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Career choice and its influencing factors: Perception of senior medical students

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ABSTRACT

Objectives: The objective was to investigate the career preferences of senior medical students. In addition, we aim to rank the factors affecting career choice to identify different motivators that could be re-enforced in medical schools to enhance pursuing those least popular specialties. **Methods:** This is an observational cross-sectional study included 116 senior medical students. Data were collected using a self-administered questionnaire. **Results:** Around 60% of the students have decided regarding their preferred future specialties. Of total male students who have decided their first choice, 23 (35.4%) students have selected surgical specialties, 12 (18.5%) preferred medical specialties, only three (4.6%) students chose family medicine, and one (1.5%) student chose pediatrics. For females, of total students who have decided their first choice, 16 (31.4%) students chose medical specialties, 15 (29.4%) chose surgical specialties, three (5.9%) selected pediatrics, and no one had chosen family medicine. Regarding the ranking of factors influencing career choices, "personal interest" ranked first for all students with females giving it significantly more weight ($P = 0.008$) and the second rank was for "previous positive experience at the same specialty" and also showed statistically significant difference between both genders ($P < 0.001$). However, "role model," "avoid on call shifts," "advice from others," and "grade point average (GPA)" were ranked lower. 30-40% of our students did not decide yet regarding specialty choice; this could be considered an opportunity to influence career paths. **Conclusion:** Attending educational activities and orientation sessions were significantly associated with career choice decision. The highest percentages of both male and female students had selected surgical and medical specialties, and the lowest percentages had preferred pediatrics and family medicine; no one had chosen obstetrics/gynecology or basic medical sciences. The significant predictors of career choice include GPA, advice from others, and attending orientation sessions.

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INTRODUCTION

Medical students' career choices have a direct impact on the availability of physicians in different specialties and can result in a shortage in some specialties or locations

and oversupply in others [1]. Moreover, the preferences of graduating medical students have a significant role in planning for the post-graduate educational and training programs, as well as provision of comprehensive country health care services [2].

Determining how the graduates select their areas of specialization is essential to achieve a balanced distribution of physicians in all specialties [3].

Several factors influence career choice of medical students. Factors such as personal preference and controllable lifestyle appear to be more important than traditional motivators such as remuneration, prestige and length of training [4-6]. Some studies addressed the lifestyle priorities of the current generations of medical students who do not prefer to sacrifice their family and social life by pursuing some specialties like surgery [7-9].

Gender also appears to influence medical students' career choices [5,9]. Some specialties that are associated with technical and instrumental characteristics are usually more preferred by male students like surgical specialties [5]. Others with more opportunities for relational aspects and more contact with patients were more pursued by female students [10].

In Saudi Arabia, there are more than 32 medical colleges; nine of them are privately found [11]. Therefore, the demand for the proper number of faculties in various medical specialties has been created.

There are several cultural differences between western societies and the Saudi community; such differences may play a role in career choices of our medical students putting into consideration that the number of female students enrolled to Saudi medical schools has been increased in the past few years, and this may affect specialty choice.

Mehmood *et al.* [12] had investigated specialty preferences and the factors influencing among Saudi undergraduate medical students. Authors reported that male students emphasized some factors such as less competitive field, shortage of specialists, and diversity of patients. Other factors had a greater impact among female students as: The prestige of specialty and teaching opportunities.

Further advances in understanding and ranking the factors influencing medical students' career choices in Saudi Arabia are needed. Moreover, no information is available about preferred future careers of senior medical students at our Faculty of Medicine, King Fahad Medical City (KFMC), which is following a hybrid problem-based learning curriculum. Therefore, the current study has been carried out to contribute to the knowledge of career aspirations through investigating the career preferences of senior medical students, and to identify the least preferred specialties which may be an indicator of future shortage in manpower in those fields. In addition, we aim to rank the factors affecting career choice in order to identify different motivators that could be re-enforced in medical schools to enhance pursuing those least popular specialties. Results of this study could help the medical workforce planners in preparing for the future supply of different specialties to the Saudi community.

METHODS

Study Design

This is an observational, cross-sectional, questionnaire-based survey.

Study Subjects

This study included 116 senior medical students from two consecutive cohorts, 5th and 6th years during the academic year 2012-2013 at the Faculty of Medicine-KFMC, King Saud Bin Abdulaziz University for Health Sciences, Riyadh/KSA.

Setting

Undergraduate medical education at the faculty of medicine- KFMC encompasses 6 years. The first 3½ years are preclinical in nature and follow a hybrid problem-based learning curriculum. The last 2½ years are clinical clerkship years during which the students complete rotations in medical specialties, surgical specialties, family medicine, pediatrics, and obstetrics and gynecology, as well as elective experiences.

Data Collection Tool

Data were collected using a self-administered questionnaire which was inspired from the literature available as evidence-based research [13-15]. The questionnaire addressed three main areas: Demographic data, list of the top three preferred specialties, and factors influencing specialty choice. Students were asked to indicate to which extent they believe that each of the nine listed factors can influence their current preferred specialty using a Likert scale ranging from 1 (strongly disagree) to 4 (strongly agree).

Statistical Analysis

Collected data were entered in and analyzed using the SPSS software version 17 (SPSS Inc., 233 South Wacker Drive, 11th Floor, Chicago, IL 60606-6412). Categorical variables were presented as counts and proportions. Mean score \pm its standard deviation for each quantitative variable was calculated. Relationships between categorical variables were tested by Chi-square test. Unpaired *t*-test was applied to compare the mean score of the factors influencing career choices by gender. Logistic regression analysis was used to identify significant predictors of career choice by students. Level of significance was set to be <0.05 throughout the study.

Career choices were categorized as one of the following five major specialties, Family Medicine, Medical Specialties (internal medicine, psychiatry, diagnostic radiology, dermatology, cardiology, neurology, pathology, forensic medicine, laboratory medicine, physical medicine, and anesthesiology), Surgical Specialties (general surgery, cardiac surgery, orthopedic, neurosurgery, otolaryngology, ophthalmology, emergency

medicine, and plastic surgery), Obstetrics and Gynecology or Pediatrics.

Ethical Consideration

The study was ethically approved by the Institution Review Board at KFMC (Log Number: 13-043). Informed consents from all subjects were obtained. Participation in response to the questionnaire was totally voluntary and anonymous.

RESULTS

One hundred ninety-three questionnaires were distributed among all the recruited 5th and 6th year students at the faculty of medicine during the academic year 2012/2013. One hundred sixteen forms were completed and returned with a response rate of 60%. Overall, more than half of the respondents (56%) were males, 57% enrolled in the 6th year class, and most of them were singles (88%). The mean age of the respondent was 23.7 ± 1.4 years [Table 1]. Two-thirds of the female students (66.7%) and 60% of the male students have already decided regarding their preferred future specialties [Figure 1].

As shown in Table 2, more than half of the total study subjects, 63 (54.3%) students have attended various educational activities

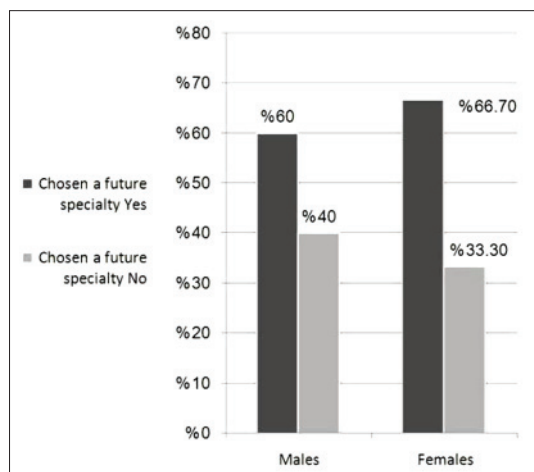


Figure 1: Decision of choosing a future specialty in both genders

Table 1: Demographic characteristics of the study participants

Demographic characteristic	n (%)
Gender	
Male	65 (56)
Female	51 (44)
Academic year	
Fifth	50 (43)
Sixth	66 (57)
Marital status	
Single	102 (88)
Married	14 (12)
Age (years)	
Mean ± SD	23.7 ± 1.4

SD: Standard deviation

for career planning, and 89 (76.7%) students have been exposed to orientation sessions about how to choose their future careers. Attending educational activities and orientation sessions were significantly associated with career choice decision ($P = 0.03$ and 0.007 , respectively).

In Table 3, of 39 male students who have decided their first choice, 23 (35.4%) students have selected surgical specialties, 12 (18.5%) preferred medical specialties, only three (4.6%) students chose family medicine, and one (1.5%) student chose pediatrics. For females, of 34 students who have decided their first choice, 16 (31.4%) students chose medical specialties, 15 (29.4%) chose surgical specialties, three (5.9%) selected pediatrics, and no one had chosen family medicine. Similar findings were obtained for the second and third preferred choices. The highest percentages of both male and female students had selected surgical and medical specialties, and the lowest percentages had preferred pediatrics and family medicine. From all our study subjects, no one had chosen obstetrics/gynecology or basic medical sciences as preferred future careers.

Table 4 profiles the ranking of factors influencing career choices in descending order. “Personal interest” ranked first for all students with females giving it significantly more weight than males (3.80 ± 0.40 for females compared to 3.55 ± 0.58 for males and $P = 0.008$). The second rank was for “previous positive experience at the same specialty” with a mean score 3.48 ± 0.64 (3.73 ± 0.45 for females compared to 3.29 ± 0.70 for males) and also showed statistically significant difference ($P < 0.001$). However, “role model,” “avoid on call shifts,” “advice from others,” and “grade point average” (GPA)

Table 2: Association between attendance of previous educational activities and having orientation about career choice with decision of choosing a career

Variable	Career choice (n (%))		Chi-square	P value
	Yes	No		
Previous educational activities				
Yes	45 (71.4)	18 (28.6)	4.268	0.03
No	28 (52.8)	25 (47.2)		
Having orientation				
Yes	62 (69.7)	27 (30.3)	7.428	0.007
No	11 (40.7)	16 (59.3)		

Table 3: Specialty choice of the participants according to gender (n=116)

Specialty	No choice n (%)	Family medicine n (%)	Medical specialties n (%)	Surgical specialties n (%)	Pediatrics n (%)
First choice					
Males (n=65)	26 (40)	3 (4.6)	12 (18.5)	23 (35.4)	1 (1.5)
Females (n=51)	17 (33.3)	0 (0)	16 (31.4)	15 (29.4)	3 (5.9)
Second choice					
Males (n=65)	38 (58.5)	0 (0)	13 (20)	13 (20)	1 (1.5)
Females (n=51)	18 (35.3)	4 (7.8)	11 (21.6)	13 (25.5)	5 (9.8)
Third choice					
Males (n=65)	44 (67.7)	3 (4.6)	8 (12.3)	8 (12.3)	2 (3.1)
Females (n=51)	25 (49.0)	2 (3.9)	10 (19.6)	11 (21.6)	3 (5.9)

Table 4: Mean rating and standard deviation of factors influencing career choices according to gender in descending order

Factors	All the study subjects	Males	Females	P value
Personal interest	3.66±0.51	3.55±0.58	3.80±0.40	0.008
Previous positive experience	3.48±0.64	3.29±0.70	3.73±0.45	<0.001
Work hours	3.15±0.81	3.20±0.83	3.08±0.77	0.422
Financial reward	3.00±0.76	3.08±0.82	2.90±0.76	0.218
Less risk	2.87±0.86	2.88±0.91	2.86±0.80	0.930
Role model	2.74±0.87	2.65±0.78	2.86±0.96	0.182
Avoid on call shifts	2.60±0.99	2.65±0.99	2.55±0.97	0.601
Advice from others	2.44±0.89	2.45±0.85	2.43±0.94	0.930
GPA	2.13±0.97	2.28±0.99	1.94±0.88	0.060

GPA: Grade point average

Table 5: Logistic regression analysis for predictors of career choices

Predictors	P-value	OR	95% CI of OR	
			Lower	Upper
Gender	0.586	1.420	0.402	5.010
Age	0.619	1.135	0.689	1.868
Academic year	0.709	0.802	0.251	2.556
Marital status	0.515	1.726	0.334	8.912
GPA	0.029*	0.534	0.304	0.937
Personal interest	0.213	2.015	0.669	6.070
Previous positive experience	0.375	1.557	0.586	4.137
Financial reward	0.914	0.955	0.409	2.229
Work hours	0.354	0.661	0.275	1.586
Less risk	0.870	0.934	0.412	2.116
Avoid on call shifts	0.338	0.728	0.380	1.394
Advice from others	0.001*	0.294	0.138	0.626
Role model	0.077	1.947	0.930	4.077
Having orientation	0.000*	5.101	2.174	11.970
Educational activities	0.544	1.366	0.499	3.738
Constant	0.406	0.009		

*Significant P value, OR: Odds ratio, CI: Confidence interval, GPA: Grade point average

were ranked lower with no statistically significant differences between both genders.

Table 5 shows the output of logistic regression analysis for predictors of career choice. All the study variables which may have predicted career choice were entered in the logistic model. The significant predictors were GPA, advice from others, and attending orientation sessions.

Investigating specialty preferences among medical students and factors affecting career choices are crucial for planning of health care delivery and to face challenges of attraction of medical students to one specialty rather than others.

DISCUSSION

We found that 30-40% of our students did not decide yet regarding specialty choice. The percentage of undecided students in some other studies varied between 19% and 60% [12,16,17]. This could be referred to poor orientation and lack of career

support services and also could be considered as an opportunity to influence career paths.

Our male students chose surgical specialties as a first choice of career aspirations and females chose medical then surgical fields; these findings are congruent with those of other globally and nationally conducted studies [5,9,12,17-20]. This could be attributed to the attracting nature of these specialties to male students considering perceived prestige and financial reward. However, female students may find difficulty in having a balanced lifestyle when opting surgical careers [21].

In our results, pediatrics ranked as the last preferred choice. This is consistent with the results of previous studies in which pediatrics ranked behind surgical and medical specialties [5,7].

Only 4.6% of our male students had considered family medicine as their first career choice while none of the females have done. This decline interest in family medicine has been demonstrated also in other studies conducted in Saudi medical schools [7,12,16]. This finding is not unique to Saudi Arabia, as other nations reported similar declines [13,22]. This decline might be attributed to the desire of the students to deal with more challenging cases, procedural skills, prestige, and more income expected from pursuing other specialty careers [6]. In the contrary, the results of Ko *et al.* demonstrated that 29% of the students enrolled in their study had ranked family medicine as the first choice of their preferred future career; moreover, they found that the most important influential factors in this career choice were personal interests and previous positive experience [15]. Furthermore, the study of Zolaly *et al.* revealed that male students' preferred specialty was family medicine [20]. In general, other attracting factors for pursuing such specialty could be shorter post-graduate training period and balanced lifestyle [23,24].

Astonishing enough, obstetrics and gynecology was not chosen at all as a preferred future specialty among our students of both genders. This finding is conforming to the findings of other national studies that demonstrated less popularity of this specialty even among female students. This could be referred to the work demands and the challenges of having a balanced lifestyle among females who pursue such a specialty. Cultural and religious reasons can be held responsible for the decreased number of male students pursuing obstetrics and gynecology especially in some conservative communities like Saudi Arabia [12,17].

With regard to basic medical sciences specialties, none of our students had chosen any as a preferred future career. Mehmood *et al.* have demonstrated that the category including anatomy, physiology, biochemistry, pathology, microbiology, and forensic medicine was representing only 5.21% of all students' preferences [12]. This could be attributed to the less attractive nature of these careers when considering the prestige, patient contact, and financial

reward and lack of medical practice. In addition, Kingdom of Saudi Arabia provides facilities and sponsorship to the post-graduate students to get higher western qualifications; this could be more encouraging for students to carry on the more attractive and challenging clinical specialties rather than basic medical sciences. Moreover, many students prefer to attend orientation sessions about clinical specialties rather than basic medical sciences.

Lack of exposure to any structured basic medical sciences courses during clerkship could contribute to the less popularity of these careers. Students may perceive these sciences as being “peripheral” to the medical profession. This misconception and lack of interest in such careers could be improved by vertical integration of these disciplines into the curriculum to cross the gap between the preclinical and the clinical phases and to demonstrate the relevance of these sciences and careers to clinical practice.

Our study showed that attending previous educational activities and career orientation sessions were significantly associated with career choice decision. The influential role of counseling was proved by other researchers [12].

In the present study, personal interest and previous positive clerkship experience both have gotten the highest scores rating among the different factors influencing career choice in both genders. However, financial reward was not a significant predictor of career choice. These findings are consistent with the results demonstrated by Ko *et al.* [15]. In contrast, remuneration was a main motivating factor for career choice in other studies [23,25].

Of all our study variables, the significant predictors for career choice included GPA, advice from others, and attending orientation sessions. It was found that obtaining marks in a particular subject can influence the specialty choice [12]. However, in another national study, advice from others was considered the least influential factor in career choice [17].

To increase the supply of family physicians which is crucial to ensure adequate primary care provision, medical schools should increase primary care exposure during training and within the curriculum so that more future physicians be encouraged to pursue this career. It is worth noting that insufficiency of Saudi manpower in such less popular medical specialties might lead to continuous dependence on expatriates to occupy the vacancies in these specialties. Future research on each individual specialty is needed to indicate the various motives for each specialty separately.

We believe that our results raise important issues regarding career choices. However, there are certain limitations. Our study was limited by the cross-sectional nature of the survey which might not reflect changes over time, as we have investigated the “preferred” choice of medical career and not the “actual” one. In addition, the response rate to our questionnaire was 60% which possibly leads to a bias in the interpretation of the preferred choices.

Establishing career counseling programs and career guidance strategy for medical students early during their study could be effective in encouraging them to pursue careers in which serious manpower deficiencies exist. In addition, after examining students’ career perceptions, tailored careers support programs could be incorporated within the curriculum after discussion with the appropriate academic staff; this could be applied especially for the less preferred specialties as obstetrics and gynecology, basic medical sciences, and family medicine.

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