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Gender Disparity in Arabian Gulf Urological Conferences Over the Past Three Years

Mohammed Zain Ulabedin Adhoni ^{1,*} , Ahmed Nassar ^{1,*}  and Mohammed Shahait ² ¹ The Royal London Hospital, London E1 1FR, UK² School of Medicine, University of Sharjah, Sharjah 26666, United Arab Emirates; mshahait@yahoo.com

* Correspondence: mohammedzain.adhoni@nhs.net (M.Z.U.A.); ahmed.nassar1@nhs.net (A.N.)

Abstract: Background/Objectives: Gender disparity is prevalent in urology and other surgical specialties, with under-representation of females in both academic and professional settings, including in the Arabian Gulf region. To investigate female participation in Arabian Gulf urological conferences over the past three years, focusing on abstract presenters, faculty, speakers, and moderators. **Methods:** Data were collected from three major conferences: the 34th Saudi Urological Conference (SUA), the Urological Asian Association and Emirates Urological Conference (UAA-EUSC), and the 11th Emirates Urological Conference and 18th Pan Arab Continence Society Conference (EUSC-PACSC). The gender of the presenters and faculty was identified using genderize.io, faculty images, and Google searches. Statistical analyses, including chi-square and Fisher's exact tests, were conducted to assess gender disparities. **Results:** Out of 536 abstracts, 13.25% were presented by females, with significant variation across conferences ($p = 0.018$). Female representation was lowest in the basic sciences category (3.13%) and highest in the other category (35.29%) ($p = 0.01$). Abstract to publication rates did not differ significantly between genders. Male dominance was noted among faculty members (94.21% male), speakers (96.44% male), and moderators (98.98% male), with no significant gender distribution differences across roles ($p = 0.1762$). **Conclusions:** This study highlights significant gender disparities at Arabian Gulf urological conferences, particularly in leadership roles and research presentations. Recommendations include promoting female leadership, supporting mentorship programs, and ensuring gender diversity in conference management and speaker line-ups to foster a more inclusive environment.



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Keywords: gender disparity; urology; Arabian Gulf; academic conferences; female representation

1. Introduction

Gender disparity in academia is a well-known ongoing issue in urology and other surgical specialties [1–4]. In the Arabian Gulf, female medical students outnumber male medical students consistently [5–9]. However, there is significant gender disparity among urological residents and consultants, with 1.2% of urology residents in Kingdom of Saudi Arabia (KSA) being female [10]. Among consultants/specialist, females account for 6.1% in Bahrain and 6.25% in Oman [8,9]. This is a global phenomenon, with 11.8% of urologists in the US being female according to the 2023 census [11], while 14.8% of UK urology consultants are female [12]. Moreover, a recent study found that only 5.2% of endourological fellowship program directors were female [13].

This is due to male medical students being more likely to apply to the specialty than female medical students, as demonstrated by a study carried out in UAE [14]. The reason

why female medical students tend to not choose urology has not been studied in this demographic; however in a Canadian medical school, female medical students did not choose urology due to the deterrence of working in a male-dominated field and working with primarily male patients [15].

Gender disparity has been noted globally in urological conferences, with females accounting for 12% of speakers in 22 conferences; similarly, another study of American Urological Association (AUA) annual meetings found that 14% of speakers were females [3,16]. In another study of sectional AUA meetings, despite female urological residents constituting 23.6% of American residents, only 17% of the presentations included a female first author [17].

We would like to study the female participation, including the abstract presenter, faculty, speakers, and moderators, in Arabian Gulf urological conferences over the past three years. By analyzing these factors, we aim to highlight existing disparities and propose recommendations for fostering a more inclusive academic environment.

2. Methods

2.1. Data Collection

The data for this study were extracted from records of Arabian Gulf urological conferences over the past three years (May 2021–May 2024). Out of nine national and international conferences held in this period, the abstract lists of three conferences were found. Two conference abstract lists were identified on the internet, namely the 34th Saudi Urological Conference (SUA), and the Urological Asian Association and Emirates Urological Conference (UAA-EUSC) [18,19]. A third conference was identified with abstracts published in a journal, the 11th Emirates Urological Conference and 18th Pan Arab Continence Society Conference (EUSC-PACSC) [20]. Key variables, including the conference name, first author's gender (from genderize.io and Google), presentation type, meeting date, country of affiliation, publication status, and whether the first author changed in the final publication, were collected. Genders were identified with genderize.io; for presenters with >90% certainty, the specific gender was assumed, while for people with under 90% certainty, a Google search was performed, along with genderize.io, to accurately find the gender. Abstracts were assigned to categories of either basic sciences, clinical, or other, based on the title and abstract. The basic sciences category was defined as studies of biological, chemical, or physical processes. The clinical category was defined as studies of diagnostics, treatments, and prevention strategies. Any abstract that did not fit into the above two categories was classified as other. Abstract to publication rates were identified through a PubMed search of the presenter's name by two independent authors (M.A., A.N.); the lists were compared, and discrepancies were solved by discussion. Then, the faculty, speaker, and moderator details, including conference and gender, were taken from the conference websites. Gender was determined from images displaced on the website; in cases of uncertainty, a Google search was performed.

2.2. Statistical Analysis

A chi-square test and Fisher's exact test were used to compare categorical variables. A Wilcoxon's test was utilized for presentation to publication duration, excluding the publications that occurred prior to the presentation. A value of $p < 0.05$ was considered statistically significant. Statistical analysis was performed using JMP Pro 14 software (SAS Institute, Inc., Cary, NC, USA).

3. Results

3.1. Analysis of Abstract Presenters

A total of 536 abstracts were presented at three included urological conferences. Among the presenters, 465 were male (86.75%) and 71 were female (13.25%) (Table 1). The percentage of female authors varied significantly across conferences, with the EUSC-PACSC having 7.27% female authors, the SUA having 6.67%, and the UAA-EUSC having 15.96% ($p = 0.018$) (Table 2).

Table 1. Abstract characteristics.

Characteristic	N (%)
Gender	
Male	465 (86.75)
Female	71 (13.25)
Conference	
EUSC-PACSC	55 (10.26)
SUA	105 (19.59)
UAA-EUSC	376 (70.15)
Categories of presentations	
Basic sciences	32 (5.97)
Clinical	487 (90.86)
Other	17 (3.17)
Publication status	
Published	116 (21.64)
Not published	420 (78.36)

Table 2. Abstract characteristics by gender.

Characteristic	Male	Female	<i>p</i> Value
Conferences N (%)			0.018
EUSC-PACSC	51 (92.73)	4 (7.27)	
SUA	98 (93.33)	7 (6.67)	
UAA-EUSC	316 (84.04)	60 (15.96)	
Categories N (%)			0.01
Basic sciences	31 (96.88)	1 (3.13)	
Clinical	423 (86.86)	64 (13.14)	
Other	11 (64.71)	6 (35.29)	
Published N (rate)	101 (21.72)	15 (21.13)	0.91
First author changes when published N (%)	40 (39.60)	3 (20)	0.14
Presentation to publication duration (in months) Median (IQR)	5 (5.56)	8.05 (9.39)	0.759

In terms of presentation categories, female representation was 3.13% in basic science, 13.14% in clinical presentations, and 35.29% in other presentations ($p = 0.01$).

The abstract to publication rate for presentations by female authors was 21.13%, compared to 21.72% for male authors ($p = 0.91$). Out of the 116 abstracts published, 71

(61.21%) were published as full-text articles prior to the presentations; excluding these, the average duration from abstract presentation to publication was not statistically different, at 5 and 8.05 months for male and female presenters, respectively ($p = 0.759$).

Authorship changes showed that 20% of female authors experienced a change in first authorship during publication, compared to 39.81% of male authors. However, this difference was not statistically significant ($p = 0.14$).

3.2. Analysis of Faculty Members, Speakers, and Moderators

The analysis of gender distribution among faculty members, speakers, and moderators across different conferences revealed a marked predominance of males in all categories (Table 3). Overall, there were 114 faculty members, 298 speakers, and 97 moderators. Among the faculty members, 114 (94.21%) were male and 7 (5.79%) were female. For speakers, 298 (96.44%) were male and 11 (3.56%) were female. Among moderators, 97 (98.98%) were male and only 1 (1.02%) was female. The overall p -value for gender distribution across these roles was 0.1762, indicating no significant difference.

Table 3. Faculty members/speakers/moderators by gender.

	Male	Female	p Value
Total N (%)			0.1762
Faculty members	114 (94.21)	7 (5.79)	
Speakers	298 (96.44)	11 (3.56)	
Moderators	97 (98.98)	1 (1.02)	
Conferences N (%)			0.3439
EUSC-PACSC	135 (97.83)	3 (2.17)	
SUA	186 (96.88)	6 (3.13)	
UAA-EUSC	188 (94.95)	10 (5.05)	
EUSC-PACSC N (%)			0.7763
Faculty members	46 (97.87)	1 (2.13)	
Speakers	49 (96.08)	2 (3.92)	
Moderators	40 (100)	0 (0)	
SUA N (%)			1.000
Faculty members	30 (96.88)	1 (3.23)	
Speakers	133 (96.38)	5 (3.62)	
Moderators	23 (100)	0 (0)	
UAA-EUSC N (%)			0.0958
Faculty members	38 (88.37)	5 (11.63)	
Speakers	116 (96.67)	4 (3.33)	
Moderators	34 (97.14)	1 (2.86)	

When examining gender distribution across the three conferences—EUSC-PACSC, SUA, and UAA-EUSC—similar trends were observed. At EUSC-PACSC, there were 135 males (97.83%) and 3 females (2.17%), with a p -value of 0.3439. The SUA conference had 186 males (96.88%) and 6 females (3.13%), with a p -value of 0.3439. At UAA-EUSC, 188 participants were male (94.95%) and 10 were female (5.05%), with a p -value of 0.3439.

A more detailed analysis by role within each conference highlighted the following distributions. At EUSC-PACSC, faculty members included 46 males (97.87%) and 1 female

(2.13%), speakers included 49 males (96.08%) and 2 females (3.92%), and moderators were all male (40 males, 100%). The *p*-value for gender distribution within EUSC-PACSC was 0.7763. At the SUA conference, faculty members included 30 males (96.88%) and 1 female (3.23%), speakers included 133 males (96.38%) and 5 females (3.62%), and moderators were all male (23 males, 100%). The *p*-value for gender distribution within SUA was 1.000. At UAA-EUSC, faculty members included 38 males (88.37%) and 5 females (11.63%), speakers included 116 males (96.67%) and 4 females (3.33%), and moderators included 34 males (97.14%) and 1 female (2.86%). The *p*-value for gender distribution within UAA-EUSC was 0.0958.

4. Discussion

The data reveal substantial gender disparities in Arabian Gulf urological conferences. However, the low percentage of female presenters is expected in EUSC-PACSC and SUA, due to a lower percentage of female urologists in the Middle East [8,9]. UAA-EUSC having a higher percentage of female presenters is also understandable, as the conference was aimed at an international audience, primarily focusing on countries in Asia and Oceania.

Female authors are significantly under-represented in basic science presentations, while being more likely to present in the “other” category, which does not require access to lab facilities or institutional data, and is based on publicly available data. This was also found in a study of regional abstract presentations in the US, where female urology residents were more likely to present in the educational/other category [17]. Moreover, among genitourinary malignancy clinical trials over a 20 year period (2000–2020), only 16.8% of principal investigators were female [4]. These findings can indicate difficulties for female surgeons in participating in high-impact research.

Productivity among presenters, as shown by publication rates and duration from presentation to publication between genders, is comparable. The higher rate of first authorship changes among male authors suggests potential differences in collaboration dynamics or authorship practices.

Although abstract to publication rates were not the focus of this article, they were found to be lower than the abstract to publication rates of international urological conferences, such as European Association of Urology (EAU), British Association of Urological Surgeons (BAUS), and AUA Annual Meetings, at 21.64% [21–23]. This is possibly due to the publication rate in our study being a short-term publication rate, as only a period of a year occurred between this study and the included conferences, whereas the studies of the above conferences were undertaken after three years or more [21–23]. Moreover, a trend towards a lower publication rate over the years is apparent, with the BAUS Annual Meeting publication rate declining from 42% to 24.2% for abstracts presented at the 2001–2002 as compared to the 2011–2012 annual meetings [24].

Perhaps change can occur by inclusive selection in the management of conferences, as there were significant gender disparities among faculty members, speakers, and moderators in the conferences in this study, with female representation at 5.79%, 3.56% and 1.02%, respectively. Similar findings were highlighted in an abstract presented by Asif et al., which stated that only 12% were female speakers among 5427 speakers in 22 urological conferences; moreover 69.7% of the panels were “manels” (male-only panels) among 838 panel sessions [3].

To address the identified gender disparities in urological conferences, the following recommendations are proposed. It is crucial to promote female leadership by encouraging female participation in roles such as faculty members, speakers, and moderators, through policies that ensure gender diversity in conference committees and speaker line-ups. Supporting female researchers is also essential, with the establishment of mentorship programs

and provision of targeted funding opportunities to enhance their access to resources and networks, particularly in high-impact research areas like basic sciences and clinical trials. Finally, conference management should aim for inclusivity by creating guidelines to ensure gender-balanced panels and transparency in the selection process, thus avoiding male-only panels (“manels”).

The findings of this study also underscore the necessity for continuous longitudinal monitoring of gender representation in urological conferences. Annual audits or inclusion metrics embedded within conference organization committees could systematically track progress and evaluate the efficacy of diversity initiatives. Concurrently, systemic efforts must address early pipeline barriers by increasing female enrollment in urology through early mentorship, scholarships, and visibility of role models in medical schools, alongside residency reforms like bias training and childcare support. These dual strategies—tracking trends and nurturing talent—are essential to align professional opportunities with the growing proportion of female medical graduates in the region.

The study faces some limitations. Firstly, the data source is restricted to three specific urological conferences in the Arabian Gulf in two countries, which limits the generalizability of the findings to the entire Arabian Gulf. Additionally, the methods used for gender identification, such as genderize.io and Google searches, may not always be accurate. The genders assigned in this paper were not based on the self-identify of individual presenters. Moreover, the analysis of publication rates is based on a short-term period, within one year after the conferences, which may not fully capture the eventual publication outcomes, and could lead to an incomplete assessment of research dissemination.

5. Conclusions

The analysis reveals significant gender disparities at Arabian Gulf urological conferences, with female representation notably low among abstract presenters (13.25%), faculty members (5.79%), speakers (3.56%), and moderators (1.02%). These findings suggest potential challenges for female urologists in pursuing research, particularly in lab-based settings. Implementing targeted interventions, such as mentorship programs and initiatives encouraging female participation in basic and clinical research, is crucial to fostering a more equitable and inclusive research environment in urology.

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