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Attitude of medical students at King Saud Bin Abdulaziz University for Health Sciences toward family medicine as a future specialty

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Abstract:

BACKGROUND: Owing to the rising population of the Kingdom of Saudi Arabia, the need for family physicians is growing. The number of family physicians who would be available in the health service in future is dependent on the attitudes of medical students because their choice of specialty is a major factor in satisfying this demand. The aim of the study was to evaluate the attitudes of medical students to family medicine as a future career.

MATERIALS AND METHODS: This cross-sectional study was conducted at King Saud Bin Abdulaziz University for Health Sciences. A total of 308 students were randomly selected from problem-based learning groups. Data were collected using a 25-item validated questionnaire, and Excel and SPSS were used for data entry and analysis. Mean and standard deviation were used to describe numerical data and frequencies and percentages to describe categorical data. $P < 0.05$ was considered statistically significant.

RESULTS: A total of 308 medical students, 201 (65.3%) of whom were male, completed the questionnaire. Majority of the students (229 [74.3%]) agreed that family physicians make important contributions to medicine although family medicine was one of the least preferred specialties of the students.

CONCLUSIONS: Most students were aware of the importance of family medicine; however, only a few of them chose this specialty. Further studies should be conducted to identify the factors that influence medical students' decisions in their choice of family medicine as a future career.

Keywords:

Attitude, family medicine, future specialty, medical student

Introduction

Family medicine was initially considered a specialty that facilitated access to high-standard quality health services for the majority of health-care seekers and reduced the growing pressure on referral hospitals.^[1,2] A large number of family physicians is essential for the overall health-care system because they manage

patients in primary health-care centers and so reduce the rate of admissions to hospitals.^[3] Family medicine is defined as a medical specialty that manages common and long-term illnesses in children and adults focusing on their overall health and well-being.^[4] One of the challenges facing the specialty of family medicine is that the concept is still unclear and seems redundant to many in the medical field.^[5] Currently, there are 2390 primary health

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centers in Saudi Arabia with only 1404 family medicine physicians.^[6] Most of these centers are managed by general physicians as out of the 10,641 physicians, only 1404 (13%) are family physicians.^[6] During the 4-year family medicine residency training program, residents are exposed to more than 13 different specialties in different hospitals unlike general physicians who do not go through the residency training program.^[7,8] The expected consequences of increasing the number of family medicine physicians are the provision of an improved quality of health care in the primary health-care centers, a reduction of the pressure on hospitals, and the improvement of the quality of health-care services.^[8,9] Family medicine in Saudi Arabia is now extremely important and rapidly improving to deal with the increase in morbidity and mortality from preventable diseases.^[10] Therefore, it is vital to train more family medicine physicians in high-quality training programs and encourage medical students to take up this important career.^[10]

In order to increase the number of family medicine specialists in Saudi Arabia, the government has recently decided to increase the number of places for training in the family medicine specialty.^[11] Although medical students' interest in family medicine is growing, this does not match the rising demand for primary health-care services^[12] primarily on account of the rise in the aging population.^[12] A study conducted on 4th- and 5th-year medical students in the Federal State of Hesse showed that 49.3% of students were interested in practicing family medicine and around a quarter of students specifically mentioned family medicine as their first or second choice of specialization.^[12] The factors affecting the choice of this specialty were personal strengths, an interest in the field, and practical experience of the subject.^[12] Another study conducted in Canada indicated that there was a difference in the two stages of medical schools, preclinical and clinical, with more positive factors in the clinical stage than the preclinical stage.^[13] In addition, a local study conducted in 2014 showed that the choice of a future career by Saudi medical students was based on personal characteristics and attitudes rather than their experience during clinical rotation.^[14] Another study carried out in Saudi Arabia reported that the good relationship and interaction between the patient and the physician, the faculty's attitudes and interests, and the enjoyment of the family medicine rotation were the main factors that led to the choice of family medicine as a future career.^[10] Furthermore, a study conducted in the USA focusing on the interest of medical students in family medicine reported a decline. Factors that influenced this included low remuneration, role models, and a negative impression of family medicine as a specialty.^[15] These factors need to be explored to forestall

any future shortage of family physicians. One of the most important factors contributing to this shortage of family physicians is the decline in the interest of medical students in family medicine career.^[16-19]

A study performed in Ghana found that 88% of the students were aware of the importance of the specialty, yet only 2.4% would consider it as a future career.^[20] Besides, medical students' negative attitude toward family medicine creates a barrier against their choice of that specialty as a career.^[21] It is, therefore, important to explore the attitudes of medical students toward family medicine, whether a positive or negative attitude, because their future career choices are determined by these attitudes and these choices are, essential indicators for meeting the demand for family physicians in Saudi Arabia. Therefore, our main aim in this study was to explore the attitudes of medical students in King Saud Bin Abdulaziz University for Health Sciences (KSAU-HS) toward the choice of family medicine as a future career.

Materials and Methods

The study was conducted at KSAU-HS, College of Medicine, Riyadh, Saudi Arabia. The total number of medical students in the College of Medicine was 1050, 750 of whom were male and 300 were female, with a male:female ratio of 2:1. Medical students go through three phases, namely preprofessional, preclinical, and clinical. The College of Medicine manages the latter two phases. Medical students of four levels, i.e. 3rd-, 4th-, 5th-, and 6th-year, both male and female, were in the college at the time of the study.

All medical students studying at KSAU-HS except the preprofessional students in the 2nd year could participate in the study. Therefore, our study included 3rd- to 6th-year medical students. The 5th- and 6th-year medical students in the clinical phase had been exposed to the family medicine rotation, whereas the 3rd- and 4th-year medical students had not.

The study used a cross-sectional design because the data were collected at a defined time, 2017–2018, and we compared different variables at the same time. The population size was 1050, and the appropriate sample size was calculated as 308, with a 5% margin of error and a confidence level of 95% using Raosoft (Raosoft Inc., US).^[22]

The sampling technique was a probability stratified random sampling to divide the population based on their gender. Students were selected from each academic year because each academic year was divided into small groups (clinical and preclinical problem-based learning groups) which were already randomly selected.

Ethical approval was obtained from the Institutional Review Board of the King Abdullah International Medical Research Centre, and informed written consent was taken from all participants in the study. The purpose of the study was explained to the participants, and they were assured that their information will be kept confidential and that the data and study results will be secured by restricting unauthorized access.

The study instrument was a self-administered, paper-based questionnaire consisting of 25 questions that measures the attitudes of medical students of family medicine as a future specialty on a 5-point Likert scale, i.e., 1 = strongly disagree, 2 = disagree, 3 = natural, 4 = agree, and 5 = strongly agree. This questionnaire had been used and validated in previous similar research, a Primary Care Attitudes Survey.^[23] The variables included were demographic variables; those variables that assessed the level of awareness of medical students about the roles, responsibilities, and the contribution of family physicians in the medical field; and questions on family medicine as against other specialties.

Microsoft Excel was used for data entry, and SPSS software version 20.0 (IBM, Riyadh, Saudi Arabia) was used for data analysis. Mean and standard deviation were used to describe the numerical data. The attitude scores were compared using the Mann-Whitney U-test because the original data were expressed on the ordinal scale (5-point Likert scale) which cannot be normally distributed. Frequencies and percentages were used to describe the categorical data. $P < 0.05$ was considered statistically significant.

Results

A total of 308 of the 1050 medical students participated in the study and completed the questionnaire. In terms of gender, the majority (201 [65.3%]) were male and 107 (34.7%) participants were female. The mean age was 22.38 ± 1.98 years (95% Confidence Interval: 22.38 ± 0.221 (22.2 to 22.6)). The minimum age was 20 years and the maximum age was 32 years [Table 1]. Internal medicine, general surgery, and orthopedic surgery were the most preferred choices for postgraduate training. Family medicine as medical specialty for postgraduate training was one of the least preferred, only eight (2.6%) students chose it [Table 2]. The majority of students (262 [85.0%]) agreed that family physicians build long-term relationships with patients; 261 students (84.8%) agreed that family medicine focuses on the whole patient, 239 (77.6%) agreed that family physicians focus on prevention as well as treatment of disease, and 229 (74.3%) agreed that family medicine makes important contribution to

Table 1: Demographic characteristics of the study participants

Basic demographics	Number (%)
Age	
20	27 (8.8)
21	98 (31.8)
22	68 (22.1)
23	55 (17.9)
24+	60 (19.5)
Gender	
Male	201 (65.3)
Female	107 (34.7)
Batch	
11	48 (15.6)
12	90 (29.2)
13	94 (30.5)
14	76 (24.7)
What is your first choice in future?	
Not decided	77 (25.0)
Family medicine	8 (2.6)
Other specialty	223 (72.4)
If there is a doctor in your family, what is his/her specialty?	
None	185 (60.1)
Family medicine	11 (3.6)
Other specialty	112 (36.4)

Table 2: Preference of medical students for family medicine specialty

What is your first choice in future?	
Specialty	Number (%)
Family medicine	8 (2.6)
Ophthalmology	9 (2.9)
ENT	9 (2.9)
Pediatrics	10 (3.2)
Pathology	12 (3.9)
Dermatology	16 (5.2)
Neurology	18 (5.8)
Orthopedic surgery	21 (6.8)
General surgery	33 (10.7)
Other	37 (12.2)
Not decided	77 (25.0)
Internal medicine	58 (18.8)

medicine [Table 3]. However, only a small proportion of students (25 [8.1%]) agreed that family medicine was predominantly a female specialty and 60 (19.5%) students agreed that family medicine was as exciting as other specialties [Table 3]. A small percentage of students (66 [21.4%]) agreed that family physicians are less focused on research and 67 (21.7%) students indicated that because medicine is becoming more specialized, family medicine may become obsolete. Only 91 students (29.5%) agreed that family physicians receive the same amount of training as other specialists. We used an overall score of 1–5 points to assess the significance of agreement and combined strongly

Table 3: Attitudes of medical students toward family medicine specialty

Question number	Question	Strongly disagree N (%)	Disagree N (%)	Neutral N (%)	Agree N (%)	Strongly disagree N (%)	Agree/ Strongly agree N (%)
1	There is demand for more family physicians	2 (0.6)	22 (7.1)	78 (25.3)	106 (34.4)	100 (32.5)	206 (66.9)
2	Family physicians will always have a job	1 (0.3)	22 (7.1)	102 (33.1)	122 (39.6)	61 (19.8)	183 (59.4)
3	Family medicine is a well-respected field of practice in medicine	23 (7.5)	58 (18.8)	88 (28.6)	84 (27.3)	55 (17.9)	139 (45.2)
4	Family physicians have more opportunity for work-life balance	3 (1.0)	17 (5.5)	73 (23.7)	107 (34.7)	108 (35.1)	215 (69.8)
5	Family medicine physicians are predominantly female	58 (18.8)	124 (40.3)	101 (32.8)	18 (5.8)	7 (2.3)	25 (8.1)
6	Family physicians focus on prevention as well as treatment of disease	2 (0.6)	7 (2.3)	60 (19.5)	147 (47.7)	92 (29.9)	239 (77.6)
7	Family physicians have the opportunity to perform different procedures	20 (6.5)	73 (23.7)	110 (35.7)	80 (26.0)	25 (8.1)	105 (34.1)
8	Family physicians build long-term relationships with patients	1 (0.3)	11 (3.6)	34 (11.0)	119 (38.6)	143 (46.4)	262 (85.0)
9	Family medicine focuses on the whole patient	1 (0.3)	8 (2.6)	38 (12.3)	124 (40.3)	137 (44.5)	261 (84.8)
10	Family physicians spend a lot of time diagnosing the common cold, ear infections, etc.	12 (3.9)	52 (16.9)	91 (29.5)	118 (38.3)	35 (11.4)	153 (49.7)
11	Family physicians are "gatekeepers" and mostly refer to other specialists	1 (0.3)	30 (9.7)	65 (21.1)	149 (48.4)	63 (20.5)	212 (68.9)
12	Family medicine makes important contributions to medicine	2 (0.6)	13 (4.2)	64 (20.8)	146 (47.4)	83 (26.9)	229 (74.3)
13	Family physicians treat a wide range of complex diseases	18 (5.8)	50 (16.2)	105 (34.1)	95 (30.8)	40 (13.0)	135 (43.8)
14	Family physicians are less focused on research	45 (14.6)	87 (28.2)	110 (35.7)	49 (15.9)	17 (5.5)	66 (21.4)
15	Medicine is becoming so specialized in that family medicine may become obsolete	42 (13.6)	61 (19.8)	138 (44.8)	54 (17.5)	13 (4.2)	67 (21.7)
16	Other specialists make more money than family physicians	9 (2.9)	32 (10.4)	92 (29.9)	102 (33.1)	73 (23.7)	175 (56.8)
17	Family medicine is diagnostically challenging	9 (2.9)	61 (19.8)	141 (45.8)	72 (23.4)	25 (8.1)	97 (31.5)
18	It is impossible for family physicians to know enough	30 (9.7)	85 (27.6)	96 (31.2)	73 (23.7)	24 (7.8)	97 (31.5)
19	Training in other specialties is harder than in family medicine	12 (3.9)	49 (15.9)	96 (31.2)	92 (29.9)	59 (19.2)	151 (49.1)
20	Family physicians are less likely to be sued for malpractice	20 (6.5)	81 (26.3)	113 (36.7)	66 (21.4)	28 (9.1)	94 (30.5)
21	Family medicine is as exciting as other specialties	54 (17.5)	102 (33.1)	92 (29.9)	41 (13.3)	19 (6.2)	60 (19.5)
22	Family physician receives the same amount of training as other specialists	14 (4.5)	61 (19.8)	142 (46.1)	74 (24.0)	17 (5.5)	91 (29.5)

agree and agree in the last columns to estimate the overall agreement and the median of the overall score to assess the significance of the difference. There was no significant difference in the attitude toward family medicine as a future specialty between male and female students based on the median of the overall scores (median: 3.32, 3.27, $P = 0.544$) [Table 4]. There was no significant difference between clinical and preclinical students based on the median (median 3.32, 3.27, $P = 0.117$) [Table 5]. The difference in the attitudes of different academic levels was not statistically significant as $P = 0.07$ [Table 6]. There was no significant difference

between clinical and preclinical students based on the median (median 3.32, 3.27, $P = 0.117$) [Table 5].

Discussion

Family medicine is a specialty that focuses on the overall health and well-being and allows patients to have access to more advanced health services.^[1,2] Family medicine physicians manage common and chronic illnesses of different age groups in the primary health-care centers with the result that the admission rate and pressure on the secondary and tertiary hospitals are diminished.^[3,4] Today,

Table 4: Comparison of attitude scores between male and female medical students

	Mean±SD	Median	Q1	Q3	P-Value
Gender					
Male	3.3±0.34	3.32	3.09	3.5	0.544
Female	3.29±0.36	3.27	3.09	3.45	

SD= Standard deviation, Q1=First quartile (25th percentile), Q3=Third quartile (75th percentile)

Table 5: Comparison of attitude scores between clinical and preclinical medical students

	Mean±SD	Median	Q1	Q3	P
Phase					
Clinical students	3.34±0.37	3.32	3.09	3.5	0.117
Preclinical students	3.27±0.32	3.27	3.09	3.45	

SD=Standard deviation; Q1=First quartile (25th percentile), Q3=Third quartile (75th percentile),

Table 6: Comparison of attitude scores of medical students by different academic years

	Mean±SD	Median	Q1	Q3	P
Batch (years)					
11 (6 th)	3.33±0.4	3.34	3.14	3.5	0.07
12 (5 th)	3.34±0.36	3.32	3.09	3.5	
13 (4 th)	3.31±0.35	3.32	3.09	3.5	
14 (3 rd)	3.22±0.29	3.23	3.05	3.36	

SD=Standard deviation, Q1=First quartile (25th percentile), Q3=Third quartile (75th percentile),

family medicine in Saudi Arabia is rapidly improving to cope with the increasing burden of chronic and preventable diseases.^[10] Therefore, the Government of Saudi Arabia has recently ruled for the increase of the places available for training in residency training programs for family medicine physicians.^[11] However, medical students' attitudes toward family medicine can create a barrier against choosing the specialty as a career.^[21] Therefore, in this cross-sectional study, our main aim was to explore the attitudes of medical students in KSAU-HS toward choosing family medicine as a career. From four different academic levels, 308 medical students completed the questionnaire which assessed their attitudes toward family medicine as a future specialty on a 5-point Likert scale. The results of this study showed that many students agreed that family physicians build long-term relationships with patients, focus on the whole patients, and make important contributions to medicine. There was no statistically significant difference between male and female students ($P = 0.544$) [Table 3]. However, a study conducted in Saudi Arabia by Alshahrani *et al.* showed that family medicine as a specialty was preferred more by females than males.^[14] Furthermore, a local study conducted in Taif city reported that there was a significant difference in the perceptions of female and male students of the family medicine specialty, with female students showing more interest ($P < 0.001$).^[21]

Family medicine as a future specialty was the least preferred specialty, chosen by only eight (2.6%) students

of the sample [Table 2]. Majority (229 [74.3%]) of the students were aware of the importance of the contributions of family medicine to medicine [Table 3]. This finding is similar to previous studies. A study conducted in Riyadh city showed that the majority of the participants believed that family medicine is an essential component of the health-care system in Saudi Arabia.^[10] In addition, a study carried out in Taif University on 574 medical students to assess their perception toward family medicine^[21] showed that while the majority of the senior medical students (91.5%) were aware of family medicine as a clinical specialty, only 11.8% of the junior students agreed that the specialty is not very intellectually stimulating.^[21] A Ghanaian study reported that family medicine was the least preferred medical specialty for postgraduate training (2.4%) although 88% of the students acknowledged its importance.^[20] Similar results were reported in a study conducted in Greece, with only 4.3% considering family medicine as a possible future specialty.^[15] However, the Taif University study showed that the main source of awareness of the medical students was preclinical training (53.8%), friends and relatives (47.9%), and private reading/Internet (35.9%).^[21] Furthermore, in our study, there was no statistically significant difference between the attitude of clinical and preclinical students based on the median ($P = 0.117$) [Table 5]. In contrast, the Taif study showed that 6th-year medical students were more likely to perceive the family medicine specialty positively than those in the 4th and 5th years ($P < 0.001$).^[21] It may indicate that certain factors in the clinical phase had an impact on the attitude of students toward family medicine.

A Canadian study supports the current study with a similar finding in which a more positive attitude was observed in students at the clinical level.^[24] In 2017, Alyousefi carried out a study to assess the attitude and knowledge of senior medical students toward family medicine before and after commencing their family medicine clinical rotation.^[10] The results of that study showed that the family medicine clinical rotation played a major role in the decisions medical students made in deciding on family medicine as a future career.^[10] Furthermore, the majority of medical students become more inclined to practicing family medicine when their knowledge of the specialty had vastly improved during the clinical rotation.^[10] Many of the studies carried out abroad and two recent published studies conducted in Saudi Arabia, one in Riyadh and the other in Taif city, explored the attitudes of only senior medical students toward family medicine. However, the present study assessed the attitudes of all medical students in KSAU-HS including both senior (clinical) and junior (preclinical) medical students.

The study limitations are that only students from a single institution were studied; hence, the findings may

not be representative of all medical schools in Saudi Arabia. In addition, some preclinical students had not yet completed their family medicine rotation. Finally, this study did not assess the factors affecting the students' attitudes toward the choice of family medicine as a future career. Further studies should be conducted to identify these factors.

Conclusions

The aim of this study was to explore the attitudes of medical students in KSAU-HS to choosing family medicine as a career. Although the results indicated that 229 (74.3%) students were aware that family medicine makes important contributions to medicine, only 8 (2.6%) students considered it as a preferred specialty. Further studies should be conducted to identify and understand the key factors that influence medical students' choice of family medicine, crucial to the health-care service of Saudi Arabia, as a future career.

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Conflicts of interest

There are no conflicts of interest.

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