



CODEN [USA]: IAJPBB

ISSN: 2349-7750

**INDO AMERICAN JOURNAL OF  
PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.2549912>Available online at: <http://www.iajps.com>

Research Article

**PERCEPTION, ATTITUDE, AND KNOWLEDGE OF UNDERGRADUATE STUDENTS ON UROLOGY CURRICULUM DELIVERED BY MEDICAL SCHOOLS IN SAUDI ARABIA****Abdullah Abdulatif Allahiany, Basim Saleh Alsaywid, Meshari Ahmed,  
Muhammad Anwar khan**

College of Medicine King Saud bin Abdulaziz University for Health Sciences, Jeddah Saudi Arabia, Urology Section, Department of Surgery, King Abdulaziz Medical City – Western Region, Urology Section, Department of Surgery, King Abdulaziz Medical City – Western Region, College of Medicine, King Saud Bin Abdulaziz University for Health Sciences, Jeddah.

**Abstract:**

**Background:** Urology is a branch of medicine that deals with different diseases of the urinary tract or the reproductive organs in both men and women. There is anecdotal evidence that medical students are not well-known with Urology specialty comparing with other specialties like general surgery, internal medicine, etc. Based on several factors including student's awareness, overcrowded curriculum, traditional medical education system, and busy hospital rotations in clinical years and internship are associated with a poor level of knowledge in Urology specialty field. The purpose of this survey is to evaluate the effect of including urology curriculum on the knowledge, perception, and attitude of our medical students in Saudi Arabia. Moreover, to assess the inhibiting factors affecting their selection in enrollment in a postgraduate training program in urology.

**Methods:** An online questionnaire was sent to all medical students through official E-mail addresses. The responses were collected and tabulated. Frequencies and percentages were calculated using SPSS 21 software.

**Results:** The response was 116 participants from all over Saudi Arabia regions, 62 (53.4 %) were males and 53 (46.6%) were females. Respondents included 29 (25 %) 6<sup>th</sup>-year medical students and 28 (24.1%) medical interns. 59 (50.9 %) respondents had urology rotation. Only 13 (11.2 %) of the respondents were thinking of pursuing a career in urology, all of them were males. 93 (80.2 %), 69 (59.5 %), 83 (71.6%) and 65 (56%), had adequate knowledge in subjects as urolithiasis, urine incontinence, urinary tract infection and uro-oncology respectively.

**Conclusion:** Only small percentage of medical students Consider Pursuing a Career in urology. Unattractive lifestyle, social issues, the specialty is limited to the scope of the field are the reasons behind medical student avoid a Career in urology. In many urology topics, medical student's knowledge was sufficient. Current medical school's curricula provide students with adequate knowledge and skills.

**Key-words:** Perception, Attitude, Knowledge, Urology, Curriculum, Medical schools.

**Corresponding author:****Abdullah Abdulatif Allahiany,**

College of Medicine King Saud bin Abdulaziz University for Health Sciences,  
Jeddah Saudi Arabia.

E-Mail: [mlok3700@gmail.com](mailto:mlok3700@gmail.com) (Dr. Abdullah Allahiany)

QR code



Please cite this article in press Abdullah Abdulatif Allahiany et al., *Perception, Attitude, And Knowledge Of Undergraduate Students On Urology Curriculum Delivered By Medical Schools In Saudi Arabia.*, Indo Am. J. P. Sci, 2019; 06(01).

## INTRODUCTION:

Urology is a branch of medicine that deals with different diseases of the urinary tract or the reproductive organs in both men and women. A urologist requires gaining knowledge in many specialties such as internal medicine, pediatrics, and gynecology to be able to manage different clinical problems [1].

There is anecdotal evidence that medical students are not well-known with Urology specialty comparing with other specialties like general surgery, internal medicine etc. Based on several factors including student's awareness, overcrowded curriculum, traditional medical education system, and busy hospital rotations in clinical years and internship are associated with the poor level of knowledge in Urology specialty field [2].

In 2013, Binsaleh et al. published an article showing that the knowledge of medical school graduates toward urology specialty is insufficient [4]. The limitation of this study was the inclusion of one medical school only. In our study, we aim at including several medical colleges from all over kingdom evaluating the effect of including the new urology curriculum on the knowledge, perception, and attitude of our medical students in senior years. Moreover, to assess the inhibiting factors affecting their selection in enrollment in a postgraduate training program in urology.

## MATERIALS AND METHODS:

A questionnaire was developed. It contains 15 questions were grouped together to evaluate perception, attitude, and knowledge of undergraduate students toward urology curriculum delivered by medical schools in Saudi Arabia. The questionnaire was designed by Google Forms to be easily distributed through official email and mobile applications to medical students. It is composed of closed-ended questions which can be answered by a simple "yes" or "no" and multiple-choice questions where students select one correct answer from several choices. After the study was approved by King Abdullah International Medical Research Center (KAIMRC), medical students were invited to participate in an online questionnaire. The research team was unaware of the identity of the participants. All responses were collected and tabulated. Descriptive statistics were conducted to get frequency and percent of qualitative variables. SPSS version 21.0 was used to perform tests. Chi square and independent t-test were conducted to compare the qualitative and quantitative variables. Those who chose three or more correct answers out of five were

labeled as having adequate knowledge while those who answered two or less having inadequate knowledge. This study was conducted during the year 2017 at College of Medicine, King Saud bin Abdulaziz University for Health Science in Jeddah.

## RESULTS & DISCUSSION:

The overall response was 116 participants, 62 (53.4%) were males and 53 (46.6%) were females Figure 1. Respondents included 29 (25 %) 6th year medical students and 28 (24.1%) medical interns [Table 1].

### Perception of rotation

59 (50.9 %) of respondents stated that they had a rotation in urology unit, 32 (27.6 %) of them think rotating in urology increase their preparation for internship, 26 (22.4%) think urology is a surgical sub specialty while 71 (61.2%) considered it as a medico surgical specialty. Most of the respondents 108 (93.1%) stated that urology specialty is important or very important, while 90 (77.6%) suggested medical school curriculum should include rotation in urology. Bedside teaching and attending urology clinics as the best urology learning methods 46 (39.7%) and 53 (45.7 %) respectively. 56 (48.3 %) respondents consider urology a male dominant specialty [Table 2].

### Perception of career

13 (11.2 %) of the respondents Consider Pursuing a Career in urology, most of them were males. The main reasons behind not-choosing urology as a career were unattractive lifestyle 25 (21.6%), social issues 17 (14.7 %), inadequate urology knowledge 9 (7.8%) and demand of surgical residency 9 (7.8%).

### Perception of knowledge and skills

45 (38.8%) of the respondents stated that they could perform digital rectal examination (DRE) appropriately. 93 (80.2 %), 69 (59.5 %), 83 (71.6%) and 65 (56%), reported adequate knowledge in many urology topics such urolithiasis, urine incontinence, urinary tract infection and uro-oncology respectively. while the most knowledge deficiency was in hematuria.

### Gender differences

No significant differences were found regarding knowledge between males and females (p-value = 0.19) in subjects as urolithiasis, urine incontinence, urinary tract infection, hematuria and uro-oncology [Table 3]. There was no significant difference in the scores for male mean knowledge  $3.3 \pm 1.14$  and female mean knowledge  $3.1 \pm 1.44$  (p-value = 0.49) [Table 4]. Both males and females had no differences in

performing digital rectal examination (DRE). Also, no differences in defined urology. However, there were gender differences between males and females in considering urology as a male dominant specialty. No differences were found in the importance of urology as subject, in their preference for urology learning methods or choosing urology as a career in future. 88 (75.9 %) of participants agreed on the inclusion of mandatory urology rotation to medical school's curriculum. While 12 (10.3%) intend to enter the field and become a urologist in future. Most of the participants can perform digital rectal examination (DRE) [Table 5].

### DISCUSSION:

In this study, we aim to evaluate the perception of undergraduate medical students in Saudi Arabia to urology exposure. 93% of respondents agreed that urology specialty is important or very important, and 77.6% Of respondents suggest urology clerkship should be a core rotation in medical school's curriculum. These results are like another study conducted in Saudi Arabia found (91.1%) consider urology important or very important specialty and (77.3%) agree that medical school's curriculum should include urology clerkship [4]. These days, Primary health care physicians provide health care to patients with urological diseases. Hence, providing undergraduate medical students with sufficient urological education is critical.

Having urology rotation during clerkship years is essential for preparing undergraduate medical students for work [6]. The study showed improvement in exposure to urology 33 (72.2%) respondents had urology rotation, compared with (8.9%) and (42%) in previous studies have conducted in Saudi Arabia and Canada 4,6 respectively. This may be due to exposure of medical students to urology differs from one institution to another, moreover many medical colleges have different

curricula structure for clerkship and pre-clerkship years [7]. Thus, it is not surprising the difference in exposure to urology exist. Learning through interaction with patients is preferred learning method to many students. This finding was consistent with another study where students think that their learning needs are best achieved by seeing patients [10].

The survey showed that (11.2 %) desire to select urology as a career which is low compared with study have conducted in United Kingdome showed (25.6%) of those who interested in surgery think about urology as career [6]. The presence of role model will help in recruit the best students to enter the field like another study found that a role model in a given field correlated significantly with a possibility of students choose that field as a career in future [8,9].

To attract brilliant students to urology, it is important to understand the reasons that deter undergraduate medical students from a career in urology. The results showed unattractive lifestyle is the most common reason behind not choosing urology as a career, unlike another study that found Social barriers are the leading reason for not choosing urology as a career [4].

Medical school's curricula are designed to provide undergraduate medical school students with adequate knowledge and skills to deal with common urological conditions 8. The survey found that (80.2 %), (59.5 %), (71.6%) and (56%) reported adequate knowledge in subjects as urolithiasis, urine incontinence, urinary tract infection and uro-oncology respectively. While the most knowledge deficiency was in hematuria. This data indicates that the current medical school's curricula have provided students with adequate general urological knowledge and skills that they need as a general practitioner. Furthermore, students think urology rotation during clerkship years is sufficient to prepare them for internship year.

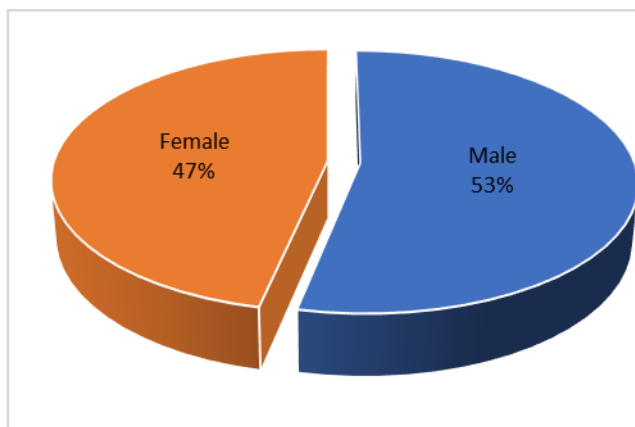


Fig. 1 Percent of male and female participants.

Table 1: Year of education		
What is your current year of education	n	%
First	2	1.8
Second	2	1.8
Third	11	9.7
Fourth	26	23
Fifth	18	15.9
Sixth	29	24.8
Internship	28	23
Total	116	100

Table 2: Participants' perception		
	n	%
<b>Have you been enrolled/rotated in academic urology unit?</b>		
Yes	59	50.9
No	57	49.1
<b>How do you define urology?</b>		
I do not care	1	0.9
I do not know	6	5.2
Medical specialty	12	10.3
Medico-surgical specialty	71	61.2
Surgical specialty	26	22.4
<b>In general, do you consider urology as-</b>		
I do not care	3	2.6
I do not know	4	3.4
Important specialty	64	55.2
Very important	44	37.9
Not important at all	1	0.9

<b>Do you think Urology rotation should be part of medical school curriculum?</b>		
Strongly disagree	3	2.6
Disagree	8	6.9
I do not know	17	14.7
Agree	44	37.9
Strongly agree	44	37.9
<b>In your opinion, what is the best modality to learn urology?</b>		
Dealing with inpatient and bedside teaching	53	45.7
Independent reading	2	1.7
Regular lectures	10	8.6
Watching endoscopic surgery	5	4.3
Attending urology clinics	46	39.7
<b>Do you intend to become a urologist?</b>		
Strongly disagree	39	33.6
Disagree	30	25.9
I do not know	35	30.2
Agree	9	7.8
Strongly agree	3	2.6
<b>What caused you NOT to pursue a career in urology?</b>		
I do not intend to become a urologist	51	44.0
Social issue	17	14.7
Lack of knowledge about urology	9	7.8
Demand of surgical residency	9	7.8
Unattractive lifestyle	25	21.6
Limited specialty	5	4.3
<b>Is urology a male dominated specialty?</b>		
Strongly disagree	9	7.8
Disagree	28	24.1
I do not know	23	19.8
Agree	35	30.2
Strongly agree	21	18.1
<b>I feel comfortable performing a digital rectal exam to screen for prostate cancer</b>		
Strongly disagree	17	14.7
Disagree	20	17.2
I do not know	34	29.3
Agree	32	27.6
Strongly agree	13	11.2
Total	116	100

Table 3: Difference in knowledge

	Inadequate Knowledge	Adequate Knowledge	Total	p-value*
Male	15 (24.2%)	47 (75.8%)	62	0.19
Female	19 (35.1%)	35 (64.8%)	54	

Table 4: Difference in mean of knowledge					
	n	Mean	±	Std. Dev	p-value*
Male	62	3.26	±	1.14	0.49
Female	54	3.09	±	1.44	

Table 5: Participants who agreed to these questions		
	n	%
<b>Do you think Urology rotation should be part of medical school curriculum?</b>		
Agree	88	75.9
I don't know	17	14.7
Disagree	11	9.5
<b>Do you intend to become an urologist?</b>		
Disagree	69	59.5
I don't know	35	30.2
Agree	12	10.3
<b>Is urology a male dominated specialty?</b>		
Agree	56	48.3
I don't know	23	19.8
Disagree	37	31.9
<b>I feel comfortable performing a digital rectal exam to screen for prostate cancer</b>		
Agree	45	38.8
I don't know	34	29.3
Disagree	37	31.9
Total	116	100

**CONCLUSIONS:**

Only small percentage of medical students Consider Pursuing a Career in urology. Unattractive lifestyle, social issues, the specialty is limited to the scope of the field are the reasons behind medical student avoid a Career in urology. In many urology topics, medical student's knowledge was sufficient. The Current medical school's curricula appear to be providing students with adequate knowledge and skills.

**REFERENCES:**

1. American Urological Association - Why Urology? [Internet]. Auanet.org. 2017 [cited 5 September 2017]. Available from: <http://www.auanet.org/about/what-is-urology.cfm>
2. Kerfoot B, Turek P. What Every Graduating Medical Student Should Know About Urology: The Stakeholder Viewpoint. *Urology*. 2008;71(4):549-553
3. American Urological Association - Education for Medical Students [Internet]. Auanet.org. 2017 [cited 6 September 2017]. Available from: <https://www.auanet.org/education/education-for-medical-students.cfm>
4. Dr. S, Al-Jasser A, Almannie R, Madbouly K. Attitude and perception of urology by medical students at the end of their medical school: An appraisal from Saudi Arabia. *Urology Annals*. 2015;7(2):211.
5. Wuensch, K. L. (2005). What is a Likert Scale? Department of Psychology, East Carolina University.
6. Derbyshire L, O'Flynn K. Medical students' exposure to Urology in the undergraduate curriculum, a web-based survey. *British Journal of Medical and Surgical Urology*. 2012;5(1):4-10.
7. Hoag N, Hamidzadeh R, MacNeily A. Undergraduate exposure to urology: impact of the distributed model of medical education in British Columbia. *Canadian Urological Association Journal*. 2013;7(2).
8. Wright S, Wong A, Newill C. The Impact of Role Models on Medical Students. *Journal of General Internal Medicine*. 1997;12(1):53-56.
9. Erzurum V, Obermeyer R, Fecher A, Thyagarajan P, Tan P, Koler A et al. What influences medical students' choice of surgical careers. *Surgery*. 2000;128(2):253-256.
10. Teichman J, Monga M, Littlefield J. Third year medical student attitudes toward learning urology. *The Journal of Urology*. 2001;165(2):538-541.