

## Research Article

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# Factors affecting the specialty choice of medical students at king Abdulaziz University in Jeddah, Saudi Arabia

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## ABSTRACT

**Background:** Little is known about the factors that influence the choice of medical specialty by male and female senior medical students at King Abdulaziz University in Jeddah so this study was conducted to investigate these factors.

**Methods:** In this cross sectional study, data was collected through a questionnaire that was adapted to the Saudi culture from. It was distributed to three hundred male and female medical students in their sixth year and the response rate was 79.6%. Data analysis was carried out by using the Statistical Package for the Social Science (SPSS) version during the years 2013-2014. The percentages and the significances of the most and the least factors that influence the choice of medical specialties by the sample of the study were computed.

**Results:** Study showed that 91 out of 121 senior male students and 88 senior female students out of 118 agreed that joining medical school was their first interest. Results illustrated that helping patients is the most considerable reason to choose medicine by the majority of the students (93% of senior male students and 91% of senior female students) whereas family enforcement was the least influential reason to choose medicine (28% of senior male students and 23% of senior female students). Internal medicine was chosen by the majority of the sample of the study as their first interest after graduating from medical school (43 male and female senior students). While only one male medical student chose community medicine.

**Conclusions:** Medicine was the first choice for the majority of both male and female medical students who entered university. Internal medicine was the most desirable specialty following graduation. Most of the graduates have no plan in pursuing a career in general practice. It is advocated to establish a career advising committee at KAU. The committee should focus on medical students during their final clinical years. The lack of physicians in some specialties and its effect on the community should be addressed.

**Keywords:** Medical specialty, Selection, Medical students, Saudi Arabia, Carrier

## INTRODUCTION

The preference and the choice of the medical specialty may be contemplated before being a medical student. However, the real process to determine the career of life begins during clinical rotations when students are exposed to both clinical and intellectual environments of various specialties.<sup>1</sup> In the Ministry of Health, the proportion of Saudi doctors who are working in health centers is (5.8%) which is lower than those in hospitals (16.9%).<sup>2</sup> According to the Ministry of Health, the numbers of medical schools in Saudi Arabia in the year of 2011 have been increased to 16 governmental medical schools, and five private ones. In addition, the numbers of Saudi doctors are counted as 45,188 doctors in the government sector and 21,134 doctors in the private sector. Therefore, the efforts to increase the numbers of Saudi physicians in the primary health care and other unpopular specialties require an adequate understanding of how medical students choose their career. A survey of the first three graduate classes of King Abdulaziz University, College of Medicine indicated that most of male graduates choose to practice in Medicine, Surgery, Dermatology, Urology, ENT, Ophthalmology and Orthopedics whereas females prefer Obstetrics and Gynecology and Paediatrics. Regarding postgraduate certificates, males choose to complete their studies outside Saudi Arabia while most females earn them in Saudi Arabia.

Generally speaking, determining medical specialty is the most important step in the career life of medical students; and one must acknowledge that it is a complicated process. It is important to note that there is no ranking or listing of "best medical specialties". Specialty choice is a very personal decision that depends on many factors including personality fit in the first place. Accordingly, this study aims to explore the factors that influence the choice of medical specialty by senior medical students at King Abdulaziz University in Jeddah in the year 2013-2014.

## METHODS

This study followed the cross sectional design. It is based on examining the factors that affect the choice of medical specialty by senior (sixth year) medical students. Male and female at King Abdulaziz University in Jeddah in the year 2013-2014 represent the sample of the study. The sample of the study was selected intentionally since senior medical students simultaneously face difficulties in choosing their medical specialties that suit them better in their future.

For the purpose of the study, a questionnaire adapted to the Saudi culture was utilized. The questionnaire was devised according to the review of literature and previous studies, as well as the discussions held with the medical students and physicians in regard to the topic of the study. The questionnaire consists of twenty four positive

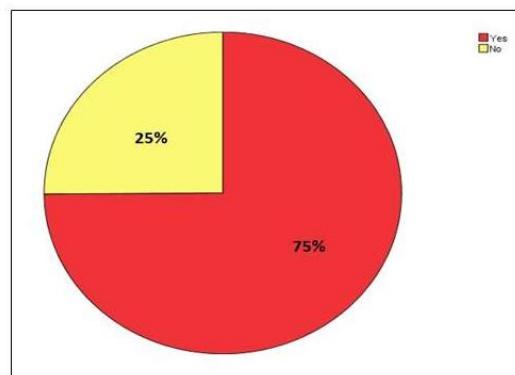
statements. These statements embody the factors that influence the choices of medical specialties. The questionnaire involved demographic information, specialty preferences and factors that influenced their choice of medical specialty. The questionnaire was conducted on three hundred male and female medical students in their sixth year. However, only two hundreds and thirty-nine questionnaires were received (79.6%).

Data analysis were carried out by using the Statistical Package for the Social Science (SPSS) during the year 2013-2014 to compute the percentages and the significances of the most and the least factors that influence the choice of medical specialties by the sample of the study.

## RESULTS

Two hundreds and thirty-nine (80 %) out of three hundred (300) questionnaires were returned. One hundred and twenty one questionnaires (51%) were responded by male students whereas one hundred and eighteen questionnaires (49 %) were by female students.

As figure 1 showed, 179 (75%) out of 239 senior medical students agree that medical school was their first interest while the rest of the sample of the study 60 (25%) disagree. Specifically, 91 senior male medical students stated that medicine was their interest as compared to 30 senior male students. On the other hand, 88 senior female medical students stated that medicine was their first interest as opposed to 30 senior female students who state that medicine was not their primary interest.



**Figure 1: Choosing medicine as a first priority.**

The majority of the participants (92%; 219 senior male and female medical students) chose medicine because they are interested in helping patients. Specifically, 93% (112 senior male medical students) chose medicine in order to help patients as compared to 91% (107 senior female medical students) who also chose medicine for the same reason. Moreover, 69% (164 senior male and female medical students) chose medicine because they are concerned with the scientific basis of Medicine. Particularly, 72% (87 senior male students) considered

the scientific basis of Medicine as a primary priority to select medicine and 65% of female (77 senior female medicine students) who found scientific basis of Medicine a considerable reason to choose medicine. Economic reasons were another significant reason for 59% (141 senior male and female students) in choosing medicine. Precisely, 69% (83 senior male medical students) choose medicine for economic reasons while 49% (58 senior female medical students) took in

consideration the economic reasons in choosing medicine. Also, 63% (150 senior male and female medical students) preferred medicine because it granted them a profession's image. To be accurate, 72% (87 senior male medical students) chose medicine because it granted them profession's image compared with 53% of females (63 senior female medical students) chose medicine for the same reasons Table (1).

**Table 1: Relation between gender & reasons for choosing medicine.**

<b>Reasons for choosing Medicine</b>	<b>Male</b> (n=121)		<b>Female</b> (n=118)		<b>Total</b> (n=239)		<b>P</b>
	<b>Yes</b>	<b>N (%)</b>	<b>Yes</b>	<b>n (%)</b>	<b>Yes</b>	<b>n (%)</b>	
Helping Patients	112	(92.6%)	107	(90.7%)	219	(91.6%)	.385
The scientific basis of Medicine	87	(71.9%)	77	(65.3%)	164	(68.6%)	.167
Economic Reasons	83	(68.6%)	58	(49.2%)	141	(59%)	.002
Influence of role model (family / friend)	63	(52.1%)	53	(44.9%)	116	(48.5%)	.309
Illness of relative / friend	47	(38.8%)	35	(29.7%)	82	(34.3%)	.087
Family enforcement	34	(28.1%)	27	(22.9%)	61	(25.5%)	.219
The profession's image	87	(71.9%)	63	(53.4%)	150	(62.8%)	.002
Employment security	78	(64.5%)	65	(55.1%)	143	(59.8%)	.089

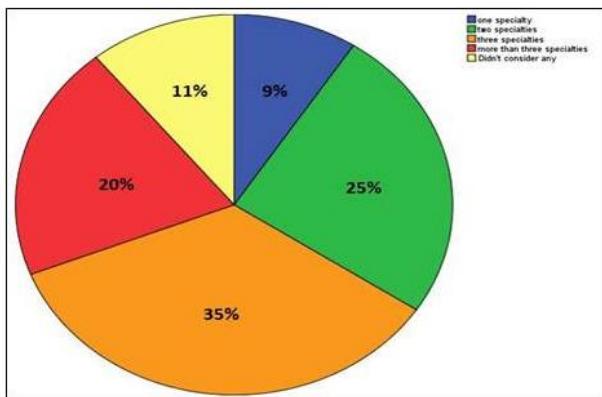
**Table 2: Type of specialty selected by the sample of the study.**

<b>What is the speciality in you?</b>	<b>Gender</b>					
	<b>Consider it your first choice?</b>		<b>Male (n=121)</b>		<b>Female (n=118)</b>	
	<b>Count</b>	<b>%</b>	<b>Count</b>	<b>%</b>	<b>Count</b>	<b>%</b>
Anesthesiology	6	5.0%	3	2.5%	9	3.8%
Basic Science	2	1.7%	1	.8%	3	1.3%
Cardiology	3	2.5%	3	2.5%	6	2.5%
Cardiac Surgery	0	.0%	2	1.7%	2	.8%
Community	1	.8%	0	.0%	1	.4%
Medicine						
ENT	2	1.7%	4	3.4%	6	2.5%
Family Medicine	3	2.5%	7	5.9%	10	4.2%
General Surgery	26	21.5%	15	12.7%	41	17.2%
Internal Medicine	21	17.4%	22	18.6%	43	18.0%
Neurology	3	2.5%	5	4.2%	8	3.3%
Neurosurgery	3	2.5%	2	1.7%	5	2.1%
OB Gyne	5	4.1%	2	1.7%	7	2.9%
Ophthalmology	4	3.3%	8	6.8%	12	5.0%
Orthopedic	9	7.4%	2	1.7%	11	4.6%
Surgery						
Pediatric	10	8.3%	17	14.4%	27	11.3%
Plastic Surgery	2	1.7%	2	1.7%	4	1.7%
Psychiatry	1	.8%	1	.8%	2	.8%
Radiology	6	5.0%	3	2.5%	9	3.8%
Urology	3	2.5%	0	.0%	3	1.3%
Dermatology	2	1.7%	2	1.7%	4	1.7%
Nothing	9	7.4%	17	14.4%	26	10.9%
<b>Total</b>	121	100.0%	118	100.0%	239	100.0%

Other factors such as the influence of a role model, illness of a relative or friend and family enforcement showed less significance for the participants when

deciding to choose medicine. Eighty nine percent of the participants who responded to the questionnaire took in consideration multiple specific specialties. Specifically,

9% of the participants reported one specialty, (25%) prefers two specialties, and (35%) considered three specialties and (20%) favored more than three specialties for their future career. However, 11% of the participants did not consider any specialty at all; 62% of them were females Figure 2.



**Figure 2: Number of specialties considered by the participants.**

About 18% (43 senior male and female medical students) chose internal medicine as their first interest. 17 % (21 senior male medical students) preferred internal medicine as compared to 19% (22 senior female medical students) who selected the same specialty. Similarly, 17% (41 senior male and female students) preferred General surgery as their selected specialty. In Particular, 22% (26 senior male medical students) as well as 13% (15 female students) had general surgery as their primary preference. As for pediatrics, only 11% (27 senior male and female medical students) favored this specialty, precisely, 14% females (17 senior female medical students) preferred pediatrics as opposed to 8% (10 male medical students). On the other hand the least considered specialties by the participants were community medicine (0.4%), cardiac surgery (0.8%) and psychiatry (0.8%). This was followed by the urology and basic sciences (1.3%) Table (2).

About 35% of the participants performed aptitude test to evaluate their preference to specific specialty. However, 65% of the total number of the participants did not perform the test Figure 3.

**Table 3: Reasons of choosing a medical specialty.**

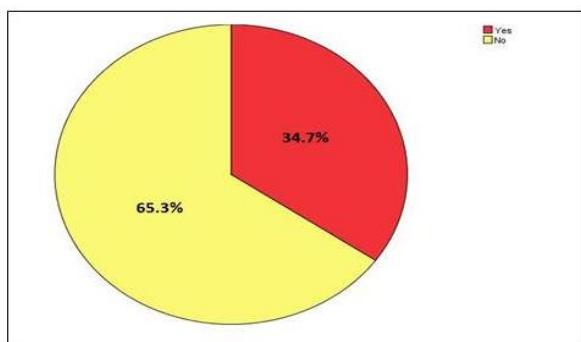
Reasons For choosing a Medical specialty	Male (n=121)		Female (n=118)		Total (n=239)		P
	Yes	N (%)	Yes	n (%)	Yes	n (%)	
Interesting / challenging specialty	108	(89.3%)	113	(95.8%)	221	(92.5%)	.54
Relationship with patients	86	(71.1%)	72	(61.0%)	158	(66.1%)	.066
Economic Reasons (High Salary)	68	(56.2%)	41	(34.7%)	109	(45.6%)	.001*
Years required for training	45	(37.2%)	38	(32.2%)	83	(34.7%)	.424
A specialty that is rapidly advancing	80	(66.1%)	71	(60.2%)	151	(63.2%)	.206
Prestige	66	(54.5%)	40	(33.9%)	106	(44.4%)	0.001*
Independent practice	84	(69.4%)	67	(56.8%)	151	(63.2%)	0.029*
Opportunity for private practice	72	(59.5%)	59	(50.0%)	131	(54.8%)	0.089
Performing surgery/procedures	77	(63.6%)	60	(50.8%)	137	(57.3%)	0.031*
Competitiveness	61	(50.4%)	61	(51.7%)	122	(51.0%)	0.473
Much teamwork	73	(60.3%)	57	(48.3%)	130	(54.4%)	0.041*
Time in the operating room	53	(43.8%)	31	(26.3%)	84	(35.1%)	0.003*
Research opportunities	70	(57.9%)	66	(55.9%)	136	(56.9%)	0.433
Schedule or workload or Numbers of On-calls	57	(47.1%)	45	(38.1%)	102	(42.7%)	0.102
Control over lifestyle	75	(62.0%)	78	(66.1%)	153	(64.0%)	0.299
Experiences with physician role models	86	(71.1%)	82	(69.5%)	168	(70.3%)	0.450
Location of available jobs	80	(66.1%)	69	(58.5%)	149	(62.3%)	0.139
Family enforcement	21	(17.4%)	16	(13.6%)	37	(15.5%)	0.264
Specialties that classmates or friends choose	24	(19.8%)	15	(12.7%)	39	(16.3%)	0.094
Feedback or attitudes of physician instructors	65	(53.7%)	60	(50.8%)	125	(52.3%)	0.376
Your Grade (GPA)	53	(43.8%)	53	(44.9%)	106	(44.4%)	0.483
Your marks in subjects related to a specialty	55	(45.5%)	45	(38.1%)	100	(41.8%)	0.155
Elective Rotation	84	(69.4%)	65	(55.1%)	149	(62.3%)	0.016*
Specialty Aptitude Test or personality test	43	(35.5%)	40	(33.9%)	83	(34.7%)	0.448

Distinctively, 89% (108 senior male medical students) as well as 96% (113 senior female medical students) selected the medical specialty because they considered it

interesting and challenging. Furthermore, 66% (158 senior male and female medical students) chose medical specialty for the sake of the relationship with patients.

71% (86 senior male medical students) joined medical specialty to establish the relationship with patients in comparison to 61 % (72 senior female medical students) who considered the same reason Table (3).

Differently, 67 senior female medical students (57 %) choose medical specialty because it granted them independent practices. Generally, large number of the sample of the study (151; 63%) considers independent practices as a main factor to choose medical specialty. This is found significant (0.029). 75 senior male medical students (62%) picked medical specialty because it has control on their life style.



**Figure 3: Number of students who performed the aptitude test to select a speciality.**

Totally, 153 senior male and female medical students from the whole sample of the study (64%) believed that the choice of medical specialty has its own control over their life. Elaborately, 86 senior male medical students (71%) selected medical specialty to role model an experienced physician. where, 82 senior female medical students (70%) were Generally, 168 senior male and female medical students (70%) are influenced by role modeling of an experienced physician while choosing medical special influenced by the same reason. Job location was a crucial factor to 80 senior male medical students (66%) as compared to 69 senior female medical students (59%). Generally speaking, 149 senior male and female medical students (62%) consider job location as a major factor to choose medical specialty Table (3). In contrast, Economical reasons were crucial for senior male medical students (56%; 68 students) as compared to (35%; 41 senior female students) who considered this factor as less influential. Totally, 109 senior male and female medical students (46%) considered economic reasons as considerable factor to choose medical specialty. The significance was computed as (0.001).

## DISCUSSION

The key factor for a successful career for medical students is the smart choice of the medical specialty. In this sense, the current study aimed at investigating the factors that influenced the choice of medical specialty by

senior medical students at King Abdulaziz University in Jeddah.

Specifically, there are many studies conducted in this domain, which all assert the relationship between medical career and the choice of medical specialty. They also proclaim that there should be a career counseling activities to help students choose their medical specialty in Saudi Arabia and other studies in Canada, United Kingdom and USA. 1-5 On the other hand, It was concluded in 2 a previous study 2 that the number of Saudi doctors working in health centers was lower than that in the hospitals. They elaborated through the analysis of the survey that was implemented on three graduate classes of king Abdulaziz University, college of Medicine that male doctors preferred practicing medicine, surgery, dermatology, Urology, Ophthalmology and Orthopedic. However, female doctors preferred obstetrics and gynecology and paediatrics.

In the current study, (75%) of senior male and senior female students agreed that medicine is their first interest. helping patients was the most considerable reason to choose medicine by the majority of the students (93% of senior male students and 91% of senior female students). It was also detected that 11% of the participants did not consider any specialty at all due to the lack of career counseling. This agrees with the results of the study done by AlAhwal et al. which considered career counseling is an important factor in choosing the medical specialty.<sup>5</sup> Generally, Internal medicine was the most desirable specialty of 18% of medical students' followed by general surgery (17 %). This is similar to a study done 20 years ago in Saudi Arabia. However, the least considered specialties by the participants were community medicine (0.4%).

A survey of both fourth and fifth (final) years medical students at King Saud University has shown that the majority of students intend to specialize and practice in the major disciplines of medicine, surgery, pediatrics and obstetrics; only a few (3.5%) chose primary care and none chose pathology or anesthesia.<sup>2</sup> Non Saudi "expatriate" doctors constitute the majority of practicing physicians, which might lead to cultural conflicts, communication, as well as language barriers. In addition, the expatriates stay in Saudi Arabia is usually temporary which makes the efforts to train, develop and advance their knowledge not cost-effective. Therefore, increasing the number of Saudi medical graduates should be considered of prime importance. A Saudi medical undergraduate takes 6 years to complete their school curriculum followed by a compulsory one year as an internship service. Practitioners then, are eligible to apply for residency programs inside or outside the kingdom. The distribution of Saudi physicians among the different subspecialties is imbalanced with significant deficiencies in some specialties: Anesthesia 4.7%, Physical medicine 6.7%, Pulmonology 11.1% and General Practice 11.4%, etc.<sup>5</sup>

Researchers also have found that there are different factors which attribute to post graduate career choices. The factors include: heavy work load, intense working pressure, lower salaries, health insurance payment system, scientific challenges and interaction with patients. The scientific challenge (61.4%) and interaction with patients (60.6%) seem to be the major influencing factors for most students' specialty preferences.<sup>3</sup>

Bittaye et al. stated that personal intelligence/ability preference and career opportunities were more important factors to the current generation of students in choosing a specialty. In a survey performed by The Association of American Medical School to investigate the factors that influence the choice of medical specialty, among the factors that were chosen to have strong to moderate influence were; Personality fit (98.3%), Role model influence (78.0%), Future family plans (62.6%) and Competitiveness of specialty (41.1%).<sup>4</sup>

## CONCLUSION

This study shows that medicine is the choice of 75% of male medicine students as well as 75% of female. The main reason for choosing this major was the students' desire to help patients. Students are planning to become certified in one of the sub-specialties available. Internal medicine was the most desirable specialty of 18% of students' wishes. The majority of graduates had no plans in pursuing a career in general practice. It is advised to establish a career advising committee at KAU. The committee should focus on medical students during their final clinical years and during internship rotations. The lack of physicians in some specialties should be addressed by this committee putting in perspective the national health problems in the Kingdom of Saudi Arabia. So, it is advisable to establish a counselling career committee to guide students in their choice of medical specialty. It is recommended also to generalize

the aptitude test to evaluate medical students' preference to specific specialty. This can be compulsory to all the students in their first academic year.

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