

Survey of Saudi urology program directors: What do you look for in a candidate?

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Abstract

Introduction: Prospective urology applicants in Saudi Arabia must go through a rigorous matching process. Defining which aspects of an applicant's portfolio or interview will get them matched is difficult. Our objective is to provide information on which aspects of an application are the most important.

Subjects and Methods: In this cross-sectional study, an electronic survey was sent out to all urology program directors (PD). The survey included 27 items from an application that were rated by the respondent using a 5-point Likert scale.

Results: Twenty-three urology PD completed the survey (79.3% response rate). Most of the PD subspecialized in endourology and minimally invasive surgery. The three most important aspects as perceived by all responding PD were as follows: performance during rotation at the respondent's centre, publications in urology, and the total number of electives in urology. The three least important factors were as follows: presentations in fields other than urology, recommendation letters from nonurologists, and quality reference letters from nonurologists.

Conclusion: Performance during rotations has been shown in our and other studies to be one of the most important factors in an application. Surveying PD on what they value the most in an applicant, provides valuable information and more transparency regarding the match processes. We also recommend that our colleagues from different specialties conduct similar studies.

Keywords: Program directors, residency, Saudi Arabia, urology

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INTRODUCTION

In Saudi Arabia, residency training is supervised by an external entity, which is the Saudi Commission for Health Specialties (SCFHS). Urology residency training aims to provide core knowledge, updated clinical information, and skills in managing urological diseases, and it aims to

graduate well-rounded qualified urologists.^[1] The SCFHS supervises 29 Urology residency programs in Saudi Arabia, Bahrain, and Jordan.^[2] The programs are held in multiple healthcare settings, including university hospitals, the Ministry of Health (MOH) hospitals, military hospitals, private practice, and general organizations.

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Prospective urology applicants in Saudi Arabia must go through a rigorous matching process, which has two main steps. The first step is matching to a city, which includes multiple training centers. This step is based on an algorithm that matches applicants automatically based on their total SCFHS score. The SCFHS score is based on the applicant's grade point average, their Saudi Medical Licensing Exam score, and their curriculum vitae points. This is followed by 2 months that are dedicated to in-person interviews with the training centers. Consequently, both the training centers and the applicants will rank their preferences. Based on an algorithm that is provided by the SCFHS, applicants will match with their respective centers.^[3]

From the perspective of a urology applicant, defining which aspects of their portfolio or interview will get them matched is difficult. With the aim of providing transparency to prospective urology applicants, our objective in this paper is to provide information on which aspects of an application are the most important.

SUBJECTS AND METHODS

Study design

This was a cross-sectional quantitative study. An electronic survey was sent to all program directors (PD) of the SCFHS's Urology programs.

Survey construction

An electronic survey was constructed using Google Forms (Google Form, Mountain View, CA, USA). The survey was based on Nguyen *et al.*'s study,^[4] and it was modified based on the SCFHS scoring system and on feedback from different PD.

Survey content

The survey contained two sections. The first section included demographic data, which include the PD subspecialties, their hospital settings (University, MOH, Military, Private, or a General Organization), and their years of experience as PD. This was followed by 27 items from an application. The respondents were asked to rate each aspect on a 5-point Likert scale, with 5 being "very important" and 1 being "unimportant." All 27 items are presented in Table 1.

Survey dissemination

The survey was sent to all 29 PD at each SCFHS urology program on June 4, 2020.

Statistics

Statistical analysis was performed using SPSS version 23 (IBM Corp. Released 2015. Version 23.0. Armonk, NY, USA: IBM Corp). The frequency of demographic data

(PD's subspecialty, PD's hospital setting, and PD's years of experience as a PD) were calculated. The mean score for each aspect of the application was also calculated. PD were also categorized based on years of experience as PDs, with 5 years of experience as a cut-off point. A Shapiro–Wilk test was performed and revealed all application aspects to be not normally distributed. Thereafter, a Mann–Whitney U-test was performed to compare the mean results of each application aspect based on the hospital setting (university versus nonuniversity) and respondent's years as a PD. A $P < 0.05$ was considered to be statistically significant.

RESULTS

Response

Twenty-three urology PD completed the survey (79.3% response rate). Most of the PD subspecialized in endourology and minimally invasive surgery. The PD subspecialties are summarized in Figure 1. Most of the respondents (43.5%) were military hospitals' PD. The PD hospital settings are summarized in Figure 2.

Most and least important aspects

The three most important aspects as perceived by all responding PD were as follows: performance during rotation at the respondent's center (mean score, 4.52;

Table 1: Application aspects mean scores, and standard deviation (descending order)

Rank	Aspect of application	Mean score±SD
1	Performance during rotation at respondent's center	4.52±0.51
2	Publications in Urology	4.3±0.77
3	Total number of electives in Urology	4.26±0.69
4	Performance during the interview	3.96±0.83
5	English proficiency	3.96±0.56
6	SMLE score	3.96±0.64
7	GPA	3.96±0.48
8	Research experience in urology	3.96±0.93
9	Quality of research	3.96±1.02
10	Total SCFHS score	3.91±0.52
11	Extracurricular activity	3.87±0.76
12	Working as a service resident	3.87±0.82
13	Presentations in urology	3.87±0.82
14	The candidate is a fresh graduate	3.83±0.89
15	Appearance during the interview	3.78±0.67
16	Having a higher degree (Ph.D., Masters)	3.70±0.88
17	Medical school prestige	3.61±0.58
18	Recommendation letters from urologists	3.61±0.50
19	Total number of researches	3.57±1.12
20	Quality reference letters from urologists	3.52±0.85
21	Community service	3.35±0.71
22	The candidate is on the dean's honorary list	3.35±0.89
23	Publications in fields other than urology	3.22±0.74
24	Research experience in fields other than urology	3.17±1.07
25	Presentations in fields other than urology	3.09±1.28
26	Recommendation letters from nonurologists	2.7±1.06
27	Quality reference letters from nonurologists	2.43±0.95

SD: Standard deviation, SMLE: Saudi Medical Licensing Exam, GPA: Grade point average, SCFHS: Saudi Commission for Health Specialties

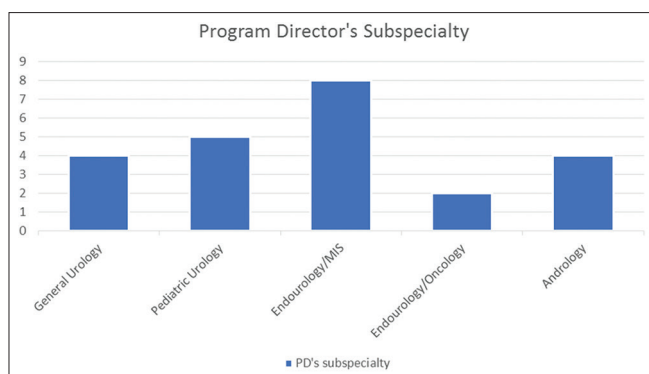


Figure 1: Program directors' subspecialties

standard deviation [SD], 0.51), publications in urology (mean score, 4.3; SD, 0.77), and the total number of electives in urology (mean score, 4.26; SD, 0.69). The three least important factors were as follows: presentations in fields other than urology (mean score, 3.09; SD, 1.28), recommendation letters from nonurologists (mean score, 2.7; SD, 1.06), and quality reference letters from nonurologists (mean score, 2.43; SD, 0.95). Table 1 provides the rank of all application aspects, with the mean score and SD.

Program directors with <5 years of experience (group 1) versus program directors with ≥5 years of experience (group 2)

A Mann–Whitney U-test revealed statistically significant differences between PD who had served for <5 years compared to a PD who had served for ≥5 years. Mean scores for the application aspects were as follows: holds a PhD or Master's degree ($U = 19.5$, $P = 0.009$) and recommendation letters from a nonurologist ($U = 28.5$, $P = 0.049$). Group 2 (PD with ≥5 years of experience) had a higher mean score for both factors. There was no statistically significant difference between the two groups in other application aspects.

University hospitals' program directors versus nonuniversity hospitals' program directors

A Mann–Whitney U-test showed that nonuniversity hospital PD had a statistically significantly higher mean score than university hospital PD for the total SCFHS score ($U = 2$, $P = 0.007$) and presentations in fields other than urology ($U = 1$, $P = 0.025$). There was no statistically significant difference between the two groups in other aspects of the application.

DISCUSSION

The competition for a urology residency position is becoming more difficult each year. A urology residency is considered to be one of the most competitive surgical

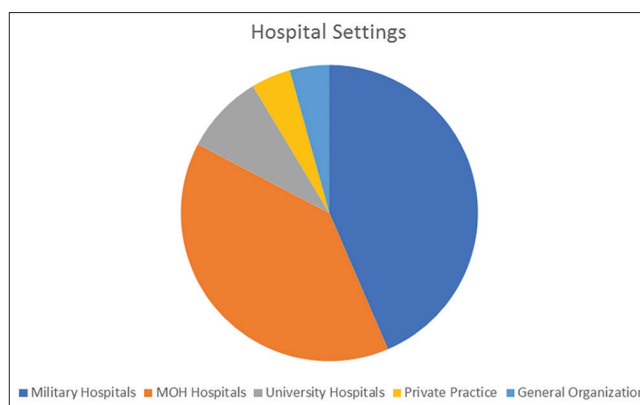


Figure 2: Program directors' hospital setting distribution

specialties worldwide.^[5,6] In 2015, SCFHS urology programs accepted 30 out of 110 applicants.^[7] PD looks for unique aspects in candidates' applications that may reflect better patient care, eagerness to learn, professionalism, and potential academic endeavors.

The three most important aspects for selection criteria that were reported by the responding urology PDs were as follows: (I) Performance during rotation at the respondent's center (4.52 ± 0.51); (II) Publications in urology (4.3 ± 0.77); and (III) The total number of electives in urology (4.26 ± 0.69). In Canada, urology PDs' three most important factors were (I) Rotation performance at the respondent's institution (4.95 ± 0.21); (II) Quality of reference letters from a urologist (4.60 ± 0.62); and (III) Interview performance (4.49 ± 0.63).^[4] A large survey was conducted in the US among 2528 PD across 21 medical specialties, and this study showed that the top five selection criteria were: (I) Grades in required clerkships; (II) United States Medical Licensing Examination (USMLE) Step 1 score; (III) Grades in senior electives in the specialty; (IV) Number of honors grades; and (V) USMLE Step 2 Clinical Knowledge score.^[8] Specific to urology, data reported from the US showed that urology reference letters and the USMLE scores were the most important factors for applicant selection.^[9]

The most important aspect for an applicant is their performance at PD centers. This was similar to what Canadian and American urology PDs reported.^[4,9] Clinical performance is shown as an important criterion for selection because it can assist PDs in assessing candidates' attitudes, behaviors, and knowledge level. However, an objective assessment of the qualities and achievements that make a good urology resident remains unclear. Punctuality, discipline, and proactivity are major merits to demonstrate when on an away rotation.

The second most important factor for selection into a urology residency in our study was research publications in urology. Weissbart *et al.* surveyed American urology PDs and demonstrated that not having a research publication had a negative impact on the applicant.^[9] Moreover, PDs in our study showed a higher score for the candidate's quality of research and the total number of studies (mean score 3.96 and 3.57, respectively) compared to data from Nguyen *et al.*'s study (mean score 3.63 and 3.49, respectively). In ophthalmology, a higher applicant, Hirsch's index (h-index) is associated with matching at a program with greater research output.^[10] Moreover, applicants who matched to an orthopedic surgery residency tended to have more publications than those who matched to other programs.^[11] We recommend that prospective applicants should focus on high-quality research rather than focusing on the number of studies.

However, the value of preresidency publications remains controversial.^[12] Grewal *et al.* retrospectively reviewed current residents' applications. Residents with an "excellent" evaluation had a statistically significant difference in the quality of the recommendation letters and evaluation as an intern compared to the residents with an "average" evaluation. The number of publications before residency demonstrated statistically insignificant results between the two groups.^[13] Consequently, PDs should weigh the value of preresidency publications carefully to avoid application bias.^[14]

The third-most important factor for selection was the total number of electives in urology. This was also an important criterion that was reported by Nguyen *et al.* Matching in urology was significantly higher among Canadian medical graduates who had an elective in urology at the matched center. However, only 11% matched without an elective in urology at their matched center.^[4] In addition, Weissbart *et al.* found that PDs consider applicants completing an away rotation at the PD's institution more than if they are from the same medical school as the program director.^[9] Higgins *et al.* reported that many medical students performed many "away" rotations as "auditions" to improve their chances of matching to highly competitive specialties, including urology. In addition, 71% of students who auditioned matched at one of their top three choices compared to 84% of students who did not audition but matched to one of their top three choices ($P < 0.01$). Overall, students who did not audition were just as successful or more successful than students who auditioned.^[14] It is important to note the cost of doing an away rotation. In the US, most students who completed an away or audition elective spent between \$1,000 and \$4,000 to complete these electives. Approximately 35%

of students reported limiting the number of away electives that they completed because of financial constraints.^[15]

University hospitals' PDs and other hospitals' PDs showed no significant difference in most application aspects. Many studies that evaluated the variation between university hospitals and nonuniversity hospitals based on residency training showed conflicting results. A paper from the US in 2015 showed that 71% of US medical school graduates cited "academic medical center programs" as a factor in selecting residency programs during the application process.^[16] Data from Japan showed that residents at university hospitals had fewer experiences and were less confident about their clinical skills than residents at nonuniversity hospitals.^[17] To date, the variation in the selection criteria for residency between the university hospitals and nonuniversity hospitals remains unknown.

To address the main challenge that faces applicants who wish to be selected into the urology program, we need to highlight the bidirectional aspects from postgraduate applicants and PDs. Locally, Binsaleh *et al.* reported insufficient urology knowledge among medical graduates, which could be addressed by more urology exposure during surgical rotations. In addition, the social aspect and lack of knowledge about urology discourages those graduates from choosing the urology specialty as a future career.^[18]

CONCLUSION

To the best of our knowledge, this is the first study in Saudi Arabia to survey PD on what they look for in an applicant. We urge our colleagues in different specialties to adopt a similar model to offer more transparency to potential applicants. Moreover, we recommend surveying the applicants on what they would like in a training program.

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Conflicts of interest

There are no conflicts of interest.

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