

Factors influencing students' decision in choosing obstetrics and gynecology as a career in a university hospital in Central Saudi Arabia

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ABSTRACT

الأهداف: تحديد العوامل المؤثرة على طلاب وطالبات كلية الطب بجامعة الملك سعود والتي من شأنها التأثير على قرارهم في اختيار تخصص أمراض النساء والولادة ومزاولة كمنهنة في المستقبل.

الطريقة: أُجريت هذه الدراسة المقطعية في جامعة الملك سعود، الرياض، المملكة العربية السعودية، واستمرت خلال الفترة من يناير إلى فبراير 2010م. لقد تم توزيع الاستبيان على طلاب وطالبات كلية الطب بالسنة الأخيرة وسنة الامتياز والذي تم تصميمه من أجل تقييم العوامل الجاذبة والمنفرة لاختيار تخصص أمراض النساء والولادة. وتم تحليل النتائج إحصائياً باستخدام التحليل أحادي المتغيرات والمتعدد المتغيرات.

النتائج: لقد وُزع الاستبيان على 507 طالب وطالبة حيث تم إكمالته وإعادة من قبل 330 طالب (نسبة الرد 65%). وقد اختير تخصص أمراض النساء والولادة من قبل 32 طالب وطالبة (9.7%) وذلك كأحد التخصصات الثلاثة الأولى المفضلة لديهم. أشارت نتائج الدراسة إلى أن تناوب الطلاب على عيادة النساء والولادة كان من أكثر العوامل الجاذبة مستقطبةً بذلك 81.3% من الطلاب لاختيار هذا التخصص. كما كان تأثير أعضاء هيئة التدريس من العوامل الجاذبة الأساسية حيث جذبت 71.9% من الطلاب، بينما كان التفاعل مع الأطباء المقيمين من أقل العوامل الجاذبة حيث لم يتأثر بهذا العامل إلا 37.5% من الطلاب. وكانت الخبرة العملية في تخصص النساء والولادة مثل التوليد أو إجراء العمليات البسيطة من أكثر العوامل الجاذبة أيضاً ($p=0.006$) و ($p=0.004$).

خاتمة: قد تساعد نتائج هذه الدراسة على جذب طلاب وطالبات الطب للتخصص في مجال أمراض النساء والولادة في المملكة العربية السعودية. فتحديد العوامل الخمسة الأساسية الجاذبة من خلال هذه الدراسة سيساعد الجامعة على دمج هذه العوامل في تصميم المنهج الدراسي لأمراض النساء والولادة بهدف زيادة اهتمام الطلاب في التخصص واختياره كمنهنة يزاولونها في المستقبل.

Objectives: To determine factors influencing final year medical undergraduate trainees at King Saud University in choosing a career in Obstetrics and Gynecology.

Methods: In this cross sectional study, the undergraduate final year medical students and interns at King Saud University, Riyadh, Saudi Arabia were asked to complete a survey instrument designed to assess possible attracting and detracting factors. The survey was conducted from January 2010 to February 2010. Factors were analyzed in a univariable and multivariable analysis.

Results: The survey was distributed to 507 students. Completed questionnaires were returned by 330 participants (response rate 65%). Overall, 32 (9.7 %) of students listed Obstetrics and Gynecology in their top 3 choices. The rotation of students through Obstetrics and Gynecology was the most influential factor attracting 81.3% of the students who chose to take this course. Faculty interaction was a major reason for attracting students accounting for 71.9%, but resident interaction was less attractive where only 37.5% of students mentioned that they were affected positively by residents. Hands-on experience such as performing deliveries and other procedures were significant attracting factors. ($p=0.006$ and $p=0.004$).

Conclusion: The findings in this study will hopefully aid in recruiting trainees to the specialty of Obstetrics and Gynecology in Saudi Arabia. Identifying the 5 major attracting factors from our study will allow our institute to integrate these factors in Obstetrics and Gynecology curriculum design, eventually increasing interest in postgraduate training in this specialty.

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During the past 10 years, there has been a progressive decline in the number of applicants in Obstetrics and Gynecology (OB/GYN) residency programs in Saudi Arabia. Data from the Saudi Commission for Health Specialties for the training year 2008-2009¹ showed a widening gap between the number of applicants for the Obstetrics and Gynecology residency program and the number of vacant positions all over the Kingdom. A similar trend has been observed in other regions of the world including the United States of America (USA).² As a result, an alarming imbalance has emerged between the number of applicants and the increasing demand for Obstetricians and Gynecologists. This raises serious concerns regarding the quality of care provided by overwhelmed and exhausted physicians in the field, which may lead to increased rates of complications, patient dissatisfaction and complaints and potential medico-legal actions. A study from Creighton University Medical Center (USA) surveyed graduates over a 10-year period at one school and found that significant factors in choosing OB/GYN included female gender, continuity of patient care, surgical opportunities, healthy patient population, female patients, and financial opportunity. Interestingly, perceived lifestyle and malpractice concerns did not influence the decision to pursue careers in Obstetrics and Gynecology.³ On the other hand, a study from the Medical College of Georgia (USA) found lifestyle, particularly in residency training, to be the most significant detractor for students from entering OB/GYN.⁴ The alarming decline of medical school graduates pursuing a career in OB/GYN requires actions to explore the factors influencing medical school graduates' decision to pursue a career in this important specialty, and hopefully, to find ways to entice and increase recruitment of medical students into Obstetrics and Gynecology. The American College of Obstetricians and Gynecologists (ACOG) and the Association of Professors in Gynecology and Obstetrics (APGO) proposed an action plan to face the alarming decline in recruitment in the field. The plan included improving the quality of the medical student clerkship, frankly addressing gender and lifestyle issues that dissuade students from choosing obstetrics and gynecology as a career, and engaging students early in their medical school careers through student interest groups and monitoring programs.⁵ The purpose of this study is to determine the factors influencing the final year medical undergraduate trainees at King Saud

University (KSU) in choosing a career in Obstetrics and Gynecology.

Methods. This study was approved by the Research Ethics Committee of King Khalid University Hospital (KKUH), Riyadh, Kingdom of Saudi Arabia (KSA). Final year undergraduate medical students and interns at KKUH, Riyadh, KSA, were asked to complete a survey instrument formulated on published surveys.^{6,7} Students were divided into groups, each group leader provide the survey to his/her group. Students that were on an off-site rotation were sent a soft copy by email. The survey was conducted from January 2010 to February 2010. Verbal consent was obtained from the students prior to their participation in the study. The survey instrument included: socio-demographic characteristics (4 items); specialty choice (1 item); consideration of Obstetrics and Gynecology at any point in their training (1 item); clerkship experiences (5 items); religion affecting their decision (1 item); gender as an effect on their choice (1 item); social aspects influence (2 items); and whether various characteristics of Obstetrics and Gynecology detracted, had no influence or attracted them to a career in Obstetrics and Gynecology (19 items).

The data were analyzed in a univariable and multivariable analysis by the SAS statistical package for windows, version 9.2 (SAS Institute Inc., Cary, NC). A p-value of less than 0.05 was considered significant.

Results. The survey was distributed to 507 final year students and interns. Of these, 332 (65.5%) were males, reflecting the approximate ratio of males to females in the College of Medicine. Completed questionnaires were returned by 330 participants (response rate 65%). The average age of the participants was 23.7 (range 21-28 years). Most of the participants were single (89.4%). Major specialty options listed as first (44.8%) and second choice (44.9%) were mainly surgical specialties. Overall, only 32 (9.7%) students listed Obstetrics and Gynecology as their top 3 choices. Of these, only 10 (3.2%) stated that OB/GYN would be their first option as a future specialty. Six (2.0%) listed Obstetrics and Gynecology as a second option and 16 (6.5%) listed Obstetrics and Gynecology as a third option. Among the 32 students who preferred Obstetrics and Gynecology, 17 (53.1%) were females.

Univariable association of attractors with Obstetrics and Gynecology, at statistically significant level of 0.05, are listed in Table 1, while a multivariable model for Obstetrics and Gynecology selected as one of top 3 specialty options is shown in Table 2. In addition, univariable association of neutral factors (neither attractors, nor detractors) with Obstetrics and Gynecology is shown in Table 3.

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Discussion. In a study from the University of Colorado Health Sciences Center (USA) the percentage of students interested in OB/GYN increased from 16-29.4% at the end of their clerkship. However, the actual number of students who ultimately pursued a career in OB/GYN was only one third of those who expressed interest at the end of clerkship.⁸ Therefore, other factors must exist that negatively influence the choice to pursue a career in OB/GYN despite the student's stated interest. A study from Michigan State University (USA) investigated the role of student gender and its effect on determining factors that influence selection of the specialty of OB/GYN.⁹ They found that female students felt more strongly than male students that interest in women's health, ability to improve the health of women, and intellectual content of OB/GYN had a positive influence in their decision.⁹ The results of this study were in contrast to previous studies that had indicated that students enter medical school with pre-established beliefs and values that influence career selection.^{10,11} Although several reports have described factors affecting medical students in formulating their decision to choose OB/GYN, no such factors have been reported in the Middle East area, especially in the Kingdom of Saudi Arabia. A survey conducted in Jordan described demographic characteristics, specialty preferences, and factors that influenced career preferences.¹² Interestingly, OB/GYN was the first choice among females; preferred by 31%, compared to 1% of male students.¹² In Saudi Arabia, no study has been reported addressing factors that attract or detract students from choosing a career in OB/GYN. A presentation at the First Annual Medical Student's Research Day at King Saud University (held on 14th of May, 2009) reported that female students cared mostly

about the length of residency and family considerations and their top choices were Internal Medicine followed by Surgery and Pediatrics. On the other hand, male students were more concerned about income and most of them chose surgery as their future specialty.¹³ Several factors in medical student career choice was rewards, prestige, social issues, and the impact of faculty/resident role models. Even though our study was limited to a single medical school and covered only the final year medical students in the year 2010, this study confirmed the influence of some of these factors and identified some differences in the perceptions of male and female medical students in our medical school. The female students who selected Obstetrics and Gynecology as one of their 3 top options, performing procedures was the highest attracting factor (90.3%). Improving women's health, intellectual content of Obstetrics and Gynecology and continuity of care were of similar high significance (83.9% and 80.7%). One study reported that surgical opportunities (mean score 4.7), variety of clinical experiences in day-to-day procedures (office, surgery, labor unit, mean score 4.6), and fast paced/high acuity experiences (mean score 4.3) were factors of highest importance for both males and females. The opportunity to be a women's health advocate was more important to women than men (mean score 4.3 and 3.1).¹⁴ The rotation of students through Obstetrics and Gynecology is one of the most important factors that can attract or detract students to the specialty. The quality of teaching, interaction with qualified and willing to teach staff members can attract many students. It was the most influential factor attracting 81.3% of the students who chose Obstetrics and Gynecology. During their rotation, faculty interaction was a major reason for attracting students accounting for 71.9%, but resident interaction

Table 1 - Univariable association of attractors with Obstetrics and Gynecology at statistically significant level of $p < 0.05$.

Variable	OB/GYN selected as one of 3 top options		Odds ratio	(95% confidence intervals)	P-value
	No (n=290)	Yes (n=32)			
Faculty interaction	118/288 (41.0)	23/32 (71.9)	3.68	(1.65, 8.24)	0.002
Faculty encouragement	59/287 (20.6)	15/32 (46.9)	3.41	(1.61, 7.23)	0.001
Rotation through OB/GYN	128/287 (44.6)	26/32 (81.3)	5.38	(2.15, 13.48)	0.001
Socially accepted	125/290 (43.1)	20/31 (64.5)	2.40	(1.11, 5.19)	0.026
Intellectual content	150/287 (52.3)	26/31 (83.9)	4.75	(1.77, 12.71)	0.002
Perform deliveries	87/287 (30.3)	16/31 (51.6)	2.45	(1.16, 5.18)	0.019
Work with hands	166/289 (57.4)	25/31 (80.7)	3.09	(1.23, 7.75)	0.017
Role model	117/287 (40.8)	23/31 (74.2)	4.18	(1.81, 9.66)	0.001
Continuity of care	150/290 (51.7)	25/31 (80.7)	3.89	(1.55, 9.76)	0.004
Coping with mortality	106/290 (36.6)	21/31 (67.7)	3.65	(1.65, 8.03)	0.001
Perform procedures	176/287 (61.3)	28/31 (90.3)	5.89	(1.75, 19.82)	0.004

Table 2 - Attractors classification by multivariate analysis.

Attractors to Obstetrics and Gynaecology	Odds ratio	(95% Confidence interval)	P-value
Rotation through Obstetrics and Gynaecology	7.44	(2.47 - 22.45)	0.001
Perform procedures	6.48	(1.72 - 24.40)	0.006
Coping with mortality of mother/baby	3.85	(1.61 - 9.25)	0.003
Female gender of student	3.60	(1.47 - 8.84)	0.005
Role model	2.66	(1.07 - 6.59)	0.035

Only variables with statistically significant at 0.05 level were considered for the entry. Hosmer Lemeshow goodness-of-fit test $\chi^2=10.582$, $p=0.227$
 Multivariable model for Obstetrics & Gynecology was selected as one of the top 3 specialty options.

Table 3 - Univariable associations with Obstetrics & Gynecology (OB/GYN) of neutral factors (not attractors/nor detractors).

Variables	OB/GYN selected as one of the 3 top options		Odds ratio	95% Confidence interval	P-value
	No (n=290)	Yes (n=32)			
Age	254	28	0.69	(0.45 - 1.06)	0.087
4th/5th year	178/287 (62.0)	25/32 (78.1)	2.19	(0.92 - 5.23)	0.078
Married	28/287 (9.8)	6/32 (18.8)	2.14	(0.81 - 5.63)	0.125
Resident interaction	76/288 (26.4)	12/32 (37.5)	1.67	(0.78 - 3.59)	0.185
Year 4 satisfaction	64/290 (22.1)	11/32 (34.4)	1.85	(0.85 - 4.04)	0.123
Religion	217/289 (75.1)	27/32 (84.4)	1.79	(0.67 - 4.83)	0.249
Affect family life	139/287 (48.4)	14/31 (45.2)	0.88	(0.42 - 1.85)	0.729
Career decision	189/290 (65.2)	16/31 (51.6)	0.57	(0.27 - 1.20)	0.139
One organ system	133/287 (46.3)	17/31 (54.8)	1.41	(0.67 - 2.96)	0.370
Female only	62/286 (21.7)	10/31 (32.3)	1.72	(0.77 - 3.84)	0.186
Mostly healthy	132/288 (45.8)	13/31 (41.9)	0.85	(0.40 - 1.81)	0.679
Improve women's health	195/290 (67.2)	26/31 (83.9)	2.53	(0.94 - 6.80)	0.065
Prestige	59/289 (20.4)	11/31 (35.5)	2.14	(0.97 - 4.72)	0.058
Lifestyle	60/287 (20.9)	7/31 (22.6)	1.10	(0.45 - 2.68)	0.828
Spouse opinion	43/287 (15.0)	8/31 (25.8)	1.97	(0.83 - 4.70)	0.124
Malpractice concerns	36/287 (12.5)	6/31 (19.4)	1.67	(0.64 - 4.36)	0.292
Income prospects	130/289 (45.0)	15/31 (48.4)	1.15	(0.55 - 2.41)	0.718
Times on call	151/284 (53.2)	20/31 (64.5)	1.60	(0.74 - 3.47)	0.232
Level of stress	42/289 (14.5)	6/31 (19.4)	1.41	(0.55 - 3.65)	0.477
Time demands	146/288 (50.7)	18/31 (58.1)	1.35	(0.64 - 2.85)	0.437

was less attractive (37.5%). Students mentioned that they were affected positively by residents. This disparity between staff and residents warrants further evaluation since it may be due to a variety of reasons, including lack of knowledge, confidence and attitude of residents, as well as, gender and ethnic issues. The teaching faculty then, appears to be the greatest source of encouragement to both female and male medical students in their pursuit of a career in obstetrics and gynecology. Verbal feedback and positive evaluation to students that they possess effective skills, which would be a major asset to the practice of obstetrics and gynecology, had a markedly strong influence in encouraging a student to explore obstetrics and gynecology as a career. Written

and/or verbal statements, both positive and negative, held significant weight and influenced (46.9%) to the students.

Factors that were most influential were interactions with faculty and rotation through obstetrics and gynecology (34.4%). The surgical component of obstetrics and gynecology was a very attractive aspect. Hands-on experience such as performing deliveries and other procedures were significant attracting factors. ($p=0.006$ and $p=0.004$). This finding is consistent with results from other studies.^{5,6,11}

In our study, many of the factors that were thought to be major detractors and attractors turned out to be not significant. These factors include life style prospects,

income prospects, dealing mostly with healthy patients, stress level, and time demands of the specialty. These results are enlightening and would be invaluable in planning future recruitment of students to the specialty of OB/GYN in Saudi Arabia. Furthermore, in order to make OB/GYN an attractive specialty for students, one should concentrate on the most attracting and detracting factors for those who are interested in OB/GYN. The concept of Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis¹⁴ can certainly be applied in our efforts to recruit trainees to our specialty. The highest attracting factors should be considered as strengths while less attracting factors should be considered as opportunities. The least attracting factors should be considered as weaknesses and warrant further soul-searching and reflection of our teaching program, curriculum and commitment to our students. Opportunities are the factors that if were present, students' selections would have changed positively towards a choice in OB/GYN. The hands-on component and the performance of procedures was found to be the greatest strength in attracting "willing-to-be interested" students. Therefore, encouraging and allowing students a hands-on approach as much as possible will remain one of the strongest appeals to the OB/GYN specialty. Among the 32 (9.9%) students interested in OB/GYN as a career, only 12 (37.5%) were attracted by their interaction with residents. Promoting a more welcoming, non-competitive educational environment may minimize this weakness. This may lead to an incline in the attractiveness of the specialty shifting the resident-student interaction from a weakness into strength.

In conclusion, the findings in this study will hopefully aid in recruiting trainees to the specialty of OB/GYN in Saudi Arabia. Identifying the 5 major attracting factors from our study will allow our institute to integrate these factors in OB/GYN curriculum design, eventually increasing interest in postgraduate training in this specialty.

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