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FACTORS AFFECTING FUTURE SPECIALTY CHOICE IN MEDICAL INTERNS AT QASSIM UNIVERSITY

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Abstract

Introduction: *There is significant shortage of Saudi physicians in several specialties. The process of choosing future specialty is poorly understood. This study aims to identify the factors that influence medical interns to choose their future specialty.*

Methodology: *This study was designed as a cross-sectional survey. In September 2018, medical interns at Qassim University in Saudi Arabia were asked to fill out an on-line-questionnaire. On 24 items with 5-points Likert scale, the interns rated the importance of specified occupational and individual aspects. Moreover, interns were asked to specify their intended specialty. Analysis was performed using Statistical Package for Social Science SPSS version 24. Chi-squared test and logistic regression were used to test the association between deciding a future specialty and interns' socio-demographic factors.*

Result: *75 interns participated in the survey. Majority of the interns chose good treatment outcome as their most influential factor for choosing their future career, while gender distribution in the specialty was the weakest factor. Pediatrics and general surgery were the most preferred specialties followed by internal medicine. The least preferred specialties were anesthesiology, community medicine, urology, ICU, cardiac and pediatric surgery. There were no gender differences found.*

Conclusion: *Many factors appeared to inspire medical students and interns to choose a future specialty. Administrative efforts may also play a major role in steering medical students toward certain specialties to meet the workforce demand. Thus, we recommend to establish a formal career counseling to guide students choose their medical specialty and cultivate their interest.*

Key words: *Medical interns; Future specialty; Cross-sectional ; Career counseling; Qassim.*

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INTRODUCTION:

Choosing medical specialty is challenging experience for interns and medical students, as there are many factors to be considered. These factors embrace a wide spectrum of variable influences and range from individual and occupational characteristics. Previous studies shown that these factors include personality, age, gender, marital status, parents' socioeconomic status, academic performance, years of residency training required, lifestyle preferences, expected income, role model and prestige (1–4). Information concerning the career choice of medical students is important in planning the health care workforce and medical education programs and providing equitable and high quality health care services to the population. It is generally believed that understanding of factors influencing career choice could be utilized to modify medical school curriculum, methods of selection and practice opportunities to better match community needs and medical student desires (5).

There is a significant deficiency of Saudi physicians in several specialties. The Ministry of Health reported that the total number of physicians in the kingdom was 98,074 and the total number of Saudi physicians was 28,896 that represent 29.5%. This clearly indicates shortage of Saudi physicians in almost all the specialties (6). 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 physicians should be considered of prime importance.

In times of physicians' shortage, it is important to understand how future doctors choose their career. In order to discuss the policy implications of managing the numbers of specialists, it is crucial to elucidate why some specialties chosen more than the others. Thus, the purpose of this study was to understand what career preferences medical interns have and to determine what factors influence their choice.

METHODS:

A cross-sectional study was conducted amongst medical interns at Qassim University, Qassim, Saudi Arabia, during September 2018. Ethical approval was obtained. A questionnaire was developed after literature review including demographic data (age, gender, marital status, grade point average (GPA) and parents' level of education). Participants were asked to specify which of the following medical specialties they intended to pursue: GM/FM, internal medicine subspecialty, surgery, pediatrics, obstetrics/gynecology, psychiatry, anesthesiology, emergency medicine, dermatology, orthopedics, ophthalmology, otolaryngology, urology and radiology, or 'other'. They then indicated the degree to which factor influenced their choice. Responses were measured on a 5-point Likert scale ranging from 1 (extremely important) to 5 (not important at all). They were also asked whether they would prefer to complete their postgraduate education abroad or locally, again with points to indicate the factors that influenced their choice.

Data analysis was performed using Statistical Package for Social Science SPSS version 24. Chi-squared test and logistic regression were used to test the association between deciding a future specialty and interns' socio-demographic factors.

RESULTS:

Total 75 doctors were included in this study to know the factors influencing their medical specialization choice. Among the respondents, 52.0 % were male. The mean age of all respondents was 24.49 ± 2.15 years and the mean age difference between male and female respondents was not statistically significant (p .579). The clear majority (96.0 %) of the respondents were single. The mean GPA of female respondents were observed to be higher than the males (4.02 ± 0.58 vs 3.70 ± 0.70) but this mean difference was not statistically significant (p .071). Interestingly, none of the female respondents' father's education was above graduation (p .047). Mother's education was similarly distributed between male and female respondents (p .439). (Table 1)

The highest percentage of (16.0%) respondents wanted Pediatrics and General Surgery as their first choice whereas the lowest percentage of the respondents (1.3%) wanted Anesthesiology, Community Medicine, Urology, Cardiac Surgery, ICU and Pediatric surgery as their primary choice. Emergency Medicine and Internal Medicine (17.3 %) was observed to be the second most desirable choice among the

respondents. The highest third choice was Family Medicine and Internal Medicine (17.3%). Overall, 14.6 % of respondents had Community Medicine in their top three choices. (Chart 1). 'Good treatment outcome' was recognized by the most important factor (mean value 3.93 ± 1.04) for specialty choice. 'Gender distribution in the specialty' was identified as the weakest factor (mean value 2.15 ± 1.32) for specialty choice according to the respondents. All other studied factors that may affect specialty choice were presented in table 2. It was observed that factors about half (50.7%) of the respondents kept Internal Medicine in their top three choices. Only affecting the specialty choice were not statistically significantly different between males and females (p values > .05). (Table 2)

Eighteen (24.0%) study participants had plans to take residency abroad (Chart 2). Eleven (61.1%) out of these 18 respondents want to take residency abroad so that they can explore other culture (Chart 3)

***Table 1*:** Baseline characteristics of all respondents, male respondents and female respondents. (n = 75)

Characteristics	All respondents (n = 75)	Males (n = 39)	Females (n = 36)	p-value
Age in years (mean ± SD)	24.49 ± 2.15	24.59 ± 1.90	24.39 ± 2.41	.579
Marital status				.509
▪ **Single**	72 (96.0)	38 (97.4)	34 (94.4)	
▪ **Married**	3 (4.0)	1 (2.6)	2 (5.6)	
GPA (mean ± SD)	3.85 ± 0.66	3.70 ± 0.70	4.02 ± 0.58	.071
Father's education				.047
▪ **High school or less**	35 (38.9)	18 (46.2)	17 (47.2)	
▪ **Diploma**	4 (4.4)	3 (7.7)	1 (2.8)	
▪ **Bachelor's degree**	29 (32.2)	11 (28.2)	18 (50.0)	
▪ **Master's degree**	2 (2.2)	2 (5.1)	0 (0.0)	
▪ **PhD**	5 (5.6)	5 (12.8)	0 (0.0)	
Mother's education				.439
▪ **High school or less**	40 (44.4)	24 (61.5)	16 (44.4)	
▪ **Diploma**	11 (12.2)	4 (10.3)	7 (19.4)	
▪ **Bachelor's degree**	21 (23.3)	10 (25.6)	11 (30.6)	
▪ **Master's degree**	3 (3.3)	1 (2.6)	2 (5.6)	
▪ **PhD**	0 (0.0)	0 (0.0)	0 (0.0)	

Chart 1: Distribution of specialty preferences among the participants (n = 75).

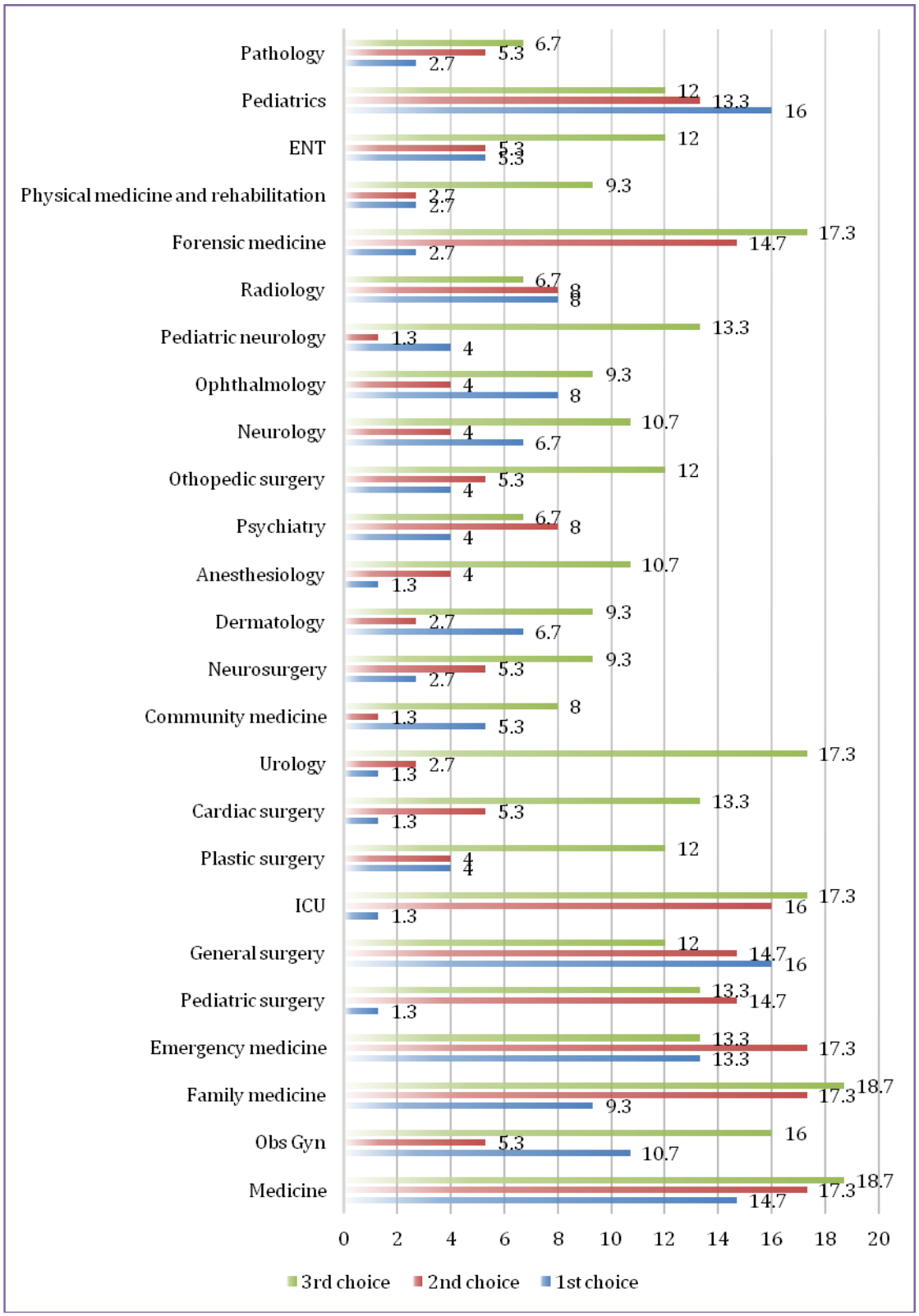

Pathology
Pediatrics
ENT
Physical medicine and rehabilitation
Forensic medicine
Radiology
Pediatric neurology
Ophthalmology
Neurology
Othopedic surgery
Psychiatry
Anesthesiology
Dermatology
Neurosurgery
Community medicine
Urology
Cardiac surgery
Plastic surgery
ICU
General surgery
Pediatric surgery
Emergency medicine
Family medicine
Obs Gyn
Medicine
0 2 4 6 8 10 12 14 16 18 20
3rd choice
2nd choice
1st choice

***Table 2*:** Distribution of factors affecting the decision of specialty choice. (n = 75)

Factors	All	Female	Male	p-value
	Mean ± SD	Mean ± SD	Mean ± SD	
Working hours	3.39 ± 1.05	3.47 ± 1.16	3.31 ± 0.95	.502
Number of on-calls	3.37 ± 1.06	3.47 ± 1.23	3.28 ± 0.89	.442
Residency training length	2.93 ± 1.54	3.03 ± 1.18	2.85 ± 1.14	.500
Training place	3.76 ± 1.09	3.94 ± 1.01	3.59 ± 1.14	.160
Good treatment outcome	3.93 ± 1.04	4.14 ± 0.87	3.74 ± 1.16	.102
Clinical settings (direct interaction with patient)	3.63 ± 1.11	3.64 ±1.09	3.62 ± 1.14	.928
Non-clinical settings (indirect interaction with patient)	2.88 ± 1.13	2.97 ± 1.13	2.79 ± 1.13	.500
Interest in surgical and procedural work	3.25 ± 1.44	3.58 ± 1.42	2.95 ± 1.41	.057
Opportunity for research	2.65 ± 1.41	2.86 ± 1.48	2.46 ± 1.33	.222
Opportunity to teach	3.01 ± 1.34	3.25 ± 1.36	2.79 ± 1.30	.143
Gender distribution in the specialty	2.15 ± 1.32	2.11 ± 1.30	2.18 ± 1.35	.825
Future job security	3.98 ± 0.95	4.11 ± 0.89	3.87 ± 1.04	.279
High income	3.68 ± 1.04	3.78 ± 0.99	3.59 ± 1.09	.439
Advice from a mentor	3.17 ± 1.18	3.11 ± 1.09	3.23 ± 1.27	.663
Family/ friends influence	2.32 ± 0.99	2.31 ± 0.79	2.33 ± 1.54	.904
Clinical rotation experience	3.89 ± 0.99	3.83 ± 1.03	3.95 ± 0.97	.619
Personal experience (you/family suffer from illness in the specialty)	2.90 ± 1.15	2.69 ± 1.03	3.10 ± 1.25	.126

Chart 2: Distribution of respondents by their planning to take residency abroad. (n = 75)

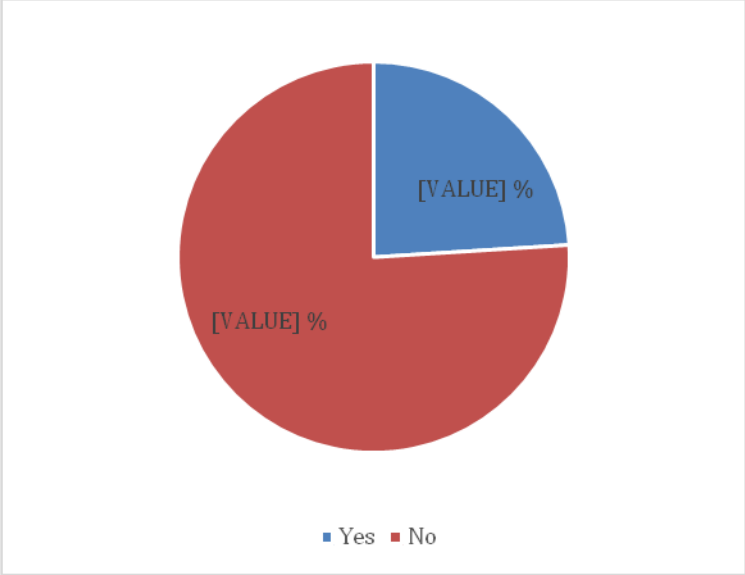
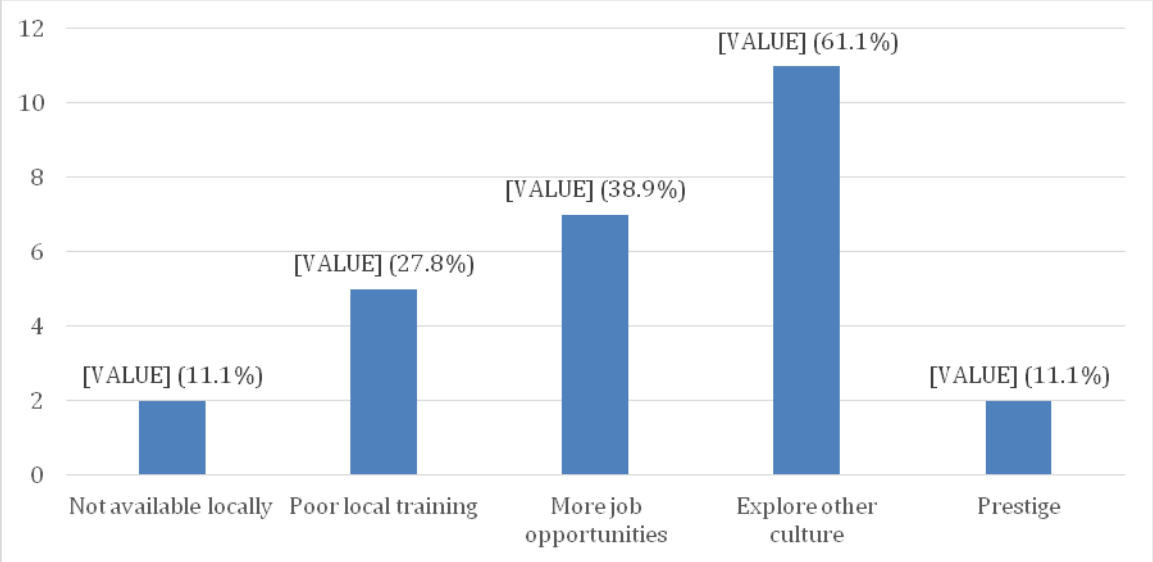


***Chart 3*:** Distribution of respondents by the reasons behind their planning to take residency abroad. (n = 18)



DISCUSSION:

Various similar studies had been done in Saudi Arabia as well as other countries. (7) (8) (9). Many factors were observed to inspire medical students and interns to choose future specialty such as intellectual content of specialty, prestige, and financial opportunities. (10) (11) (12) (13). Furthermore, personal intelligence/ability preference, job opportunities, positive experience were also considered important factors (1) (10).

We found that pediatrics and general surgery were the most preferred specialties. The same study was conducted in different countries and they found that surgery is the most preferable specialty. Another study conducted by Mehmood et al., stated that both male and female students preferred surgery for their first choice while pediatrics was female preferred second choice (14). Similarly, Alfowzan, found that pediatrics and general surgery were the most desirable specialties. This may be due to the fact that these are specialties that the students encounter on a daily basis (15).

Seeking for a good treatment outcome for patients was the most influential factor in choosing future specialty in our study. A similar study done in Kuwait University showed that the most influencing incentives are good treatment outcome for their potential patients, challenging specialty, good income, good social life and the luck of specialties in the country (15). While in other study, medical students considered lifestyle as the most important factor (16) (17). An increasing trend among medical students and graduates toward controllable lifestyle (CL) specialties has been reported. Schwartz et al suggested that CL specialties included anesthesiology, dermatology, emergency medicine, neurology, ophthalmology, otolaryngology, pathology, psychiatry and radiology (18).

Gender differences have been studied at a national level. Surprisingly, we found no differences between male and female. In contrast to other studies, gender plays an important role in choosing the specialty, as females tend to choose specialty with low workload than the males (16) (19).

The low influence of mentors and role models was observed in our study. The mentoring program can positively influence medical students' interest (20)(21). A study published by Mahony at al., suggested that early career counseling and support during medical school and immediately after graduation may encourage doctors who were considering careers in specialties in which there are shortages to pursue careers in these specialties (22). Boyd et al., stated that the impact of mentors and role models ranked as the second most important influence (23). Another study also reported that a

great majority of junior physicians want a career counseling after qualification (24). This could be of interest to medical college deans and students affairs as they develop career planning activities and programs.

CONCLUSION:

Administrative efforts may play a major role in steering students toward certain specialties to meet the workforce demand. Thus, we recommend that to establish a formal career counseling to guide students choose their medical specialty and cultivate their interest.

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