

Saudi university students' awareness and attitude towards family medicine specialty

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Received: April 19, 2018; Accepted: May 10, 2018; Published: June 1, 2018

Citation: Dalia El-Sayed Desouky, Maryam Hassan Turkistani, Wedad Saeed Althobaiti, Mai Muaiwedh Algethami. Saudi university students' awareness and attitude towards family medicine specialty. *World Family Medicine*. 2018; 16(6): 4-16.

DOI: 10.5742/MEWFM.2018.93390

Abstract

Background: Worldwide, there is shortage of family medicine (FM) specialists and disinterest of medical students in choosing FM as a career. Saudi Arabia is facing the same problem.

Objectives: The aim of this study was to know the magnitude of knowledge and attitude of Saudi medical and non-medical students towards FM specialty.

Methods: A cross-sectional study was done on 708 students of Taif University using a self-administered questionnaire about socio-demographic factors, knowledge and attitude towards FM specialty.

Results: Medical students showed a significant higher percentage of students who saw that FM specialty has an essential social function, has a pleasant working environment, has a high social status, is an attractive option for a medical students, is an interesting specialty from a research perspective, and is an important specialty in: disease prevention/Health promotion, family-focused health care, bio-psychosocial focus of health care, collaboration with other sectors, team work, bioethics, and urgent care. Only 6% of medical

students chose FM as a future career, and the most common factor influencing the specialty preferences was the good working condition and the quality of life. Female students and older grades showed a significant higher percentage of students choosing FM as a future career. For all participants, the study reflects the bad reputation about FM specialty regarding its status within the medical profession, scientific prestige and salary.

Conclusion: Medical students had better knowledge and perception of family medicine compared to non-medical students, but they had low interest in choosing it as a future career.

Key words: students, Saudi, awareness, attitude, family, medicine

Abbreviations

FM	Family medicine
FP	Family Physician
KSA	Kingdom of Saudi Arabia
SPSS	Statistical Package of Social Science
χ^2	Chi-square test

Introduction

Family medicine (FM) is a cornerstone for developing a community based health care system (1), and family physicians (FPs) are the most appropriate physicians to be located in primary health care (2). They are qualified to provide continuing and comprehensive medical care, health maintenance and preventive services to each member of the family (3).

Worldwide, many people suffer from lack of access to proper preventive and curative health services due to shortage of FM specialists (4,5), or their mal-distribution (6), a matter that has forced many countries to adopt national strategies to overcome this problem.

There is a decrease in the number of medical students interested in choosing FM as a career (4,7,8,9,10), a matter that makes the low number of FM specialists a worldwide problem (2,4, 5, 7,8,9,10).

Studies have found that medical students know the importance of FM specialty, but did not consider it attractive according to the scientific and technical interest, workplace conditions, and research prospective (11,12,13). Their knowledge about FM specialty was found to increase by studying it as a mandatory course in medical colleges, but that doesn't increase their interest in choosing it as a profession (6, 14).

A systematic review of ten studies done on medical students in western countries found that over the last decade, medical students showed a decreased interest in FM as a career choice. This result was revealed although students found FM an interesting specialty, but they considered it a career of low prestige (4, 5, 8, 15).

According to studies done in Arab countries, a nationwide web-based survey carried out on 600 students of seven Egyptian medical colleges showed that, although 90.7% of them believed in the importance of FM in the Egyptian healthcare system, only 4.7% showed an interest in its choice as a future career (16).

In the Kingdom of Saudi Arabia (KSA), FM practice became a recognized specialty because of increasing cases of morbidity and mortality due to preventable diseases (17). That is why there is an urgent need to train as many family medicine practitioners as possible to deal with these cases (17). Studies from KSA have shown that more attention is required at all levels of FM in order to produce an adequate number of family physicians to improve the academic aspects and the services provided by FM in the country (18,19,20).

According to a study titled " Family medicine practice in Saudi Arabia: the current situation and proposed strategic directions plan 2020", there is a shortage of qualified family physicians in all Saudi health care sectors (21). Despite the scarcity of Saudi FM practitioners and the governmental need for this specialty, only one study was done on medical students of King Saud University to assess students'

knowledge about the family medicine specialty and their attitude towards choosing FM as a career. The study found that students knew the importance of FM specialty only after the FM course was taken in the college. The study notified the high probability that the general Saudi population will have little knowledge and appreciation of the importance of the family medicine practice (22).

Knowledge and attitudes of Saudi university students towards FM is presently not well known as only one known study was done to address this issue. That is why this study was carried out to know the magnitude of knowledge and attitude of both medical and non-medical students of Taif University towards FM specialty.

Subjects and methods

Study Design and time frame: The present study was a cross-sectional study done on students of Taif University in the time frame from January to May 2018.

Sampling methodology: Multistage sampling methodology was carried out, and the university community of Taif University was the sampling frame. The university includes two (female and male) sections. The medical college was chosen by its male and female sections and simple random sampling methodology was carried out to choose the non- medical college, where its male and female sections were included.

The total number of students from the medical and non-medical colleges (male and female sections) registered in the academic year 2017-2018 was obtained from the office of the student's affairs. After exclusion of the non-respondents, the total number of participants was 753 students, with a response rate of 69.46%. Incomplete questionnaires (45) were excluded leaving 708 questionnaires for final analysis.

Inclusion/exclusion criteria: All students who agreed to share in the study from the two colleges were included. Non-Saudi students and those who refused sharing were excluded.

Ethical Considerations: The study was reviewed and approved by the Research Ethics Committee of Taif University, and from the deanships of the colleges included in the study. Verbal consent was obtained from students before participating in the study.

Study instrument: A self-report format of a pre-designed questionnaire where the first few question were to collect data about age, sex, marital status, and educational grade, was used. A filter question about previous knowledge about FM specialty was added, where students who replied "yes" (502 students) were qualified to reply to the subsequent questions on knowledge and attitude towards FM specialty. For each item a 5-point Likert scale from strongly disagree to strongly agree was used and scored from 1- 5 respectively, where a score greater than 3 was considered a positive response (16).

For medical students, an additional section was added to address their specialty preference, factors influencing their preferences, and reason for not choosing FM specialty for students who replied they were not choosing FM as a future career. The items of the questionnaire were taken from questionnaires used in previous research (9, 16, 23, 24). Afterwards, pilot testing of the questionnaire was carried out on 40 university students to check the clarity, comprehension and the interpretation of each item.

Statistical analysis: Data was coded, tabulated and analyzed using (SPSS) version 20 (Armonk, NY: IBM Corp.). Qualitative data was expressed as numbers and percentages, and Chi- squared test (χ^2) was applied to test the relationship between variables, and quantitative data was expressed as mean and standard deviation (Mean \pm SD). A p-value of <0.05 was considered as statistically significant.

Results

In the present study, among the 708 participants, 53.4% were females, 61% were from the medical college, and their mean age was (20.48 ± 1.75) years. The percentage of the participants from each grade ordered from the 1st to the 6th is as follows: 15.1%, 18.5%, 19.9%, 19.5%, 13.6% and 13.4% respectively. About 70% of all participants had heard about FM specialty before, and only 48% thought that they had a good knowledge about FM specialty. Of the participants, only 7.5% had a FP among relatives, 64.4% visited a PHC Unit as consumers before, and 79.4% of them were satisfied with the service given (Table 1).

Table 1: Comparison between medical and non-medical students according to their response to statements related to FM specialty

Parameter	Medical students (No.: 432)		Non-Medical students (No.: 276)		Chi (Square χ^2) test	p-value
Heard about FM specialty:						
- Yes	376	87	126	45.7	139.81	<0.001
- No	56	13	150	54.3		
Having a good knowledge about FM specialty:						
- Yes	274	63.4	66	23.9	105.33	<0.001
- No	158	36.6	210	76.1		
Having a FP among relatives:						
- Yes	27	6.3	26	9.4	1.72	0.189
- No	405	93.7	250	90.6		
Visited a PHC unit as consumers:						
- Yes	285	66	171	62	1.18	0.276
- No	147	34	105	38		
Satisfaction with given service:						
- Yes	224	78.6	138	80.7	0.28	0.591
- No	61	21.4	33	19.3		

Table 1 shows that a highly significant difference was found between medical and non-medical students (in the favor of medical students) according to previous hearing about FM, and having adequate knowledge about it ($p = <0.001$).

Table 2: Comparison between medical and non-medical students according to their response to statements about the FM role in Saudi Arabia

Do you believe that FM in Saudi Arabia:	Medical students (No.: 378)		Non-medical students (No.: 126)		Chi (square χ^2) test	p-value
	No.	%	No.	%		
	Has an essential social function:	318	84.1	18		
- Positive response	60	15.9	108	85.7		
- Negative response						
Is a pleasant working environment:	264	69.8	30	23.8	82.38	<0.001
- Positive response	114	30.2	96	76.2		
- Negative response						
Has a high social status:					18.14	<0.001
- Positive response	118	31.2	15	11.9		
- Negative response	260	68.8	111	88.1		
Is an attractive option for a medical student:					35.55	<0.001
- Positive response	143	37.8	12	9.5		
- Negative response	235	62.2	114	90.5		
Has a high status within the medical profession:					3.64	0.056
- Positive response	66	17.5	13	10.3		
- Negative response	312	82.5	113	89.7		
Provides a high salary in comparison with other specialties:					0.28	0.592
- Positive response	36	9.5	10	7.9		
- Negative response	342	90.5	116	92.1		
Is an interesting specialty from a research perspective:					7.02	0.008
- Positive response	90	23.8	16	12.7		
- Negative response	288	76.2	110	87.3		
Has a level of scientific prestige equivalent to other specialties:					0.049	0.824
- Positive response	54	14.3	17	13.5		
- Negative response	324	85.7	109	86.5		

Table 2 shows a highly significant difference between medical and non-medical students (in the favor of medical students) according to their opinion that FM specialty: (1) Has an essential social function, (2) Has a pleasant working environment, (3) Has a high social status, (4) Is an attractive option for a medical students, and (5) Is an interesting specialty from a research perspective ($p < 0.001$). A non-significant difference was found between medical and non-medical students according to their opinion that FM specialty: (1) Has a high status within the medical profession, (2) Provides a high salary in comparison with other specialties, and (3) Has a level of scientific prestige equivalent to other specialties.

Table 3: Comparison between medical and non-medical students according to their response to the importance of FM's contributions to other areas of preparation

Contribution	Medical students (No.: 378)		Non- medical students (No.: 126)		Chi Square (χ^2) test	p value
	No.	%	No.	%		
Communication/Doctor-patient relationship	318	84.1	101	80.2	1.06	0.303
- Positive response	60	15.9	25	19.8		
- Negative response						
Clinical attention for the most common problems	300	79.4	90	71.4	3.4	0.056
- Positive response	78	20.6	36	28.6		
- Negative response						
Disease prevention/Health promotion					17.28	<0.001
- Positive response	258	68.3	60	47.6		
- Negative response	120	31.7	66	52.4		
Health care across the lifespan					0.415	0.52
- Positive response	132	34.9	48	38.1		
- Negative response	246	65.1	78	61.9		
Family-focused health care					22.04	<0.001
- Positive response	180	47.6	30	23.8		
- Negative response	198	52.4	96	76.2		
Bio-psychosocial focus of health care					44.36	<0.001
- Positive response	134	35.4	6	4.8		
- Negative response	244	64.6	120	95.2		
Community-focused health care					1.32	0.249
- Positive response	72	19	30	23.8		
- Negative response	306	81	96	76.2		
Collaboration with other sectors (education, social services or other)					19.24	<0.001
- Positive response	132	34.9	18	14.3		
- Negative response	246	65.1	108	85.7		
Bioethics					4.48	0.034
- Positive response	91	42.1	19	15.1		
- Negative response	287	75.9	107	84.9		
Clinical epidemiology					0.93	0.334
- Positive response	113	29.9	32	25.4		
- Negative response	265	70.1	94	74.6		
Team work					21.65	<0.001
- Positive response	192	50.8	34	27		
- Negative response	186	49.2	92	73		
Urgent care					7.62	0.006
- Positive response	80	21.2	42	33.3		
- Negative response	298	79.8	84	66.7		
Research					0.016	0.901
- Positive response	83	22	27	21.4		
- Negative response	295	78	99	78.6		

In Table 3 a significant difference was found between medical and non-medical students (in the favor of medical students) according to their response to the importance of FM in:

- (1) Disease prevention/Health promotion,
- (2) Family-focused health care,
- (3) Bio-psychosocial focus of health care,
- (4) Collaboration with other sectors (education, social services or other),
- (5) Team work
- (6) Bioethics, and (

7) Urgent care ($p < 0.005$). A non-significant difference was found between medical and non-medical students according to their response to the importance of FM in:

- (1) Research,
- (2) Clinical epidemiology,
- (3) Community-focused health care,
- (4) Health care across the lifespan,
- (5) Clinical attention for the most common problems, and
- (6) Communication/Doctor-patient relationship ($p > 0.005$).

Figure 1 (next page) shows that according to the students' specialty preferences, FM ranked the tenth among eleven specialty options given to students (only 6% of students chose it a future career). The most common factor that influenced the specialty preferences of medical students was the good working condition and the quality of life, and the least factor was the popularity of the specialty (Figure 1).

The reasons for not choosing FM as a future career for medical students was the student's disinterest in the specialty for (44.2%) of students, lack of information about FM for (29.5%) of them, being a difficult field (15.5%), and (10.5%) of students had multiple reasons of the above.

Table 4 (page 27) shows that a significant gender difference was found according to choosing FM as a future career, as 8% of female students chose it compared to 3% of male students ($p = 0.034$). A significant difference was found between students' grades as regards choosing FM as a future career, where the 6th grade students had the highest percentage of students who chose FM, followed by the 5th grade, the 4th, the 3rd and the 2nd grade students (11.6%, 8.3%, 7.4%, 2.7%, and 1.7% respectively) ($p = 0.022$). None of the students in the 1st grade chose FM as a future career.

A significant difference was found between students according to their choice of FM as a future career and having a FP among relatives, where 18.5% of those who have a FP among relatives chose FM, compared to 5.2% of those who don't have a FP relative and chose FM ($p = 0.005$). A non-significant difference was found between students who chose and who didn't choose FM according to: having a good knowledge about FM specialty, previous visit of a PHC Unit or their satisfaction as consumers with the service given ($p > 0.005$).

Figure 1: Medical students' specialty preferences and factors influencing their choice

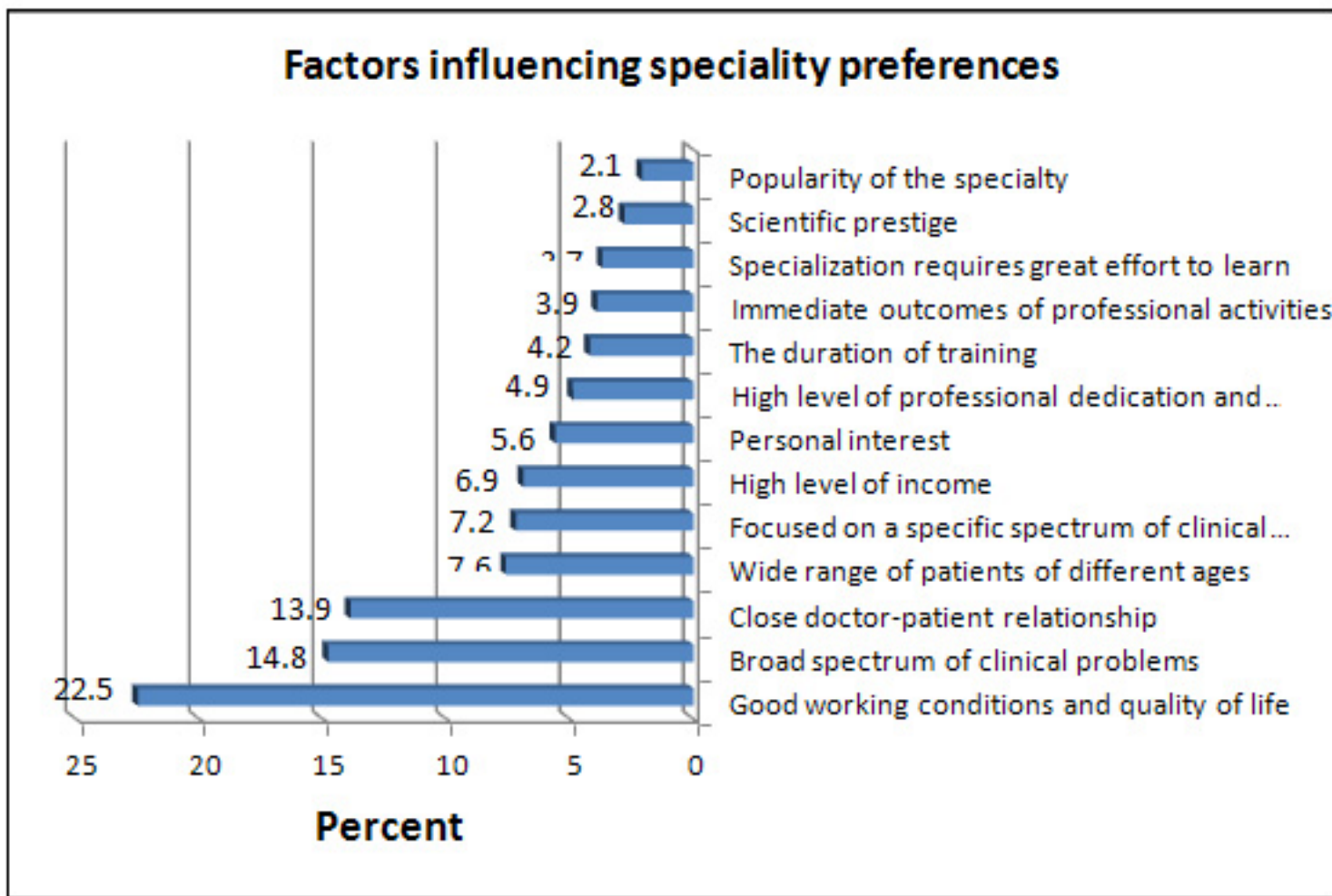
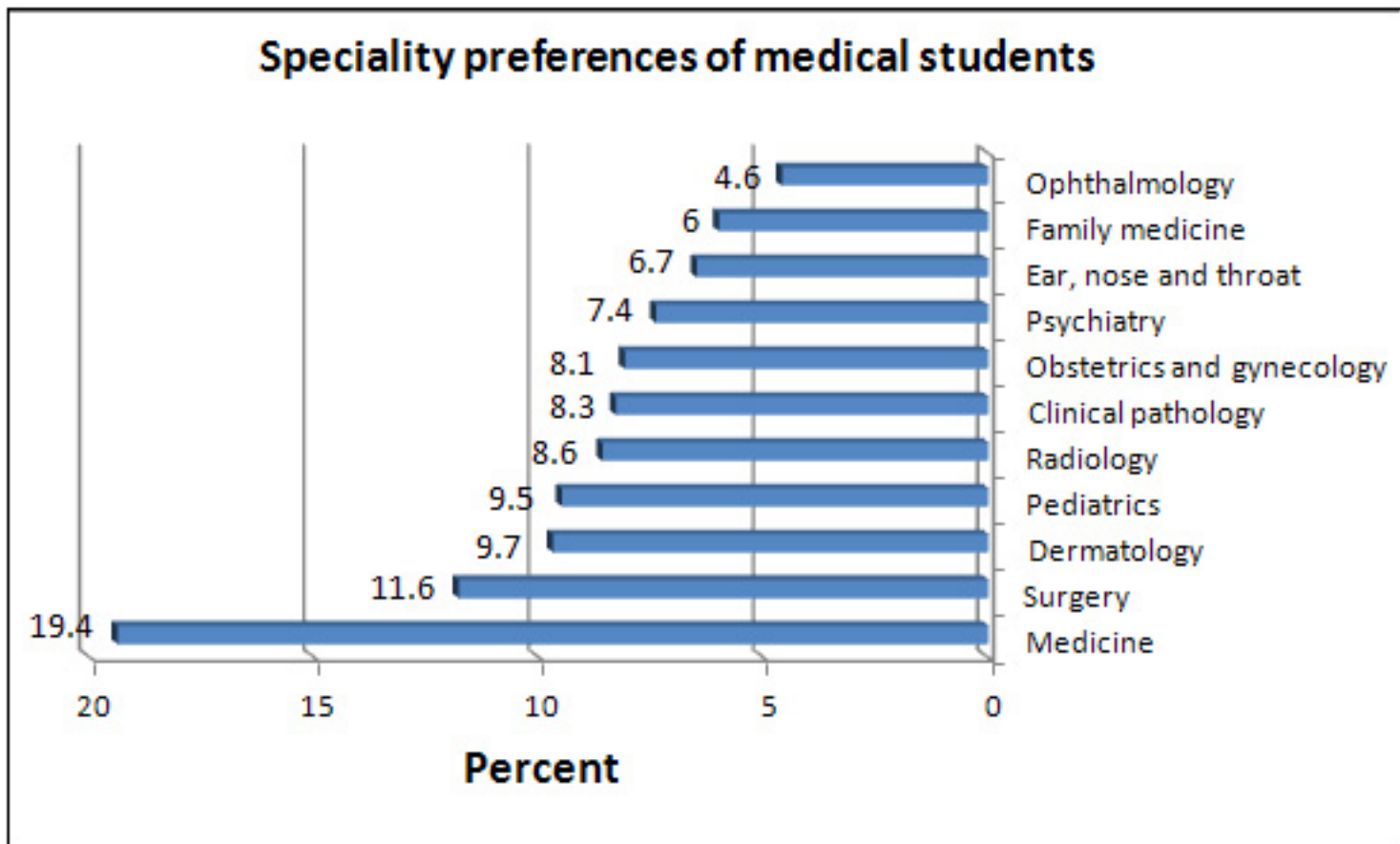


Table 4: Association between some studied variables and the choice of FM as a future career by medical students

Parameter	Chose FM		Didn't Choose FM		Chi Square (χ^2) test	p-value
	No.	%	No.	%		
Gender						
- Male	5	3	163	97	4.49	0.034
- Female	21	8	243	92		
Grad					13.12	0.022
- 1 st grade	0	0.0	53	100		
- 2 nd grade	1	1.7	58	98.3		
- 3 rd grade	2	2.7	73	97.3		
- 4 th grade	4	7.4	50	92.6		
- 5 th grade	8	8.3	88	91.7		
- 6 th grade	11	11.6	84	88.4		
Having a good knowledge about FM specialty?					3.58	0.058
- Yes	21	7.7	253	92.3		
- No	5	3.2	153	96.8		
Having a FP among relatives					7.95	0.005
- Yes	5	18.5	22	81.5		
- No	21	5.2	384	94.8		
Visited a PHC Unit as Consumers					1.47	0.224
- Yes	20	7	265	93		
- No	6	4.1	141	95.9		
Satisfaction with given service					0.52	0.469
- Yes	17	7.6	207	92.4		
- No	3	4.9	58	95.1		

Discussion

Determining the public knowledge and attitudes towards FM specialty and identifying deficiencies in knowledge can help those responsible for health education to raise awareness of the community about the importance of FM and correct any related misconceptions (25).

In the present study medical college had a significant higher percentage of students who had heard previously about FM or had adequate knowledge about it when compared to non-medical students (Table 1). This result goes along with that revealed from another Saudi study which stated that the general Saudi population does not know the importance of FM specialty to the country (22). The study reported that this lack of information was present even among medical students, where their knowledge and attitude towards FM did not improve until they had completed the FM training course in the college.

Compared to the non-medical college, medical college also had a significant higher percentage of students who had a positive response towards FM as having an essential social function, a pleasant working environment, a high social status, and their response that FM is an attractive option for medical students, and is an interesting specialty from a research perspective (Table 2). This result was observed in previous studies done with medical students where the vast majority of students surveyed reported the essential social function of FM (11,12,15).

The same positive response regarding the work environment was displayed also in previous studies where students saw the work environment of the family practice is friendly due to lack of competition compared to a hospital work environment (26), and the ability of working in a multidisciplinary team (27).

This work shows that, despite 84.1% of medical students who thought that FM has an essential social function, only 37.8% thought that it is an attractive option for a medical

student, 17.5% thought that FM has a high status within the medical profession, 14.3% thought that it has a level of scientific prestige equivalent to other specialties, and only 9.5% thought that FM specialty provides a high salary in comparison with other specialties (Table 2). This disappointing trend was observed in a study done in Spain which found that despite 89.8% of medical students who reported the important social role of FM; only 20% believed that FM has a high status within the medical profession (9).

This result is in agreement with previous studies which reported that FM is at the 'bottom of the medical hierarchy' and it is considered as an inferior choice according to medical students' point of view (4,11).

In the present study, only 37.8% of medical students thought that FM is an attractive option for a medical student. This result was seen in other studies which found that despite medical students who agreed on the essential social role of FM they did not consider it to be an attractive option for a medical student. The cause of their opinion was the lower scientific prestige, lower salary and less research opportunities of FM compared to other specialties (11,12,15).

This study showed that, only 9.5% of medical students thought that FM specialty provides a high salary in comparison with other specialties, a result that was revealed from another study done on medical students in Toronto University where about 89% of them saw that FPs are paid too little (28). In another study medical students see that the FP is unable to gain additional income from the private sector (11).

In the present work only 14.3 % of medical students surveyed thought that FM has a level of scientific prestige equivalent to other specialties. This negative opinion was also revealed from a systematic review which found that despite medical students finding FM appealing, it was considered as a specialty of low interest and prestige (15).

The non-significant difference found between medical and non-medical students according to the previous four items (FM as an attractive option for a medical student, has a high status within the medical profession, has a level of scientific prestige equivalent to other specialties, provides a high salary in comparison with other specialties), reflects the ignorance of the general Saudi population of the basic role of FM and the aspects it presents as an important medical specialty for the Saudi society. It also reflects the bad reputation and misconceptions about FM specialty among the general population.

This study showed that compared to students of the non-medical college, medical students reported a significant higher positive response to the importance of FM in disease prevention/health promotion, family-focused health care, bio-psychosocial focus of health care, and collaboration with other sectors, team work, bioethics, and urgent care (Table 3). This result goes along with that revealed from

a study done in Spain where students found that the most important contributions of FM was in doctor-patient relationship and the clinical attention for the most common problems (9), a matter that can solve the Saudi health sector problem of the shortage of qualified FPs (21).

This study showed a non-significant difference between medical and non-medical students according to their response to the importance of FM in clinical attention for the most common problems, and communication/doctor-patient relationship, where more than 70% of all students had a positive response to the importance of FM in these two fields (Table 3). The same result was revealed from previous studies where medical students pointed out the FPs/patients relationship, as they saw the general physicians, were more patient centered (29,30).

Similarly, less than 40% of all students (without a significant difference between medical and non-medical students) had a positive response to the importance of FM in research, clinical epidemiology, community-focused health care and health care across the lifespan, with no significant difference between medical and non-medical students (Table 3). This reflects absence of basic information about the role of FM and nature of the work of the FP among the studied sample. The same opinion was observed in a previous study where medical students complained of the lack of research in the FM training (11,12).

According to medical students' specialty preferences, internal medicine specialty was the most chosen specialty in the present study, a result that was seen in a Turkish study (31). The most common specialties chosen by students in the present study were internal medicine, surgery, dermatology and pediatrics. The same result was observed in another two Saudi studies (32,33). This result was also reported by medical students in other international studies where surgery, general medicine and pediatrics were the most chosen specialties by surveyed medical students (34).

According to FM specialty, the present work showed that only 6% of students chose it as a future career, where it ranked the tenth among eleven specialty options given (Figure 1). This result goes along with that observed in a recent Saudi study done on 220 medical students of Taibah University, where only 6.8% of students chose FM (33).

In a previous Saudi study done on medical students of King Saud University, medical students become more willing to practice FM only after completing their clinical training course and getting a wide knowledge on FM, when about 58% of them chose FM as a future career (22). This finding reflects the negative attitude of medical students towards FM specialty, which boosts results observed in other studies where FM is devalued as a professional activity and a future career by medical students. (4,7,8,9,10).

The proportion of students who chose FM as a future career in the present study is lower than that observed in other international studies (4,5,7,8,9,10). The low

percentage of medical students who chose FM as a future career is observed in the present study despite 84.1% of them reporting that FM has an essential social function and 69.8% stating that it has a pleasant working environment. These contradictory responses were reported in an Egyptian study, where 90.7% of students believed in the vital role of FM, but only 4.7% of them reported to choose it as a future career (16). And it goes along with other international studies where medical students know the importance of FM specialty, but do not consider it an attractive career choice. (11,12,13).

The percentage of students who chose FM as a future career in the present study is however higher than that observed in a study done in nine universities in five sub-Saharan African countries, where only 4.5% of medical students chose FM as a future career (35). It is also higher than results revealed from a study done in Spain where only 1.4% of medical students chose FM (36).

The good working conditions and the quality of life were the most common factors that influence the specialty preferences among surveyed medical students in the present study; a result that was also reported by medical students in a previous Saudi study where lifestyle and personal interest were the most common factors influencing specialty preferences (32).

The high level of income was ranked 6th among thirteen options of factors influencing career preferences chosen by medical students in the present study, a result that was observed in another Spanish study where the high salary ranked 8th among the given options (9).

The least important factor that influenced career choice in the present study was the popularity of the specialty, a result that is in keeping with an Egyptian study, where the nature of the specialty and its importance were the most observed factors influencing the career choice (16).

A previous systematic review demonstrated the importance of assessing factors influencing choosing FM as a future career among medical students to prevent the future shortage of FPs (37). The present study showed that 44.2% of students who didn't choose FM as a future career reported their disinterest as a reason for not choosing FM.

Studies have demonstrated and explained the disinterest of medical students towards choosing FM as a future career in the light of being a boring practice with an administrative role that compromised its medical aspects according to students' opinion (11). Other studies showed that medical students see FM as a superficial specialty that is not intellectually challenging as it deals with common diseases while severe problems are referred to specialists (4,11). Some students think that advances in medical knowledge can be found only in organ or disease-based specialties (11). Medical students in another study thought that the duty of the FP is just to triage patients, and practicing FM has a lack of evidence base as it teaches them communication and counseling skills but not knowledge (30).

The negative attitudes and comments from residents, peers, or other specialists on FM were found to have a negative effect on the students' interest in FM too (4,11). Other studies showed that families may force the medical student to choose another specialty (4,11), a matter that reflects the ignorance of the public of the importance of the specialty of FM. Others explained this in the light of the negative perception of medical students of FM clinical rotation as being a study overload as it focuses on theoretical aspects of FM rather than the practical ones (16). FM is a medical field that has a high expectation level, as the FP should have adequate knowledge about every facet of health care, and this may make medical students less motivated to choose FM as a future career (38).

In Saudi Arabia, FM specialty is facing a lot of challenges; these challenges include the inefficient and incomplete health records in hospitals and medical training centers, the lack of skilled trainers in the FM field for effective teaching of medical students, [8], in addition to the shortage of FPs which increase the workload and the burnout of the available physicians, and in turn decreases the time they have to teach medical residents (19,39). This situation was illustrated in a previous Saudi study which showed that all Saudi medical colleges have a FM department with a total staff of only 170 teachers (21).

Previous studies proposed changing the curriculum design of medical schools to start teaching the basic elements of FM early in the third or fourth year (4,40). Others proposed improving the practical and theoretical content of the curriculum of FM to improve medical students' knowledge and attitude towards it, and to increase their willingness to choose it as a future career (9). These proposals have proved effective in a previous Saudi study where medical students become more willing to choose FM as a future career after completing their clinical training course (22). The significant gender difference in choosing FM as a future career in the favor of females was found in other studies (7,9,16,41). This gender difference was explained in another study by the female belief of their presence in a double income family which enables them to consider choosing FM without consideration of the income (4,42). In addition, female medical students think that FM enables working part-time allowing having a family. A different result was observed in a Japanese study where a non-significant difference was found between male and female medical students according to their choice of FM as a future career (43).

The undergraduate medical programme of Taif University includes 6 years divided into 12 semesters. Medical students are exposed to FM in the FM module taught in the 5th year which has a five weeks length, where clinical FM is covered during these weeks. In the present work, a significant difference was found between students' grades according to choosing FM as a future career, where the highest percentage of students who chose FM were in the 6th grade followed by students in the 5th grade, the 4th, the 3rd and the 2nd grade respectively. This result was observed in a previous study done in South Africa where

students in the first three years of medical colleges showed the least interest in FM (44). It is also in line with studies that reported the increased interest in FM over years of medical training, and the improvement of their attitude towards FM as they progress in medical school (7,9), a finding that was somewhat explained by the more contact with general physicians during students training (45).

The observed gradual increase of students' interest in FM as they progress in the study years could be hypothesized by the low interest of students in the early years due to lack of exposure to FM (8).

The significant higher percentage of students who choose FM in the 5th and 6th year could be explained by their completion of the FM module in the 5th year, besides their exposure to FPs during their rotations. This was proved by the result of the previous Saudi study done in King Saud University, where medical students' desire to select FM specialty increased after completion of their clinical training course (22). This result is in agreement with studies which showed that medical students become more interested in choosing FM after experiencing FM clinical training and gaining knowledge about the specialty during the clinical rotation [29]. This enables them to understand different aspects of the specialty which can change their attitude towards it (29,46).

In the present study, FM was not chosen as a future career by any student in the 1st grade, a matter that was found in a previous study and explained by the students' poor knowledge regarding FM (41).

Studies have shown that having a FP among relatives may be a motive for a medical student to choose FM as a future career. The present study observed this relation, where 18.5% of medical students who have a FP among relatives chose FM, compared to 5.2% of those who don't have a FP relative chose FM.

In the present study, having a good knowledge about FM specialty, previous visit of a PHC Unit or their satisfaction as consumers with the service given didn't affect medical students choice of FM as a future career. This result is in contrast with the previously mentioned Egyptian study where students' intention to choose FM as a future career was found to be associated with a previous consumer experience with FM (16). This could be explained by the good status of PHC units in Saudi Arabia as an oil producing country with better health care services available in PHC settings. This was proved in a previous study done to assess the Patients' Satisfaction with Primary Health Care Centers' Services in the capital which showed that 82% of clients were satisfied with the services, where cleanliness of the PHCs and technical abilities of the staff were the most common reasons behind satisfaction (47). This high level of satisfaction was reported in other national studies (47,48).

Conclusion

This study demonstrated that medical students had better knowledge and perception of family medicine compared to non-medical students, but they had low interest in choosing it as a future career. Interest in FM as a specialty increases among female students and those in older grades. All studied students had a bad opinion about FM regarding its status within the medical profession, scientific prestige and salary. The study calls for awareness campaigns to increase the awareness of the Saudi population on FM specialty and the role of the family physician. Strategies should be planned and implemented by medical schools to increase the knowledge of FM specialty among medical students, to define its parameters, and to change the medical curriculum to enable the exposure of medical students to the content of FM in their early years in the medical school.

Limitations

Limitations of this study are: (1) Using a self-reported questionnaire which was prone to recall bias. (2) Study design was a cross-sectional one which showed the relation between variables without concluding the cause-effect relationship. (3) Findings of the study can't be generalized on Saudi university students as it was limited to only one Saudi university (4). The intention of medical students to choose FM as a career is not known whether it will be implemented in the future or not.

Acknowledgments

The authors gratefully acknowledge the support provided by the officials of the chosen colleges, and the cooperation of the participant students. Special thanks to Drs: Mohammed Ali Algarni and Alwaleed Saeed Ali Aljabir who helped in data collection from male students.

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