men.

Overall, 81.6% (n = 297) of reviews were positive. There was no significant difference between the percentage of positive reviews received by women and men surgeons (79% vs 85%, $P = 0.144$). However, women surgeons received more positive reviews on professionalism (16% vs 9%, $P = 0.019$) themes and fewer positive comments with regard to outcomes (23% vs 46%, $P < 0.001$), technical skills (5% vs 13%, $P = 0.008$), and staff interaction (14% vs 23%, $P = 0.040$) themes compared with men surgeons. Frequency of each theme element mentioned as positive is shown in Figure 2.

DISCUSSION

Because American health care consumers use online resources and physician reviews[13] to choose their health care providers, it is important to understand the potential pitfalls in such reviews. We demonstrated differences in the way women and men urogynecologic surgeons are evaluated in commercial patient reviews. Specifically, despite having an equal number of reviews, women had a lower quantitative "likelihood to recommend" score compared with men, and reviews were more likely to mention themes of comfort and professionalism and less likely to mention technical skill and outcomes compared with men. This pattern contradicts the evidence that the outcomes of women surgeons are at least on par with, and may exceed, those of male surgeons, although this has not been directly studied in the surgical subspecialty of urogynecology.[14]

Although patient reviews have not been shown to correlate with physician performance, they remain important in the health care landscape. Patients have been shown to use commercial reviews written by other patients when choosing health care providers.[15,16] Patient satisfaction is used as a quality indicator but can be influenced by a variety of patient characteristics, including self-rated health status and health outcomes. As a quality indicator, patient satisfaction (as reported in patient reviews of physicians) has been incorporated into physician compensation and promotion. Our study and others have identified the presence of sex bias in these patient reviews. As such, it is important to de-emphasize the use of such intrinsically biased patient reviews.

Sex discrimination is pervasive in the medical field, but more importantly, sex bias and discrimination also have been

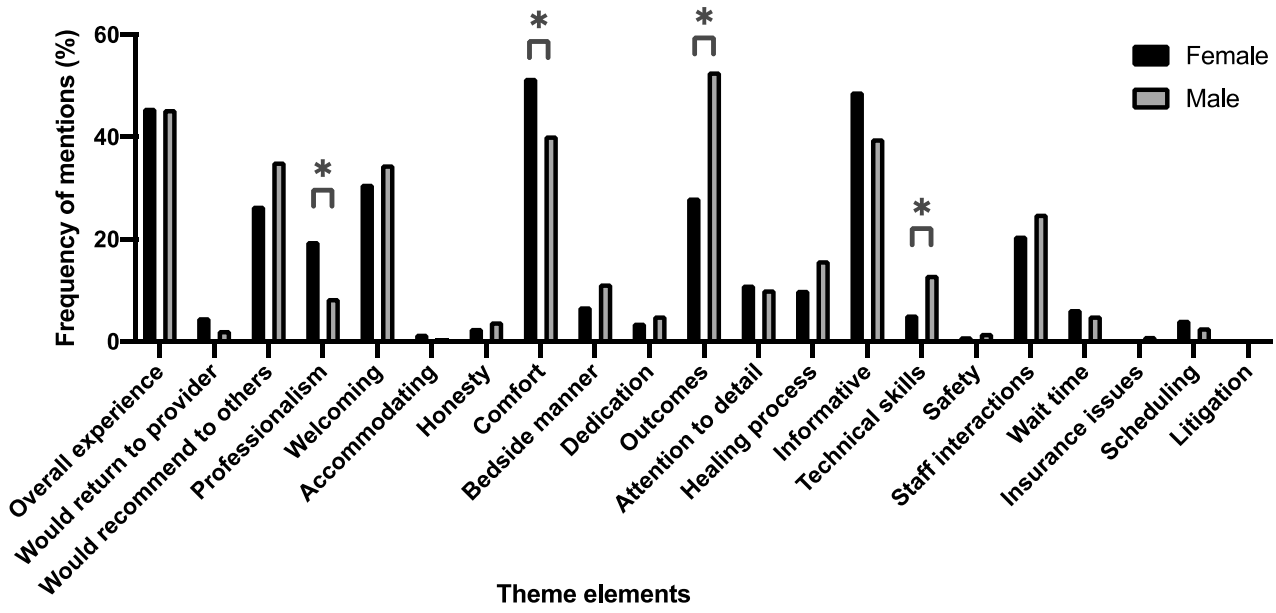

FIGURE 1. Frequency of reviews by theme elements.

recognized as a driver of burnout[7] and can lead to women physicians leaving the field.[17] Moreover, there is a large, known sex wage gap in the gynecologic surgical subspecialties, with women making substantially less income.[18] The identification of sex bias in the fields of surgery and obstetrics and gynecology has led to recent calls to action to address sex bias and discrimination.[11] Suggestions to counteract bias focus on systemic or culture change.[10,19] Simple interventions such as a sex bias–reducing workshop have also been shown to be effective drivers of change.[20] The Association of Women Surgeons is tackling sex discrimination and has created a task force to accomplish this mission.[21] This task force recently published recommendations for decreasing sex bias within departments, presenting several strategies to combat sex bias and discrimination:

1. Commit to a culture.
2. Introduce bias literacy.
3. Provide counter-stereotypes.
4. Conduct an introspective departmental assessment.
5. Encourage mentorship.
6. Empower the individual.

Based on the results of this study and others revealing sex bias in patient reviews of their health care providers, we assert that the

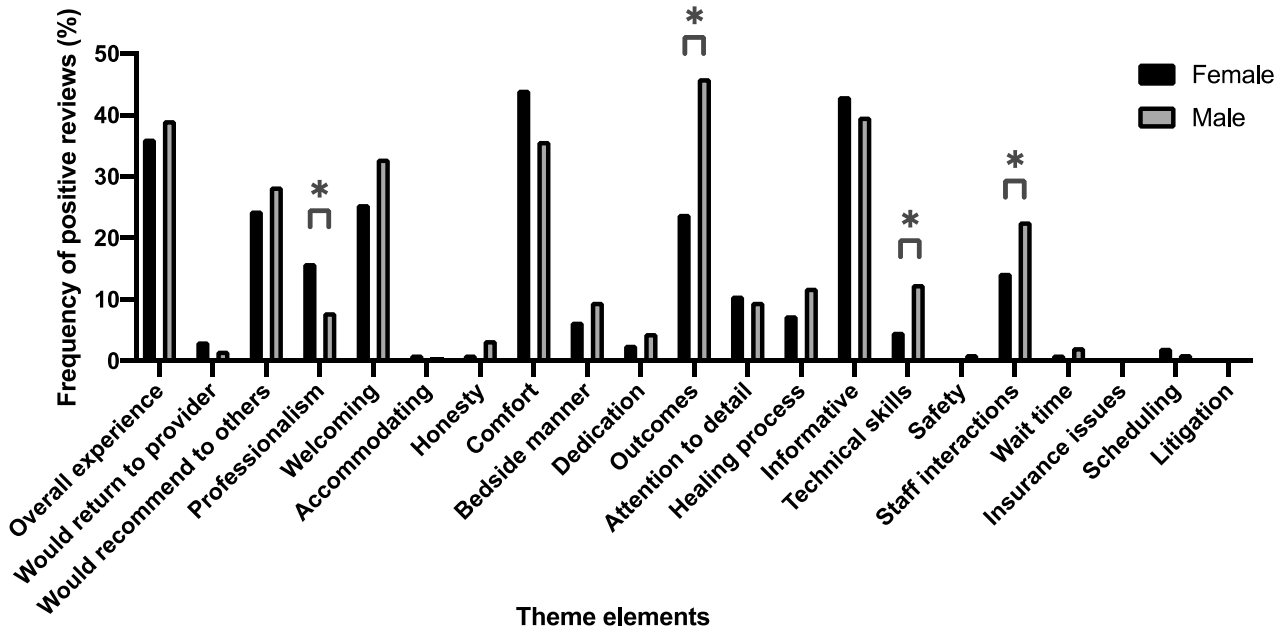

FIGURE 2. Frequency of positive reviews by theme elements.

de-emphasis of patient reviews by health care organizations should be added to this list.

We acknowledge several limitations to our study. There is no mechanism to ensure that reviews of physicians are submitted by actual patients who have received care with the specific physician. Although we used a single review platform to limit duplicate patient reviews, it is possible that some reviews were not submitted by actual patients and some reviews might be duplicates (from the same patient). Also, our results are potentially not generalizable to all urogynecologists because we focused on 4 urban metropolitan areas with a minority of the reviews garnered from the "Houston" metropolitan area. We also do not have information on the type of care provided to patients (ie, surgical vs nonsurgical management), which could influence patient reviews; however, there are no data to support or reason to suspect that women and men urogynecologic surgeons have different practice patterns. Furthermore, although there is a difference in likelihood to recommend scores, the implications of this as it relates to compensation, referrals, and promotion are unclear and likely vary by institution. However, our results are strengthened by the fact that the overwhelming majority of patients presenting for urogynecologic care identify as women. The homogeneity of this population decreases the effect of a different potential source of sex bias in reporting, which has been demonstrated in other studies evaluating physicians who care for both men and women.[22]

In conclusion, we demonstrated significant elements of sex bias in the commercial patient reviews of women and men urogynecologic surgeons. Given the presence of this sex bias, patient reviews must be de-emphasized by health care organizations to prevent burnout of women urogynecologic surgeons.

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