Relationship Between Work-Home Conflicts and Burnout Among American Surgeons

A Comparison by Sex

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Objectives: To evaluate differences in burnout and career satisfaction between men and women surgeons and to determine the relationships among personal factors, professional characteristics, and work-home conflicts.

Design: Cross-sectional study, with data gathered through a survey.

Setting: The United States.

Participants: Members of the American College of Surgeons.

Main Outcome Measures: Burnout and career satisfaction.

Results: Of approximately 24,922 surgeons sampled, 1,043 women and 6,815 men returned surveys (31.5% response rate). Women surgeons were younger, less likely to be married, less likely to be divorced, and less likely to have children (all \( P < .001 \)). No differences between women and men in hours worked or number of nights on call per week were observed. Women surgeons were more likely to believe that child-rearing had slowed their career advancement (57.3% vs 20.2%; \( P < .001 \)), to have experienced a conflict with their spouse/partner’s career (52.6% vs 41.2%; \( P < .001 \)), and to have experienced a work-home conflict in the past 3 weeks (62.2% vs 48.5%; \( P < .001 \)). More women than men surgeons had burnout (43.3% vs 39.0%; \( P = .01 \)) and depressive symptoms (33.0% vs 29.5%; \( P = .02 \)). Factors independently associated with burnout on multivariate analysis were generally similar for men and women and included recent experience of a work-home conflict, resolving the most recent work-home conflict in favor of work, and hours worked per week.

Conclusions: Work-home conflicts appear to be a major contributor to surgeon burnout and are more common among women surgeons. Although the factors contributing to burnout were remarkably similar among women and men surgeons, the women were more likely to experience work-home conflicts than were their male colleagues.

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The percentage of first-year medical students who are women has increased from 8% to 48% during the past 4 decades (1965-2008) and women now comprise approximately 50% of medical student graduates.1 Despite this trend, in 2007, women graduates submitted half as many applications (14% vs 33%) to surgical residencies as their male colleagues.2 The lower interest in surgical disciplines by women physicians is cause for concern and could reduce the number and quality of individuals pursuing a career in surgery.

Although a complex array of factors likely influence career decision making among women graduates, their experiences during surgical clerkships and mentoring by women surgeons probably play a role.3-5 There is a perception that surgical specialties offer less work-life balance than some other medical disciplines do; however, research specifically evaluating the experience of women surgeons has been limited. Most previous studies of surgeons included few women,6-9 were limited to academic surgeons,6,7 failed to include male surgeons for comparison,8-11 or were conducted more than a decade ago.10,11 Two small studies of academic surgeons6,7 suggest that women and men surgeons have similar clinical responsibilities but women surgeons have younger children, more home responsibilities, and are more likely to be in a dual-career household. These findings indicate that the women might experience greater challenges balancing work and home responsibilities and more often face conflict between their own and their spouse’s/partner’s career advancement.

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In the present study, we evaluated differences between men and women in personal factors, professional characteristics, and work-home conflicts of American College of Surgeons members. Based on previous studies, we hypothesized that work-home conflicts may be a larger challenge for women surgeons and that the factors that contribute to burnout and career satisfaction among surgeons may differ by sex.

### METHODS

#### PARTICIPANTS

As previously reported, a survey was sent to all members of the American College of Surgeons who had an e-mail address on file with the College and permitted it to be used. Participation was elective and responses were anonymous. Participants were masked to any specific hypothesis of the study. The study was commissioned by the American College of Surgeons Governor’s Committee on Physician Competency and Health and approved by the Mayo Clinic Institutional Review Board.

#### DATA COLLECTION

The survey included the Maslach Burnout Inventory, the Primary Care Evaluation of Mental Disorders, and the Medical Outcomes Study Short Form to identify burnout, symptoms of depression, and quality of life (QOL), respectively. The Maslach Burnout Inventory, the primary tool for measuring burnout, has separate subscales to evaluate each domain of burnout: emotional exhaustion, depersonalization, and low sense of personal accomplishment. Standard categorical thresholds were used to classify domain scores as low, moderate, or high. We considered surgeons with a high score on the depersonalization and/or emotional exhaustion subscales as having at least 1 manifestation of professional burnout. The 2-item Primary Care Evaluation of Mental Disorders asks about anhedonia and feelings of being “down,” depressed, or hopeless; it has a sensitivity of 86% to 96% and a specificity of 57% to 75% for major depressive disorder. When scoring the Medical Outcomes Study Short Form, norm-based scoring methods are used to calculate mental and physical QOL summary scores. The mean (SD) mental and physical QOL summary scores for the US population are 50 (scale 0-100).

Items used to explore the intersection between personal and professional life hypothesized to have an effect on surgeons’ well-being and similar to items from previously published surveys were developed for this questionnaire. Surgeons were asked about their relationship and parental status, spousal characteristics, children, parental responsibilities, conflict between work and personal responsibilities, and conflict between their own and their spouse/partner’s career. The survey also included questions about practice characteristics and satisfaction with specialty choice. Respondents who indicated they would “probably” or “definitely” choose to become a surgeon again if they were given the opportunity to revisit their specialty choice were considered to be satisfied with their specialty choice.

#### STATISTICAL ANALYSIS

Prevalence of burnout, positive results of a depression screen, and mental and physical QOL determined by sex were compared using χ² tests or Kruskal-Wallis tests. All tests were 2-sided, with type I error rates of 0.05. We performed logistic regression to evaluate associations of the independent variables with burnout and specialty choice satisfaction by sex. Both forward and backward elimination methods were used to select significant variables for which the directionality of the modeling did not affect the results. Bootstrapping validated the final models by generating random samples with replacement from the observed distributions. The independent variables used in the modeling process included age, relationship status, spouse/partner’s current profession, having children, age of children, subspecialty, years in practice, hours worked per week, hours per week spent in the operating room, number of nights on call per week, practice setting, academic rank, primary method of compensation, percentage of time dedicated to non-patient-care activities, whether commitment to raising children slowed career advancement, who cares for youngest child when the child is ill or has nonschool day, experienced a work-home conflict within the past 3 weeks, how the most recent work-home conflict was resolved, experienced a career conflict with spouse/partner, how the career conflict was resolved, depression, and burnout. All analyses were done using SAS version 9 (SAS Institute Inc, Cary, North Carolina) or R (R Foundation for Statistical Computing, Vienna, Austria; http://www.r-project.org).

A total of 7905 of 24 922 (31.5% response rate) members of the American College of Surgeons responded to the survey; 1043 were women and 6815 were men (47 did not indicate their sex and were so were excluded from analysis). Table 1 contains demographic characteristics of the responders. Women surgeons were younger, less likely to be married, less likely to have been divorced, and less likely to have children (all P < .001). Among married surgeons, nearly twice as many women had a spouse/partner who worked outside the home (83.1% vs 47.8%; P < .001). The spouses of 43.4% (279 of 643) of married women surgeons were physicians, with 27.3% of spouses/partners being surgeons. In contrast, the spouses of 28.9% (877 of 3039) of married men surgeons were physicians, with only 5.3% (160 of 3039) of spouses/partners being surgeons. Among surgeons with children, women had their first child later during their career compared with men and were substantially more likely to have children younger than 5 years (both P < .001).

In contrast to these extensive differences in demographic characteristics by sex, fewer differences were observed in professional characteristics (Table 2). Both men and women surgeons worked a median of 60 hours per week and took 2 to 3 nights of call per week. Women surgeons had been in practice fewer years, spent less time in the operating room per week, had lower academic rank, and had subtle differences in primary practice setting, primary method of compensation, and specialty choice (all P < .001).

#### INTERACTIONS BETWEEN PERSONAL AND PROFESSIONAL CHARACTERISTICS

Of the 6880 surgeons who had children, 1611 (23.4%) thought that their commitment to child rearing slowed their career advancement. More than half (57.3%) of the women indicated that child rearing slowed their career advancement compared with 20.2% of men (P < .001;
Table 3. Women were less likely to rely on their spouse/partner to care for a sick child or child out of school compared with men (25.6% vs 70.4%; <.001). Among surgeons who reported a career conflict, the conflict was resolved in favor of the surgeon for 59.0% of women compared with 87.3% of men (<.001). A conflict between work and personal responsibilities (work-home conflict) in the past 3 weeks was reported by 62.2% of women and 48.5% of men (<.001). For both men and women, such work-home conflicts were overwhelmingly resolved either in favor of work or in a manner that met both responsibi-
ties. Only 12.3% of women and 11.9% of men reported resolving their most recent work-home conflict in favor of personal responsibilities rather than professional responsibilities.

BURNOUT, DEPRESSION, QOL, AND SPECIALTY CHOICE SATISFACTION BY SEX

As shown in Table 4, women surgeons had higher mean emotional exhaustion scores (22.9 vs 20.6; *P < .001) than male surgeons, but similar mean depersonalization scores (6.6 vs 6.7; *P = .45) and personal accomplishment scores (40.8 vs 40.6; *P = .72). Women surgeons were more likely to be burned out (43.3% vs 39.0%; *P = .01) and have high levels of emotional exhaustion (35.9% vs 31%; *P < .001). Women surgeons reported more depressive symptoms (33.0% vs 29.5%; *P = .02). Women surgeons also had lower mental QOL scores (*P < .001) than male surgeons, with 34.0% of women compared with 27.4% of men having a mental QOL score more than 0.5 SD below the population norm (*P < .001). In contrast, men had worse physical QOL scores (*P < .001) than women.

Although most surgeons were satisfied with their career, slightly fewer women than men would become a physician (71.2% vs 74.4%; *P = .03) or surgeon (67.3% vs 71.1%; *P = .01) again if they had an opportunity to revisit their career choice. Fewer women thought that their work schedule left enough time for personal/family life (29.8% vs 37.4%; *P < .001), indicating less satisfaction with work-life balance.

MULTIVARIATE ANALYSIS

Separate multivariate analysis by sex indicated that the primary factors associated with burnout were shared by men and women (Table 5 and Table 6). Experience of a work-home conflict in the past 3 weeks (odds ratios [ORs] 2.39 and 2.50 for women and men, respectively), resolving the most recent work-home conflict in favor of work (ORs 1.67 and 2.50 for women and men, respectively), and each additional hour worked per week (ORs 1.02 and 1.01 per hour...
worked for women and men, respectively) were independently associated with burnout after controlling for other personal and professional characteristics.

Factors independently associated with specialty choice satisfaction by sex are shown in Table 7 and Table 8. Three factors associated with career satisfaction were shared between the sexes. The absence of burnout (ORs 3.65 and 4.14 for women and men, respectively) and practicing in an academic medical center (ORs 1.75 and 1.33 for women and men, respectively) were associated with greater career satisfaction, and resolving the most recent work-home conflict in favor of work was associated with lower career satisfaction for both sexes (ORs 0.67 and 0.74 for women and men, respectively).

This study of 7905 practicing surgeons demonstrates substantial differences in the experience of women and men surgeons in the United States. To our knowledge, this is the first large study focusing on the experience of women physicians that included a male comparison group, providing the ability to identify challenges specific to sex rather than simply being a physician or surgeon. Despite similar hours worked per week, extensive differences were found in demographic characteristics, professional factors, and the interaction between personal and professional lives. From a demographic perspective, women surgeons were younger, had younger children, were more likely to be the primary childcare provider, and were more often in a dual-career household than were their male colleagues. From a professional standpoint, women had been in practice fewer years, were more likely to practice at an academic medical center, and were less likely to have their compensation based on sex.
tirely on billing. Women surgeons also reported greater conflict between their own and their spouse’s/partner’s career, more often subjugated their career for the good of their spouse’s/partner’s career, were more likely to believe that their commitment to their children slowed their career advancement, and reported more work-home conflicts. Although women had slightly higher degrees of burnout and depression on univariate analysis, these differences were no longer significant after controlling for other factors (eg, age, having children, hours worked).12

In addition to providing unique insight into the personal and professional lives of surgeons by sex, this study provides insight regarding the factors that contribute to burnout independent of sex. The present analysis expands the previous evaluation12 of factors associated with surgeon burnout by exploring the relationship between work-home and career conflicts and separately evaluating the factors that contribute to burnout by sex. Notably, despite the extensive differences in the personal and professional lives of women and men surgeons, the same 3 factors (hours worked per week, work-home conflict in the past 3 weeks, and resolving the most recent work-home conflict in favor of work) were independently associated with burnout in both men and women. Consistent with these observations for burnout, 3 factors (burnout, practice setting, and how the most recent work-home conflict was resolved) were also independently associated with career satisfaction in both men and women.

The results of this study suggest that work-home conflicts play a role in burnout and career satisfaction for both men and women. It is notable that not only the presence of work-home conflicts but also how the presence of the most recent work-home conflict was resolved was an independent predictor of burnout and career satisfaction for both men and women. Work-home conflicts were rarely resolved in a manner that favored personal responsibility rather than work. Efforts to reduce work-home conflict and, when such conflicts occur, to enable surgeons to resolve the conflict in a manner that meets both work and home responsibility appear to be worthwhile endeavors on a personal and organizational level as part of efforts to reduce surgeon burnout and improve career satisfaction. Greater autonomy in scheduling, more allowance for job sharing and other innovative practice structures, purposeful alignment of personal and professional values and priorities, and on-site backup childcare for nonschool days may be ways to help achieve this goal.26-29

Our findings that women surgeons are younger, more likely to be single, have younger children, delay childrearing, and assume greater parental responsibility while they have similar clinical duties as men surgeons are consistent with 2 previous studies6,7 of women and men surgeons practicing at academic medical centers. Previous studies of women surgeons11 and women physicians in academic internal medicine15 have also found that women physicians with children perceive that childcare slows their career advancement; these studies, however, did not include a male physician comparator group to determine whether this perception is specific to women physicians or physicians in general. Although others6,7,19 have also found that most women surgeons and physicians are in dual-career households, those studies did not specifically explore the challenges of 2-career families. In our study, 1 in 5 surgeons reported experiencing conflict between their own career and that of their spouse’s/partner’s career and women were more likely to report such conflicts (52.6% vs 41.2%; P < .001). Although we are unaware of previous studies evaluating the frequency of career conflict among women and men physicians, 1 study of practicing women surgeons in Canada reported that only 10% of women surgeons thought that their spouse/partner expected his career advancement to take priority over their own career.11 In contrast, 41.0% of women surgeons in our cohort reported that the most recent career conflict was resolved in favor of their spouse/partner’s career advancement—more than 3 times the rate for male surgeons in 2-career families. These findings suggest that traditionally held societal beliefs about women’s role in the home and workforce remain true today for a large segment of the US women surgeon population.

Our study is subject to a number of limitations. First, although our response rate was typical of national survey studies of the members of physician societies,30,31 only 31.5% of surgeons responded to the survey and response bias remains a possibility. We do not know whether men or women surgeons are less likely to complete surveys. Second, due to the cross-sectional nature of this study, we were unable to determine cause and effect or the potential direction of causality. Third, we did not explore sex-related work expectations. For example, expectations from patients, physician colleagues, and ancillary staff may differ in important ways between the sexes. In the Physician Work Life Study,32 male patient mix, perceived time pressures, and practice control differed between women and men primary care and specialty nonsurgical care physicians. In our study, women surgeons worked the same number of hours and had similar call responsibilities as their male colleagues but were more likely to be in academic practice and be compensated based on salary rather than exclusively by billing.

CONCLUSIONS

The number of women surgical residents has nearly doubled during the past 14 years.25,33 Women surgeons experience more work-home conflicts and societal expectations appear to remain different than those for their male colleagues. Despite extensive personal and professional differences, many of the factors that drive career satisfaction and burnout for women surgeons appear to be the same as those of men surgeons. Work-home conflicts seem to be one of the critical contributors to surgeon burnout. Strategies to reduce such conflicts or that provide avenues to resolve conflicts in a manner that meets both work and home responsibilities may reduce surgeon burnout and increase career satisfaction. Such strategies may be particularly beneficial for women surgeons as they appear to encounter work-home conflicts more frequently. Ultimately however, burnout is an issue that confronts all surgeons.
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REFERENCES


