

## Research Article

# Perception of Senior Medical Students in Taif University towards Family Medicine Specialty as a Future Career

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**Background:** The family medicine specialty is faced by a number of challenges; the concept of family medicine is still confusing and probably irrelevant to most physicians in other specialties.

**Objectives:** To explore the perceptions of senior medical students (both genders) in Taif University to family medicine as a chosen future career.

**Subjects and Methods:** This cross-sectional study was conducted at Taif University in Taif city, Saudi Arabia. It included students of medicine levels 4 to 6 (male and female sections). A self-administered, anonymous English questionnaire was utilized for data collection. It is composed of two main parts. The first part includes the socio-demographic characteristics of the participants and awareness about the scope of family medicine as a clinical specialty and sources of that awareness, if any. The second part includes the original version of the Valuation of Attitudes towards and Knowledge of Family Medicine Questionnaire (CAMF).

**Results:** The study included 574 medical students. Their age ranged between 20 and 28 years (22.8±1.1 years). More than half of the students were males (57.5%). Majority of the senior medical students (91.5%) were aware of family medicine scope as a clinical specialty. Preclinical training (53.8%), friends and relatives (47.9%) and private reading/internet (35.9%) were the main source of awareness among them. The overall family medicine perception score ranged between 44 and 92 with a mean of 75.3±6.7, out of a possible 102. Older, female, sixth year students, those whose fathers were retired, whose mothers were working and higher educated expressed higher perception of family medicine than others. Awareness of the scope of family medicine through preclinical training, friends and relatives improved perception of family medicine while awareness through private reading and internet had a bad influence on perception of family medicine.

**Conclusion:** Although, a considerable proportion of senior medical students agreed that family medicine is highly valued in the medical school, and they would like to be family physicians in the future, some negative points towards family medicine were raised by the students.

**Keywords:** Family Medicine; Taif University; Questionnaire

## Abbreviations

FM: Family Medicine; PC: Primary Care; USA: United States of America; CAMF: Valuation of Attitudes towards and Knowledge of Family Medicine Questionnaire;  $\chi^2$ : Chi-square; SPSS: Statistical Package for Social Sciences

## Introduction

### Background

Choosing a future career is a special moment in any students' life as it will affect the personal development, and satisfaction level throughout life [1].

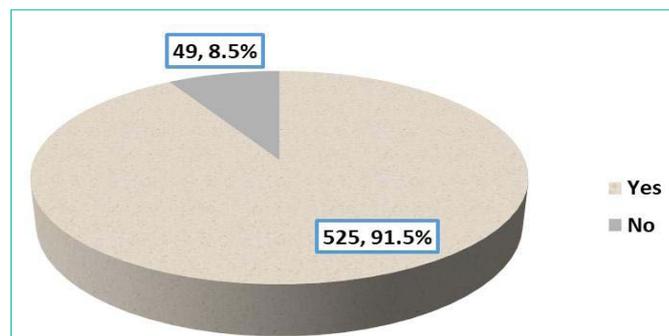
The specialty of family medicine (FM) is a demanding one that requires a great experience and knowledge [2]. Family medicine is the cornerstone of the health care system [3] since family physicians

screen everyone seeking help, regardless of his/her characteristics [4,5].

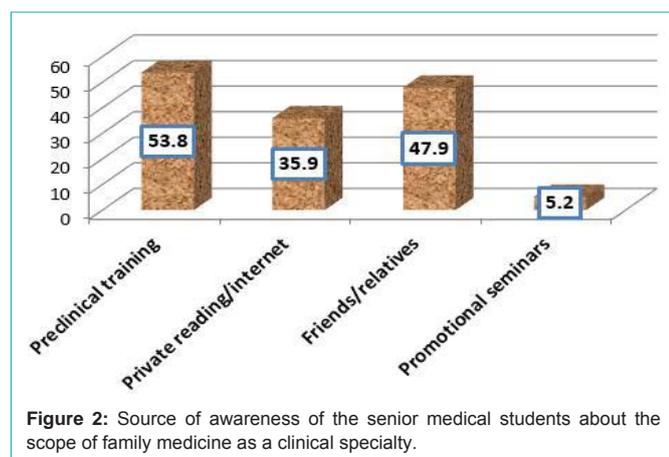
The family physician was described by the World Organization of Family Doctors (Wonca, 1991) as "the physician who is primarily responsible for providing comprehensive health care to every individual seeking medical care, and arranging for other health personnel to provide services when necessary [6].

There is an obvious need of family physicians in Saudi Arabia. During the residency family medicine program which extends to 4 years, residents are exposed to thirteen different specialties. They spend most of that period rotating in training centers at different hospitals [7,8].

Family medicine as a specialty is more preferred by females than males in Saudi Arabia. In a relatively recent study carried out in Saudi



**Figure 1:** Awareness of the senior medical students about the scope of family medicine as a clinical specialty.



**Figure 2:** Source of awareness of the senior medical students about the scope of family medicine as a clinical specialty.

Arabia (2014) [9], the second choice for female students was family medicine. They reported that family medicine practice in Saudi Arabia is attractive to females as they work less hours, as family physicians are underutilized by the general public in Saudi Arabia, which leads to a large number of unnecessary visits of less urgent cases to emergency departments. In North America [10], family physicians have a heavy workload with great public awareness and utilization.

Third year and fourth year medical students in USA were allowed to share clinical experience with family physicians. This proved to improve students' attitude towards family medicine [11] and at the same time strongly affect their decision to choose family medicine as a future career [12].

The family medicine specialty is faced by a number of challenges; the concept of family medicine is still confusing and probably irrelevant to most physicians in other specialties; relatively few family physicians are being graduated; family physicians working in Ministry of health face many problems related to shortage of staff, services and infrastructure, which could have a role in choosing family medicine as a future carrier [13].

The limited attraction of family physicians specialty to medical students is influenced by several factors including personal characteristics of students, educational environment and the perception of its professional practice [14-18].

A recent study done in Sao Paulo, Brazil revealed that having a course in primary care for medical students not only improves

students' knowledge of family medicine and helps them to develop a more positive attitude towards it, but also would lead to more favorable attitudes to be more likely to choose this specialty in the future [19].

### Rationale

- Low attitude towards family medicine among medical students could formulate a barrier against choosing family medicine as a future career.

- Shortage of primary care physicians is a prominent problem worldwide, which contributes to suboptimal care, inappropriate use of specialists and less concentration on preventive activities.

- Up to our knowledge, no similar study has been done in this vital area in Taif.

- The results of this study would contribute to the development of the undergraduate programme for senior medical students.

### Aim of the study

The aim of this study is to explore the perceptions of senior medical students (both genders) in Taif University to family medicine as a chosen future career.

### Objectives

- To investigate the awareness and perception of senior medical students (fourth year to sixth year) in Taif University towards family medicine as a future career.

- To compare between male and female students in this regard.

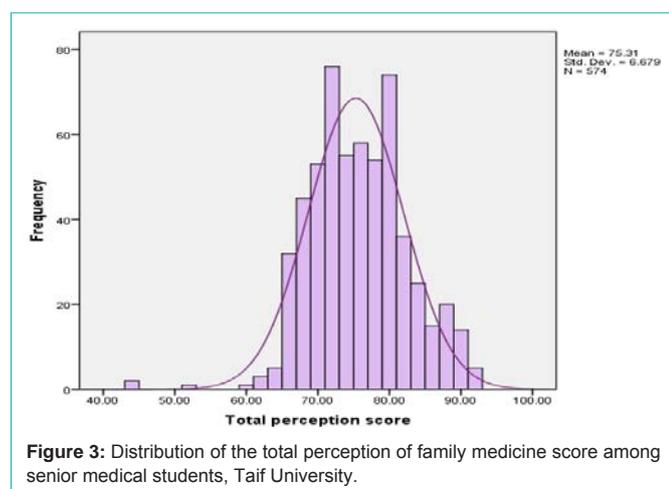
- To identify socio-demographic factors that may be associated with perception of family medicine as a future career.

### Literature Review

Some similar studies were cited, majority of them were conducted abroad with only one recent published study carried out locally.

Alyousefi (2017) carried out a qualitative study to evaluate knowledge and attitude of undergraduate Saudi medical students at King Saud University, Riyadh towards family medicine as a future career. The results indicated that the family medicine clinical course has a significant influence on medical students' career decisions, and it was beneficial in improving students' knowledge of family medicine. Many of the students have chosen family medicine as a career after acquiring extensive knowledge on the subject. Majority of them believe that family medicine is an integral part of the healthcare system in Saudi Arabia. The main reasons for choosing family medicine as a future career were observations of the physician-patient interaction in this specialty; the faculty staff's attitudes, interests and compassion; and the enjoyment of the family medicine rotation [20].

In USA, Phillips and Charnley (2015) implemented a study to evaluate third-year medical students' attitudes toward family medicine before and after a family medicine clerkship as well as to compare these findings to the same students' attitudes toward family medicine in the fourth year. At least 92 students completed participation at each time point. Approximately, (27%) of students initially unlikely to choose



family medicine as a career became interested after the clerkship and 90% of those interested in family medicine maintained their interest. Attitudes toward lifestyle and compensation, family medicine's role in research, and family physician expertise significantly improved after the clerkship. However, some of these areas deteriorated in the fourth year [21].

In Tajikistan (2014), Kadirova et al carried out a cross-sectional study among medical undergraduate students (first, fourth and sixth grades) and teaching staff to explore the perceptions and determinants (socio-demographic and clinical teaching) of family medicine. In total more than 2500 students and more than 350 staff of Tajik State Medical University were included in the study. Students were mostly interested in working in surgery, obstetrics and gynecology more than family medicine. Prestige, working abroad and very high salary were the commonest motivators. Students and staff agreed that working as a family physician is not very attractive in Tajikistan. Most students, as well as teaching staff, do not actually know what is family medicine in reality. Furthermore, students viewed that society and other medical professionals have a low perception of family medicine. However, they agreed that everyone should receive training in family medicine, no matter what specialty they choose later. Students supported the idea that family medicine should have the same prestige as any other specialty. However, students and teaching staff did not agree that family doctors should receive higher salaries than narrow specialists [22].

In Ghana (2013), Essuman and his colleagues carried out a descriptive study among first clinical year medical students (92 students) to explore their perceptions about family medicine with regard to knowledge, specialty preferences and relevance. Level of awareness of FM was high among the students (88.0%). Rotations and information from friends were the major sources of awareness. More than half of the students (54.4%) perceived that family physicians are capable of providing total health care for majority of patients and majority of them (79.8%) believed that family physicians can reduce overall cost of health care. Despite that, only 2.4% were considering postgraduate training in family medicine. The major factor for specialty choice was personal interest (75.6%) and the main reason for not choosing family medicine was inadequate understanding of the specialty (79.3%) [23].

**Table 1:** Personal profile of the senior medical students participated in the study.

	Frequency N=574	Percentage
<b>Age in years</b>		
≤22	224	39.1
23	189	32.9
>23	161	28
Range	20-28	
Mean±SD	22.8±1.1	
<b>Gender</b>		
Male	330	57.5
Female	244	42.5
<b>Academic level</b>		
Fourth	206	35.9
Fifth	191	33.3
Sixth	177	30.8
<b>Father's occupation</b>		
Professional	123	21.4
Military	91	15.9
Retired	134	23.3
Business/trading	97	16.9
Others	129	22.5
<b>Mother's occupation</b>		
Working	342	59.6
Not working	232	40.4
<b>Father's educational level</b>		
Secondary school or below	287	50
University or above	287	50
<b>Mother's educational level</b>		
Secondary school or below	298	51.9
University or above	276	48.1

Innocent, 2013 carried out a cross-sectional study (qualitative and quantitative through focus group discussion) to explore the knowledge and establish the perceptions of family medicine discipline among final year medical students and estimate the proportion of final year medical students that would consider family medicine as a future career. Most of the students seventy one (78%) of 91 respondents knew Family Medicine as a specialty, 67 (73.7%) reported that family physicians need specialized training and knew the principles and core values of Family Medicine. Forty-six (45.1%) of students strongly disagreed that their exposure to Family Medicine was not adequate but few students would be satisfied as family physicians with only 3 (3.3%) of respondents claimed that they would consider Family Medicine as first career choice. Forty-seven (52.2%) of the students were not sure whether to choose Family Medicine as a future career [24].

Zurro et al (2012) implemented a study to explore the perception of medical students first, third and fifth-year students in 22 participated medical schools in Spain regarding family medicine (the total number was 5299 students). Majority of the students (89.8%)

**Table 2:** Responses of the students to statements regarding perception of family medicine specialty.

Statement	Disagree N (%)	Neutral N (%)	Agree N (%)
1. I would like to become a family doctor in the future	170 (29.6)	201 (35.0)	203 (35.4)
2. Potential of FM to improve the health of the community	15 (2.6)	126 (22.0)	433 (75.4)
3. Better healthcare compared to the previous ambulatory care system	16 (2.8)	346 (60.3)	212 (36.9)
4. High satisfaction of patients with primary care (PC)	154 (26.8)	289 (50.3)	131 (22.8)
5. PC is more cost-effective than hospital care	86 (15.0)	369 (64.3)	119 (20.7)
6. Family medicine (FM) as first career choice	207 (36.1)	202 (35.2)	165 (28.7)
7. Knowledge is useful although I will choose another specialty	19 (3.3)	278 (48.4)	277 (48.3)
8. Responsibility of the family doctor for the health of the community	27 (4.7)	95 (16.6)	452 (78.7)
9. Team work improves medical care	6 (1.0)	75 (13.1)	493 (85.9)
10. Controlling expenses is more feasible in PC	11 (1.9)	331 (57.7)	232 (40.4)
11. Good knowledge of family doctors' professional tasks	13 (2.3)	304 (53.0)	257 (44.8)
12. PC is the first medical contact with the healthcare system	22 (3.8)	131 (22.8)	421 (73.3)
13. Clinical history is a fundamental tool for the family doctor	79 (13.8)	215 (37.5)	280 (48.8)
14. Diagnostic tests have less certain positive predictive value in FM	54 (9.4)	412 (71.8)	108 (18.8)
15. Family doctors manage health problems of little importance	274 (47.7)	121 (21.1)	179 (31.2)
16. Steady improving quality of care is a main objective	25 (4.4)	308 (53.7)	241 (42.0)
17. Family doctors manage health problems unlikely to be resolved	189 (32.9)	286 (49.8)	99 (17.2)
18. Large responsibility as regards preventive healthcare activities	22 (3.8)	311 (54.2)	241 (42.0)
19. Family doctors must have excellent communication skills	12 (2.1)	162 (28.2)	400 (69.7)
20. Family doctors manage chronic health problems	83 (14.5)	219 (38.2)	272 (47.4)
21. FM is highly valued in the medical school	123 (21.4)	319 (55.6)	132 (23.0)
22. It is impossible to be an expert in such a wide field as FM	101 (17.6)	412 (71.8)	61 (10.6)
23. FM is not a very intellectually stimulating specialty	175 (30.5)	331 (57.7)	68 (11.8)
24. Family doctors have a large work overload	180 (31.4)	270 (47.0)	124 (21.6)
25. Family doctors are poorly valued in our society	59 (10.3)	127 (22.1)	388 (67.6)
26. Family doctors are poorly valued by the rest of the medical profession	62 (10.8)	157 (27.4)	355 (61.8)
27. A course in PC in the medical school is appropriate	45 (7.8)	415 (72.3)	114 (19.9)
28. FM should be a cross-sectional course	29 (5.1)	465 (81.0)	80 (13.9)
29. Low efficiency of a health system directed exclusively to diagnosis and treatment	131 (22.8)	354 (61.7)	89 (15.5)
30. Family doctors should provide comprehensive and continuing healthcare	18 (3.1)	196 (34.1)	360 (62.7)
31. The family doctor is clinically competent to provide most of the health care an individual may require	21 (3.7)	202 (35.2)	351 (61.1)
32. Family doctors provide health care at their surgeries and at the patient's home	53 (9.2)	354 (61.7)	167 (29.1)
33. Family doctors have little time to spend on their patients	177 (30.8)	220 (38.3)	177 (30.8)
34. Family doctors make decisions in highly uncertain circumstances	131 (22.8)	381 (66.4)	62 (10.8)

considered the social role of FM to be essential, while only 20% have seen the specialty as well respected within the medical professions. The acceptance of family medicine increased with years of study, independent of student characteristics or medical school attended [25].

Olid et al (2012) systematically reviewed published articles regarding medical students' attitudes and perceptions towards family practice and concluded that although some students found family medicine appealing, it is regarded as a career of low interest and prestige [26].

In Poland, (2007) Pawelczyk and his colleagues analyzed the

literature on primary care (PC) specialty choice to explore factors that affect medical students' specialty selection decisions for primary care. They also analyzed personality profiles of physicians, and the influence of communication skills and knowledge of social psychology on his/her work. There was a negative perception of family medicine among Polish students and doctors because of its long work hours and less time for family, insufficient diagnostic possibilities and monotony. It was chosen because of lack of other possibilities, difficulties in employment and opportunity to become 'a specialist' in short time [27].

## Methodology

### Study area

This study was conducted at Taif University in Taif city, which is located in the Mecca Province of Saudi Arabia at the West of Saudi Arabia in an elevation of 1700 meters on the slopes of the Al-Sarawat Mountains. It has a population of 1,281,613 (2011 census) [28]. Taif University consists of twenty colleges including 38,047 regular students (15,539 males and 22,508 females) [29]. The study was conducted at the college of medicine levels 4 to 6 (male and female sections).

### Study period

Preparatory period (4-8 weeks):

- Selecting the title and doing the literatures review
- Securing the required permissions
- Preparing the questionnaire
- Pilot study

Field work (4-6 weeks):

- Data collection
- Data entry and analysis

Writing the report (2-4 weeks)

### Study design

A cross-sectional study was implemented.

### Study population

Fourth-year medical students (104 males and 100 females), fifth-year medical students (118 males and 74 females) and six-year medical students (106 males and 69 females) enrolled throughout the academic year 1438 H.

### Sample size/technique

All senior students (n=574); fourth-year medical students (n=206), fifth-year medical students (n=191) and six-year (n=177) were invited to participate in the study by filling in the study questionnaire.

### Data collection tool

A self-administered, anonymous English questionnaire was utilized for data collection. It is composed of two main parts. The first part includes the socio-demographic characteristics of the participants (age, gender, academic level, Fathers' and mothers' occupation and education), and awareness about the scope of family medicine as a clinical specialty and sources of that awareness, if any. The second part includes the original version of the Valuation of Attitudes towards and Knowledge of Family Medicine Questionnaire (CAMF). It has been proved to be valid and reliable and composed of 34 close-ended questions [30]. Permission to use the questionnaire was requested through an e-mail communication with the corresponding author.

### Scoring system

The overall score of the questionnaire was calculated, giving the following values: "disagree": 1; "neutral" 2; "agree": 3. In order to make the "1" value always correspond to the most unfavorable option

**Table 3:** Association between students' age and perception of family medicine specialty.

Age in years	Perception of family medicine score			p-value*
	Median	IQR	Mean rank	
≤22 (n=224)	74	68-79	246.8	<0.001
23 (n=189)	73	71-78	264.3	
>23 (n=161)	79	76-82	371.4	

\*Kruskal-Wallis test.

**Table 4:** Association between students' gender and perception of family medicine specialty.

Gender	Perception of family medicine score			p-value*
	Median	IQR	Mean rank	
Male (n=330)	72	69-78	229.1	<0.001
Female (n=244)	79	74-83	366.4	

\*Mann-Whitney test.

regarding family medicine and the value "3" to the most favorable, the responses to items 15, 22, 23, 25 and 26 were reversed. The minimum possible score was 34 and the maximum one was 102.

### Data collection technique

The researcher distributed the self administered questionnaire during the studying hours; care was taken to not disturb the students. Trained medical colleague helped in collecting data from the male faculty of medicine. The researcher and her colleague were available to clarify any issue and the questionnaires were collected in the same day. The researcher and her colleague repeated this over one week period to include as many as students. The data were verified by hand then coded and entered to a personal computer.

### Data entry and analysis

Statistical analyses were conducted with the SPSS version 22.0 for Windows (SPSS Inc., Chicago, IL, USA). Data were shown as number and percents. Perception of family medicine total score was utilized for comparisons. Since, it was abnormally distributed (significant K-S test). Non-parametric statistical tests were applied. Mann-Whitney test was utilized for comparison of two groups and Kruskal-Wallis test for comparison of more than two groups.  $P \leq 0.05$  was accepted as statistically significant.

### Pilot study

It was conducted over 10 male medical students and 10 female medical students results were included in the final research as they were not significantly differ from the final results. It helped in adaptation of the study.

### Ethical consideration

- Approval of the Regional Research and Ethics committee at Al-Hada Armed Forces Hospital was requested.
- Permission from Dean of medical college at Taif University (male and female sectors) was obtained.
- The purpose of the study was explained to students.
- It was also explained to the participants that the data would be used solely for the purpose of the study, and that their privacy and anonymity would be fully protected.

- All participants completed the questionnaire in the college, anonymously after obtaining verbal consent.

## Results

The study included 574 medical students. The youngest age was 20 years while the oldest one was 28 years. The mean±SD age was 22.8±1.1 years. More than half of the students were males (57.5%). More than one third of them (35.9%) were enrolled in the fourth year whereas 33.3% and 30.8% were enrolled in the fifth and sixth years, respectively. Fathers of 23.3% of the students were retired whereas those of 21.4% were professionals. Mothers of 59.6% of the students were working. Exactly half and 48.1% of fathers and mothers respectively were university or above graduated (Table 1).

### Awareness about family medicine scope as a clinical specialty

Majority of the senior medical students (91.5%) were aware of family medicine scope as a clinical specialty as illustrated in Figure 1. Preclinical training (53.8%), friends and relatives (47.9%) and private reading/internet (35.9%) were the main source of awareness among them (Figure 2).

### Perception of family medicine specialty

As seen in Table 2, most of the senior medical students agreed that team work improves medical care (85.9%), responsibility of the family doctor for the health of the community (78.7%), potential of FM to improve the health of the community (75.4%) and primary care is the first medical contact with the healthcare system (73.3%). On the other hand, only 10.6% agreed that it is impossible to be an expert in such a wide field as family medicine, family doctors make decisions in highly uncertain circumstances (10.8%), and FM is not a very intellectually stimulating specialty (11.8%).

The overall family medicine perception score ranged between 44 and 92 with a mean of 75.3±6.7. It was abnormally distributed with a significant kolmogorov-smirnov test, p<0.001 (Figure 3).

### Factors associated with students' perception of family medicine specialty

#### Personal profile:

**Age:** Older students (aged >23 years) were more likely to perceive family medicine specialty than younger students (≤22 years) (mean ranks was 371.39 versus 246.81). The association between students' age and perception of family medicine specialty was statistically significant, p<0.001.

**Gender:** Female students were more likely to perceive family medicine specialty compared to male students (men ranks were 366.44 and 229.13), respectively. The difference was statistically significant, p<0.001 (Table 4).

**Academic level:** Students of the sixth year were more likely to perceive family medicine specialty than those of the fourth and fifth years (mean ranks was 374.91 versus 236.13 and 261.9, respectively), p<0.001 (Table 5).

**Father's occupation:** The highest rate of perception of family medicine specialty was found among students whose fathers were retired (mean rank was 348.57) while the lowest perception level was

**Table 5:** Association between students' academic level and perception of family medicine specialty.

Academic level	Perception of family medicine score			p-value*
	Median	IQR	Mean rank	
Fourth (n=206)	74	68-78.25	236.1	<0.001
Fifth (n=191)	72	71-78	261.9	
Sixth (n=177)	79	76-82	374.9	

\*Kruskal-Wallis test.

**Table 6:** Association between father's occupation and students' perception of family medicine specialty.

Father's occupation	Perception of family medicine score			p-value*
	Median	IQR	Mean rank	
Professional (n=123)	74	71-81	294.38	<0.001
Military (n=91)	74	71-80	287.61	
Retired (n=134)	78	72-83.25	348.57	
Business/trading (n=97)	68	66-70	124.81	
Others (n=129)	78	76-79	339.76	

\*Kruskal-Wallis test.

**Table 7:** Association between mother's occupation and students' perception of family medicine specialty.

Mother's occupation	Perception of family medicine score			p-value*
	Median	IQR	Mean rank	
Working (n=342)	75	71.75-79	301.5	0.014
Not working (n=232)	74	68-80	266.9	

\*Mann-Whitney test.

**Table 8:** Association between father's education and students' perception of family medicine specialty.

Father's education	Perception of family medicine score			p-value*
	Median	IQR	Mean rank	
Secondary school or below (n=287)	75	69-79	275.2	0.074
University or above (n=287)	75	71-80	299.8	

\*Mann-Whitney test.

observed among students whose fathers were working in business and trading (mean rank was 124.81). The association between fathers' occupation and perception of family medicine specialty was statistically significant, p<0.001 (Table 6).

**Mother's occupation:** It is clear from table 7 that students with working mothers perceived family medicine specialty higher than those with not working mothers (mean ranks were 301.47 and 266.90, respectively), p=0.014.

**Father's education:** Table 8 shows that fathers' educational level was not significantly associated with students' perception of family medicine specialty.

**Mother's education:** Students whose mothers were university or above graduated tended to perceive family medicine more than those whose mothers were lower educated (mean ranks was 305.68 versus 270.66), p=0.011.

**Awareness about the FM scope:** As demonstrated in table 10, there was no significant association between awareness of the students about the scope of family medicine and their perception of

**Table 9:** Association between mother’s education and students’ perception of family medicine specialty.

Mother’s education	Perception of family medicine score			p-value*
	Median	IQR	Mean rank	
Secondary school or below (n=298)	75	69-79	270.66	0.011
University or above (n=276)	75	71-80	305.68	

\*Mann-Whitney test.

**Table 10:** Association between awareness of the students about the scope of family medicine and their perception of family medicine specialty.

Awareness about the scope of family medicine as a clinical specialty	Perception of family medicine score			p-value*
	Median	IQR	Mean rank	
Yes (n=525)	75	70-79	287.8	0.894
No (n=49)	76	71.5-79	284.5	

\*Mann-Whitney test.

family medicine specialty.

**Source of Family medicine specialty awareness**

- Preclinical training: Students whose source of awareness about the scope of family medicine was preclinical training were more likely to perceive family medicine specialty (mean ranks was 277.53 versus 24.22), p=0.009.
- Private reading/internet: Students whose source of awareness about the scope of family medicine was private reading/internet were less likely to perceive family medicine specialty (mean ranks was 240.99 versus 277.21), p=0.007.
- Friends/relatives: Students whose source of awareness about the scope of family medicine was friends or relatives were more likely to perceive family medicine specialty (mean ranks was 299.13 versus 223.26), p<0.001.
- Promotional seminar: Having awareness about family medicine specialty through promotional seminar was not significantly associated with perception of family medicine (Table 11).

**Discussion**

Shortage of family physicians is documented worldwide, which had an impact on quality of healthcare, inappropriate use of specialists and less focus on prevention [31]. Among important factors contributing in this shortage of family physicians is the decrease in the interest of medical students in family medicine career [19,31-33].

The importance of family medicine in Saudi Arabia has rapidly improving as a result of increasing morbidity and mortality due to

preventable diseases. Therefore, it is essential to train family medicine practitioners to be highly qualified, and encourage medical students to join this important career [20]. For this rationale mainly, this study was carried out to explore the perceptions of senior medical students of both genders in Taif University to family medicine as a chosen future career.

In the present study, less than one quarter of students agreed that family medicine is highly valued in the medical school. Similarly, Ayuso-Raya et al [19] in a study carried out in Spain reported that family medicine was seen to be a minority option as a specialty among medical students.

Choosing of the future medical career is complex and multi-factorial [34]. A well-known theoretical model was developed for medical students’ specialty choice and specified two main factors linked with students’ own future career choice; type of medical school and students’ perceptions of the medical specialty characteristics [35]. In the present study, almost one-third of the students agreed that they would like to be family physicians in the future and slightly less than one third of them documented that family medicine will be their first career choice.

It has been reported that specific courses during clinical rounds has a significant influence on medical students’ attitudes towards specialties [36-39]. However, in the present study awareness of the medical students about the scope of family medicine through promotional seminar had no significant association with students’ perception of family medicine. Therefore, the quality and contents of such seminars should be reconsidered.

Taif medical school include family medicine training at preclinical stages, and it has been indicated in the present study that students whose source of awareness about the scope of family medicine was preclinical training were more likely to perceive family medicine specialty than others. The same has been documented by others [19,40]. Early training of undergraduates could motivate and help them in acclimatization with the clinical field through direct interaction with patients with less stress and more confidence. It could also enforce their learning and make it more relevant to clinical practice [41].

Nevertheless, the current study showed that the students’ of the sixth year were more likely to perceive family medicine as a clinical career better than fourth and fifth year students. Also, Zurro et al (2012) indicated that the acceptance of family medicine increased with years of study, independent of student characteristics or medical school attended [25].

**Table 11:** Association between source of awareness of the students about the scope of family medicine and their perception of family medicine specialty.

Source of awareness about the scope of family medicine as a clinical specialty	Perception of family medicine score			p-value*
	Median	IQR	Mean rank	
<b>Preclinical training</b> Yes (n=309) No (n=216)	76	71-79	277.5	0.009
	74	68-80	242.2	
<b>Private reading/internet</b> Yes (n=206) No (n=319)	74	68-80.25	241	0.007
	76	71-79	277.2	
<b>Friends/relatives</b> Yes (n=275) No (n=250)	77	72-80	299.1	<0.001
	72	68-79	223.3	
<b>Promotional seminar</b> Yes (n=30) No (n=495)	75	72-82	287.4	0.364
	75	70-79	261.5	

\*Mann-Whitney test.

In USA, Xu et al [42] asked general practitioners whether their level of interest in family medicine changed during medical school and observed that for 45% of them; it increased, particularly after having elective courses during undergraduate medical school. Therefore, medical education, not only important for increasing interest in family medicine but also for maintaining it after graduation. Scott et al [43] observed in their study that all medical students who were previously interested in selecting family medicine as a future career became more linked to their decision after the clinical training. Furthermore, many students changed their previously chosen specialty to family medicine as a result of the knowledge they had about family medicine during clinical rotation. In Ghana (2013), Essuman and his colleagues reported that the major factor for family medicine specialty choice was personal interest (75.6%) and the main reason for not choosing family medicine was inadequate understanding of the specialty (79.3%) [23]. In USA, Phillips and Charnley (2015) observed that approximately (27%) of third year medical students initially unlikely to choose family medicine as a career became interested after a family medicine clerkship and 90% of those interested in family medicine maintained their interest [21].

Alshahrani et al (2014) [9] reported that the decision of a career choice among Saudi medical students is based on personal characteristics and life attitudes more than on the experience of clinical rotation. Also, Alyousefi et al [20] documented that the personal priorities and lifestyle of the medical residents are the main factors responsible for their choice of specialty. In the present study, some personal characteristics were significantly associated with higher perception of family medicine specialty like gender, fathers and mothers' working status and mother's educational level.

In accordance with Alyousefi et al [20] and Alshahrani et al [9], in the present study, awareness of the students of the scope of family medicine was not significantly associated with their perception of family medicine as a clinical career.

A study carried out by Al Sareai in Saudi Arabia among residents of family medicine training program indicated that family medicine is a challenging specialty; as a result, students should be properly trained according to the specifications of this discipline. Also, the relative suboptimal number of family practitioners in Saudi Arabia lead to increased the workload and consequently burnout among them and decreases the time they have to teach residents [44].

Interestingly, having information about the scope of family medicine from previous reading or the internet decreased the perception of family medicine career. Contents of the internet should be reconsidered.

Family medicine is a very diverse specialty, and professionals in this career need to have sound knowledge about every aspect of physician care to be a successful [45]. In the current study, some negative points towards family medicine were raised by the participants. Almost half of them documented that, although they have sound knowledge about family medicine, they will chose another specialty as a future career. About two-thirds of them agreed that family physicians are poorly valued in our society and most of them expressed neutral opinion concerning the appropriateness of the primary care course in medical school. Pawełczyk and his colleagues reported a negative perception of family medicine among Polish students and doctors because of

its long work hours and less time for family, insufficient diagnostic possibilities and monotony. It was chosen as a specialty because of lack of other possibilities, difficulties in employment and opportunity to become 'a specialist' in short time [27]. Zurro et al found that only 20% of medical students have seen the family medicine specialty is respected within the medical professions [25].

The present study has some limitations. The conduction of the study by a family medicine resident might have biased the study through having a possible positive impact on the answers. Another limitation was choosing students from one school of medicine which could not reflect other medical schools in the Kingdom.

## Conclusion

The present study revealed that although, about one quarter of senior students at Taif University agreed that family medicine is highly valued in the medical school, almost one-third of them agreed that they would like to be family physicians in the future and slightly less than one third documented that family medicine will be their first career choice, some negative points towards family medicine were raised by the students as almost half of them documented that, although they have sound knowledge about family medicine, they will chose another specialty as a future career. About two-thirds of them agreed that family physicians are poorly valued in our society and most of them expressed neutral opinion concerning the appropriateness of the primary care course in medical school.

Choosing of family medicine specialty as a future career is influenced by some demographic characteristics of the students such as gender, parental working status and maternal educational level.

Preclinical training improved the perception of family medicine among the participants.

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## Recommendations

- Medical students need appropriate training and sound knowledge about the scope of family medicine during their clinical rotations.
- Further studies are recommended including students from different medical schools to have a more clear profile.
- Health awareness of the general public about the importance and value of family medicine is necessary, therefore it will be valued in the society and among health professionals as a whole.
- Encourage medical students to join family medicine specialty by providing advantages for that.

- Discourage medical students to have information about family medicine from inaccurate internet sources.

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