

Gender Differences in the Professional and Private Lives of Plastic Surgeons

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Abstract: There are over 700 female members in the American Society of Plastic Surgeons. The purpose of this study was to assess possible differences between female and male plastic surgeons with respect to their practice characteristics, duration of practice, and some aspects of their private lives.

We designed a 41 question survey to compare the practice features and personal demographics of female and male members of the American Society of Plastic Surgeons. A total of 1498 questionnaires were sent via e-mail to all female members ($n = 687$) and a random cohort of male members ($n = 811$). The respondents were age stratified by decade and their responses were compared by gender using χ^2 tests.

The overall response rate was 36.3%: 337 females (49%) and 207 males (25.5%) ($P < 0.0001$). Of female respondents, 35.3% were not married, as compared to only 12.5% of the males ($P < 0.001$). Additionally, 42.9% of women had no children, as compared to 11.5% of men ($P < 0.001$). Men also tended to have more children than their female counterparts, across all age groups. The majority of women (58.8%) delayed child-rearing until after residency, as compared to only 25.7% of men ($P < 0.001$). Male plastic surgeons were more than twice as likely as female plastic surgeons to earn an income greater than \$400,000 per year ($P < 0.001$). Of 39 respondents who stated that they were no longer practicing, 21 (54%) were male and 18 (46%) were female ($P = \text{NS}$).

Female plastic surgeons are significantly more likely to be unmarried, to postpone having children or be childless, as compared to their male counterparts. Furthermore, female plastic surgeons have a lower income than their male colleagues despite similar hours and practice profile. Nevertheless, female plastic surgeons appear to have similar career satisfaction and are no more likely to retire earlier or more frequently than male plastic surgeons.

Key Words: gender, female plastic surgeons, practice profile

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The demographics of American physicians has changed over the past 50 years. Currently, one-half or more of US medical students are women. This would be expected because women currently earn more collegiate degrees than men. In the mid 1980s, the number of female graduate students surpassed the male students.¹ In the 2002 to 2003 academic year, women earned 58% of all higher education degrees.² Interestingly, these differences in academic achievement are evident at an early age.³ Unless male scholarly efforts improve, this gender gap will continue to widen.

It has been predicted that by 2010, one-third of the nation's physicians will be women, an increase from 8% in 1970.⁴ Many of these women are entering fields that were traditionally male-dominated, such as general surgery and the surgical specialties. In 1977,

there were only 24 women in the American Society of Plastic Surgeons (ASPS) and now there are over 700 female members. We wondered how the women's practice profiles might differ from those of their male counterparts. We were also interested in a possible difference between the sexes in length of practice before retirement. Our hypotheses were that there are dissimilarities in practice profile (eg, part time vs. full-time, cosmetic vs. reconstructive) and, furthermore, that the female plastic surgeons were more likely to depart from practice to have children.

MATERIALS AND METHODS

Study Population

The names and e-mail addresses of all 736 female members and candidates for membership were obtained from the ASPS in December 2005. At the same time, the names and the e-mail addresses of a random cohort of 736 male members were acquired. About 49 of the female e-mail addresses and 55 of the male e-mail addresses were nonfunctional; therefore, the ASPS provided 130 more male addresses. Thus, the total study population was 687 female the ASPS members and 811 male members.

The Questionnaire

We wrote a 41 question survey to compare the practice profile and personal characteristics of male and female members of the ASPS (Table 1). The questions focused on marital status, number of children, type of practice (academic vs. private), full- or part-time status, career satisfaction, and income level. The issue of departure from practice was also addressed. The survey was designed so that it could be completed in approximately 5 minutes to maximize the number of responses from busy surgeons.

E-mails were sent to the target groups with an embedded link to the survey website. A cover letter that described the survey was the text of the e-message and, if the recipient decided to participate, the physician clicked on the link to access the survey. Another link allowed those who wished to remain completely anonymous to print the survey and submit it by mail.

The first mailing was in September 2006. Nonrespondents were sent a reminder e-mail at 1 and 2 weeks after the initial mailing. The study was completed in November 2006 when the website was dismantled and the final printed surveys were collected.

A Web-programming company managed the website for the survey, and the respondents remained anonymous to the authors. The respondents were age stratified by decade and their responses were compared by gender using χ^2 tests.

RESULTS

A total of 1498 questionnaires were sent via an e-mail to all female the ASPS members with active e-mail addresses ($n = 687$) and a random cohort of male members ($n = 811$). The overall response rate was 36.3%; 49% for females ($n = 337$) and 25% for males ($n = 207$) ($P < 0.0001$). Nine incomplete surveys were disregarded; the data were analyzed based on the responses of 323 females and 202 males.

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TABLE 1. The Questionnaire**Survey of Plastic Surgeons**

1. Are you male or female?
 - Male
 - Female
2. How old are you?
3. How old were you when you finished training?
4. Are you currently married/single/divorced? (select one)
 - Married
 - Single
 - Divorced
5. Do you have children? (If not, see question 10)
 - Yes
 - No
6. How many children do you have?
 - 1
 - 2
 - 3
 - 4
 - 5
 - 6 or more
7. How old are your children?
8. When did you have your children? (select all that apply)
 - Please fill in all that apply
 - Before residency
 - During residency
 - After residency
9. If any of your children need (or needed) care at home, who provides (or provided) care while you were working? (select all that apply)
 - Please fill in all that apply
 - Nanny
 - Day care
 - Spouse/partner
 - Other family member
10. If applicable, what is your spouse/partner's occupation?
11. Are you certified by the American Board of Plastic Surgery?
 - Yes
 - No
12. Did you complete a general surgery program prior to entering plastic surgery?
 - Yes
 - No
13. Did you complete another training program prior to entering plastic surgery?
 - Yes
 - No
14. If so, what was the specialty for the training program taken prior to entering plastic surgery?
15. Did you complete a fellowship after your plastic surgery training? (select all that apply)
 - Please fill in all that apply
 - Craniofacial
 - Cosmetic
 - Hand/microsurgery
 - Breast
 - Other, please specify

Survey of Plastic Surgeons

16. What was the total number of years that you spent in postgraduate training?
 - 1 yr
 - 2 yr
 - 3 yr
 - 4 yr
 - 5 yr
 - 6 yr
 - 7 yr
 - 9 yr
 - 10 yr
 - 11 yr
 - 12 yr or more
17. How many years have you been in practice?
18. Are you still practicing now? (If not, see question 24)
 - Yes
 - No
19. How many years did you practice?
20. Why did you stop practicing?
21. What are you doing now?
22. Did you retire?
 - Yes
 - No
23. Do you plan to return to practice?
 - Yes
 - No
24. When do you want to retire?
25. Do you mostly work in private practice, full time at an academic center, or are you affiliated with an academic center?
 - Private practice
 - Academic center
 - Both
 - Other
26. What is the highest academic rank that you hold?
27. Do you work full time or part time?
 - Full time
 - Part time
28. How many days a week do you work?
 - 1 d
 - 2 d
 - 3 d
 - 4 d
 - 5 d
 - 6–7 d
29. On average, how many hours a week do you work?
 - Less than 20 h
 - 20–29 h
 - 30–39 h
 - 40–49 h
 - 50–59 h
 - 60–69 h
 - 70–79 h
 - 80 h or more
 - Prefer not to answer

(Continued)

TABLE 1. (Continued)

Survey of Plastic Surgeons

30. What is/was your scope of practice? (select all that apply)

Please fill in all that apply

Aesthetic surgery

Breast reconstruction

Hand surgery

Craniofacial surgery

Other, please specify

31. Is/was your mother or father a physician?

Yes

No

32. How would you rate your career satisfaction?

Poor

Fair

Good

Very good

Excellent

33. Would you become a plastic surgeon again?

Yes

No

34. Would you recommend a career in medicine to a daughter?

Yes

No

35. Would you recommend a career in surgery to a daughter?

Yes

No

36. Would you recommend a career in medicine to a son?

Yes

No

37. Would you recommend a career in surgery to a son?

Yes

No

38. What is your current income?

Less than \$50,000

Between \$50,000 and \$100,000

Between \$100,000 and \$200,000

Between \$200,000 and \$300,000

Between \$300,000 and \$400,000

Over \$400,000

39. What is your current total family income?

Less than \$50,000

Between \$50,000 and \$100,000

Between \$100,000 and \$200,000

Between \$200,000 and \$300,000

Between \$300,000 and \$400,000

Over \$400,000

40. Would you mind if we contacted you for further details?

Yes

No

41. If so, please enter your email address.

Demographics

The mean age was 43.8 years for the female plastic surgeons and 49.5 years for the male plastic surgeons. The mean age at the completion of training was 33.9 years for women and 33.7 years for men.

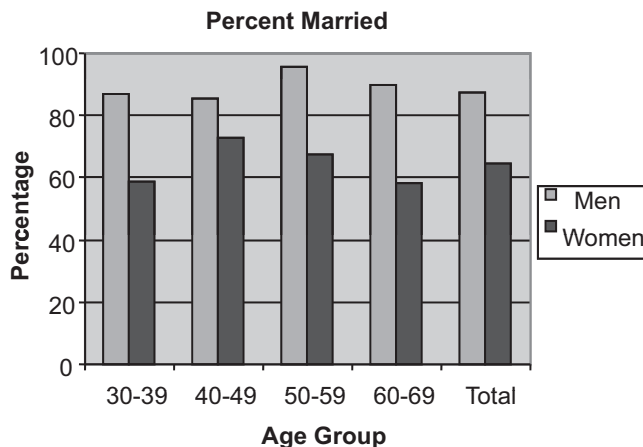


FIGURE 1. The percent of male and female plastic surgeons married in each age group.

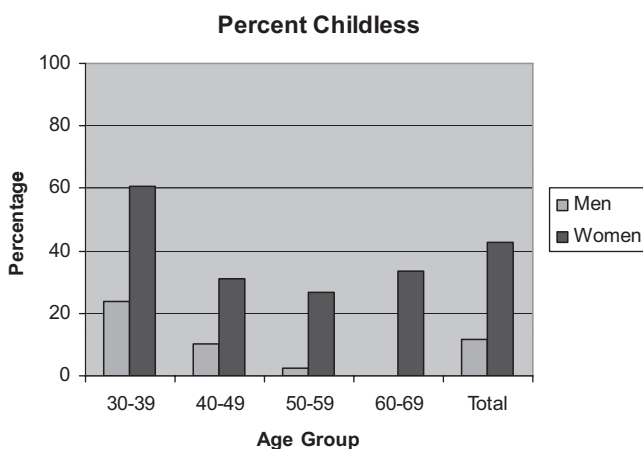


FIGURE 2. The percent of male and female plastic surgeons childless in each age group.

Among female respondents, 35.3% were not married as compared with only 12.5% of the males ($P < 0.001$). This trend was consistent across every decade (Fig. 1).

The frequency of women with no children was 43% as compared with 12.4% for men ($P < 0.001$). Among respondents in their 30s, 60.7% of females had no children, whereas only 23.7% of males were childless (Fig. 2). A 3-fold difference remained for the 40 to 49 year age group; in this group, 31.0% of women and 10.1% of men reported no offspring. The percentage of older female plastic surgeons without children was unchanged, whereas only 2.3% of males in their 50s had no children. Furthermore, men also tended to have more children than their female counterparts; this was true across all age groups. Of surgeons with children, 26.3% of women had 3 or more, as compared with 43.7% of men. The majority of women (58.8%) delayed child-rearing until after residency, as compared with only 25.7% of men ($P < 0.001$). In response to who was responsible for childcare during the workday, most male plastic surgeons named their spouse (75.7%), whereas female plastic surgeons listed either a nanny (38.5%) or other helper (22.5%) more frequently than a spouse (19.8%).

The average income range among respondents was between \$200,000 and \$300,000. Male plastic surgeons were more than twice

as likely as female plastic surgeons to earn an income greater than \$400,000 per year ($P < 0.001$).

Of 39 respondents who stated that they were no longer practicing, 21 (54%) were male and 18 (46%) were female ($P = \text{NS}$). Most of these retired respondents were over 60 years of age. Only 2 female plastic surgeons stated they left practice to raise children. An overwhelming majority of the respondents were satisfied with their careers: 87.4% of the females and 92.2% of the males rated their satisfaction level as good, very good, or excellent. There were no statistically significant differences between the sexes with respect to academic versus private practice, full-time versus part-time practice, desire to become a plastic surgeon again, or recommending the same career to a son or daughter.

DISCUSSION

The influx of women has brought about a dramatic change in the medical workforce over the past 30 years. In 1965, only 8.3% of first year medical students were women, whereas in 2005, 48.4% of incoming medical school students were female.⁴ With more women graduating from medical school, their number has risen in traditionally male-dominated fields, such as surgery. In 2005, 22% of plastic surgical residents were women versus 17% in 1995. In 2005, 12.5% of full-time faculty in plastic surgery were female.⁵ Women are also rising to leadership positions. For example, the current presidents of both the ASPS and the president of the Plastic Surgery Educational Foundation, as well as the president-elect of the American Association of Plastic Surgeons, are women.

Life-style is one reason that surgery has traditionally been male-dominated. A surgeon's hours are long and the daily schedule is unpredictable. Women typically tend to enter medical specialties that afford some flexibility with respect to life-style, such as pediatrics, internal medicine, psychiatry, obstetrics, and dermatology. These and other specialties have adapted to allow women part-time positions and more flexible hours during childbearing years. Regardless of efforts to make men and women "equal," biologic roles remain unchanged. Women bear, nurse and tend to be the primary caregiver for children. The long days and frequent emergencies in surgery are difficult to manage for women with children. Several studies have shown that the resignation rate for women in general surgery residency is roughly twice that for men.⁶⁻⁸

Nevertheless, the number of women entering general surgery and the surgical specialties is increasing. There are currently over 700 female members of the ASPS. We wondered if a higher proportion of these female plastic surgeons was working part-time or if women were curtailing their practice to raise families. Our questionnaire was designed to assess how these women were faring compared with their male colleagues.

Gender differences were obvious before even analyzing the data. The response rate of the female plastic surgeons was twice that of the males. Were the women just more interested in a topic that pertains directly to them? Were the men apathetic about how the women in the field were doing? Given the increasing number of women entering the field, neither sex can afford to ignore the advancement of female plastic surgeons.

Similar to the earlier study, we found that almost 3 times as many female plastic surgeons were unmarried compared with their male counterparts.⁹ It is possible that women who are inclined to remain single self-select a surgical field; however, another explanation could be that women who become surgeons have difficulty finding a suitable mate. Female plastic surgeons have a smaller mating pool because they are searching for a partner who is intellectually and professionally an equal or above. Perhaps, suitors are intimidated by an accomplished woman plastic surgeon. It would seem that both men and women would be equally able to balance a

spousal relationship with a career. The reasons why more female plastic surgeons are unmarried are unclear; this topic deserves further inquiry. Unfortunately, we failed to document the difference in age at marriage, which would also have been interesting.

Compared with the male respondents, almost 4 times as many women were childless. Men also tended to have more children. This discrepancy was also noted in a 1997 study that showed only 51% of women plastic surgeons had biologic children as compared with 86.2% of men.⁹ Also in agreement with our findings, this study noted the frequency of 3 or more children among plastic surgeon fathers was 41.5% as compared with only 18.5% among plastic surgeon mothers.

When asked about responsibility for childcare, most male plastic surgeons named their spouse, whereas female plastic surgeons listed either a nanny or other helper more frequently than a spouse. The majority of women delayed child-rearing until after residency, as compared with only one-quarter of men. Unless they have a "house-spouse," women need outside help to care for their children. This is expensive and inconvenient, and may influence when they have children. For example, it may be difficult or impossible to afford childcare on a student or resident salary. Despite the advent of the 80-hour work week, surgical residency is still demanding and allows minimal flexibility in the schedule. This makes daycare, with its prescribed hours, unreliable. A nanny may be easier, but in-home childcare providers often work on a schedule as well. Furthermore, directors of surgical residency programs are uncomfortable dealing with a pregnant resident and, in fact, some subtly discourage childbearing during training.¹⁰⁻¹² In an editorial written 15 years ago, a residency director commented that he had heard of "at least 4 training program directors speak negatively about females and plastic surgery residency and fellowship" because of the pregnancy issue.¹³ Many female plastic surgeons delay childbearing because they would rather not have it interfere with their surgical training and early practice. By the time they are ready to start having a family, they are at an age where complications of pregnancy increase and fertility has decreased. A 1995 survey of women plastic surgeons found a 33% infertility rate.¹⁰ Infertility due to delayed childbearing may only partially account for the large discrepancy between men and women with respect to childlessness.

We found no differences between men and women plastic surgeons with respect to the number of hours worked per week or full-time versus part-time practice. Since both private practitioners and academicians were surveyed, this study did not specifically address possible differences between men and women with respect to academic rank or number of publications. Other studies have focused on this issue and show that female medical faculty with children have fewer publications and slower academic progression.^{14,15} This may be due to the greater responsibility and required time for childcare, which is the woman's traditional role. Some investigators have suggested giving more institutional support for the careers of faculty with children and some changes to the method of advancement within academic medicine.¹⁶ The senior author has proposed, with tongue gently in-cheek, that if both husband and wife are physicians and work in the same institution, they should be academically advanced together, based on their combined publications, ie, "couple's promotion."

Male plastic surgeons in this study were more than twice as likely as female plastic surgeons to earn an annual income greater than \$400,000. Although this discrepancy was not observed at the lower income levels, the difference at this high level was marked. We did not find any significant differences between men and women, with respect to full-time versus part-time practice or the number of hours worked per week. Additionally, there was no significant difference in the proportion of women versus men in

academic practice, where surgeons traditionally have a lower income. What accounts for the difference between men and women in the higher income levels? Do men charge more for their services? Do males have greater case volume or do they do more cosmetic procedures than their female counterparts? Are the men more efficient than the women (ie, perform more procedures per hour)? The differential in income found in this survey may relate to the average age difference: males were slightly older than females. One gender comparison study in cardiothoracic surgery also noted that twice as many male surgeons had incomes over \$350,000 as compared with female surgeons.¹⁷ Studies in other fields have also noted discrepancies between the income of men and women even when controlling for the number of work-hours.^{18,19} This financial gap should be the subject for further inquiry.

One of the major purposes of this study was to answer the question whether female plastic surgeons tended to leave practice earlier than their male counterparts. Anecdotally, there seemed to be a woman or 2 in every plastic surgical program who, after having completed all requisite training and even practiced for a while, “left it all behind” to raise a family and never return. One never hears those stories about male residents. We found that women were no more likely to retire earlier than male plastic surgeons. Most of the retired respondents were over 60 years of age; only 2 female plastic surgeons stated that they left practice to raise children. This is a heartening finding, one that shall be held up to those last few nay-sayers who believe that women should not be trained for a surgical career and “take up a residency slot.” One criticism of our study with respect to this finding could be that we likely did not reach all of the women who had departed from plastic surgery. These women may not have maintained active status in the ASPS or they may never have joined this organization. To more accurately determine the attrition rate of women and men within the field, it would have been better to have contacted all plastic surgery training programs for a list of their incoming residents and graduates. From these data, one could calculate how many men and women left during training and, by contacting all of the graduates, one could determine what proportions were no longer in practice.

Finally, this study documented that both men and women in plastic surgery are overwhelmingly pleased with their careers. There were no gender differences with respect to the desire to become a plastic surgeon again or recommending the field to a son or daughter. Other studies of women in surgery have also found a similar rate of satisfaction.^{20,21} Thus, despite difficulties that may arise for women in balancing a career and raising a family, they seem just as content with their choice of a career as men. Future studies in this area could focus on ways to give more flexibility in residency

training, to improve child care, and to explain and reduce the discrepancy in compensation.

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