

Exploring the patterns of practice and satisfaction among female urologists in Canada

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Abstract

Introduction: Our aim was to explore the satisfaction, personal and professional challenges, and practice barriers among female urologists in Canada.

Methods: A literature review was completed to design our survey. Trends with respect to career and personal satisfaction were identified, including academic advancement, mentorship, professional challenges, workplace discrimination, family satisfaction, and remuneration, among others. These key themes were formatted into 44 questions, translated into French, and distributed electronically as a survey to 80 female urology staff across Canada.

Results: Sixty (75.0%) women completed the survey. Many had been in practice <5 years (44.1%) and 72.9% completed a fellowship. Overall, 96.6% of women were very or somewhat satisfied with their career. Seeing more time-consuming patients and financial constraints within the healthcare system were the greatest source of dissatisfaction. Two-thirds of respondents reported that they received significant mentorship and 40% found it difficult to find a mentor during their training. Overall, 65.0% experienced gender discrimination, most commonly from a colleague or a patient. Women who practiced in the community were more likely to report experiencing discrimination compared to women practicing in an academic setting (78.1% vs. 51.9%; $p=0.034$). Mean time for maternity leave was 17.1 (± 8.3) weeks, and 29.6% reported a pregnancy-related complication triggered by their work. Overall, 66.1% would choose urology again.

Conclusions: It is important to advocate for the wellness of female urologists. To accomplish this, we need to address the challenges revealed in the survey, including supporting women on maternity leave, improving mentorship, and prioritizing female urology leadership initiatives. We

have established a formal circle of support within the urology community in Canada to achieve these goals.

Introduction

Roughly equivalent numbers of males and females graduate medical school in Canada¹. Among practicing physicians registered with the Royal College of Surgeons, 14% of women choose to go into surgical specialties in contrast to 33% of men². In Canada, urology has one of the lowest proportion of females (11.2%) compared to all other specialties³.

While urology remains a male-dominated field⁴, a recent retrospective review of the Canadian Residency Match statistics from 1998 to 2015 demonstrated an increase in the proportion of female applicants who ranked a surgical program as their first choice⁵. There was also a reported increase in the proportion of females applying to urology as their first-choice program⁵.

As the numbers and percentages of women completing surgical training increase, it is important to understand the work patterns and career decisions of women in the field. Our aim was to explore the current trends in practice and satisfaction, as well as the personal and professional challenges experienced by female urologists in Canada.

Methods

A systematic literature review was completed to identify current trends in practice and satisfaction among female surgeons. This list of items was reviewed by the coauthors and finalized into a 44-item survey. The survey consisted of both multiple choice and open answer questions (Table 1). Demographic variables were collected as categorical or continuous variables where appropriate. Items pertaining to professional and personal challenges were presented in the form of yes/no questions with space to provide an explanation if desired by the respondent. Questions pertaining to satisfaction were presented on a Likert scale (quite a lot, a little, not very much, none). Greatest sources of dissatisfaction and discrimination in the workplace were presented as a list of options with space for participants to add additional responses that did not appear on the predetermined list. Some questions were left completely open to written responses, specifically “How do you practice differently than your male counterparts”. A complete version of the survey is presented in Supplementary Appendix 1.

This list was then translated into French and distributed (by email) to 42 English-speaking and 38 French-speaking female board-certified urologists in Canada (Figure 1). Current fellows were not included in the study. Multiple resources were used to identify actively practicing female urologists in Canada, including the Canadian Urological Association (CUA) database as well as internet searches of University departments, and known contacts of the co-authors. Given the

personal nature of the responses, all responses were collected online in an anonymous fashion via SurveyMonkey. A response was not required for each survey answer. No respondent identifier was used. We did not ask specifically for the current age of the respondents, given the anticipated small sample size, to maintain anonymity. Similarly, categorical responses were used for specific questions (such as number of years in practice) to maintain confidentiality. Ethics approval was obtained from the St. Michael's Hospital Research Ethics Board.

Descriptive statistics were completed on demographic variables. Demographic data included number of years in practice, nature of current practice (academic vs community), qualifications, fellowship or specialization training completed, marital status, number of children and age at the time of personal and professional milestones. Categorical data were presented with numeric values and percentages and compared using the Chi-square test. Fisher exact test was used if cell counts were less than five. Univariable logistic regression analysis was used to determine predictors of choosing the same career in urology. A p-value of <0.05 was used to indicate statistical significance for a two-tailed comparison. Statistical analyses were performed using SAS® version 9.4 (SAS Institute, Inc., Cary, NC, USA).

Results

Sixty women (75.0%) responded to our survey (Table 2). While a response was not required for each item, we were missing at most one response for any given survey item. A large proportion of respondents had been in practice <5 years (26/59, 44.1%). Most women (43/59, 72.9%) completed fellowship or specialization training after residency, most commonly female urology (16/59, 27.1%), neurourology (13/59, 22.0%), reconstructive urology (11/59, 18.6%) and paediatrics (10/59, 16.9%). Overall, 88.4% reported that their current practice was reflective of their fellowship training. Thirty-four percent completed a graduate degree and approximately half of women were in academic practice (45.8%). More than one third of women did not have an academic title (24/60, 40%) while 36.7% (22/60) were Assistant Professors, 10.5% (6/60) were Associate Professors, and 8.3% (5/60) were full Professors.

Women who completed the English version of the survey were more likely to have completed fellowship training (91.4% vs 45.8%, $p<0.001$) compared to women who completed the French version. There were no differences between the two groups with respect to overall satisfaction, years in practice, post-graduate degree, or community versus academic practice (all $p>0.05$).

Women who practiced in an academic setting were more likely to have completed fellowship training (92.6% vs 58.1%, $p=0.003$) and have a graduate degree (59.3% vs 12.9%, $p<0.001$) compared to those practicing in the community. There were no differences between the groups with respect to overall satisfaction or years in practice (all $p>0.05$).

Professional satisfaction

More than half of women (32/59, 54.2%) were very satisfied with their career, with 96.6% (57/59) stating they were very satisfied or somewhat satisfied. Seeing more time-consuming patients and financial constraints within the health care system were the greatest source of dissatisfaction (Figure 2).

Women worked a median of 55 hours per week (IQR: 50-70) and had a median of eight hours of operative time per week (IQR: 8-12, not including cystoscopy time). Most women (36/60, 60.0%) felt that they worked the same number of hours compared to their male colleagues while 11/60 (18.3%) and 13/60 (21.7%) felt they worked more and less, respectively. Sixty-nine percent (40/58) felt they had the same amount of operative time as their male colleagues, while 4/58 (6.9%) felt they had more and 14/58 (24.1%) felt they had less or significantly less. Sixty-three percent (38/60) reported that they received significant mentorship during their training, most commonly from a male urologist (92.1%). Forty percent (24/60) felt that it was difficult to find a mentor during their training. Multiple women reported the need for organized mentorship opportunities within the female urology community in Canada.

When asked how women practice differently than their male counterparts, the most common response was spending more time with patients (91.5%), improved empathy/communication, and seeing more non-operative patients. Women commonly reported receiving many female urology referrals and fewer referrals within their area of specialization. In some instances, this is what motivated a change from community to academic practice. Overall, 75.0% (45/60) were satisfied with their current financial situation. However, women reported financial challenges with respect to maternity leave, unequal compensation due to fee schedule/salary, fewer referrals for surgical cases, more administrative work without associated compensation, and challenges with respect to salary negotiation.

Gender discrimination in the workplace

Overall, 39/60 (65.0%) reported experiencing gender discrimination during their career, most commonly from a colleague or a patient (Figure 3). Many women who were interested in community practice during their training reported difficulties obtaining community exposure and at times not feeling welcome in a community environment. Women practicing in the community reported experiencing discrimination more often than women practicing in an academic setting (78.1% vs 51.9%, $p=0.034$). Examples of perceived discrimination in the workplace included colleagues not allowing residents to attend the clinics of the female staff, referral pattern outside of known area of specialization, not being invited to participate in journal clubs, receiving a different level of tolerance from nursing staff compared to male colleagues, being bypassed on the operative list overnight, and discrete jokes about being female. One respondent reported that a patient refused to have an operation when they found out the covering staff was female.

Satisfaction with personal life

Most respondents were married (38/59, 64.4%) or in a relationship (12/59, 20.3%) (Table 2). Most women had at least one child (43/59, 72.9%). Most women had their first child after becoming a staff (61.4%), 22.7% had their first child during residency and 13.6% during fellowship. Median age at the time of the birth of their first child was 33 years (IQR: 31-34) and 35 years (IQR: 34-38) at the time of the birth of their last child. Mean time for maternity leave was 17.1(±8.3) weeks, and 30.2% (13/43) reported a pregnancy related complication that they believe was triggered by their work (pre-eclampsia, premature contractions/labour, and miscarriage).

Most women (47/57, 82.5%) were very satisfied with their family life. Half of women (29/60, 48.3%) reported taking on the primary role in running the home. Forty-three percent (19/44) reported taking on the primary role in childcare, and 38.6% (17/44) reported equally shared childcare responsibilities with their partner. However, 74.6% (44/59) felt their career compromised their personal life and family responsibilities, while 33.9% (20/59) felt that their personal life and family responsibilities have compromised their career. Challenges included less time for research, delayed childbearing, compromising on location of fellowship due to family responsibilities, compromises made for their spouse's career, and challenges with respect to missing family events for work. Many women reported setting their hours differently or booking fewer patients to spend more time with their families. More than half (55.4%, 31/56) reported they would have had more children if they had a less demanding career.

Would you choose urology again?

Most women (66.1%, 39/59) would choose urology again, 20.3% (12/59) would choose a non-surgical subspecialty and 10.2% (6/59) would choose a career outside of medicine. Seventy percent of responders stated they would encourage their son/daughter to pursue a career in medicine. Univariable logistic regression analysis revealed that women who reported financial satisfaction were more likely to report that they would choose the same career in urology (OR=4.50, 95%CI: 1.31-15.52; p=0.015). Language spoken, practice location, fellowship training, having children, experiencing discrimination, and effect of family life on career and vice-versa did not have a significant impact (Table 3).

Discussion

This was a nation-wide survey exploring professional and personal satisfaction among female urologists in English- and French-speaking Canada. With rising numbers of females in surgery, it is important to explore the personal and professional challenges these women face. Overall, our response rate was 75.0%. Most women (82.5%) were very satisfied with their personal and family life, and 96.6% stated they were very satisfied, or somewhat satisfied, with their career. Even though most respondents reported professional satisfaction, only two thirds of women would choose to pursue a career in urology again.

The proportion of participants who reported professional satisfaction in this survey (96.6%) is higher than a recent 2017 Canadian Medical Association workforce survey of 716 urologists (89% male, 11% female)⁶ in which 71% reported that they were satisfied or very satisfied with their career. In contrast, fewer respondents in this study would choose a career in urology again compared to a large American College of Surgery survey of over 8000 male and female surgeons of all specialities. They found that 74% of respondents would choose surgery again as a specialty⁷ compared to 66% in our survey.

With regards to personal milestones, most women had children (72.9%) and most began their families once on staff. One third of women who had children reported a pregnancy related complication they felt was related to their work schedule or work environment. A cross-sectional study of 939 female physicians reported that women who worked more than 70 hours per week during the first trimester had a three-fold increased risk of experiencing a threatened abortion and 2.5-fold increase in preterm birth after adjusting for specialty, maternal age, and income⁸. Two cohort studies in the US revealed similar findings^{9,10}. One study compared 92 female residents to the spouses of 144 male residents and found a 10-fold increased risk of premature labour among female residents⁹. A second study compared the outcomes of 67 pregnancies of practicing physicians to 201 pregnancies of non-physicians and found that physicians had a nearly two-fold increased risk of an adverse pregnancy outcome and a four-fold increased risk of preterm labour¹⁰. A survey of 243 female urologists in the US revealed a pregnancy-related complication rate of 25.3%, most commonly premature labour/delivery¹¹, which is similar to this study.

Training in surgery coincides with optimal timing for childbearing. In Ontario and Quebec, guidelines are in place for female residents with regards to duty hours restriction and maternity leave^{12,13}. In our study, approximately 22.7% of women surveyed had children during residency. Based on the literature, it is difficult to estimate pregnancy rates within specific specialties, but the rate reported in this study seems to be comparatively lower than other specialties, such as paediatrics (38%)¹⁴. With formal guidelines in place, there appears to be an improved culture of support for women taking maternity leave during residency. Nonetheless, in a recent survey of 347 female surgeons, 73% reported witnessing faculty members or other residents making negative comments about pregnant trainees or childbearing during training¹⁵. More than 80% felt that requesting accommodations for less demanding rotations during pregnancy would have been perceived negatively by their peers and supervising faculty¹⁵. More than one third of respondents strongly considered leaving their surgical residency program because of the difficulties in balancing pregnancy and motherhood with training¹⁵. Furthermore, women from a procedural specialty are more likely to report a negative impact on referrals by maternity leave¹⁶. Ensuring women are well supported with regards to duty hours during pregnancy and maternity leave requires more research and more support at both a resident and staff level.

In our study, gender discrimination was experienced by two thirds of responders and was more commonly reported by women practicing in the community. Gender discrimination and lack

of mentorship have been cited as primary barriers to career advancement among female surgeons¹⁷. These factors contribute to ongoing discrepancies in terms of rank attainment, leadership roles, and salaries¹⁷. Despite having no difference in self assessed leadership ability, women are significantly less likely to be asked to serve in leadership roles¹⁸. In the field of urology specifically, proportionately fewer women achieve senior academic ranking¹⁹. In a meta-analysis evaluating job performance among professional women, females tended to outscore men on performance evaluations on average, yet had lower promotability ratings²⁰. Facilitating mentorship, providing leadership training, and reducing discrimination moving forward will minimize this gender gap.

Discrepancies in financial compensation between males and females in urology have been reported²¹. In 2016, it was shown that female gender was a significant predictor of lower compensation for physicians in the US after controlling for many factors and adjusted salaries were more than \$80,000 less than those of men²². While perhaps thought to be less of an issue in Canada where we operate in a single-payer fee-for-service environment, other sources of financial disparity were reported in our study. Differences in negotiating abilities, fewer operative referrals, increased administrative tasks without financial compensation, and maternity leave were sources of this perceived discrepancy. The discrepancy in operative referrals does not seem to be related to surgical ability. A recent cohort study of surgeons in Ontario revealed that post-operative mortality rates were improved for female compared to male surgeons, controlling for patient and surgeon confounders²³. In a recent study in the US, female surgeons (even those who completed gender neutral subspecialty training) operated on a higher proportion of female patients compared to their male colleagues and performed significantly more female-specific procedures, such as slings²⁴, which are known to be associated with lower remuneration. It should be acknowledged, however, that this discrepancy may be due to patient preference rather than surgical culture.

We found differences between women who practiced in Quebec compared to the rest of Canada. Female urologists who completed the French version of the survey were less likely to have completed fellowship training compared to those who completed the English version. However, there were no differences between the two groups with respect to overall satisfaction, years in practice, graduate degree completion, or practice location. Interestingly, we found that there were more actively practicing female urology staff in Quebec compared to the other provinces. The exact reason for this is not entirely clear, but perhaps may be related to increased urology exposure among medical students in Quebec, increased female mentorship, or perhaps simply a reflection of the fact that there are more female medical students²⁵ and physicians²⁶ in Quebec as a whole.

There are limitations to the current study. While many participants were actively registered with the CUA, the list provided was not comprehensive and additional informal strategies had to be used to increase our capture rate. Therefore, we have no way to know for certain that all female urologists were identified and there may be an element of sampling bias. While we made every

effort to maintain anonymity, given that this is a small community there is potential for a Hawthorne effect whereby participants may have modified their responses if there was a concern they could be identifiable in the survey. Our small sample size is reflective of the small number of female urologists in Canada and is a limitation of this study. Nevertheless, our exploratory study achieved a high overall response rate and revealed important barriers and challenges within our speciality.

Urology is a speciality that allows for a diverse practice while providing a more flexible lifestyle when compared to many other surgical specialties. With more female medical students choosing to pursue a surgical speciality⁵, it is important to advocate for the women within the field of urology in Canada. To this end, we have established a formal circle of support, mentorship and promotion within the urology community in Canada. A formal meeting of female urologists in Canada now occurs on a yearly basis at the annual CUA meeting with the objective of forming of a formal society in the future.

Conclusions

It is important to advocate for the wellness of our current female urologists and to attract and maintain the most talented physicians in our field. To accomplish this, we need to address the challenges revealed in this survey by supporting women on maternity leave, incorporating maternity leave guidelines into contract negotiations, improving mentorship, prioritizing leadership initiatives, as well as acknowledging and combating gender discrimination in the workplace.

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Figures and Tables

Fig. 1. Distribution of actively practicing female staff urologists across Canada, n=80.

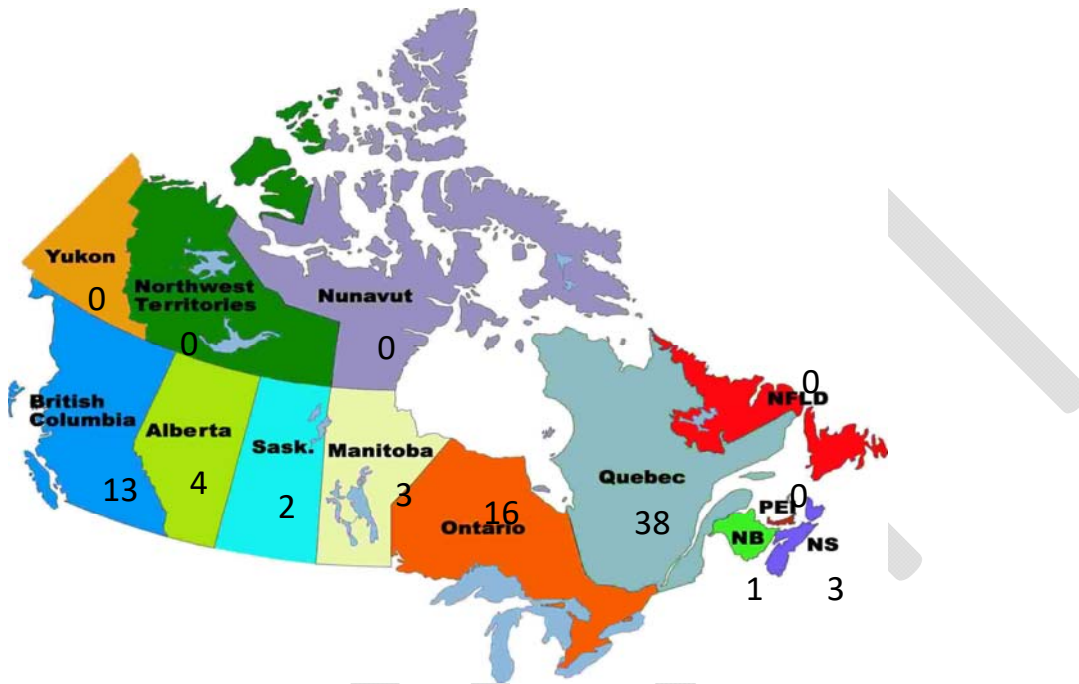


Fig. 2. Greatest causes of professional dissatisfaction (y-axis) among female staff urologists in Canada (total number of respondents=60; number of respondents who completed the English survey=35; number of respondents who completed the French survey=25)

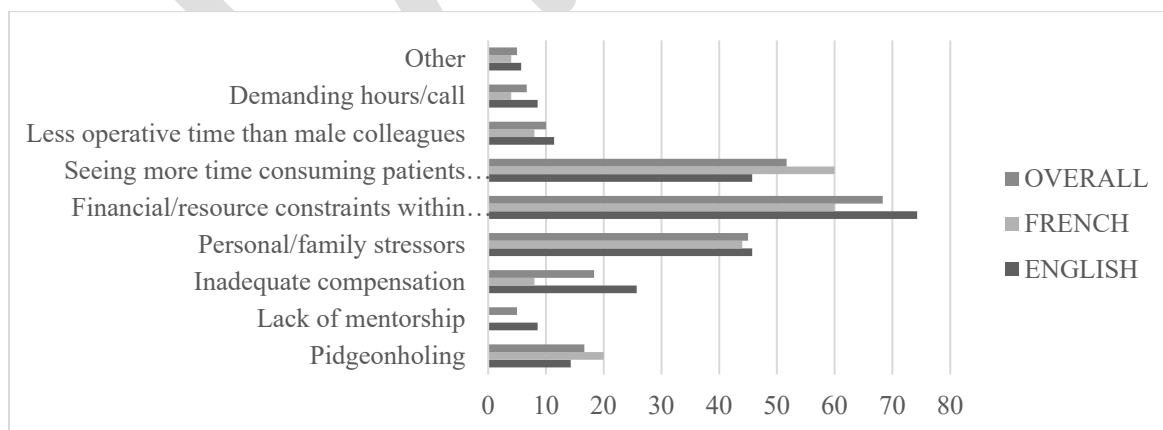


Fig. 3. Source of perceived gender discrimination in the workplace (y-axis) among female staff urologists in Canada (total number of respondents=60; number of respondents who completed the English survey=35; number of respondents who completed the French survey=25)

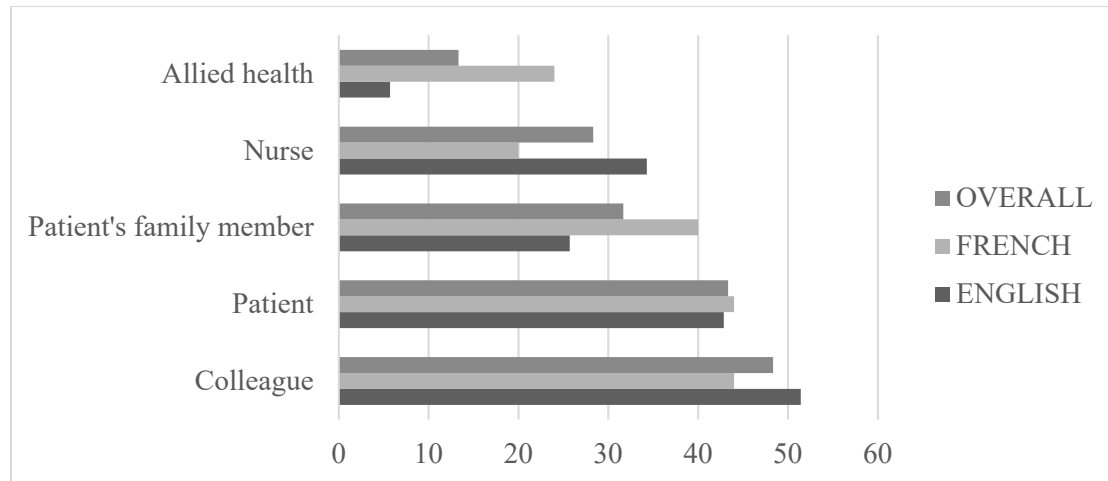


Table 1. Summary of survey items
Demographic Information
Years in practice
Fellowship completed
Graduate degree completed and timing
Age at completion of residency and fellowship
Nature of current practice
Academic title
Marital status
Children and timing of children
Professional
Satisfaction with career
Hours worked per week
Hours in the operating room per week (excluding cystoscopy)
Number of days at work per week
Operative time compared to male colleagues
Mentorship during training
Differences in practice style compared to male colleagues
Time spent with patients compared to male colleagues
Pay compared to male colleagues
Greatest source of dissatisfaction in your practice

Gender discrimination in the workplace
Personal
Time for maternity leave
Pregnancy complications related to your work schedule/environment
Role in running the home
Role in childcare
Satisfaction from family life
Family life compromised career
Career compromised family life
More children if job was less demanding
Satisfaction with financial situation
Overall
Would you choose urology again
Would you encourage your children to pursue a career in medicine

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Table 2. Respondent demographics	
Number of surveys distributed	80
English	42
French	38
Number of respondents, n (%)	60 (75.0%)
English	35
French	25
Years in practice, n (%)*	
<5	26 (44.1%)
5–10	9 (15.3%)
10–20	14 (23.7%)
>20	10 (16.9%)
Age at time of residency completion	
Median (years) (IQR)	30 (29–32)
Age at time of fellowship/specialization completion	
Median (years) (IQR)	32 (31–33)
Fellowship training completed, n (%)*	43 (72.9%)
Female urology	16 (27.1%)
Neurourology	13 (22.0%)
Reconstructive urology	11 (18.6%)
Paediatrics	10 (16.9%)
Oncology	6 (10.2%)
Endourology/MIS	6 (10.2%)
Other	8 (13.6%)
Clinical practice reflective of fellowship training, n (%)	
Yes	38 (88.4%)
No	5 (11.6%)
Graduate degree, n (%)*	20 (33.9%)
Masters	15 (25.4%)
Doctorate	3 (5.1%)
Other	2 (3.4%)
Current practice setting, n (%)*	
Academic	27 (45.8%)
Community	32 (54.2%)
Academic title, n (%)	
None	24 (40.0%)
Assistant professor	22 (36.7%)
Associate professor	6 (10.0%)
Full professor	5 (8.3%)
Other	3 (5.0%)
Marital status, n (%)*	

Married/remarried	38 (64.4%)
Single/divorced/separated	9 (15.3%)
In a relationship	12 (20.3%)
Children, n (%) [*]	
Yes	43 (72.9%)
No	16 (27.1%)
Age at time of first child	
Median (years) (IQR)	33 (31–34)
Age at time of last child	
Median (years) (IQR)	35 (34–38)

^{*}Missing one response, N=59. IQR: interquartile range; MIS: minimally invasive surgery.

Variable	OR	95% CI	p
Language (reference=English)	1.99	0.64–6.28	0.227
Location of practice (reference=Community)	0.95	0.32–2.86	0.931
Fellowship (reference: No)	0.61	0.17–2.25	0.453
Discrimination (reference: No)	1.50	0.49–4.61	0.481
Children (reference: No)	1.20	0.36–3.98	0.766
Career compromised family life (reference: No)	0.38	0.09–1.56	0.157
Family life compromised career (reference: No)	0.69	0.23–2.14	0.523
Financial satisfaction (reference: No)	4.50	1.31–15.52	0.015

CI: confidence interval; OR: odds ratio.