Original Article

Gender bias in urology: The role of gender in selecting urology as a medical specialty

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Abstract

Background: Gender inequality has been prevalent in the history of medicine, specifically within surgical specialties. Although there have been advances, urology has remained overwhelmingly male-dominant, with slow growth in female recruitment.

Objectives: The study aimed to assess whether the gender influences selection of medical specialty, especially gender bias in urology.

Materials and Methods: A cross-sectional study was conducted among undergraduate medical students in Saudi Arabian medical schools to explore the influence of gender on urology specialty selection. Data were collected from November 2023 to June 2024 using a structured questionnaire administered electronically. A pilot study was conducted to evaluate the questionnaire's reliability and clarity. Data were analyzed using descriptive and inferential statistics. The questionnaire demonstrated acceptable reliability.

Results: The total study participants were 602 medical students. The dataset reveals a balanced gender representation, with males constituting 55.6% and females 44.4%. A substantial majority, 94.5%, expressed a definitive willingness to pursue further residency training following graduation, indicating a robust commitment to advancing their medical careers. However, while evaluating interest in urology, the statistics revealed a potential disparity, with only 43.2% affirmatively considering urology as a specialty, contrasted against 56.8% who would not. The study shows that the participants' considering urology as a specialty has a statistically significant relation to gender ($P = 0.0001$) as 72.3% of those who would consider the specialty were males compared to only 27.7% for females. The data also show a concerning trend where 21.8% of those uninterested in urology reported insufficient exposure during medical school as a deterrent, while others found the specialty to be embarrassing or simply uninteresting, accounting for 70.8% of the negative responses.

Conclusion: This study reveals a significant gender disparity in urology specialty selection among medical students. While the majority of students intend to pursue residency training, male students are significantly more likely to consider urology as a specialty compared to female students. Factors such as limited exposure and negative perceptions contribute to the underrepresentation of women in urology. Addressing these issues is crucial to achieving gender equality within the field.

Keywords: Feminization of medicine, gender, gender-based selection, person-centered medicine, urology

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INTRODUCTION

Selecting a medical specialty represents one of the most critical choices that future physicians need to confront during their training. This choice is not a straightforward one; it involves a complex decision-making process influenced by an array of factors. These factors include considerations related to lifestyle within the medical profession, societal expectations, the prestige associated with various medical fields, the environment of hospitals, the scope of practice, and the presence of role models within specific specialties. Furthermore, students' perceptions of different medical specialties play a substantial role in shaping their eventual decisions.[1]

Urology faces numerous stereotypes that may impact its appeal to medical students. Common misconceptions often portray urology as a specialty that exclusively addresses male genital health, suggesting that it caters only to male patients and offers no viable role for women within the field. Urology encompasses the entire genitourinary system, which is relevant to individuals of all genders. Over the past decade, the discipline has seen a noteworthy increase in the number of female urologists, indicating a shift toward greater gender inclusivity.[2]

While there has been a notable rise in the participation of women in the medical workforce, it is essential to acknowledge that certain specialties still exhibit significant gender disparities. For instance, fields such as general surgery and orthopedics continue to be predominantly male-dominated, while specialties such as gynecology and pediatrics attract a higher proportion of female practitioners.[3]

Historically, urology has been a specialty characterized by a predominance of male practitioners. Even with the broader trend of increasing female representation in the medical profession throughout the 21st century, urology appears to continue attracting most male applicants. To understand why fewer women consider this specialty, it is crucial to examine various factors across different domains that influence these decisions.[4]

Despite the challenges associated with stereotypes and gender inequities, urology remains a highly competitive surgical specialty. Therefore, gaining insights into the elements that affect medical students' consideration of urology as a potential career path is vital. This understanding will pave the way for developing strategic initiatives aimed at ensuring the specialty continues to draw outstanding candidates, regardless of their gender.[5]

Literature review

Since 2001, female students have represented the majority, nearly 60%, of each graduating medical class in Canada. Despite these improvements in gender equity in medicine, female applicants to surgical programs have lagged, only catching up in the 2019 Canadian Residency Match Service cycle, where female surgical applicants outnumbered male applicants for the first time in Canadian history.[6]

Gender bias in urology has become an increasingly important topic of investigation within the field of medical research and practice. Historically, urology has been perceived as a male-dominated specialty, which has implications for both the practice of urology and the care received by patients of different genders. Numerous studies highlight a disparity in how male and female patients are treated and diagnosed in urological settings.[7] For instance, research has shown that women often experience a delay in the diagnosis of conditions such as urinary incontinence and interstitial cystitis, which can be attributed to gender stereotypes and biases held by healthcare providers. These stereotypes often frame women as being overly emotional or exaggerating their symptoms, leading to a lack of adequate attention to their concerns.[8]

In addition, the literature indicates that the prevalence of certain urological conditions, such as kidney stones, may be under-researched in female populations due to a historical focus on male subjects. This has resulted in an imbalance in understanding the disease mechanisms and treatment responses pertinent to women. Furthermore, studies reveal that healthcare professionals often have entrenched biases that can shape their interactions with patients. For example, women seeking treatment for sexual dysfunction might be dismissed or given inadequate care compared to their male counterparts, reflecting a broader cultural stigma associated with discussing female sexual health issues.[9]

The underrepresentation of women in urology, both as practitioners and researchers, exacerbates the problem. The American Urological Association has recognized this gap and taken steps to encourage more women to enter the field, but progress remains slow. Female urologists often report experiences of isolation and bias in a professional environment dominated by male colleagues. This can hinder mentorship opportunities and perpetuate a cycle where fewer women pursue urology as a career, further limiting the diversity of perspectives in the specialty.[10]

Research also suggests that female patients may prefer to be treated by female urologists due to perceived biases and sensitivities related to care. However, the

lack of representation in the field creates a barrier to fulfilling this preference, potentially impacting patient satisfaction and outcomes. Furthermore, existing biases in medical education can affect how urology is taught, with male anatomical models and scenarios dominating the curriculum. This can lead to a skewed understanding of female anatomy and physiology within urology, influencing both treatment protocols and clinician confidence.[11]

The intersectionality of gender bias in urology also extends to issues of race and ethnicity, where women of color may face compounded biases in healthcare settings. Such intersections necessitate a more nuanced understanding of how gender bias in urology operates at multiple levels, affecting not only individual patient experiences but also broader systemic issues in healthcare delivery. Interventions aimed at reducing gender bias must therefore be multidimensional, including improving education around gender differences in urology, increasing the recruitment and retention of female urologists, and fostering inclusive environments in both academic and clinical settings.[12]

Objectives

The study aimed to assess whether the gender influences selection of medical specialty among medical students in Saudi Arabia, specifically gender bias in urology.

MATERIALS AND METHODS

Study design

This research utilized a cross-sectional study design to explore the influence of gender on the selection of urology as a medical specialty among medical students in Saudi Arabian medical schools. The cross-sectional approach enables the collection of data at a specific point in time, facilitating an assessment of current attitudes, perceptions, and barriers related to gender bias in the field of urology. By surveying medical students from various institutions, this study aims to identify patterns in specialty choice, as well as the underlying factors that may contribute to gender disparities in urology, thereby providing valuable insights into the role of gender in shaping career decisions within this medical specialty.

Study setting

The study was conducted on undergraduate students enrolled in medical schools all over Saudi Arabia.

Study duration

The study was carried out between November 2023 and June 2024. This timeframe was sufficient to collect, analyze, and interpret the data, ensuring a comprehensive exploration of current attitudes, perceptions, and barriers related to gender bias in the field of urology among medical students.

Sampling procedure

The sample size was determined based on statistical considerations to balance precision and resource constraints. In addition, to capture the influence of gender on specialty selection, we strived for a balanced representation of both male and female students within the sample.

Data collection tool

The data collection was conducted through a structured questionnaire designed to gather quantitative and qualitative data from medical students across various institutions. This questionnaire aimed to explore perceptions, experiences, and biases related to the specialty of urology, particularly in relation to gender.

Questionnaire design

The questionnaire was developed to include demographic questions as well as specific inquiries regarding the participants' attitudes toward urology. The questions were chosen to provide insights into the factors influencing students' decisions concerning their specialty choices, with a focus on the impact of gender. The questionnaire was distributed to medical students in different years of study, allowing for comprehensive data collection across varying educational stages.

Data collection procedure

The questionnaire was distributed electronically to students enrolled in medical schools across Saudi Arabia. Participants were given the option to complete the survey anonymously to encourage honest and open responses. Data were collected over a specified period, ensuring a diverse sample regarding gender, year of study, and medical school affiliation.

The responses were compiled and analyzed using appropriate statistical software to identify patterns and correlations related to gender bias in the selection of urology as a medical specialty. The open-ended responses were thematically analyzed to further understand the nuances of student perceptions and experiences.

Validity and reliability

The questionnaire was presented to an expert panel to assess if the questions aligned with the content of the items, determine how well these items represent the concepts related to the research problem, and evaluate the statistical validity of the instrument, ensuring that the questionnaire is effectively designed to illustrate relationships between

the variables being studied. Reliability was assessed by calculating Cronbach's alpha coefficient for the overall questionnaire and its six subdomains. The overall Cronbach's alpha for the questionnaire was 0.853, which is deemed acceptable, indicating that the questionnaire is reliable.

Pilot study

A pilot study involving 10% of the collected sample was carried out to evaluate the tool's reliability and applicability, as well as to determine its feasibility and clarity. No modifications were made based on the results, and the students involved in the pilot study were not included in the main study.

Data analysis

The data analysis involved both descriptive and inferential statistical methods. Descriptive statistics presented demographic information and summarized participants' responses, including means, frequencies, and percentages. Inferential statistics, such as Chi-square tests, explored potential relationships and correlations among variables. Statistical analysis was conducted using appropriate software, and findings were interpreted in the context of the research objectives.

RESULTS

Table 1 displays various demographic parameters with a total number of 602. The sociodemographic characteristics of the participants, as detailed in Table 1, provide a comprehensive overview of the population under study, comprising 602 individuals exclusively from the medical field. The age distribution highlights a predominantly young cohort, with approximately 55.3% of participants aged 22 years or younger, which could reflect the increasing accessibility and attractiveness of medical education to younger demographics. This is particularly relevant in a rapidly evolving healthcare environment where fresh perspectives and innovations are essential. Furthermore, the dataset reveals a balanced gender representation, with males constituting 55.6% and females 44.4%, suggesting an encouraging trend toward gender equity within the medical profession. The year of medical school enrollment demonstrates a significant concentration of students in their fourth (23.6%) and fifth (23.3%) years, indicative of a well-established pipeline of professional training leading to graduation. Notably, Taibah University emerges as the most represented institution, accounting for 37% of the sample, which may imply the university's prominent role in shaping the medical workforce in the region. This dataset provides critical insights for stakeholders in medical education and healthcare policy, emphasizing the need for tailored strategies that address the demographics of the future healthcare workforce, ensuring a balanced representation and support for medical professionals at various stages of their training.

Table 1: Sociodemographic characteristics of participants (*n*=602)

Parameter	*n* (%)
Age (mean: 22.4, SD: 2.4)	
20 years or less	135 (22.4)
21–22	198 (32.9)
22–24	197 (32.7)
25 or more	72 (12.0)
Are you in the medical field?	
Yes	602 (100.0)
No	0
Year of medical school	
1st	88 (14.6)
2nd	64 (10.6)
3rd	93 (15.4)
4th	142 (23.6)
5th	140 (23.3)
Internship	59 (9.8)
Service resident	16 (2.7)
Gender	
Male	335 (55.6)
Female	267 (44.4)
Medical school	
Taibah University	223 (37.0)
Tabuk University	39 (6.5)
King Saud University	27 (4.5)
King Saud bin Abdulaziz University for Health Sciences	16 (2.7)
Umm Al-Qura University	36 (6.0)
King AbdulAziz University	77 (12.8)
Al-Rayan Medical Colleges	17 (2.8)
Al-Imam Muhammad Ibn Saud Islamic University	7 (1.2)
King Khalid University	10 (1.7)
King Faisal University	12 (2.0)
Imam Abdulrahman Bin Faisal University	16 (2.7)
Taif University	11 (1.8)
Hail University	25 (4.2)
Qassim University	31 (5.1)
Majmaah University	6 (1.0)
Al Jouf University	3 (0.5)
Jazan University	4 (0.7)
Princess Nora bint Abdulrahman University	3 (0.5)
Batterjee Medical College Jeddah	4 (0.7)
Bisha University	12 (2.0)
Alfaisal University	3 (0.5)
Prince Sattam Bin Abdulaziz University	3 (0.5)
Others	17 (2.8)

SD: Standard deviation

As shown in Figure 1, with 569 respondents indicating their intention to pursue residency training, compared to only 33 expressing a reluctance to do so, it is evident that a substantial majority of graduates are motivated to advance their medical careers.

The data presented in Table 2 delineates a comprehensive overview of the gender-biased career choices associated with the urology specialty among medical graduates, as

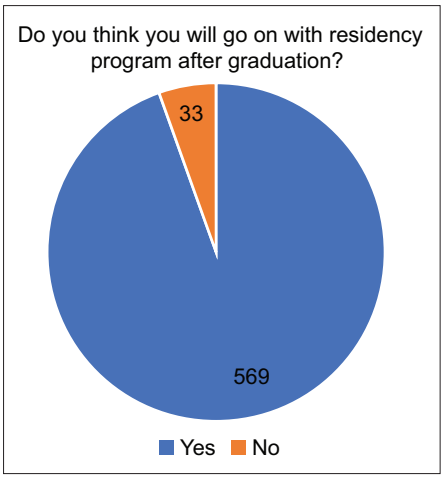

Figure 1: Illustrates if participants will on with residency program after graduation

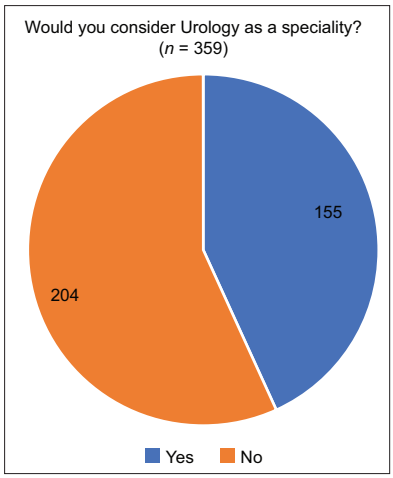

Figure 2: Illustrates whether participants will consider urology as a specialty

evidenced by the responses from 602 participants. Notably, a substantial majority, 94.5%, expressed a definitive willingness to pursue further residency training following graduation, indicating a robust commitment to advancing their medical careers. However, when evaluating interest in urology, the statistics reveal a potential disparity, with only 43.2% affirmatively considering urology as a specialty, contrasted against 56.8% who would not. This suggests that while there is a general intent to continue in residency, specific interest in urology may be influenced by various factors, including the perceived challenges of the specialty. A significant proportion of respondents, particularly those opting out of surgical careers, cited reasons such as the perceived stressful and difficult nature of the career, as well as the presence of a hostile and sexist environment, with nearly 11.3% attributing their hesitance specifically to sexism. Moreover, the data highlight a concerning trend where 21.8% of those uninterested in urology reported insufficient exposure during medical school as a deterrent, while others found the specialty to be embarrassing or simply uninteresting, accounting for 70.8% of the negative responses. This raises critical implications for educational institutions to enhance urology exposure within curricula to foster a more informed and inclusive perception of the specialty. Overall, while a significant number of graduates recognize the merits of urology, including its favorable work–life balance and opportunities for advanced technologies, the prevailing gender biases and environmental influences may warrant further investigation and intervention to promote a more equitable approach to career choices within the field.

As shown in Figure 2, the presented data regarding the perceptions of urology as a specialty in Saudi Arabia reveal a significant gender bias in career choices related to this field, as indicated by the responses of the 359 participants surveyed. With only 155 individuals affirming their consideration of urology as a viable specialty, contrasted by a substantial majority of 204 individuals expressing reservations, the figures highlight not only potential societal attitudes toward gender roles within the medical profession but also raise critical questions regarding access, encouragement, and representation. This disparity suggests that cultural factors may heavily influence the perception of urology, a surgical specialty, as predominantly masculine, which could deter women from pursuing this path despite their qualifications and interests. Such trends necessitate further investigation into the socio-cultural barriers and support systems that affect women's career choices in urology, alongside proactive strategies aimed at fostering a more inclusive environment. Addressing these biases is essential not only for the advancement of gender equity within the healthcare sector in Saudi Arabia but also for ensuring that the specialty of urology benefits from diverse perspectives and talent, ultimately enhancing patient care and outcomes.

Table 3 shows that the participants' considering urology as a specialty has a statistically significant relation to gender ($P = 0.0001$) and which area of specialty do participants prefer ($P = 0.0001$). It also shows a statistically insignificant relation to age and year of medical school.

Table 4 shows that the participants' preference for a specialty has a statistically significant relation to age ($P = 0.013$) and year of medical school ($P = 0.016$). It also shows a statistically insignificant relation to gender and whether the participants are considering joining a residency program after finishing medical school.

Table 2: Parameters related to urology specialty as a gender-biased career choice (*n*=602)

Parameter	*n* (%)
Do you think you will go on with residency program after graduation?	
Yes	569 (94.5)
No	33 (5.5)
Which area you think fits you best?	
Surgical	321 (53.3)
Medical	281 (46.7)
Why not surgical? (*n*=265)	
Stressful career	3 (1.1)
Difficult career	132 (49.8)
Inaptitude	25 (9.4)
Sexist environment	30 (11.3)
No interest	15 (5.6)
Hostile environment	29 (10.9)
Too little exposure during medical school	25 (9.4)
Toxic environment	2 (0.8)
Little aspect of business	2 (0.8)
Lifestyle	1 (0.4)
No patient relationship	1 (0.4)
Poor hand skills	3 (1.1)
Would you consider urology as a specialty? (*n*=359)	
Yes	155 (43.2)
No	204 (56.8)
Have you experienced urology as a specialty? (*n*=359)	
Yes	133 (37.0)
No	226 (63.0)
If yes, how did you gain exposure to urology?* (*n*=178)	
Internship rotation	20 (11.2)
Student clinical rotation	90 (50.5)
School curriculum and lectures	92 (51.7)
Observership	48 (26.9)
Summer elective	46 (25.8)
I'm urology resident	1 (0.5)
Part of surgery course and was amazing	1 (0.5)
Never experienced it	1 (0.5)
Not interested	1 (0.5)
Why are you considering urology?* (*n*=155)	
Good medical/surgical mix	111 (71.6)
Advanced technologies	72 (46.4)
Good income	78 (50.3)
Favorable work–life balance	57 (36.7)
Deals with high social impact diseases	34 (21.9)
Diverse subspecialties	32 (20.6)
Competitive specialty	20 (12.9)
Ever-lasting relevance due to increase of average age of population	21 (13.5)
Advice/example of family or peers	20 (12.9)
Despite a sexist environment	11 (7.1)
Why are you not considering urology?* (*n*=243)	
Too little exposure during medical school	53 (21.8)
Embarrassing	67 (27.5)
Too stressful	27 (11.1)
Not interesting	172 (70.8)
Sexist environment	50 (20.5)
Not a versatile specialty	25 (10.2)
Not fit for female	46 (18.9)
Unfavorable work–life balance	23 (9.4)
Considering	1 (0.4)
Religious reasons and beliefs	1 (0.4)

*Results may overlap

Table 5 shows that the participants' will to join residency program has a statistically insignificant relation to gender, age, and participants' preference for a specialty.

DISCUSSION

Gender inequality has been prevalent in the history of medicine, specifically within surgical specialties. Although there have been advances, urology has remained overwhelmingly male-dominant, with slow growth in female recruitment. Approximately 90% of practicing urologists are male, and male patients are seen 3 times more often in the ambulatory urology setting.[13] The predominantly male patient and provider environment of urology may serve as barriers to female matriculation, and these distinct differences in gender ratios throughout the specialty may influence medical students' perception of urology, their role as they enter the field, and how their personal statements are received by reviewers.[14] Thus, we aimed in this study to assess whether the gender affects selection of medical specialty among medical students in Saudi Arabia, specifically gender bias in urology.

As regards the relation between participants' preference for a specialty and sociodemographic characteristics, we have found that participants' considering urology as a specialty has a statistically significant relation to gender ($P = 0.0001$). On the other hand, a study conducted by Muszkat *et al*.,[15] which assessed the factors influencing specialty choice among medical students, it was found that only 7.8% of female respondents chose urology compared to 31.6% of male respondents ($P < 0.01$). The researchers concluded that perceived gender bias within the field and the male-dominated culture of urology significantly deters female medical students from pursuing this specialty. Another important study by Ahn *et al*.[16] investigated the impact of mentorship on the decision to pursue urology, revealing that 55% of female medical students who received mentorship from female urologists chose urology, compared to only 20% of those who did not ($P = 0.002$). This suggests that mentorship plays a critical role in encouraging female medical students to enter the field of urology, potentially mitigating the gender bias they may encounter. Moreover, a study conducted by Das *et al*.[17] surveyed 500 medical students across various institutions and found that only 17% of female students expressed interest in pursuing urology as a career, compared to 43% of male students ($P < 0.01$), indicating a statistically significant gender disparity in specialty choice. The authors noted that 65% of female respondents cited perceived challenges such as work–life balance and gender bias in the workplace as primary deterrents. Another relevant study by Kumar *et al*.[18] analyzed data from 250 urology residency applications and discovered that female applicants were awarded interview invitations at a rate of 22%, compared to 41% for male applicants ($P = 0.03$). This study underscored

Table 3: Relation between participant's preference for a specialty and sociodemographic characteristics

Parameters	Would you consider urology as a specialty		Total (*n*=602), *n* (%)	*P**
	Yes, *n* (%)	No, *n* (%)		
Gender				
Male	112 (72.3)	223 (49.9)	335 (55.6)	0.0001
Female	43 (27.7)	224 (50.1)	267 (44.4)	
Age				
20 years or less	34 (21.9)	101 (22.6)	135 (22.4)	0.191
21–22	53 (34.2)	145 (32.4)	198 (32.9)	
22–24	43 (27.7)	154 (34.5)	197 (32.7)	
25 or more	25 (16.1)	47 (10.5)	72 (12.0)	
Which year of medical school?				
1st	22 (14.2)	66 (14.8)	88 (14.6)	0.508
2nd	18 (11.6)	46 (10.3)	64 (10.6)	
3rd	22 (14.2)	71 (15.9)	93 (15.4)	
4th	45 (29.0)	97 (21.7)	142 (23.6)	
5th	29 (18.7)	111 (24.8)	140 (23.3)	
Internship	14 (9.0)	45 (10.1)	59 (9.8)	
Service resident	5 (3.2)	11 (2.5)	16 (2.7)	
Do you think you will go on with residency program after graduation?				
Yes	155 (100.0)	414 (92.6)	569 (94.5)	N/A
No	0	33 (7.4)	33 (5.5)	
Which area you think fits you best?				
Surgical	184 (41.2)	137 (88.4)	321 (53.3)	0.0001
Medical	263 (58.8)	18 (11.6)	281 (46.7)	

* *P* value was considered significant if ≤ 0.05. N/A: Not available

Table 4: Relation between participant's preference for a specialty and sociodemographic characteristics

Parameters	Which area you think fits you best?		Total (*n*=602), *n* (%)	*P**
	Surgical, *n* (%)	Medical, *n* (%)		
Gender				
Male	188 (58.6)	147 (52.3)	335 (55.6)	0.123
Female	133 (41.4)	134 (47.7)	267 (44.4)	
Age				
20 years or less	87 (27.1)	48 (17.1)	135 (22.4)	0.013
21–22	107 (33.3)	91 (32.4)	198 (32.9)	
22–24	93 (29.0)	104 (37.0)	197 (32.7)	
25 or more	34 (10.6)	38 (13.5)	72 (12.0)	
Which year of medical school?				
1st	59 (18.4)	29 (10.3)	88 (14.6)	0.016
2nd	34 (10.6)	30 (10.7)	64 (10.6)	
3rd	55 (17.1)	38 (13.5)	93 (15.4)	
4th	78 (24.3)	64 (22.8)	142 (23.6)	
5th	60 (18.7)	80 (28.5)	140 (23.3)	
Internship	28 (8.7)	31 (11.0)	59 (9.8)	
Service resident	7 (2.2)	9 (3.2)	16 (2.7)	
Do you think you will go on with residency program after graduation?				
Yes	303 (94.4)	266 (94.7)	569 (94.5)	0.885
No	18 (5.6)	15 (5.3)	33 (5.5)	

* *P* value was considered significant if ≤0.05

systemic biases in the selection process which may dissuade women from pursuing urology. In addition, a study by Gulati *et al*.[19] found that only 7% of practicing urologists in the United States are women, and they reported that among medical students, female representation dropped significantly during urology residency applications, with only 24% of applicants being women ($P < 0.01$). Another study by Hsu *et al*.[20] revealed that female medical students expressed a lack of mentorship and perceived fewer opportunities in male-dominated specialties. They found that 62% felt that gender bias affected their decision to pursue urology ($P < 0.05$). In Saudi Arabia, a study by Alshahrani *et al*.[21] assessed the factors influencing medical students' decisions to pursue urology as a specialty. The researchers conducted a cross-sectional survey with 200 medical students from various institutions, finding that 60% of male students expressed interest in urology compared to only 25% of female students ($P < 0.01$). The study indicated that societal perceptions and gender stereotypes significantly influenced these preferences. Another relevant study by Al Husaini *et al*.[22] explored gender perceptions among residents in surgical specialties,

Table 5: Participant's will to join residency program in association with sociodemographic characteristics

Parameters	Do you think you will go on with residency program after graduation?		Total (*n*=602), *n* (%)	*P**
	Yes, *n* (%)	No, *n* (%)		
Gender				
Male	314 (55.2)	21 (63.6)	335 (55.6)	0.342
Female	255 (44.8)	12 (36.4)	267 (44.4)	
Age				
20 years or less	124 (21.8)	11 (33.3)	135 (22.4)	0.107
21–22	184 (32.3)	14 (42.4)	198 (32.9)	
22–24	191 (33.6)	6 (18.2)	197 (32.7)	
25 or more	70 (12.3)	2 (6.1)	72 (12.0)	
Which year of medical school?				
1st	79 (13.9)	9 (27.3)	88 (14.6)	N/A
2nd	60 (10.5)	4 (12.1)	64 (10.6)	
3rd	86 (15.1)	7 (21.2)	93 (15.4)	
4th	134 (23.6)	8 (24.2)	142 (23.6)	
5th	137 (24.1)	3 (9.1)	140 (23.3)	
Internship	57 (10.0)	2 (6.1)	59 (9.8)	
Service resident	16 (2.8)	0	16 (2.7)	
Which area you think fits you best?				
Surgical	303 (53.3)	18 (54.5)	321 (53.3)	0.885
Medical	266 (46.7)	15 (45.5)	281 (46.7)	

*P value was considered significant if ≤0.05. N/A: Not available

including urology. This survey included 150 urology residents and revealed that 70% of male residents felt that gender did not impact their choice of urology, whereas only 40% of female residents felt the same ($P < 0.05$). This discrepancy highlights the entrenched gender biases and the challenges female surgeons face in pursuing this specialty. Similar to our results, a study by Alshammari *et al*.[23] surveyed 500 medical students in Kuwait, finding that only 30% of female respondents expressed interest in pursuing urology compared to 65% of their male counterparts ($P < 0.01$), highlighting a significant gender disparity in interest toward the specialty. In a separate study conducted by Al-Otaibi *et al*.,[24] the authors explored the perceptions of urology among medical residents and attending physicians in Kuwait. This research revealed that 45% of male participants believed that gender biases hinder women's entrance into urology, compared to 22% of female participants who acknowledged similar biases ($P = 0.04$), suggesting an awareness gap regarding systemic bias in the field.

CONCLUSION

This study underscores a persistent gender disparity in the selection of urology as a medical specialty among Saudi Arabian medical students. Our findings align with previous research highlighting the underrepresentation of women in urology. The statistically significant association between gender and interest in urology reinforces the notion of existing gender bias within the field. Factors such as insufficient exposure, perceived stigma, and a male-dominated culture appear to deter female students from considering urology as a career path. These findings emphasize the urgent need for targeted interventions to address gender bias and promote a more inclusive environment within urology.

Recommendations

Strategies such as mentorship programs, increased female representation in urology curricula, and challenging gender stereotypes are essential to encourage more female students to pursue this specialty. By fostering a supportive and equitable atmosphere, we can strive for a more balanced gender distribution in the field of urology and ultimately enhance patient care. Furthermore, additional research is warranted to explore the underlying reasons for these gender disparities in greater depth, including the impact of cultural factors and societal expectations on career choices. By addressing these issues comprehensively, we can work toward creating a more inclusive and equitable future for urology.

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Conflicts of interest

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