Longitudinal Gender Disparity in Female Urology Resident Primary Authorship at an American Urological Association Sectional Meeting

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OBJECTIVE To further evaluate the academic representation of female urology residents in the United States, we reviewed abstracts from the Mid-Atlantic American Urological Association (MA-AUA) sectional meetings to determine if the recent increase in the number of female urology residents mirrored an increase in this group's abstract authorship.

MATERIALS AND METHODS Full text abstracts from the MA-AUA meetings were analyzed from 2008 to 2014 excluding 1 joint section meeting. First-author gender was determined by querying publicly available institutional websites, social media platforms, and the U.S. News & World Report. First-author gender was indeterminable in 10 abstracts based on search criteria and these were excluded. Individual abstracts were broadly categorized based on keywords into 1 of several topics. Chi-square statistical tests examined the relationship between first-authorship gender, publication year, and abstract category.

RESULTS The number of female urology residents in the MA-AUA increased over the study period. A total of 484 abstracts were analyzed. Three hundred ninety-three abstracts (81%) included a male first-author, whereas 81 abstracts (17%) included a female first-author. Female first-authorship ranged from 13% to 25% annually. Comparison of male-to-female first-authorship was statistically significant in all years evaluated ($P < .001$). There was a statistically significant difference between male and female first-authorship in all topic categories ($P < .01$), except Education/Other ($P = .56$).

CONCLUSION Despite continued gains and increasing female representation in urology, these data highlight significantly fewer female first-authors at the regional Mid-Atlantic section meetings. Larger studies are necessary to identify contributing factors and further areas for improvement toward decreasing gender imbalances within the academic community. UROLOGY ■■: ■■–■■, 2017. © 2017 Elsevier Inc.

The practice of surgery, including its subspecialties such as urology, has been a male-dominated field throughout medical history.[1-4] As recently as 20 years ago, the male-to-female ratio in urologic surgery was 84:1, with women constituting only 1.2% of all practicing US urologists at that time.[5,6] These statistics are rapidly changing, however, as the number of board-certified female urologists increased from 97 to 536 between 1995 and 2012.[6-8] Currently, 7.7% of all board-certified urologists are women.[7] Women now constitute half of all graduating medical students in the United States and Canada, and they are increasingly represented in general surgery and its surgical subspecialties.[2] A third of U.S. medical graduates who successfully matched into a urology residency are female, now totaling 23.6% of all urology residents.[9,10]

As the number of female urology residents in the United States continues to rise, the representation of this cohort in academia has not been fully defined. Specifically, it is not yet clear whether female urologists are also evenly represented in the literature in terms of authorship and scholarly activity. To better explore this issue, we reviewed abstracts from the Mid-Atlantic American Urology Association (MA-AUA) regional section meetings to determine whether this increase in female urology residents reflects an increase in this group's academic representation.

MATERIALS AND METHODS

After obtaining institutional review board approval, we analyzed full-text abstracts from the MA-AUA annual meetings

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published in the *Canadian Journal of Urology* from 2008 to 2014. Section administration further provided data regarding resident members in section over each of those study years at an individual program level. First-author gender was determined by querying publicly available institutional websites, social media platforms, and the U.S. News & World Report. Abstracts from the 2011 Mid-Atlantic and New England joint section meeting were omitted, as well as those abstracts with indeterminable first-author gender. Individual abstracts were broadly categorized based on keywords into 1 of the following groups: general urology, endourology, urologic oncology, genitourinary trauma and reconstruction, pediatric urology, robotics and laparoscopic surgery, female urology, and education topics. Chi-square statistical tests examined the relationship between first-authorship gender, publication year, and abstract category.

Table 1. Gender distribution of urology residents in the Mid-Atlantic section of the American Urological Association*

Year	First-authorship Males N (%)	First-authorship Females N (%)	Total
2008	131 (74.6)	34 (20.6)	165
2009	129 (78.7)	35 (21.3)	164
2010	126 (76.7)	40 (23.3)	172
2012	123 (72.4)	47 (27.6)	170
2013	121 (69.9)	52 (30.1)	173
2014	118 (67.4)	57 (32.6)	175

* Data obtained from sectional resident membership as recorded at the annual meeting for each year.

RESULTS

The number of female urology residents in the Mid-Atlantic section increased proportionally from 21% in 2008 to 33% in 2014 (Table 1).

A total of 484 abstracts were accepted to the MA-AUA section meetings from 2008 to 2014, excluding the 2011 joint meeting with the New England AUA section. Three hundred ninety-three abstracts (81%) included a male first-author, whereas 81 abstracts (17%) included a female first-author (Fig. 1). First-author gender was indeterminable in 10 abstracts based on search criteria and these were excluded. From the total 474 abstracts included, there were 290 unique authors, with 241 unique male authors (83%) and 49 unique female authors (17%). Urologic oncology was the most commonly presented topic with 206 abstracts (44%), whereas pediatric urology was the least common category with 16 abstracts (3%). Topics with the highest female first-authorship percentages included Education (44%), Female Urology (27%), and Genitourinary Trauma/Reconstruction (19.5%) (Fig. 2).

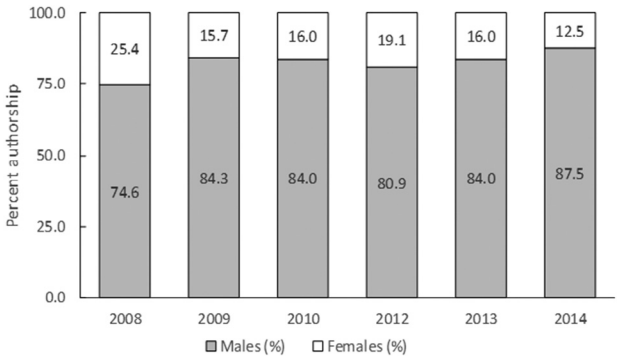

Figure 1. Male-to-female first-authorship by year.

Comparison of male-to-female first-authorship was statistically significant in all years evaluated ($P < .001$) (Table 2). Female first-authorship peaked in 2008 at 25.4% and declined to 12.5% in 2014; however, the percentage difference in female authorship per year was not statistically significant ($P = .53$). Interestingly, the female authorship distribution decreased, whereas the absolute number and proportional number of female urology residents increased over the study period. There was a statistically significant difference between male and female first-authorship in all topic categories ($P < .01$), except Education/Other ($P = .56$) (Fig. 2).

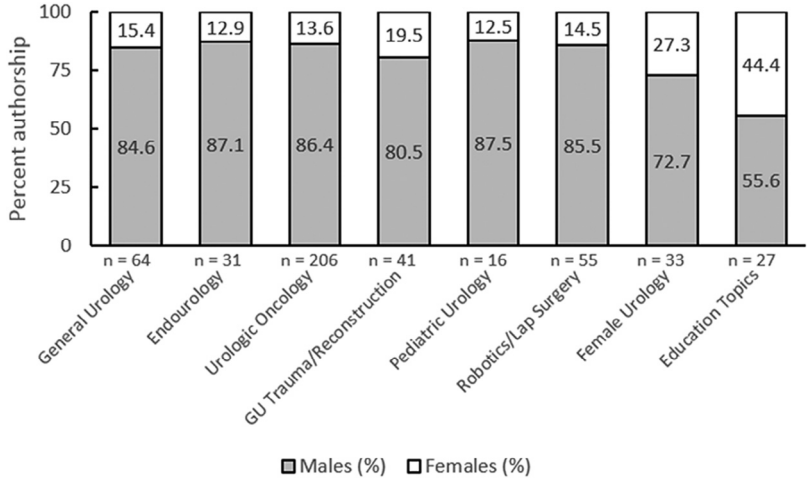

Figure 2. Male-to-female first-authorship by topic.