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# Health Services Research

## Do Women Work Less Than Men in Urology: Data From the American Urological Association Census

Sima P. Porten, Thomas W. Gaither, Kirsten L. Greene, Nima Baradaran, Jennifer T. Anger, and Benjamin N. Breyer

OBJECTIVE	To further explore the issue of work parity between male and female urologists in the context of
	demographics, practice characteristics, subspecialty affiliation, and planned retirement.
MATERIALS AND	We analyzed data from the 2014 American Urological Association census, which is a specialty
METHODS	wide survey distributed to the entire urology community in the United States. A total of 2204
	census samples were weighted to represent 11,703 urologists who practiced in the United States
	in 2014. We compared clinical and nonclinical hours worked by gender after adjusting for age,
	practice setting, fellowship type, and whether or not the urologist performed inpatient operations.
RESULTS	Of the 11,703 practicing urologists in the United States, female urologists make up approxi-
	mately 7.7% of the workforce (n ~ 897). Female practicing urologists were younger (66.4%, <45
	years old), had shorter training intervals, and a younger planned retirement age than their male
	counterparts (63 years vs 68.5 years, P <.001). More women were fellowship-trained in a uro-
	logic subspecialty (54.9% vs 34.9%, P <.001) and more were in academic practices (33.2% vs 21.9%,
	P = .03). After adjusting for age, practice type, subspecialty, and inpatient operations performed,
	there was no difference in hours worked between women and men (beta-coefficient -2.8, 95%
	confidence interval $-6.4$ to $0.7$ , $P = .12$ ).
CONCLUSION	Gender does not appear to drive the number of hours urologists work per week. There is work
	hour parity between women and men practicing urologists in both clinical and nonclinical hours.
	Women are proportionately more likely to pursue fellowship training and hold academic
	positions. UROLOGY 💵: 💵–💵, 2018. © 2018 Elsevier Inc.

The number of women entering urology continues to grow, paralleling the overall increased presence of women in medicine. In 2016, 49.8% of students matriculating into US medical school were women.<sup>1</sup> As recent as 1995, women made up just 1.2% of practicing urologists and 4.2% of incoming residents. Currently, women make up 8%-10% of practicing urologists and 26% of incoming residents, demonstrating progress in narrowing the gender gap.<sup>2,3</sup>

With a workforce comprised of more women and a predicted urology workforce shortage, concern regarding differences in work hours between genders has grown,<sup>45</sup> given the assumption, for various reasons, women may be more likely to work part time. If women truly work fewer hours than men, then the predicted workforce shortage will be even more severe. Leigh et al reported female physicians across 41 specialties (both medicine and surgery) worked 7.4 hours less than male physicians, and the reduction of hours is most pronounced in younger women.<sup>6</sup> Within the overall field of surgery, women report a preference for flexible or part-time work hours.<sup>7</sup> Specialty-specific survey data regarding work hours from both genders of urologists are conflicting. Pruthi et al found that women may work 8.3%-16.6% fewer clinical hours.<sup>8</sup> However, others have found smaller or no differences between female and male urologists in clinical hours.<sup>3,9,10</sup>

Our aim is to further explore the issue of work parity between male and female urologists in the context of demographics, practice characteristics, subspecialty affiliation, and planned retirement. We hypothesize that women and men carry similar patient loads and work similar amounts of weekly hours.

#### **MATERIALS AND METHODS**

#### **Study Population**

We analyzed data from the 2014 American Urological Association (AUA) census, which is a specialty wide survey distributed to the entire urology community in the United States.<sup>11</sup> The 2014

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AUA census data contain demographic, education, geographic, and practice characteristics of a sample of US practicing urologists. The census data used in the current study were collected from May 2014 to September 2014. A total of 2204 urologists completed the census, which were weighted to represent 11,703 practicing urologists in the United States as defined by the National Provider Identifier.<sup>11</sup> Census samples were weighted based on poststratification factors (ie, gender, location, certification status, and years since initial certification) to adjust for the representation of each respondent in a census survey by assigned proper sample weight.<sup>11</sup> Institutional review board of University of California, San Francisco gave the study exempt status.

#### **Predictor Variables**

In this study, we compared female and male urologists. Gender was collected using the National Provider Index file.

#### **Outcome Variables**

The AUA census collects demographic and practice characteristics of each participant. Demographic characteristics analyzed in our study included age, race and ethnicity (white, nonwhite, other, Hispanic), census region (Northeastern, New England, New York, Mid-Atlantic, North Central, South Eastern, South Central, and Western), and level of rurality (metropolitan, micropolitan, and small town or rural village). Practice characteristics analyzed in our study included subspecialty type (general urology, urologic oncology, sexual health or reconstruction, female pelvic medicine and reconstructive surgery, endourology or robotics, and other), institution type (academic, public or private hospital, single urology group, solo practice, multispecialty group, or other), and clinical practice characteristics (number of office locations, clinical hours, nonclinical hours [administration, teaching, or research], inpatient operations performed, patients seen per week, total hours per week, and total years in urology). Except for gender and location that were collected from the National Provider Identification file, all other variables were self-reported by respondents in the AUA 2014 Census (ie, training interval reported as years between medical school and residency completion and years between residency and fellowship completion, planned age of retirement, etc.)

#### **Statistical Analysis**

All data were analyzed using the survey function in Stata v. 13.0 (StataCorp, College Station, TX) to account for the complex sampling design to report a representative estimate by gender. Continuous outcome variables were analyzed with Student *t* tests, and binary outcomes were analyzed with the Pearson chi-square test. All data were assessed for normality. We examined the independent effects of gender on clinical and nonclinical hours worked using linear regression. We selected a priori confounders and adjusted for age, practice setting, fellowship type, and whether or not the urologist performed inpatient operations based on previous literature.<sup>9</sup> All tests were 2-sided and statistical significance for all cases was defined as  $P \leq .05$ .

### RESULTS

Table 1 depicts demographic characteristics by gender. Female practicing urologists were younger (66.4%, <45 years old), had shorter training intervals (both shorter residencies and fellowships), and a younger estimated retirement age than their male counterparts (63 years vs 68.5 years, P <.001). More women completed a fellowship and

Table 1. Demographic characteristics of practicing urologists by gender, 2014

	Women	Men	P value
Age, n(%)			
<35	188 (20.9)	635 (5.9)	<.001
33-44	409 (45.5)	2424 (22.5)	
45-54	189 (21.1)	2407 (22.3)	
55-64	108 (12.0)	2610 (24.2)	
≥65	4 (0.4)	2711 (25.1)	
Race, n(%)			
White	669 (74.5)	8580 (79.4)	.53
Nonwhite	172 (19.2)	1663 (15.4)	
Not recorded	56 (6.3)	564 (5.2)	
AUA region, n(%)			
New England	102 (11.3)	591 (5.5)	.13
Middle Atlantic	97 (10.8)	1794 (16.6)	
East North Central	133 (14.8)	1637 (15.2)	
West North central	78 (8.7)	621 (5.8)	
South Atlantic	141 (15.7)	2223 (20.6)	
East South Central	36 (4.0)	674 (6.2)	
West South central	98 (11.0)	1276 (11.8)	
Mountain	43 (4.8)	487 (4.5)	
Pacific	169 (18.9)	1505 (13.9)	
Level of rurality, n (%)			
Metropoliton	802 (89.5)	9584 (88.7)	.97
Micropolitan	76 (8.5)	964 (8.9)	
Small town/rural	19 (2.1)	259 (2.4)	
Years between medical school and residency completion, mean (95%CI)	5.78 (5.59-5.97)	6.39 (6.27-6.51)	<.001
Years between residency completion and fellowship, mean (95%CI)	2.11 (1.77-2.44)	2.73 (2.34-3.12)	.02
Estimated age of retirement, mean (95%CI)	63.0 (61.8-64.1)	68.5 (68.1-69.0)	<.001

AUA, American Urological Association; CI, confidence interval.

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#### Table 2. Practice characteristics of practicing urologists by gender, 2014

	Women	Men	P value
Primary subspecialty/fellowship, n(%)			
General	404 (45.1)	7038 (65.1)	<.001
Endourology	42 (4.7)	787 (7.3)	
Female pelvic medicine/reconstruction	211 (23.6)	311 (2.9)	
Male sexual health/reconstruction	50 (5.6)	605 (5.6	
Oncology	65 (7.2)	1278 (11.8)	
Pediatrics	107 (12.0)	586 (5.4)	
Renal transplant/laparoscopic surgery	0	135 (1.3)	
Other	17 (1.9)	67 (0.6)	
Practice setting, n(%)			
Single urology group	203 (22.7)	3844 (35.6)	.03
Academic	298 (33.2)	2365 (21.9)	
Multispecialty group	178 (19.8)	1849 (17.1)	
Public/private hospital	129 (14.3)	1158 (10.7)	
Solo practice	86 (9.6)	1362 (12.6)	
Other	4 (0.4)	227 (2.1)	
Perform inpatient operations, n(%)			
Yes	734 (82.2)	8984 (84.4)	.59
By age:			
<35	145 (77.3)	593 (96.0)	.04
35-44	355 (87.0)	2328 (96.3)	.005
45-54	148 (79.7)	2153 (90.9)	.02
55-65	84 (78.2)	2133 (83.0)	.58
>65	2 (42.5)	1762 (66.5)	.47
By practice setting			
Single urology group	141 (69.3)	3281 (86.7)	.01
Academic	243 (82.5)	2094 (89.1)	.43
Multispecialty group	166 (93.1)	1590 (87.3)	.22
Public/private hospital	115 (89.1)	935 (80.1)	.27
Solo practice	67 (78.1)	925 (71.1)	.69
Other	4 (100)	158 (70.9)	.56

had a primary subspecialty (54.9% vs 34.9%, P <.001) and were in academic practices (33.2% vs 21.9%, P = .03). (Table 2) Although overall women and men equally performed inpatient operations (82.2% vs 84.4%, P = .59), fewer younger women (<55 years old) reported performing inpatient operations than men their age (77.3% vs 96.0%, P = .04). Women who were part of a single urology group did not perform inpatient operations at the same rate as men (69.3% vs 86.7%, P = .01).

On univariable analysis (Table 3), women and men worked a similar number of overall (clinical and nonclinical) hours per week (54.2 vs 53.8, P = .75) as well as clinical hours per week (42.2 vs 45.0, P = .14). When grouped by age, younger women (<45) and older women (>65) worked statistically significant fewer clinical hours than men in the same age group. Women who subspecialized in male sexual health or reconstruction also worked less clinical hours than men (30 vs 43, P <.001). Women reported working more nonclinical hours per week than men (10.1 vs 8.8, P = .04). When stratified by age, this only remained significant in women >65 years old (14.2 vs 6.9, P = .03). Women who were in pediatrics reported working significantly less nonclinical hours per week than men (7 vs 14, P = .01).

After adjusting for age, practice type, subspecialty, and inpatient operations performed, there is no difference in hours worked between women and men (Table 4). The greatest driver for clinical hours appears to be age. Urologists >65 years old worked less clinical hours than other age groups. The greatest driver for nonclinical hours appears to be subspecialty. Urologists who had subspecialty training (except for endourology) worked more nonclinical hours. Practice setting influenced both clinical and nonclinical hours. Those who had an academic practice, solo practice, or hospital-based practice worked less clinical hours and more nonclinical hours than other practice settings.

#### DISCUSSION

As women enter the medical profession workforce there is concern about perceived differences in gendered work hour patterns. Based on the AUA census gender does not appear to drive the number of hours urologists work per week. There is work hour parity between women and men practicing urologists in both clinical and nonclinical hours. Previous studies report that female physicians across specialties work approximately 7.4 hours less than male physicians.<sup>6</sup> Similar trends have been reported in urology, most recently by Spencer et al where women worked approximately 5 hours less than men and had 1 less call day per month.<sup>3</sup> Using data from the AUA 2014 census, McKibben et al concluded that reduced work hours among

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Table 3. Comparison of work hours per week by gender and age of practicing urologists, 2014

	Women	Men	P value
Overall	54.2 (51.9-56.6)	53.8 (53.0-54.7)	.75
By practice setting			
Single urology group	45 (41-49)	48 (47-49)	.13
Academic	40.3 (36.9-43.6)	44 (42-46)	.07
Multispecialty group	50 (44-55)	46 (44-48)	.24
Public/private hospital	40 (35-45)	40 (37-43)	.93
Solo practice	29 (10-48)	42 (40-45)	.16
Other	60	41 (34-47)	
Clinical work hours		(0 )	
Overall	42.2 (38.6-45.8)	45.0 (44.1-45.8)	.14
By age			
<35	34.2 (22.4-46.0)	47.7 (43.9-51.6)	.03
35-44	42 6 (39 8-45 5)	45 9 (44 3-47 6)	05
45-54	45 1 (40 9-49 3)	48 7 (47 5-49 8)	11
55-65	50 3 (43 2)	48 1 (46 8-49 4)	55
>65	32 9 (29 5-36 3)	37 2 (35 2-39 3)	03
By subspecialty	02.0 (20.0 00.0)	01.2 (00.2 00.0)	.00
General	42 (35-49)	45 (44-46)	41
Endourology	47 (45-50)	48 (41-55)	92
Female pelvic medicine/reconstruction	45 (41-48)	44 (40-48)	91
Male sexual health/reconstruction	30 (26-35)	43 (39-46)	0001
Oncology	43 (38-49)	AA (A1-A7)	82
Pediatrics	38 (31-45)	45 (35-55)	24
Renal transplant /lanarosconic surgen		43 (33-53)	.27
Ather	41 (36-46)	46 (42-50)	13
Nonclinical work hours	41 (30 40)	40 (42 30)	.10
Overall	10 1 (8 3-12 0)	8 2 (7 8-8 6)	04
By age	10.1 (0.0 12.0)	0.2 (1.0 0.0)	.04
~35	13 5 (5 9-21 1)	66(18-83)	08
<55 35-ΔΔ	9.6 (7.7-11.5)	94 (8 5-10 2)	.00
45-54	8.8 (6.0.11.7)	8 9 (8 3 9 5)	-0. 90
40-04 55-65	10 1 (7 6-12 6)	8 2 (7 6-8 8)	.38
>65	1/1 2 (7/1-21)	69 (61-77)	.14
By subspecialty	14.2 (1.4-21.1)	0.9 (0.1-1.1)	.00
Conoral	6 (5 7)	6 (6 7)	69
Endourology	10(712)	9(810)	.09
Endourology	10(7-12)	11 (013)	.09
Male social health (reconstruction	11(7-13)	11(1012)	.00
	20 (11-20)	12(10-13)	.00
Dediatrice	エキ (ジーエジ) フ (5 0)	17 (12-14) 17 (0.10)	.02
reulaulus Panal transplant /lanaraspania surgan	1 (0-9)	14 (3 - 10) 11 (914)	.UL
Action and the spin of the surgery	15 (11 10)	10 (10 12)	11
	10 (11-19)	12 (10-13)	.11

women (either flexible or part-time work) may result in a small but significant decrease in projected workforce productivity, contributing to a future shortage of practicing urologists as more men near retirement.<sup>5,12</sup>

Although work hour gender disparity has been frequently reported in practicing surgeons, including urologists,<sup>12-14</sup> our findings do not support these conclusions. Our results were similar to those of both Saltzman et al and Lightner et al who surveyed women currently practicing urology and found that although 20% worked part time, the majority worked full time and over 70% reported working >50 hours per week.<sup>9,10</sup> The discrepancies in reported work hours between studies may be specialtyspecific or due to women underreporting work hours compared to men.<sup>9,15</sup>

Another possible explanation is that women pursue different career tracks and practice settings, and this

determines resulting work hours. Carr et al surveyed female physicians across various disciplines and found that differences between full time and reduced hour schedules were indeed practice-driven.<sup>16</sup> Part-time physicians were more likely generalists, had more direct patient care, and less time in research compared with full-time physicians. We found similar results, where practice setting influenced both clinical and nonclinical hours.

Our study has limitations. The distribution of female urologists is skewed with very few over the age of 65 who are in practice, and no women identified as completing a transplant or laparoscopic fellowship. We weighted the sample to help account for these baseline differences. Additionally, many of our variables are self-reported. As mentioned in the discussion, women tend to underreport work hours, which should have augmented work hour disparity contrary to our findings.

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#### Table 4. Linear regression models of hours worked by practicing urologists, 2014

	Clinical hours Beta-coefficient (95% Cl)	P value	Nonclinical hours Beta-coefficient (95% CI)	P value
Gender				
Men	(Referent)		(Referent)	
Women	-2.8 (-6.4 to 0.7)	.12	0.6 (-0.8 to 2.0)	.41
Age				
<35	(Referent)		(Referent)	
35-44	1.0 (-3.5 to 5.5)	.65	0.4 (-1.2 to 2.1)	.59
45-54	3.7 (-0.8 to 8.1)	.11	0.9 (-0.6 to 2.5)	.24
55-65	4.1 (-0.4 to 8.6)	.08	0.9 (-0.6 to 2.5)	.23
>65	-5.5 (-10.3 to -0.7)	.03	-0.6 (-2.3 to 1.1)	.48
Practice setting				
Single urology group	(Referent)		(Referent)	
Academic	-3.2 (-5.4 to -1.0)	.004	5.5 (4.5-6.5)	<.001
Multi-specialty group	-1.1 (-3.0 to 0.8)	.25	-0.02 (-0.8 to 0.8)	.96
Public/private hospital	-6.0 (-8.6 to -3.4)	<.001	1.4 (0.4-2.5)	.01
Solo practice	-3.8 (-6.8 to -0.7)	.02	1.9 (0.9-2.8)	<.001
Other	-4.7 (-10.0 to 0.4)	.37	0.8 (-1.0 to 2.6)	.37
Fellowship type				
Generalist	(Referent)		(Referent)	
Endourology	0.8 (-1.5 to 3.1)	.49	0.7 (-0.4 to 1.8)	.19
Female pelvic medicine and reconstruction	-2.0 (-5.6 to 1.6)	.27	2.5 (0.8-4.1)	.003
Male sexual health and reconstruction	-2.4 (-5.5 to 0.8)	.15	3.8 (2.1-5.6)	<.001
Oncology	-1.4 (-4.2 to 1.4)	.32	4.1 (2.8-5.3)	<.001
Pediatrics	-0.4 (-8.8 to 8.0)	.92	5.5 (2.2-8.7)	.001
Renal transplant/laparoscopic surgery	-1.5 (-5.3 to 2.3)	.45	2.9 (1.5-4.4)	<.001
Other	-3.5 (-10.2 to 3.2)	.31	2.9 (0.8-5.1)	.01
Perform inpatient operations				
No	(Referent)		(Referent)	
Yes	7.7 (5.6-9.8)	<.001	0.8 (-0.1 to 1.7)	.07

#### CONCLUSION

Gender does not appear to drive the number of hours urologists work per week. There is work hour parity between women and men practicing urologists in both clinical and nonclinical hours. Women are proportionately more likely to pursue fellowship training and hold academic positions.

#### References

- More Women Than Men Enrolled in U.S. Medical Schools in 2017. 2017. Available at: https://news.aamc.org/press-releases/article/ applicant-enrollment-2017/. Accessed January 4, 2018.
- Halpern JA, Mittal S, Shoag JE, et al. Temporal trends and practice patterns in the urology work force between low and high density population areas. Urol Pract. 2017;4:91-95.
- Spencer ES, Deal AM, Pruthi NR, et al. Gender differences in compensation, job satisfaction, and other practice patterns in urology. *J Urol.* 2016;195:450-455.
- Pruthi RS, Neuwahl S, Nielsen ME, Fraher E. Recent trends in the urology workforce in the United States. Urology. 2013;82:987-994.
- Gaither TW, Awad MA, Fang R, et al. The near-future impact of retirement on the urologic workforce: results from the American Urological Association census. Urology. 2016;94:85-89.
- Leigh J, Tancredi D, Jerant A, Kravitz RL. Annual work hours across physician specialties. Arch Intern Med. 2011;171:1211-1213.

- Viola KV, Bucholz E, Yeo H, Piper CL, Bell RH Jr, Sosa JA. Impact of family and gender on career goals: results of a national survey of 4586 surgery residents. Arch Surg. 2010;145:418-424.
- Pruthi NR, Deal A, Langston J, et al. Factors related to job satisfaction in urology. Urol Pract. 2016;3:169-174.
- Lightner DJ, Terris MK, Tsao AK, Naughton CK, Lohse CM. Status of women in urology: based on a report to the Society of University Urologists. J Urol. 2005;173:560-563.
- Saltzman A, Hebert K, Richman A, et al. Women urologists: changing trends in the workforce. Urology. 2016;91:1-5.
- The State of the Urology Workforce and Practice in the United States 2014. 2015. Available at: http://www.auanet.org/research/ research-resources/aua-census/census-results. Accessed February 8, 2016.
- McKibben MJ, Kirby EW, Langston J, et al. Projecting the urology workforce over the next 20 years. Urology. 2016;98(supplC):21-26.
- Lachish S, Svirko E, Goldacre MJ, Lambert T. Factors associated with less-than-full-time working in medical practice: results of surveys of five cohorts of UK doctors, 10 years after graduation. *Hum Resour Health.* 2016;14:62.
- 14. Kawase K, Nomura K, Tominaga R, et al. Analysis of gender-based differences among surgeons in Japan: results of a survey conducted by the Japan Surgical Society. Part 1: working style. *Surg Today*. 2018;48:33-43.
- Akers MD, Eaton TV. Underreporting of chargeable time: the impact of gender and characteristics of underreporters. J Manage Issues. 2003;15:82-96.
- Carr PL, Szalacha L, Barnett R, Caswell C, Inui T. A "ton of feathers": gender discrimination in academic medical careers and how to manage it. J Womens Health (Larchmt). 2003;12:1009-1018.