Association of Women Surgeons

Perceptions of surgeons: what characteristics do women surgeons prefer in a colleague?

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KEYWORDS:
Surgeon; Sex; Demeanor; Perception

Abstract

BACKGROUND: Perceptions underlie bias and drive behavior. This study assessed female surgeons’ implicit perceptions of surgeons, with a focus on the roles of sex and demeanor (communal = supportive, associated with women; agentic = assertive, associated with men).

METHODS: Electronic surveys were administered via the Association of Women Surgeons e-mail listserve to 550 post-training female surgeons. Each survey had one of the 4 possible scenarios that varied by surgeon sex (male/female) and surgeon demeanor (agentic/communal). Respondents rated their perception of the surgeon through 5 questions regarding preference and 5 questions regarding professional opinion (1 to 5 scale).

RESULTS: We received 212 surveys. In both preference and professional scores, female surgeons were rated significantly higher compared with their male counterparts (4.7 vs 4.4 and 4.3 vs 4.0, respectively). Communal surgeons were rated significantly higher versus agentic surgeons in both scores (4.7 vs 4.4 and 4.6 vs 3.7).

CONCLUSIONS: Female surgeons demonstrated a significant preference for female surgeons and for communal surgeons.

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Recently, women in corporate America have been the subject, and target, of dialogue about their leadership in the workforce.1 Medicine has largely been absent from this discussion, but we believe there are important parallels. Despite the fact that women and men graduate from US medical schools at comparable rates, female surgeons are promoted more slowly than their male counterparts2–4 and remain largely absent from senior academic leadership. Consequently, medical students have limited access to female role models who align with their career aspirations.5,6

One reason for this discrepancy may be the opposition of personality traits prescribed for women and those required for leadership and success in academic surgery. Men are celebrated for “agentic” traits (assertive, independent behavior), while women are expected to demonstrate “communal” traits (supportive, nurturing behavior).7–10

Agentic behavior is therefore prescribed for men and proscribed for women, while the opposite is true for communal behavior.7 In traditionally male-dominated occupations,
male values are maintained as the standard for success for both sex,\textsuperscript{[11,12]} which contributes to sex bias and creates multiple workplace predicaments for the female surgeon.

It is important to determine whether implicit sex bias exists within physicians themselves. By objective measures, sex discrepancies persist in academic medicine: women are predominantly assistant professors in nontenure track positions,\textsuperscript{[4]} wait more years before promotion,\textsuperscript{[7]} receive lower salaries than their male counterparts,\textsuperscript{[13]} and remain relatively absent from surgical specialties.\textsuperscript{[14]} However, implicit perceptions of the roles of sex and demeanor are not well understood. Furthermore, it is worth acknowledging that biases may also exist among women physicians themselves. Women who succeed in predominantly male environments can negatively affect the advancement of their subordinates.\textsuperscript{[15]} A recent study demonstrated that female, but not male, professors rated female PhD students as less committed to their career than male students.\textsuperscript{[16]} Similarly, female rather than male employees are particularly critical of their female colleagues’ career commitment, assertiveness, and leadership skills.\textsuperscript{[17,18]} It is possible that female surgeons, many of whom forged their careers in male-dominated medical schools, residencies, and fellowships, may contribute to the sex bias experienced by female physicians today. The purpose of this study was to assess female surgeons’ implicit perceptions of other surgeons, with a particular emphasis on surgeon sex and surgeon demeanor.

**Methods**

Institutional Review Board approval was obtained before the initiation of this study.

**Participants and setting**

Our survey was distributed to female surgeons subscribed to the e-mail listserve of the Association of Women Surgeons (AWS). List subscribers include medical students, residents, fellows, and board-certified surgeons; there are approximately 550 post-training surgeons subscribed to this list. Any listserve subscriber could complete the questionnaire but we only included responses from respondents who indicated they had completed their training. Ultimately, our eligible respondents were female surgeons who are on the AWS listserve, completed residency and/or fellowship, could read English, and voluntarily agreed to complete the survey.

**Questionnaire**

Our questionnaire was modeled after scenarios used in a series of studies conducted by Rudman et al. After reading the scenario, her participants answered 8 questions regarding the competence, likeability, and hireability of female and male job applicants.\textsuperscript{[19]} All reliability indices (competence, likeability, hireability) generated were greater than .81. Dusch et al\textsuperscript{[20]} adapted these vignettes to describe surgeons who demonstrated agentic and communal characteristics and then administered a 5-question survey pertinent to the scenario to generate a preference index ($\alpha = .86$) to assess patients’ implicit perceptions of surgeons. In the present study, respondents read one of the 4 possible scenarios (Appendix) that began with a short description of a surgeon who was portrayed as accomplished and well trained. The scenarios varied by surgeon sex (male/female) and surgeon demeanor (agentic/communal). Male and female surgeon sex was varied to assess implicit sex bias. Agentic demeanor, which includes being assertive and independent, is stereotypically associated with men and traditionally male-dominated occupations such as surgery; conversely, communal demeanor, which includes being supportive and nurturing, is classically associated with women.\textsuperscript{[21–24]} These types of demeanor were described using phrases derived or adapted from Rudman’s original studies.\textsuperscript{[19]} These demeanor traits were varied to evaluate for an implicit demeanor bias or an interaction between surgeon sex and surgeon demeanor. The surgery in question was a bowel resection, and the patient was designated as the respondent’s mother. We wanted the assessment of the surgeon to be slightly removed from the individual respondent to encourage objectivity and minimize explicit biases that might enter an evaluation of surgeons based on previous workplace interactions. After reading the scenario, respondents were then asked to complete a short survey.

**Measures**

Respondents answered 10 questions using a rating from 1, “not at all” to 5, “very much.” The first 5 items as taken from Dusch et al\textsuperscript{[20]} focused on overall preference and asked the respondent to rate how competent the surgeon was, how much the surgeon possessed necessary skills, how likeable the surgeon was, how likely they would be to choose this surgeon, and how likely the surgeon would be to report a possible error during surgery. The second 5 items addressed professional opinion and asked the respondent whether they would feel comfortable referring a patient to this surgeon, whether the surgeon would fit in with a medical team, whether they would work well with residents and students, whether the surgeon was, how likely they would be to choose this surgeon, and how likely the surgeon would be to report a possible error during surgery. The second 5 items addressed professional opinion and asked the respondent whether they would like to work with the surgeon, whether the surgeon would work well with residents and students, whether the surgeon would fit in with a medical team, whether they would feel comfortable referring a patient to this surgeon, and whether they would respect this surgeon. We postulated that preference and professional opinion might differ depending on what the respondent perceived to influence the care of their mother versus the function of such a person within the medical profession. The respondents also completed demographic items related to sex, age, professional title (Assistant Professor, Associate Professor, Professor, Non-academic physician), years since completion of residency or fellowship, and current specialty.

**Statistical analysis**

Our first 5-item surgeon “preference” scale had a reliability ($\alpha$) of .777, indicating that responses to each
individual item were related and that the items made a consistent set. As a result, we summed the 5 items and divided by 5 to create a composite perception score scaled from 1 to 5. Our second five-item “professional” scale had a reliability (α) of .914; we similarly created a professional composite score from 1 to 5. We obtained descriptive statistics of percentages and means to describe our respondents and their perceptions.

We conducted a univariate analysis of variance using the general linear model procedure. We studied 2 main effects: sex of surgeon and demeanor of surgeon and we had a single-dependent variable: either preference or professional score. We also assessed correlations between the 2 scores and between age and either score using the Pearson correlation coefficient. Significance was set at P value less than .05. All analyses were conducted in IBM SPSS Statistics, Version 20 (IBM Corporation, Armonk, NY).

Results

We received 212/550 responses for a response rate of 39%. Respondents were 100% female with an average age of 48 years (±9.7, range: 31 to 78) and 14.4 years (±10.0 years, range: 5 to 43) since completion of training. The majority of respondents held the role of Assistant Professor (31%), with 23% Professor, 20% Associate Professor, and 26% non-academic physicians.

The average preference score was 4.5 ± .6 and the average professional score was 4.2 ± .9. There was no significant difference between professional titles for either of the 2 scores (P > .05), nor were there significant correlations between respondent age and either of the scores (P > .05). There was a significant correlation between the preference and professional scores (Pearson’s r = .834, P < .001).

In both scores, the female surgeon was rated significantly higher compared with the male surgeon (P < .001, Table 1) and the communal surgeon was rated significantly higher compared with the agentic surgeon (P < .05, Table 1). There was no significant interaction between sex and demeanor (P > .05).

Comments

The results of this study illustrate that female surgeons have a strong preference for female surgeons and for surgeons who display a communal demeanor. We did not find a significant interaction between surgeon sex and surgeon demeanor. Our respondents rated surgeons on 5 items related to preference (eg, whether they would like the surgeon, whether they would choose the surgeon to perform surgery on their mother) and five 5 items related to their theoretical professional opinion (eg, whether they would respect this surgeon, whether this surgeon would work well with medical students and residents); values for preference and professional scores were strongly correlated.

Our survey respondents were an average age of 48-year-old with an average of 14 years since completion of training; the majority of our respondents trained at a time when the sex gap between men and women in surgery was larger than currently. Previous literature has suggested that women who work in environments where their sex is devalued (ie, male-dominated fields) may demonstrate behavior to dissociate themselves from the devalued group. Examples of these tactics include stressing differences between themselves and other women, implicitly legitimizing the disadvantaged position of women in their organization, and perpetuating the organizational culture of the discriminatory system through which they ascended. Our results demonstrated the opposite—that women surgeons preferred female surgeons both personally and professionally. This finding may be because of familiarity with female colleagues, the loyalty that is felt among members of a historically marginalized demographic, or the nature of our survey respondents. Female surgeons who are members of the AWS may be also more likely to hold views that are supportive of other female surgeons.

A review of personality and medical specialty choice showed surgeons to be more tough-minded, resolute, and unempathetic compared with their colleagues in nonsurgical fields. Accordingly, we found it somewhat surprising that there was such a strong and significant preference for the communal surgeon across the preference measures. This same preference for communal surgeons regardless of sex was seen in similar studies of nurses and medical students conducted at our institution, and may be because of the team-oriented nature of patient care, which increasingly emphasizes collaboration and effective communication between team members. The description of the communal surgeon as “humble” and “encouraging” likely conveyed the impression of a person who would not only be preferable for performing surgery on the respondent’s mother (preference measure), but who would also be perceived more favorably in professional interactions with staff, students, and surgical colleagues.

<table>
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<tr>
<th>Table 1</th>
<th>Summary of scores for sex and demeanor for each of the 3 preference measurements</th>
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<tr>
<td></td>
<td>Surgeon sex</td>
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<tr>
<td></td>
<td>Female n</td>
</tr>
<tr>
<td>Preference</td>
<td>4.7 (.4)</td>
</tr>
<tr>
<td>Professional</td>
<td>4.3 (.7)</td>
</tr>
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Scores are listed as mean (standard deviation).
(professional measure). This is an important finding for both male and female surgeons at any stage of their careers: while the stereotypical surgeon may be portrayed as harsh and unempathetic, implicit personal and professional perceptions, even among surgical colleagues, appear to be considerably more favorable when one demonstrates communal behavior.

Our study was limited by several factors. First, it is possible that physical interaction as opposed to reading words on a page may result in different perceptions by study participants. Future studies may be warranted to confirm our results using video or audio recordings or staged interactions with actors. Additionally, qualitative observation and/or focus groups may provide new and additional information on this relatively subtle topic. Second, the online nature of this survey made it challenging to obtain a robust response rate. Despite the short length of our survey, it is difficult to capture and maintain the attention of target respondents using an electronic survey in our current digital age. Finally, we were limited by respondent demographics. These results reflect the implicit perceptions of female surgeons who are members of the AWS and therefore may be motivated by a specific interest in the role of sex and demeanor in perceptions of female surgeons.

Conclusion

Female surgeons demonstrated a significant implicit preference for female surgeons and for communal surgeons, regardless of surgeon sex. Female surgeons and communal surgeons received higher scores in the preference, professional, and overall perception measures. These findings may suggest that women surgeons are supportive of one another and that communal demeanor is advantageous, even in a field that has historically cultivated agentic traits.

Supplementary data

Supplementary data related to this article can be found at http://dx.doi.org/10.1016/j.amjsurg.2014.06.005.

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