Gender Differences in Compensation, Job Satisfaction and Other Practice Patterns in Urology

E. Sophie Spencer, Allison M. Deal, Nicholas R. Pruthi, Chris M. Gonzalez, E. Will Kirby, Joshua Langston, Patrick H. McKenna, Maxim J. McKibben, Matthew E. Nielsen, Mathew C. Raynor, Eric M. Wallen, Michael E. Woods, Raj S. Pruthi and Angela B. Smith*

From the Department of Urology (ESS, NRP, EWK, JL, MJM, MEN, MCR, EMW, MEW, RSP, ABS) and Department of Epidemiology, Gillings School of Global Public Health (MEN), University of North Carolina at Chapel Hill, Cancer Outcomes Research Group, Biostatistics and Clinical Data Management (AMD) and Cancer Outcomes Research Group, Multidisciplinary Genitourinary Oncology (MEN, EMW, MEW, RSP, ABS), Lineberger Comprehensive Cancer Center, Chapel Hill, North Carolina, Department of Urology, Northwestern University, Chicago, Illinois (CMG), and Department of Urology, University of Wisconsin, Madison, Wisconsin (PHM)

Abbreviations and Acronyms

APP = advanced practice provider

AUA = American Urological Association

WRVU = work relative value unit

Accepted for publication August 11, 2015.

Supported by the University Cancer Research Fund, and the National Center for Research Resources and the National Center for Advancing Translational Sciences, National Institutes of Health, through Grant KL2TR001109.

No direct or indirect commercial incentive associated with publishing this article.

The corresponding author certifies that, when applicable, a statement(s) has been included in the manuscript documenting institutional review board, ethics committee or ethical review board study approval; principles of Helsinki Declaration were followed in lieu of formal ethics committee approval; institutional animal care and use committee approval; all human subjects provided written informed consent with guarantees of confidentiality; IRB approved protocol number; animal approved project number.

* Correspondence: Department of Urology, University of North Carolina, 170 Manning Drive, 2115 Physicians Office Building, CB#7235, Chapel Hill, North Carolina 27599-7235 (telephone: 919-966-8217; FAX: 919-966-0098; e-mail: angela_smith@med.unc.edu).

Purpose: The proportion of women in urology has increased from less than 0.5% in 1981 to 10% today. Furthermore, 33% of students matching in urology are now female. In this analysis we characterize the female workforce in urology compared to that of men with regard to income, workload and job satisfaction.

Materials and Methods: We collaborated with the American Urological Association to survey its domestic membership of practicing urologists regarding socioeconomic, workforce and quality of life issues. A total of 6,511 survey invitations were sent via e-mail. The survey consisted of 26 questions and took approximately 13 minutes to complete. Linear regression models were used to evaluate bivariable and multivariable associations with job satisfaction and compensation.

Results: A total of 848 responses (660 or 90% male, 73 or 10% female) were collected for a total response rate of 13%. On bivariable analysis female urologists were younger ($p < 0.0001$), more likely to be fellowship trained ($p=0.002$), worked in academics ($p=0.008$), were less likely to be self-employed and worked fewer hours ($p=0.03$) compared to male urologists. On multivariable analysis female gender was a significant predictor of lower compensation ($p=0.001$) when controlling for work hours, call frequency, age, practice setting and type, fellowship training and advance practice provider employment. Adjusted salaries among female urologists were $76,321 less than those of men. Gender was not a predictor of job satisfaction.

Conclusions: Female urologists are significantly less compensated compared to male urologists after adjusting for several factors likely contributing to compensation. There is no difference in job satisfaction between male and female urologists.

Key Words: urology, sex, job satisfaction, socioeconomic factors, physician's practice patterns

THE barriers preventing women from entering medicine have been substantially reduced and approximately 50% of students entering U.S. medical schools are now female.[1] Coinciding with an increase in the number

0022-5347/16/1952-0450/0
THE JOURNAL OF UROLOGY®

http://dx.doi.org/10.1016/j.juro.2015.08.100
Vol. 195, 450-455, February 2016
Printed in U.S.A.

of female medical students, the number of women entering the field of urology has increased significantly, although urology remains largely male dominated. Since 1981 the number of female urologists has increased from 34 to 512, representing a relative increase of more than 1,000% but an absolute increase of only 5%.[2] Despite an increase in the number of female urological residents, female urologists still comprise less than 10% of the urology workforce.[3]

With the increasing number of women entering urology, interest in the impact of gender on job satisfaction, work hours and compensation has become apparent. Traditionally, female physicians have been reimbursed at lower levels than their male counterparts, with lower income among female urologists also reported.[4] Furthermore, monetary compensation and the level of reported satisfaction appear to be positively correlated, although specific analyses did not directly associate dissatisfied female physicians with less income.[5]

Given the rapidly changing landscape for women in urology, we further characterized gender differences in income, workload and job satisfaction by conducting a survey of urologists currently practicing in the United States. We examined the current state of the female urological workforce and potential explanatory factors affecting income and job satisfaction.

MATERIALS AND METHODS

We collaborated with the AUA to query its domestic membership of practicing urologists regarding socioeconomic, workforce and quality of life issues. A quantitative survey was designed by the AUA and 6,511 survey invitations were sent to all members via e-mail. Although we do not know the exact gender distribution of survey invitations, the AUA is currently comprised of 92.3% male and 7.7% female urologists, and survey invitations likely paralleled these proportions. The survey consisted of 26 questions and took approximately 13 minutes to complete. A total of 848 responses were collected for a response rate of 13%. Our sample size allowed confidence intervals around percentages to be calculated with high precision. The maximum width of a 95% exact binomial confidence interval is $\pm 3.4\%$.

Survey questions addressed several provider related demographics, including age, gender and years in practice. Additional practice based questions included provider compensation, workload, training, practice focus and practice characteristics. Payer mix was not assessed. Questions related to career differences included practice type and career satisfaction with possible answers described in parentheses, such as 1) What is your current employment status? (academic, employed, self-employed) 2) How would you rate your current satisfaction with work? (very satisfied, somewhat satisfied, ambivalent, somewhat unsatisfied, very unsatisfied) and 3) Would you choose medicine again as a career? (yes, no, unsure). Factors such as prior year's compensation, average weekly hours worked and average monthly number of call days allowed free text responses. Survey responses were compared between currently practicing female and male urologists.

Exact 95% binomial confidence intervals were reported for percentages as appropriate. Multivariable linear regression models were used to evaluate associations of compensation and job satisfaction with gender, after controlling for covariates of interest, with $p < 0.05$ considered statistically significant. Of note, years in practice and age were collinear and, therefore, could not be included in the model together. Therefore, each model was fit separately with age or years in practice, and AICs were compared. Given that age provided the lowest AIC, age was included in the analysis in lieu of years in practice. All analyses were conducted using SAS® v9.3 statistical software.

RESULTS

A total of 733 providers completed the job satisfaction question and are included in these analyses, of whom 90% were male and 10% were female (table 1). Median respondent age was 49 years, with 7% younger than 37 years, 26% between 37 and 45, 31% between 46 and 54, 28% between 55 and 64, and 8% of respondents 65 years old or older. The majority of respondents worked in urban (47%) or suburban (38%) practices, and half were self-employed, followed by employed (30%) and academic (21%). Approximately 40% of survey respondents were fellowship trained, and the majority (62%) used an advanced practice provider in their practice, defined as an advanced practice nurse or physician assistant. Ancillary income was reported by 42% of respondents. Respondents also reported a median of 7 calls per month, $385,000 annual salary ($128 per hour) and 60 hours worked per week.

Female respondents were significantly younger than their male counterparts with a median age of 42.0 vs 50.0 years ($p < 0.0001$, table 1). Additionally, women reported fewer years in practice compared to men ($p < 0.0001$). Approximately two-thirds of female providers were employed or in a self-employed practice with the remaining 28.8% in an academic setting. Women were more likely to be employed in a practice or academic setting compared to their male counterparts ($p=0.008$). Correspondingly, male respondents were significantly more likely to be self-employed (50.9% vs 32.9%).

The majority of female respondents reported practicing in an urban location with a larger proportion compared to male respondents (56.2% vs 46.2%). However, the differences in practice location were not statistically significant ($p=0.25$). With regard to gender differences in fellowship training,

Table 1. *Comparison of provider characteristics among surveyed male and female urologists*

	All		Female		Male		p Value
Median age (IQR)	49	(41.0, 57.0)	42.0	(37.0, 49.0)	50.0	(42.0, 57.0)	<0.0001
No. age (%):							<0.0001
Less than 37	49	(7)	11	(15.1)	38	(5.8)	
37–45	192	(26)	36	(49.3)	156	(23.6)	
46–54	224	(31)	14	(19.2)	210	(31.8)	
55–64	205	(28)	11	(15.1)	194	(29.4)	
65 or Greater	61	(8)	0	(0)	61	(9.2)	
No. practice location (%):							0.25
Rural	108	(15)	8	(11.0)	100	(15.2)	
Urban	346	(47)	41	(56.2)	305	(46.2)	
Suburban	279	(38)	24	(32.9)	255	(38.6)	
No. fellowship (%):							0.002
No	442	(60)	32	(43.8)	410	(62.1)	
Yes	291	(40)	41	(56.2)	250	(37.9)	
No. employment type (%):							0.008
Employed	217	(30)	27	(37.0)	190	(28.8)	
Self-employed	360	(49)	24	(32.9)	336	(50.9)	
Academic	154	(21)	21	(28.8)	133	(20.2)	
No. use of APP (%):							0.21
No	281	(38)	23	(31.5)	258	(39.1)	
Yes	452	(62)	50	(68.5)	402	(60.9)	
Median job satisfaction score (IQR)*	4.0	(3.0, 5.0)	4.0	(3.0, 4.0)	4.0	(3.0, 5.0)	0.63
No. job satisfaction score (%):							0.84
1	37	(5)	3	(4.1)	34	(5.2)	
2	100	(14)	13	(17.8)	87	(13.2)	
3	81	(11)	7	(9.6)	74	(11.2)	
4	320	(44)	32	(43.8)	288	(43.6)	
5	195	(27)	18	(24.7)	177	(26.8)	
Median yrs in practice (IQR)	17.0	(9.0, 25.0)	10.0	(5.0, 17.0)	18.0	(10.0, 25.0)	<0.0001
Median calls/mo (IQR)	7	(5.0, 10.0)	6.0	(4.0, 8.0)	7.0	(5.0, 10.0)	0.09
Median last yr salary in 693 (IQR)	$385,000	(300,000; 480,000)	$318,422	(250,000; 400,000)	$400,000	(300,000; 500,000)	<0.0001
Median salary/hr (IQR)	$128.21	(96.15, 173.08)	$106.30	(83.01, 160.26)	$131.12	(100.27, 174.83)	0.004
No. ancillary income (%):							0.04
No	428	(58)	51	(70)	377	(57)	
Yes	305	(42)	22	(30)	283	(43)	
Median hrs/wk (IQR)	60	(50, 60)	55.0	(45.0, 60.0)	60.0	(50.0, 62.0)	0.03

* Range from 1—very dissatisfied to 5—very satisfied.

female providers were significantly more likely to have completed fellowship training (56.2% vs 37.9%, p=0.002). There were no significant differences in the use of APPs by gender (p=0.21).

Female providers worked fewer median hours per week compared to men (55.0 vs 60.0, p=0.03). Additionally, female urologists reported working 6.0 call days per month compared to 7.0 for males (p=0.09). Only 36% of survey respondents reported WRVUs, but among those who did, women reported a median of 6,000 annual WRVUs compared to 8,450 reported by men (p=0.0006). However, mean WRVUs were higher among women (11,272 vs 9,083 WRVUs). Given the large number of missing values, WRVU was not included in the multivariable analysis. Median salary among female urologists was $81,578 less than that of their male counterparts (p <0.0001, fig. 1). This corresponded to a lower median hourly salary of $106.30 for women vs $131.12 earned by male urologists (p=0.004). Female urologists were less likely to report ancillary income than men (30.1% vs 42.9%, p=0.04, table 1).

With regard to satisfaction scores 70% (95% CI 66.9, 73.6) of providers reported being satisfied

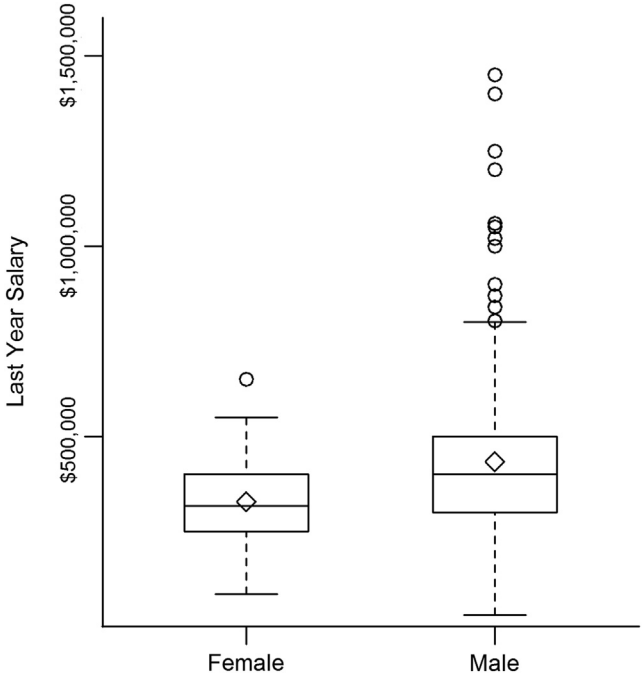

Figure 1. Boxplot of prior year salary by gender

(defined as very satisfied or somewhat satisfied), 63% (95% CI 59.8, 66.8) reported that they would choose medicine again and 83% (95% CI 80.0, 85.7) would choose urology again. Although there was no apparent difference in job satisfaction based on gender, female respondents reported a lower rate of choosing medicine again (53% vs 64%, p=0.07) and choosing urology again (75% vs 84%, p=0.07, fig. 2).

On multivariable analysis gender remained a significant predictor of lower compensation (p=0.001) after controlling for age, practice setting and type, fellowship training, call frequency, work hours, employment of APPs and ancillary income (table 2). Use of APPs and ancillary income were independent predictors of higher compensation and, on average, annual salary was about $30,000 higher for respondents reporting these characteristics. Those in academic practices reported a significantly lower income than their counterparts (−$44,959, p=0.03), as did urologists who were younger than 37 years (−$54,742, p=0.04).

Finally, female compensation was grouped more closely compared to the wider dispersion of male income. Only a single female urologist reported earning enough to place her above the 1.5 IQR of the upper quartile of female earners. However, her annual compensation was still less than $750,000 (fig. 1). Comparatively there were many male outliers, all with annual incomes greater than $750,000, placing them at 2 to 3 times the median male income. The highest male earner's reported salary was $1,500,000 compared to $650,000 for female earners. Lastly, gender was not a predictor of job satisfaction on multivariable analysis (p = 0.14, table 2).

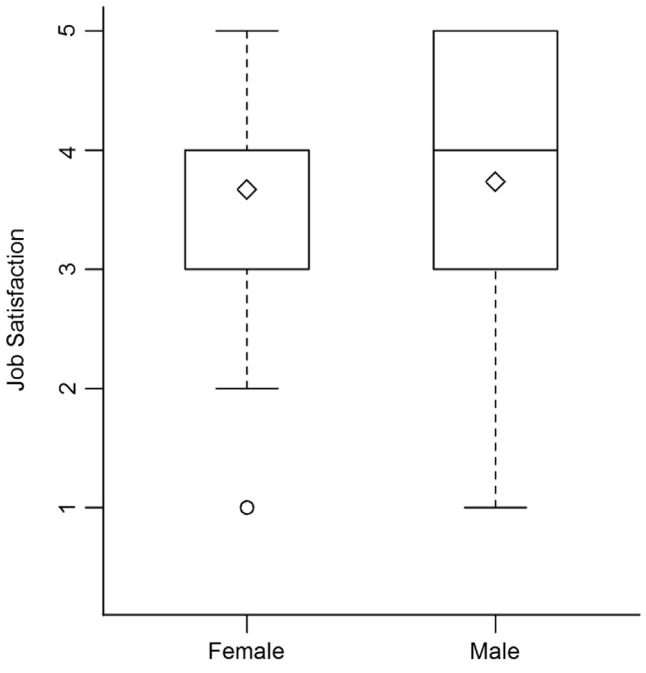

Figure 2. Boxplot of job satisfaction by gender

Table 2. *Multivariable analysis assessing predictors of annual compensation and job satisfaction*

	Annual Compensation (693)		Job Satisfaction 1–5 (733)	
	Estimate	p Value	Estimate	p Value
Gender (reference male)				
Female	−76,321	0.001	−0.212	0.14
Age (reference 37–45)				
Less than 37	−54,742	0.04	0.263	0.14
46–54	6,142	0.72	−0.280	0.01
55–64	9,497	0.59	−0.167	0.14
65 or Greater	−32,031	0.24	0.163	0.34
Practice location (reference urban)				
Rural	8,765	0.66	−0.004	0.97
Suburban	−13,958	0.34	0.042	0.66
Fellowship training (reference not fellowship trained)				
Fellowship trained	19,269	0.21	0.149	0.13
Practice type (reference self-employed)				
Academic	−44,959	0.03	0.214	0.12
Employed	−8,287	0.61	0.028	0.79
Work hrs/wk	920	0.09	−0.006	0.08
Call days/mo	−1,248	0.21	−0.009	0.18
Employment of APPs (reference no use of APPs)				
Use of APPs	31,210	0.03	0.134	0.14
Ancillary (reference no)				
Yes	29,717	0.04	−0.036	0.70

DISCUSSION

Income disparities between men and women in the medical field are well established and have been reported in the specialty of urology, despite a recent increase in the proportion of female urologists. However, to our knowledge no previous studies have attempted to delineate the causes of gender inequality by concurrently examining important training and practice characteristics known to impact compensation. In our study women made approximately $76,000 less than men after adjusting for other known predictors of compensation level. Moreover gender was one of the strongest predictors of compensation in our multivariable model, suggesting that variations in practice setting and training do not explain the documented income inequalities between men and women in urology. In contrast, we did not find any significant gender differences in job satisfaction. Despite these known inequalities in compensation, an increasing number of women are still entering the field of urology.

In 1995 the female-to-male physician ratio was 1:4 while the ratio in urology was 1:84.[6,7] Women comprised only 4.2% of urology residents and 1.2% of board certified urologists.[6,7] This has slowly increased with time to the present, with women

making up approximately 10% of the practicing urology workforce (consistent with the 10% female respondents in our survey). The percentage of women who successfully matched into urology residency parallels this trend as demonstrated by match rates of 19% in 2004 increasing to 26% as of the 2014-2015 AUA match.[8,9] While these numbers portray a relative narrowing of the gender gap, women remain underrepresented and inequalities persist in compensation.

Inequalities in compensation between male and female medical providers have been well documented.[4,6,10] In 1993 the average income claimed by practicing female urologists was 65% that of the national average reported by all urologists.[6] This income gender gap was comparable to the national female physician income gap of 62% of that reported by male physicians during the same time period.[6,11] According to a Medical Group Management Association income survey in 2002 the mean compensation for full-time female urologists was reported to be 66% of that of their male counterparts.[4] In the present study female urologists reported a median annual income of $318,422 compared to $400,000 for men, indicating that women earn 80% of the income reported by men.

Importantly the discrepancy between male and female compensation was comparable even after adjusting for other important predictors of income, suggesting that although variations in training and clinical practice are important, women continued to earn 81% of that of their male counterparts after accounting for these predictors. Nevertheless, our results may indicate that the gender gap is closing. Lightner et al reported a 33% difference in compensation between men and women vs a 19% difference in the present analyses.[4] This is supported by similar trends in compensation in all fields of medicine with regard to gender.[12,13] It is possible that increased awareness and appreciation of gender based compensation disparities and the increasing presence of women in the physician workforce may account for the narrowing of this gap.

While gender related compensation inequity is undeniable, the underlying causes are less clear. It has been proposed that some of the income inequity between genders may be due to female urologists preferentially pursuing part-time work and academically based careers,[6] working fewer hours and taking fewer calls,[4,14] or being pigeonholed through the preferential referral of time-consuming, low revenue, nonoperative cases.[4] However, available evidence regarding these potential causes of inequality has been mixed. Several studies report that female surgeons actually work longer hours than male surgeons[4,15] and may have a tendency to underreport their work time, whereas men may tend to overreport hours worked.[16–18] Our findings were likely influenced by a greater proportion of women seeking academic appointments in the present sample, which are typically associated with lower compensation but often allow for more flexibility of schedule, lower call requirements and more emphasis on research.[2,19] Academic appointments frequently offer retirement contributions which may not be included in private practice compensation, further narrowing the gender compensation gap.

Beyond work related differences such as hours and case load, gender differences in compensation could also be impacted by differences in negotiation techniques. A study that evaluated starting salaries of graduate students noted that 57% of men and 7% of women tried to negotiate for a higher offer.[18] Women who attempt negotiation often violate a perceived gender norm and pay a long-term cost in future advancement and general likeability.[18] Whether negotiation differences exist in urology warrants further study, but could explain compensation differences that begin in early practice and persist over time.

With regard to income dispersion, female compensation was grouped more closely compared to male income. The income of few women fell outside the standard deviation for female compensation. Conversely there were many male outliers with an annual income at least 2 to 3 times the median male salary. We found that 4% of men earned more than $750,000 annually, whereas no women surveyed earned this much. The highest male earner's reported salary was $1,500,000 compared to $650,000 for women. Similar to many instances in corporate America, a glass ceiling may exist for women urologists.[20,21] Another contributor to male outliers in compensation included ancillary income, which was reportedly higher among male urologists than female practitioners. Further research is needed to delineate these differences. Nevertheless, controlling for ancillary income on multivariable analysis did not impact the association of gender with compensation.

Although income is an important measure of success, it must be viewed in the context of overall job satisfaction. Studies have demonstrated that these concepts are closely related but not interchangeable.[5] Female urologists who worked more hours achieved greater financial compensation, and those who are well compensated report a higher level of career satisfaction.[5] However, dissatisfied women did not necessarily earn less.[5,22] Women in urology consistently demonstrate high levels of job satisfaction despite two-thirds reporting gender discrimination and half having been discouraged from pursuing urology.[6] Female urological surgeons

also have fewer children, higher induction rates and incidence of pregnancy complications.[23,24] Despite these findings, a recent survey of female urologists reported that 87% were happy with their choice of urology[5] and 94% would encourage other women to apply.[6]

The results of the present analyses must be viewed with several limitations in mind. Although we were able to account for many known predictors of compensation, data on work productivity, payer mix and the types of case loads were unavailable. In addition, we note that any study using self-reported survey data has inherent limitations associated with selection and reporting biases. However, our response rate was higher than many comparable surveys, and the rate of male and female respondents mirrored that of current practitioners. With the advent of the AUA Annual Census, further investigation into gender specific differences in the urology workforce will be important to monitor as we aim to narrow the gender gap in urology.

CONCLUSIONS

This study highlights several important aspects of gender inequality in the urology workforce. While the growth of women as urologists is exciting and encouraging, further research efforts are needed to quantify and characterize the factors associated with compensation disparities and to understand their root causes. Discussion at regional and national levels will ensure that gender related disparities are addressed by governing bodies as we plan for the future of our specialty.

REFERENCES

1. Association of American Medical Colleges: Total U.S. Medical School Enrollment by Race/Ethnicity and Sex, 2013-2014 and 2014-2015. Updated December 2014. Available at https://www.aamc.org/download/321534/data/factstable28.pdf. Accessed May 2015.
2. Pruthi RS and Nielsen ME: Age, gender, and the urology work force: evolving trends. Urology Times. Updated June 2013. Available at http://urologytimes.modernmedicine.com/urology-times/content/tags/career/age-gender-and-urology-work-force-evolving-trends?page=full. Accessed May 2015.
3. Grimsby GM and Wolter CE: The journey of women in urology: the perspective of a female urology resident. Urology 2013; **81:** 3.
4. Lightner DJ, Terris MK, Tsao AK et al: Status of women in urology: based on a report to the Society of University Urologists. J Urol 2005; **173:** 560.
5. Marley CS, Lerner LB, Panagopoulos G et al: Personal, professional and financial satisfaction among American women urologists. Int Braz J Urol 2011; **37:** 187.
6. Bradbury CL, King DK and Middleton RG: Female urologists: a growing population. J Urol 1997; **157:** 1854.
7. Roback G, Randolph L and Seidman B: Physician Characteristics and Distribution in the U.S. Chicago: American Medical Association 1990.
8. Kim SJ and Hyun G: Women in urology: time to lean in. J Urol, suppl., 2014; **191:** e145, abstract MP15-04.
9. American Urological Association: Results of 2015 Urology Residency Match. Updated January 2015. Accessed May 2015.
10. Ash AS, Carr PL, Goldstein R et al: Compensation and advancement of women in academic medicine: is there equity? Ann Intern Med 2004; **141:** 205.
11. Gonzalez M: Physician Marketplace Statistics, 1994. Chicago: American Medical Association 1994.
12. Peckham C: Medscape Physician Compensation Report 2015. Updated April 21, 2015. Available at http://www.medscape.com/features/slideshow/compensation/2015/public/overview. Accessed May 2015.
13. Kane L and Peckham C: Medscape Physician Compensation Report 2014. Updated April 15, 2014. Available at http://www.medscape.com/features/slideshow/compensation/2014/public/overview. Accessed May 2015.
14. Carr PL, Gareis KC and Barnett RC: Characteristics and outcomes for women physicians who work reduced hours. J Womens Health (Larchmt) 2003; **12:** 399.
15. Frank E, Brownstein M, Ephgrave K et al: Characteristics of women surgeons in the United States. Am J Surg 1998; **176:** 244.
16. Akers MD and Eaton TV: Underreporting of chargeable time: the impact of gender and characteristics of underreporters. J Manage Issues 2003; **15:** 82.
17. Krugman S: Women in accounting: tearing down barriers. Accounting Today, August/September 2000; **1:** 56.
18. Sandberg S: Lean In: Women, Work, and the Will to Lead. New York: Alfred A. Knopf 2013.
19. Friedberg MW, Chen PG, Van Busum KR et al: Factors Affecting Physician Professional Satisfaction and Their Implications for Patient Care, Health Systems, and Health Policy. Updated 2013. Available at http://www.rand.org/content/dam/rand/pubs/research_reports/RR400/RR439/RAND_RR439.pdf. Accessed January 2015.
20. Johns ML: Breaking the glass ceiling: structural, cultural, and organizational barriers preventing women from achieving senior and executive positions. Perspect Health Inf Manag 2013; **10:** 1e.
21. Achkar E: Will women ever break the glass ceiling in medicine? Am J Gastroenterol 2008; **103:** 1587.
22. Pruthi NR, Deal A, Langston J et al: Factors related to job satisfaction in urology. Unpublished data.
23. Lerner LB, Baltrushes RJ, Stolzmann KL et al: Satisfaction of women urologists with maternity leave and childbirth timing. J Urol 2010; **183:** 282.
24. Lerner LB, Stolzmann KL and Gulla VD: Birth trends and pregnancy complications among women urologists. J Am Coll Surg 2009; **208:** 293.