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Study of Future Specialty Career Choice among Female Medical Students in Medical College, Taif University, Saudi Arabia

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ABSTRACT

Introduction: *Specialty career choice is an important decision for medical students. For most, this choice is an ongoing process throughout their undergraduate schooling. The aim of the study is to identify reasons for studying medicine, the future specialty choices by medical students, identify different influencing factors in students' decision-making regarding future specialty interests.* ***Method:*** *We conducted a survey on First and sixth-year female students at Medical College in Taif University during academic year 2018-2019, using a questionnaire probing about their specialty preference and reasons of their choice.* ***Results:*** *The first choice of specialty was internal medicine specialty for first and sixth year students. The other prevalent choices were surgical specialty, ophthalmology, obstetrics and gynecology, then family medicine practice, pediatrics and dermatology for first and sixth year students choices altogether. Logistic regression analysis of reasons of choice of specialties showed that the first three statistically significant factors between first and sixth year students were: Interest in the clinical work of the specialty, Job availability and encounter with role model teachers. More than half of students mentioned that it is would rather avoided and will never work in remote and rural areas. Only (15.3%) expressed willingness to practice medicine in remote areas with no significant difference between first and sixth year students. Main reason of choice of practice location was career development and being in hometown.* ***Conclusion:*** *Majority of students planned to specialize in well-known clinical areas. First year students favored medical practice specialties and sixth year students preferred surgical.*

Keywords: Career choices, Saudi Arabia, Medical students

INTRODUCTION

Total 31 million people live in Saudi Arabia, a third of whom are migrant labors. Women represent 49% of Saudi citizens and 43% of all residents of the kingdom [1]. In Saudi Arabia, there are forty one medical colleges. In 1967, King Saud University was the first medical school established in Saudi Arabia. Each region is differ than other in number of medical colleges, and requirements of health services [2]. In 2017, the Ministry of Health, Kingdom of Saudi Arabia, released a Statistics Book on their official website, which indicates that the total number of Saudi Physicians in the Kingdom is 49,708. Saudi physicians are 20,252 representing 41.3% of all. It is proposed to be 50,810 Saudi physicians in 2027. "Specialized Saudi medical doctors are still in great demand in most Saudi secondary and tertiary hospitals" according to the report [2].

Specialty career choice is an important decision for medical students. For most, this choice is an ongoing process throughout their undergraduate schooling. Although some students distinguish what specialty they want to pursue at the time of entrance, most are influenced by internal and external factors throughout their schooling [3].

Medical students spend six years of study and one year in an internship before graduation. Students begin their clinical rotations in the fourth year of medical school, where they are exposed to patients and specialties for 1-6 weeks in each clinical turn, depending on the specialty they are assigned. After graduation, each student chooses a specialty for

a further residency training program to become a full specialist in that field [3]. As there are many factors to consider, the choice of a forthcoming career in medical practice can be an overwhelming experience for medical students and interns [4].

Medical alumni's career selections are vital to recognize because they are key factors of the medical labor force and thus influence how, where, and when medical care will be delivered. In order to discuss the policy consequences of managing numbers of specialists, it is critical to clarify why some specialties are chosen more than others [5].

To the best of my knowledge, this study was not conducted among female students in the in the western region of Saudi Arabia, which may differ from the rest of the regions in Saudi Arabia in the selections of female students.

Aim of the Study

Identify reasons for studying medicine among female medical students at Taif University

Examining future specialty career choices among female medical students at Taif University

Identify different influencing factors affecting students' decision-making regarding future specialty interests

Determine intended practice locations among females and reasons of choice

METHODOLOGY

Research Setting

Taif University, Faculty of Medicine, Female section.

Study Design

Cross sectional study design.

Study Population

Total coverage of females students of first and sixth years students have been taken.

Inclusion and exclusion criteria: All students in the first and sixth year female students of faculty of Medicine at Taif University were illegible to voluntary participation.

Research Instruments

Structured questionnaire was prepared by the researcher. The questionnaire have been modified from similar questionnaires available in the literature. It comprised socio-demographic data of the students including age, academic year, marital status, and family income. Data about future career specialty choice have been inquired. Different factors that influence their choice as characteristics of specialty, personal experience, experience at medical school, advice from others, considering future work conditions and any other mentioned factors have examined. Also data about intended practice location in the future has been inquired.

Data Collection Procedure

A questionnaire survey was conducted anonymously in the chosen years. Female students were be invited to share in the study. The questionnaire was distributed to the students. Questionnaire filling was voluntary and individual replies were anonymous.

Data analysis: Data was revised for completion. SPSS 22 version for window was used for data entry and analysis. Descriptive analysis including percentage, mean and standard deviation was calculated accordingly. Univariate analysis using chi squared test and multivariate analysis have been done to test association between type of future carrier choice and the proposed influencing factors.

Ethical Considerations

Ethical allowance was achieved from the ethical committee board at Taif University. Students were informed about the objectives of the study prior to the data collection and verbal consent was obtained from them. Confidentiality of data was assured to the participants.

RESULTS

Table 1 shows that mean age of students were 20.9 ± 2.8 years. Half of students were of monthly family income more than 5000 SAR.

Table 2 shows main reasons for studying medicine. On the total level, it was found that 35.9% mentioned that their mother and/or father a physician, dentist or other health related jobs and they want to be the same. 28.2% mentioned that they know a doctor with whom they felt exceptionally near or a part demonstrate and 29.6% mentioned other causes as family pressure, social respect of doctors and financial factors. There is no significant difference between first and sixth year students regarding different reasons for studying medicine ($p<0.05$).

Table 3 shows the students choices of specialties in the future. The first choice was internal medicine specialty for first and sixth year students (19.0%). The other prevalent choices were surgical specialty (18.3%), ophthalmology specialty (15.5%), obstetrics and gynecology (14.8%), then family medicine practice (13.4%), pediatric (11.3%) and dermatology (7.7%) for first year and sixth year students choices altogether.

First year students chose medical practices including internal medicine (30.0%) specialty, family medicine practice (20.0%) and pediatrics specialty (14.3%). Sixth year students preferred surgical practices as general surgery (27.8%), ophthalmology (22.8%) and then obstetrics and gynecology specialty (19.4%). There was statistical significant difference between first and sixth year regarding type of preferred specialty ($p=0.047$).

Table 4 shows main reasons of choosing specialty. Job availability (76.1%), Interest in the targeted population (e.g. children, the elderly) (75.4%), become interested in the specialty before medical school (75.3%), and interested in surgical procedures (73.2%) were the mean reasons for first and sixth years altogether. For first year, main reasons were interest in target population followed be Job availability. Among sixth year students; First reason was job availability followed by became interested before medical school.

Bivariate analysis showed significant difference between first and sixth year regarding job availability, became interested in specialty before medical school, interested in surgical procedure, received excellent teaching, expected outcome and ease of opening practice.

Table 5 shows logistic regression analysis of reasons of choice of specialties among first and sixth years students. Statistically significant factors were: Interest in the clinical work of the specialty (0.000), Job availability (0.000), Encounter with role model doctors (0.002), Interest in the targeted population (e.g. children, the elderly) (0.005), Received excellent teachings (0.007), Interested in the surgical procedures or technologies (0.009), feeling that it rewarding to work in the specialty (0.008), Comfortable atmosphere at the specialty department (0.011), Ease of opening practice (0.015), Became interested in the specialty before medical school (0.032), working hours (0.032), Influence of future health care reform (0.042).

Table 6 shows to what extent are the students willing to work in a rural and remote areas upon graduating. On the total level; It was found that only 15.3% were keenly motivated to work in rural areas and 25.8% reported that they are willing to work for a certain period of time. About half of the students (50.8%) mentioned that they will never work in rural area (29.8%) and it would rather avoid working in remote areas (29.0%). There were no significant difference between students in first and sixth year ($p=0.167$).

Table 7 shows important factors to choose the practice location. It was found that career development, hometown, availability of support from other doctors, life style, teaching opportunities, community atmosphere (characteristics of people), parents' residence, educational environment for children and Income were the mentioned causes.

Table 1 Socio-demographic characteristics of studied students

Monthly Family Income	No. (142)	%
Less than 1000	33	23.2%
1000-5000	38	26.8%
More than 5000	71	50%

Age/years	
Mean ± SD	20.85 ± 2.8
Minimum age/years	17
Maximum age/years	24

Table 2 Reasons for studying medicine among studied female students

	1st year		6th year		Total		p-value
	No.	%	No.	%	No.	%	Chi- square
Mother and/or father a doctor, or other health related occupations	29	41.4%	22	30.6%	51	35.9%	0.12
Actually know a doctor with whom they felt exceptionally near or a part demonstrate	23	32.9%	17	23.6%	40	28.2%	0.15
Others (family pressure, social respect of doctors and financial factors)	17	24.3%	25	34.7%	42	29.6%	0.119

Table 3 Preferred specialty among students

	1st year		6th year		Total	
	No.	%	No.	%	No.	%
Most preferred specialty for students	70	49.3%	72	50.7%	142	100%
Internal medicine	21	30%	6	8.3%	27	19%
Surgery	6	8.6%	20	27.8%	26	18.3%
Ophthalmology	6	8.6	16	22.2%	22	15.5%
Obstetrics and gynecology	7	10%	14	19.4%	21	14.8%
Family medicine	14	20%	5	6.9%	19	13.4%
Pediatrics	10	14.3%	6	8.3%	16	11.3%
Dermatology	6	8.6%	5	6.9%	11	7.7%
Chi-square=28.082; p=0.047						

Table 4 Reasons for choosing a specialty

	1st year		6th year		Total		Chi-square
	No.	%	No.	%	No.	%	
Job availability	45	64.3%	63	87.5%	108	76.1%	0.001
Interest in the targeted population (e.g. children, the elderly)	51	72.9%	56	77.8%	107	75.4%	0.314
Became interested in the specialty before medical school	47	67.1%	60	83.3%	107	75.3%	0.008
Interested in surgical procedure	45	64.3%	59	81.9%	104	73.2%	0.014
I feel it rewarding to work in the specialty	48	68.6%	50	69.4%	98	69%	0.527
Have an aptitude for the specialty	42	60%	52	72.2%	94	66.2%	0.087
Interested in the clinical work of specialty	45	58.3%	42	64.3%	87	61.3%	0.289
Comfortable atmosphere at the specialty department	32	45.7%	42	58.3%	74	52.1%	0.091
Received excellent teachings	30	42.9%	42	58.3%	72	50.7%	0.047
Expected income	29	41.4%	42	58.3%	71	50%	0.032
Influence of future health care reform	33	47.1%	25	34.7%	58	40.8%	0.091

Encountered with role model teachers	33	47.1%	36	50%	69	48.6%	0.432
Ease of opening practice	16	22.9%	30	41.7%	46	32.4%	0.013

Table 5 Logistic regression of reasons of choosing specialty

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	1.369	0.244	0	5.616	0
Interest in the targeted population (e.g. children, the elderly)	0.229	0.079	0.198	2.888	0.005
Interested in the surgical procedures or technologies	0.218	0.082	0.193	2.661	0.009
I feel it rewarding to work in the specialty	0.26	0.097	0.241	2.694	0.008
Became interested in the specialty before medical school	0.215	0.099	0.188	2.174	0.032
Received excellent teachings	0.302	0.11	0.302	2.746	0.007
Comfortable atmosphere at the specialty department	0.293	0.113	0.293	2.585	0.011
Encounter with role model teachers	-0.294	0.094	-0.294	-3.132	0.002
Job availability	0.517	0.098	0.441	5.261	0
Ease of opening practice	0.155	0.063	0.145	2.463	0.015
Influence of future health care reform	-0.163	0.079	-0.160	-2.055	0.042
Interest in the clinical work of the specialty	-0.656	0.094	-0.640	-7.000	0

Table 6 Attitude of students towards working in a rural and remote areas

	1st year (No. 59)		6th year (No. 65)		Total (No. 124)		Significance
	No.	%	No.	%	No	%	
Keenly motivated	9	15.3%	10	15.4%	19	15.3%	Chi-square=5.061 p-value=0.167
Willing to work for certain period of time	10	16.9%	22	33.8%	32	25.8%	
Would rather avoid	19	32.2%	17	26.2%	36	29%	
Never	21	35.6%	16	24.6%	37	29.8%	

Table 7 Important factors to choose the practice location

	Total	
	No	%
Career development	117	82.4%
Your hometown	110	77.5%
Availability of support from other doctors	107	75.4%
Life style	105	73.9%
Teaching opportunities	104	73.2%
Community atmosphere (characteristics of people)	95	66.9%
.Parents' residence	94	66.2%
Educational environment for children	93	65.5%
Income	89	62.7%

DISCUSSION

There are few diverse choices that apply an impact on people's lives as the choice of a subject work, or career. Most of individuals spend significantly more time at the work than in any single activity. However, also choice of profession drastically impacts life-style, and work adjustment and is closely associated with mental health and even physical well-being [6,7]. Researchers in the area of vocational psychology have been studying career choice and work adjustment for years, and a number of hypothetical models of career choice and improvement have been occurred [8,9].

On investigating the main reasons for studying medicine, it was found that 35.9% mentioned that their mother and/or father a physician, dentist or other health related jobs and they want to be the same. 28.2% mentioned that they know a doctor with whom they felt exceptionally near or a role model and 29.6 % mentioned other causes as family pressure, social respect of doctors and financial factors. There is no significant difference between first and sixth year students regarding different reasons for studying medicine ($p<0.05$).

Other causes mentioned by Al Subait, et al. [10], that the most vital components of the medical students to select their career were "Opportunity to Treat/Help People", followed by medicine is an exciting and interesting profession, and belief that medicine is a science based profession.

In Taif City [2], there were 1665 (72%) male physician and only 649 (28%) female physician at Governmental Hospitals in 2018 report. In agreement to this study, a four-nation study published in 2002 conducted within the developed nations (Australia, Canada, England and the United States (US)) appeared that women make up 30% of all practicing doctors [11].

Unlike Saudi Arabia; many developed nations like the United Kingdom (UK), female doctors will soon form the majority of the physician workforce [12]. In the Netherlands in 2007, 40% of all physicians and 34% of all specialists were female, and it is expected that by 2027, 66% of all physicians will be females [13].

On the total level in this study, the first choice was internal medicine specialty. The other prevalent choices were surgical specialty, ophthalmology specialty, obstetrics and gynecology. Sixth year students first choice was surgical practices, followed by ophthalmology and then obstetrics and gynecology specialty. First year students first choice was medical practices including internal medicine specialty, family medicine practice and pediatrics specialty.

Lee, detailed that women make up additional than half of medical faculty graduates, however they stay underneath represented in most specialty areas. While women are becoming more evenly represented in specialist-in-training programs, they still remain far behind in many specialties, most particularly surgery [13].

Low percentage of female surgeons (11.1%), from the Royal College of Surgeons in the United Kingdom in 2016 but there are signs that this number has increased. Female surgical specialists in the United Kingdom are signified differently in the different surgical specialties, accounting for 25% of pediatric surgeons but <20% in all other surgical fields [14].

As it were 19.2% of American surgeons are women, there were only 20 female Chairs of division of Surgery within the United States in 2016. Within the United States, ladies accounted for 8% of Professors, 13% of Associate Professors, and 26% of Assistant Professors of Surgery. Generally, this data indicates a clear underrepresentation of ladies as surgeons, Full Professors and Chairs of Departments in both the United States and the United Kingdom [15].

Regarding causes of carrier choice, Job availability, Interest in the targeted population (e.g. children, the elderly), become interested in the specialty before medical school, and interested in surgical procedures were the mean reasons for first and sixth years altogether. For first year, main reasons were interest in target population followed be Job availability. Among sixth year students; First reason was job availability followed by became interested before medical school.

In KSA choice of specialty was restricted by the prospect of working with male patients, the expanding availability of training within KSA in specialties reasonable for ladies, and the ability to study abroad. For most early marriage was desired: They wanted a spouse who would support them and go with them when going for higher studies [16].

A few of the doctors said they had opportunity to select their specialty. One said she had floated into it, following the specialty suggested by her seniors. The mainstream, said they could have chosen any they wanted, but appeared to have chosen specialties relating to women and children, or non-clinical work where they would not come into contact

with adult males [16].

Not like men, women are too likely to be discouraged by the "old boys' club" reputation of various surgical specialties and departments [3]. These discernments may not as it were becoming from the women themselves, with numerous ladies disheartened by their peers, assistants, and family from looking for after a career that's so commonly seen as unimaginable to alter with the prospect of starting a family and having children [1]. In addition, surgical planning programs are themselves considered to be requesting and competitive (exterior of the challenges of adjusting the preparing with nonmedical life). For ladies, who may require the proficient and familial back systems of men, and who fight with gendered discernments of what women can and cannot do. "female specialists perform similarly as well as their male peers on events of therapeutic information, communication skills, professionalism, technical skills, practiced-based learning and clinical judgment" [17].

Table 5 shows logistic regression analysis of reasons of choice of specialties among first and sixth year students. Statistically significant factors were: Interest in the clinical work of the specialty, Job availability, Encounter with role model doctors, Interest in the targeted population (e.g. children, the elderly) and received excellent teachings.

In agreement to this study, there are various factors that influence a junior doctor's choice of a field work, including an interest to the work itself, the seen way of life of specialists in that department, and the existence of an skilled seniors in that field [4]. In spite of the fact that, in surgery, various of these issues have been recognized as pushing women away from engaging in surgical training [1]. These include a need of female specialist models [1,6-8], and discernments that the surgical way of life isn't reliable with the unequal burden that the woman bear of care-giving commitments.

There are numerous variables affecting the choice of a career way based on higher education, this being highlighted clearly within the professional works. Beginning from the individual characteristics, their gender, specialized human assets, and the variables impacting the choice of choosing a career can arrive to the seen benefits and the attractiveness of certain study programs or specializations and indeed components related to school programs and encounter of the chosen specialization [18].

Table 6 shows to what extent are the students willing to work in rural and remote areas upon graduating. On the total level; It was found that more than half of the students (58.8%) mentioned that they will never work in rural are or it would rather avoid working in remote areas There were no significant difference between students in first and sixth year ($p=0.167$). On agreement to our study, the attitudes of the majority of Ethiopian medical students within the capital city towards practicing medicine in rural areas were found to be poor, and the aim to migrate after completing medical training was found to be exceptionally high among the study members, making a tremendous potential for brain drain [19].

In contrast to this research, a survey of five nations in Asia, approximately 60% of students from Bangladesh and Thailand had positive mean or concerning working in rural regions, 50% in both China and India and only 33% in Vietnam. Upon graduation and within the following five years, most of students desired to work in public divisions [20].

Regarding important factors to choose the practice location; it was found that career development, hometown, availability of support from other doctors, life style, teaching opportunities, community atmosphere (characteristics of people), parents' residence, educational environment for children and Income were the mentioned causes [20].

CONCLUSION

Majority of students planned to specialize in well-known clinical specialties. First year students preferred medical practice specialties and sixth year students preferred surgical practice specialties. More than half do not want to practice in remote and rural areas. Preventive medical specialties and basic medical subjects were found to be less popular and did not mentioned by the students.

Recommendations

Orientation of health care and medical education is needed along with policy settings to attract doctors to the inadequacy and high-priority disciplines so that inequalities encountered would be minimal in future.

DECLARATIONS

Conflicts of Interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article..

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