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Research Article

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Factors Determining the Choice of Medical Specialty and Work Environment Among Saudi Physicians: Results from A National Cross-Sectional Survey

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ABSTRACT

Aims: The study aimed to identify factors influencing Saudi physicians' choice of medical specialty.
Settings and Design: A national cross-sectional survey.
Methods and Materials: Web-based validated questionnaire contained 29 questions covering demographic factors, personality characteristics, career motivations, workload, practice environment, income, and life goals.
Statistical analysis used: Descriptive statistics along with student t-tests and analysis of variance (ANOVA) were used to compare participants according to their socio-demographic factors.
Results: A total of (384/1,249; 30.7%) physicians responded (240 men and 144 women). The mean age of respondents was 38 years. Around 47% (180/384) of participants chose their specialty during their internship. The most common reasons for specialty choice were being the main area of interest 76% (292/384), followed by scarcity of the specialty in the region (108/384).
Conclusions: Higher income potential and prestige of specialty influenced men's specialty choice more than women. Female physicians reported greater limitations on their specialty choice. Mental skills were judged as more important for psychiatry, internal medicine, radiology, and neurology. Manual skills were judged as more important for ophthalmology and surgery. These findings and others can aid medical students and their mentors in career choice decisions.

Keywords: *Medical Specialty, Personality Traits, Specialty Preference, Medical Education, Attitudes of Physicians, Saudi Arabia*

INTRODUCTION

The process of constructing a professional identity and selecting a life-long medical specialty among medical students and junior physicians is multifactorial. It is grounded in exposure to new knowledge, skills, situations, interaction with patients, role model health care workers, and clinical environments [1, 2]. Adequate understanding of the nature of available specialties supports the process of enlightened decision-making [3], which enhances creativity and productivity of correctly matched physicians. Career counseling for students in their training years is an important intervention aimed at influencing career choices [2, 3], yet only a few medical schools globally have introduced career counseling services for students that give them the opportunity to experiment and explore during elective postings [4].

Reasons for physicians' choice of their medical specialty differ in each society. For instance, in the United Kingdom, reasons for specialty choice differ between UK graduates and International Medical Graduates (IMG) [5]. In the United States, debt influences medical students to choose high-income specialties rather than primary care careers [6, 7]. In Australia, a study found that "appraisal of own skills and altitude," "the intellectual content of the specialty," and "interest in helping people" were found to be the most important factors [8]. In a qualitative study in Japan, several medical students reported that personal experience with illness or witnessing their loved ones suffer from illness influenced their choice [2]. Similarly, in Brazil, general medicine residents reported that contact with patients was the main factor that influenced their choice [9]. In Malaysia, work experience in the field, marriage and family considerations were found to be the top reasons [10]. In Gambia, a study found that "intellectual content of the specialty" and "focus on urgent care" were the most important factors that strongly influenced the choice of medical specialty among males and females, respectively [4]. In Saudi Arabia, a study that involved all the medical schools in the country at that time found that the leading reasons for selecting a specialty were "personal interest," "a chance to help people," "availability of postgraduate training," "few specialists in the country," and "prestige" [11].

Timing of choice of medical specialty probably differs per country and specialty. In Australia and Malaysia, most physicians choose their specialty in postgraduate years [8, 10], while in Brazil nearly half of general medicine students chose their specialty during their internship year compared to surgeons who made their choice during medical school or even before that (37% and 30% respectively) [9].

A previous study surveying medical students at King Saud University, Riyadh, Saudi Arabia, revealed that less than half of the students showed a future specialty preference. Senior students and background information were the most important sources that were consulted about career choice [12]. Another study in Saudi [11] found a great preference for practicing at large specialized hospitals in large cities in the four major disciplines. All studies conducted in Saudi Arabia have discussed specialty preference and factors influencing career-choice among Saudi medical students and interns [11-14]. No study has discussed background factors and preferences for particular work environments that influenced choice of specialty among practicing physicians as far as we know.

The aim of this study was to contribute to the development of healthcare services by analyzing the characteristics of work environments of each medical specialty examined and how these have influenced medical practitioners in their choice of specialty. Demographic factors also play a major part in the medical specialty selection process [15, 16], which justifies the need to include them in our study's objectives.

METHODS

Study design and participants

This was a national cross-sectional survey conducted in March 2015 in Saudi Arabia. Saudi physicians from all specialties registered with the Saudi commission for health specialties (SCFHS) represented the target population. Training residents, interns, and non-Saudi physicians were all excluded.

Selection/Sampling

The study participants were selected using simple-random sampling technique from the list of registered physicians in the SCFHS using a specialized computer program for random selection of a large number of participants who fit the inclusion and exclusion criteria. The randomization was conducted by the SCFHS. The total sample size targeted in data collection of the present study was 1,249 physicians registered in the SCFHS.

Questionnaire

The questionnaire was prepared after a literature review of related previous studies. It contained 29 questions and was divided into 3 parts. The first part included demographic data (age, sex, years of practice, training level, center of practice), and the second part was concerned with the personality characteristics of the participants. The third part contained questions related to the participants' chosen specialty and workload or work atmosphere (primary specialty, subspecialty, number of working hours and on-calls, positive features of their specialty, and their monthly income, etc.). A question about satisfaction with a five point Likert scale was used to calculate the mean satisfaction scores. Participants were given the chance to choose more than one answer for the reason for their specialty choice. A list of 12 well-defined features that were obtained from previous studies was provided to the participants. Participants were

asked to choose and rank at most four important features according to their opinions, then scores were given based on their rankings in order to compare features between specialties.

Validation

The questionnaire was thoroughly revised by 4 independent expert researchers in the field of medical specialty selection. After getting their feedback, a pilot study was conducted by interviewing a diverse group of 40 medical students to check the questionnaire clarity, and after necessary changes were made, we tested the questionnaire with another 50 interns and physicians to assess the clarity, completeness, and ease of the questions provided.

Data collection

The web-based questionnaire link was emailed to 1249 doctors using a SurveyMonkey® electronic survey. Each email was sent individually starting with the person's name. A reminder email was sent for non-responders to the initial email.

Data analysis

Complete responses were exported from SurveyMonkey® and analyzed using the Statistical Package for the Social Sciences (SPSS) version 21 (SPSS Inc., Chicago, IL, USA). Descriptive statistics along with student t-tests and analysis of variance (ANOVA) were used to compare participants according to their socio-demographic factors, that is, gender and year of study. A *p* value of less than 0.05 was considered significant. Student's t-tests and One-Way ANOVAs were used to compare the mean values across the multi-level continuous variables. Mean satisfaction scores across specialties were compared in univariate and multiple linear regressions. Survey-adjusted Wald F-tests, followed by Scheffé tests were used to assess the null hypothesis that mean satisfaction scores were homogeneous across specialties as well as across levels of other assessed independent variables.

Ethical considerations

The participants were informed that they were chosen randomly from the SCFHS database of practicing Saudi physicians and that their participation was voluntary. All of participants provided voluntary informed consent. They were reassured about the confidentiality and anonymity of their information. Ethical approval was obtained from the institutional review board at the College of Medicine, King Saud University, Riyadh, Saudi Arabia, December 2014.

RESULTS

Of the 1,249 physicians who were invited to participate, 456 agreed to participate (response rate 37%). However, of those who responded, only 384 (84%) completely filled out the questionnaire. Most of the respondents were male physicians (266/384, 70%). The mean age was 38.4 years with a range between 29 and 70 years (Table 1). The majority of the respondents (378/384; 98.4%) stated that they were practicing physicians. Surgery, general pediatrics, internal medicine, and family medicine represented the majority of the respondents respectively (figure 1). More than half of the participants (212/384, 55%) were consultants (attending physicians), followed by senior registrars/associate consultants (149/384, 30.8%), and registrars (5.7%). Around half of the respondents (51%) were employed by the Ministry of Health (195/384, 51%) followed by University hospitals (76/384, 19.8%) and National Guard Hospitals (56/384, 14.6%). The majority of study participants chose their specialty during their internship (180/384, 47%) and residency (105/384, 27%); a smaller proportion did so either during medical school (63/384, 16.7%) or before entering medical school (22/384, 5.7%).

On a five-point Likert scale, half of the physicians stated that they were strongly satisfied with their specialty (50.8%), and 35.4 % (136/384) stated that they were satisfied with their specialty. Participants' male sex, age, and monthly income were found to be associated with the mean satisfaction score (Table 1). Scheffé's test showed that physicians in the 35 to 44 age group and those above 55 were significantly more satisfied with their job than the other age groups ($P<0.05$) and that participants with a monthly income between 40,000 and 59,999 Saudi riyals were more satisfied than other income groups.

Table 1. Physicians' mean satisfaction scores in relation to demographic and work variables

Variable	n(%)	Mean satisfaction score	t-test/ F-test	p-value
Sex				
Male	266 (69.3)	4.44	3.73	<0.001
Female	118 (30.7)	4.11		
Age				
Less than 35	133 (34.6)	4.19	3.06	0.028
35 to 44	180 (46.9)	4.44		
45 to 54	54 (14.1)	4.28		
55 or older	17 (4.4)	4.53		
No. of typical weekly working hours				
Less than 36 hours	80 (20.8)	4.30	1.13	0.343
36 to 40 hours	98 (25.5)	4.47		
41 to 45 hours	80 (20.8)	4.26		
46 to 50 hours	70 (18.2)	4.36		
More than 50 hours	56 (14.6)	4.23		
No. of on-calls received on average during a month				
Less than 3	76 (19.8)	4.17	1.51	0.211
3 to 5	120 (31.3)	4.35		
6 to 8	112 (29.2)	4.38		
More than 8	69 (18.0)	4.43		
Place of practice				
Ministry of Health	195 (50.8)	4.33		
Ministry of Defense	46 (12.0)	4.57		
Ministry of Interior	10 (2.6)	4.40		
National Guard	56 (14.6)	4.29	*	*
University hospitals	76 (19.8)	4.37		
Private sector	30 (7.8)	4.80		
Other	50 (13.0)	4.32		
The monthly income from the primary medical career				
Less than 20,000 SR/m	31 (8.1)	4.39	2.57	0.027
20000 to 29,999 SR/m	116 (30.2)	4.16		
30000 to 39,999 SR/m	80 (20.8)	4.28		
40000 to 49,999 SR/m	56 (14.6)	4.55		
50000 or 59,999 SR/m	35 (9.1)	4.54		
60,000 SR/pm or more	26 (6.8)	4.38		
Monthly income from the private sector				
Less than 5,000 SR/m	26 (6.8)	4.35	0.31	0.817
5,000 to 19,999 SR/m	21 (5.5)	4.48		
20,000 to 39,999 SR/m	27 (7.0)	4.48		
40,000 SR/m or more	36 (9.4)	4.53		

* N/A; Participants were able to choose more than one place of practice

The leading reasons for selecting a specialty were "personal interest" (76%), and "few specialists in the region" (28%), while family wishes (4.7%) and the presence of a relative practicing the same specialty (8/384; 2.1%) were at the bottom of the list. Interestingly, high income and appraisal of prestige influenced 12.4% (33/266) and 7.5% (20/266), respectively, of male doctors in their choice of specialty, while these features had no influence on female participants (Table 2). On the other hand, gender limitations and restrictions had a greater influence on female (17/118; 14.4%) than on male (5/266; 1.9%) participants.

Table 2. Distribution of Study Sample According to Gender and Reason for Choosing Specialty

Reasons for specialty choice	Male	Female	Total
	No. (%*)	No. (%*)	No. (%*)
Main interest	205 (77.1)	87 (73.7)	292 (76.0)
Few specialists in the region	82 (30.8)	26 (22.0)	108 (28.1)
A role model	30 (11.3)	9 (7.6)	39 (10.2)
Low workload	30 (11.3)	8 (6.8)	38 (9.9)
High income	33 (12.4)	0 (0)	33 (8.6)
Avoiding direct working with patients	18 (6.8)	8 (6.8)	26 (6.8)
Gender (limitations, restrictions)	5 (1.9)	17 (14.4)	22 (5.7)
Prestige	20 (7.5)	0 (0)	20 (5.2)
Family desire	9 (3.4)	9 (7.6)	18 (4.7)
A relative in the same specialty	5 (1.9)	3 (2.5)	8 (2.1)
Other (please specify)	26 (9.8)	15 (12.7)	41 (10.7)
No. of participants	266	118	384

*Percent of No. of participants

The most frequent reason for dermatologists' specialty choice was low workload (50%), followed by "high income" (28.6%) (Table 3). Deficiency of specialists in the region was mostly reported as a reason for choice of medical specialty among anesthesiologists (66.7%) and pathologists (62.5%). Obstetricians and gynecologists occupied the first place in the context of gender limitations and restrictions as an impact on specialty selection (23.8%). Avoiding direct contact with patients was most frequently cited as a reason among radiologists (46.2%) and pathologists (25%).

Table 3. Distribution of Study Sample According to Specialty and the Reason for choice

Medical specialty \ Reasons for specialty choice		Main interest	Family desire	High social status (prestige)	High income	Low workload	Specialty infrequent in your region	Gender (limitation, restriction)	One of my family members or relatives is practicing the same specialty	Following a role model	Avoiding direct working with patients	Other (please specify)	No. of participants
Anesthesiology	No. (%)	5 (55.6)	1 (11.1)	1 (11.1)	2 (22.2)	0 (0)	6 (66.7)	0 (0)	0 (0)	0 (0)	0 (0)	3 (33.3)	9
Internal Medicine	No. (%)	37 (82.2)	1 (2.2)	3 (6.7)	3 (6.7)	2 (4.4)	16 (35.6)	1 (2.2)	1 (2.2)	5 (11.1)	0 (0)	5 (11.1)	45
Surgery	No. (%)	46 (83.6)	3 (5.5)	4 (7.3)	7 (12.7)	4 (7.3)	19 (34.5)	1 (1.8)	2 (3.6)	7 (12.7)	1 (1.8)	3 (5.5)	55
Dermatology	No. (%)	10 (71.4)	0 (0)	2 (14.3)	4 (28.6)	7 (50.0)	0 (0)	1 (7.1)	0 (0)	1 (7.1)	0 (0)	3 (21.4)	14
Emergency Medicine	No. (%)	12 (80.0)	0 (0)	0 (0)	2 (13.3)	2 (13.3)	7 (46.7)	1 (6.7)	1 (6.7)	2 (13.3)	1 (6.7)	3 (20.0)	15
ENT (Otolaryngology)	No. (%)	8 (80.0)	0 (0)	1 (10.0)	1 (10.0)	1 (10.0)	3 (30.0)	0 (0)	0 (0)	1 (10.0)	1 (10.0)	0 (0)	10
Family Medicine	No. (%)	29 (65.9)	4 (9.1)	0 (0)	0 (0)	9 (20.5)	7 (15.9)	5 (11.4)	2 (4.5)	6 (13.6)	0 (0)	7 (15.9)	44
Neurology	No. (%)	13 (72.2)	3 (16.7)	0 (0)	0 (0)	2 (11.1)	7 (38.9)	1 (5.6)	0 (0)	0 (0)	1 (5.6)	1 (5.6)	18
Obstetrics and Gynecology	No. (%)	17 (81.0)	1 (4.8)	0 (0)	0 (0)	1 (4.8)	2 (9.5)	5 (23.8)	0 (0)	1 (4.8)	0 (0)	2 (9.5)	21
Ophthalmology	No. (%)	8 (88.9)	0 (0)	2 (22.2)	1 (11.1)	1 (11.1)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (11.1)	9
Orthopedics	No. (%)	18 (90.0)	1 (5.0)	1 (5.0)	4 (20.0)	1 (5.0)	4 (20.0)	1 (5.0)	0 (0)	3 (15.0)	0 (0)	0 (0)	20
Pathology	No. (%)	7 (87.5)	0 (0)	0 (0)	0 (0)	0 (0)	5 (62.5)	0 (0)	0 (0)	1 (12.5)	2 (25.0)	0 (0)	8
General Pediatrics	No. (%)	34 (70.8)	2 (4.2)	1 (2.1)	3 (6.3)	2 (4.2)	8 (16.7)	5 (10.4)	0 (0)	7 (14.6)	0 (0)	5 (10.4)	48
Psychiatry	No. (%)	13 (86.7)	1 (6.7)	0 (0)	0 (0)	2 (13.3)	5 (33.3)	0 (0)	1 (6.7)	0 (0)	0 (0)	2 (13.3)	15
Radiology	No. (%)	26 (66.7)	1 (2.6)	5 (12.8)	6 (15.4)	4 (10.3)	12 (30.8)	0 (0)	1 (2.6)	4 (10.3)	18 (46.2)	4 (10.3)	39
Other	No. (%)	9 (64.3)	0 (0)	0 (0)	0 (0)	0 (0)	7 (50.0)	1 (7.1)	0 (0)	1 (7.1)	2 (14.3)	2 (14.3)	14
Total	No. (%)	292 (76.0)	18 (4.7)	20 (5.2)	33 (8.6)	38 (9.9)	108 (28.1)	22 (5.7)	8 (2.1)	39 (10.2)	26 (6.8)	41 (10.7)	384

Regarding positive features of the chosen medical specialties of participants, taking care of people (mean = 1.05), decision-making (mean = 1.02), and creativity (mean = 1.01) had the highest scores in general. Male participants allocated higher values for creativity (1.06), variety (1.03), decision-making (1.00), and taking care of people (0.98) than their female counterparts. On the other hand, female participants considered helping people (1.21), cognitive skills (1.08), decision-making (1.05), and manual skills (0.94) as the most important positive features (see Table 4).

Table 4. Mean scores and ranks of positive specialty features according to gender

Positive Specialty Features	Male		Female	
	Mean	Rank	Mean	Rank
Creativity	1.06	1	0.90	5
High income	0.40	9	0.24	12
Variety (less routine)	1.03	2	0.87	6
Low occupational hazards (safe work environment)	0.18	12	0.27	11
Working with people	0.51	8	0.49	8
Manual skills	0.79	6	0.94	4
Mental skills	0.90	5	1.08	2
helping people	0.98	4	1.21	1
Decision making	1.00	3	1.05	3
Prestige	0.23	11	0.29	10
Low workload	0.35	10	0.40	9
Independence	0.53	7	0.69	7

Positive features and specialties are summarized in Table 5. In this table, internal medicine (1.51), neurology (1.22), psychiatry (1.93), and radiology (1.44) had "mental skills" ranked first. Manual skills were the most important features in ophthalmology (2.11) and surgery (1.58), while manual skills ranked second place (1.20) in orthopedics following creativity (1.85). For emergency physicians, variety of workload (2.33) was the most important feature, followed by decision-making (1.87). Family medicine, and obstetrics and gynecology scored the highest (1.86 and 1.71, respectively) in "taking care of people" as the main positive features. Dermatology had "low workload" and "high income" as the two most significant features with mean scores of 0.93 and 0.79, respectively. Environmental safety was not ranked highly in most specialties. However, psychiatrists ranked this reason highly with a mean value of 0.87.

Table 5. Mean score and ranks of positive specialty features according to medical specialty

		Creativity	High income	Variety (no routine)	Low occupational hazard (safe work environment)	Working with people	Manual skills	Mental skills	Taking care of people	Decision making	Prestige	Low workload	Independence
Anesthesiology	M	1.22	0.56	0.56	0.44	0.44	0.78	1.33	0.44	1.67	0.33	0.33	1.22
	R	3	6	6	8	8	5	2	8	1	11	11	3
Internal medicine	M	0.87	0.38	0.96	0.09	0.51	0.67	1.51	1.33	0.84	0.29	0.31	0.51
	R	4	9	3	12	7	6	1	2	5	11	10	7
Surgery	M	1.44	0.40	1.07	0.07	0.45	1.58	0.53	0.91	0.84	0.24	0.29	0.40
	R	2	8	3	12	7	1	6	4	5	11	10	8
Dermatology	M	0.57	0.79	0.50	0.36	0.50	0.57	0.29	0.29	0.57	0.50	0.93	0.64
	R	6	2	7	10	7	4	11	11	4	7	1	3
Emergency medicine	M	0.20	0.13	2.33	0.20	0.27	0.60	0.53	1.47	1.87	0.13	0.13	0.80
	R	8	10	1	8	7	5	6	3	2	10	10	4
ENT (Otolaryngology)	M	1.30	0.90	1.10	0.20	0.50	1.00	0.10	0.50	0.80	0	0.30	0.70
	R	1	4	2	10	7	3	11	7	5		9	6
Family Medicine	M	0.59	0.11	1.00	0.55	0.73	0.25	0.82	1.86	0.95	0.30	0.55	0.59
	R	6	12	2	9	5	11	4	1	3	10	8	6
Neurology	M	1.17	0.11	0.72	0	0.39	0.83	1.22	1.11	0.67	0.44	0.44	0.67
	R	2	11	5		10	4	1	3	6	8	8	6
Obstetrics and Gynecology	M	0.90	0.19	1.48	0	0.71	1.38	0.67	1.71	1.48	0.05	0.19	0.33
	R	5	10	2		6	4	7	1	2	11	9	8
Ophthalmology	M	0.44	0.44	0.67	0.11	0.67	2.11	0.44	0.89	0.33	0.11	0.67	0.44
	R	7	6	3	11	3	1	7	2	10	11	3	7
Orthopedics	M	1.85	0.30	1.10	0.30	0.25	1.20	0.20	0.50	0.60	0.30	0.40	0.35
	R	1	8	3	8	11	2	12	5	4	8	6	7
Pathology	M	1.00	0	1.75	0	0.25	0.88	1.13	0	1.63	0	0.38	0.75
	R	4		1		8	5	3		2		7	6
General Pediatrics	M	0.85	0.29	0.65	0.15	0.75	0.81	1.06	1.17	1.27	0.15	0.31	0.69
	R	4	10	8	11	6	5	3	2	1	11	9	7
Psychiatry	M	0.80	0.07	0.33	0.87	0.73	0.53	1.93	1.47	0.47	0.40	0.33	0.53
	R	4	12	10	3	5	6	1	2	8	9	10	6
Radiology	M	1.18	0.69	0.92	0.18	0.23	0.41	1.44	0.41	1.26	0.38	0.33	0.77
	R	3	6	4	12	11	7	1	7	2	9	10	5
Others	M	1.43	0.36	1.00	0	0.21	0.14	1.36	0.71	1.21	0	0.21	0.29
	R	1	6	4		8	10	2	5	3		8	7

DISCUSSION

This study is an initial step of an ongoing plan to develop an accessible database that can be reviewed and referenced by medical students, physicians, and other researchers. Many studies have discussed the reasons behind specialty choice and factors influencing this, but they were either done outside Saudi Arabia [10, 17-20] or done on medical students [11, 12, 21-23]. Moreover, a lack of data about features of medical specialties led us to extend our study to uncover and pinpoint some of them and provide us with some qualitative measures to explore similarities and differences between these specialties. We elected to include registrars and consultants because they are the best representatives of the specialties' practices and are well oriented and exposed to the work environment.

According to our research, the satisfaction score differs significantly between male and female physicians. This difference could be due to a number of reasons faced by female physicians: 1) social obstacles in the region; 2) limited specialty choices for some of them to avoid direct contact with male patients; 3) additional responsibilities to care for their children and to do housework; 4) difficulties in transportation to attend their work, as females in Saudi Arabia are not allowed to drive until the time of survey. Most of these factors, however, do not exist outside of Saudi Arabia, which explains the finding of another study performed on 6,590 physicians in the United States that reported no significant differences in male and female satisfaction [18].

A trend of increasing satisfaction was also noted as physicians advanced in their careers. This may be explained by the reduction of workload and the increase in income achieved by senior physicians. Similar findings were also noted in other studies [24].

In general, the leading factor in determining medical specialty choice was main interest. This correlates with other studies conducted on medical students and intern physicians [19, 23, 25]. High income plays an important role in specialty choice as well but not for Saudi female physicians. This is not surprising, as women in Saudi culture do not have to worry about financial issues, as men are responsible for these, and they have a fairly dependable lifestyle whether single or married. Dermatologists appeared to take this factor into consideration along with low workload when they considered their specialty choice, which corresponds to research done internationally [26].

Females also showed particular inclinations for obstetrics and gynecology mainly because of increased demand and regional limitations evident from the relatively high percentages obtained from the respondents (22% and 14.4% respectively). Yet, similar findings were found in other studies though they were done in different settings and cultures [19, 27, 28].

Some physicians prefer to avoid direct contact with patients and that is why doctors in specialties with limited patient-physician contact such as radiology and pathology have endorsed "minimal contact with patients" as a feature to justify their specialty choice. Specialty infrequency and increasing demand also played a role for some physicians in choosing particular specialties such as anesthesiology and pathology. In contrast to a study done on 45 former interns in Germany that showed family reasons as the most motivating factor for specialty choice [29], our research showed that family reasons played no significant role in specialty choice.

Our survey results also showed that creativity and variety were the most preferred positive features for men in their medical specialty, while prestige and low occupational hazards (safe work environment) were the least. On the other hand, taking care of people, followed by mental skills were the most preferred for female physicians, whereas high income and low occupational hazards (safe work environment) were the least.

According to physicians' responses about the positive features in their specialties, internal medicine showed mental acuity as the most important feature, while surgery showed manual skills as the leading quality. This finding is consistent with the nature of their medical interventions; internal medicine requires a great deal of knowledge that can be applied and manipulated using both critical thinking and experience to deal with diseased patients, while surgery on the other hand, focuses more on manual skills that can be learnt and acquired through continuous and repetitive practice. Emergency medicine deals with a relatively large number of different cases in a short-term manner, which makes it a great choice for people who dislike routines, as our data showed variety was the prominent feature. Prestige was not a significant feature within all specialties.

Using a web-based survey that was sent via email presented a disadvantage for achieving a truly representative sample with a sufficient response rate. The response rate in this study was obtained after sending several and repetitive emails with a well-written and clear letter. We believe however that our sample is well-representative of the real population for a number of reasons: 1) the distribution of gender in our response rate correlates closely with the real distribution of gender in the whole population of Saudi physicians in our country according to the Ministry of Health; 2) most, if not all, physicians nowadays use their emails as a main source for communication; 3) emails were sent randomly from the list of all Saudi physicians registered in the Saudi Commission of Health Specialties. Finally, although our sample size was fairly adequate, analyzing a wide variety of medical specialties and trying to explore their features requires a larger number of participants for good quality and satisfactory results. This can be achieved in the future by extending our list and emailing all registered physicians.

CONCLUSIONS

We conclude that many factors, from regional need to personal goals, have been considered when choosing a medical specialty by Saudi physicians. Just as physicians judge different skills as important depending on their specialty, so job satisfaction is determined by a variety of factors that differ among specialties. The results of our study provide a unique perspective on the factors influencing specialty choice and job satisfaction among physicians in Saudi Arabia.

This research could provide a useful guide for medical students to help them become aware of the leading reasons behind every specialty choice. Learning about the most important features within every specialty will aid students in choosing their own precisely. If this sort of insight is implemented in career counseling for students to guide future physicians, it can contribute to the further development of healthcare services.

Abbreviations

IMG: International Medical Graduates SCFHS: Saudi Commission for Health Specialties
SPSS: Statistical Package for the Social Sciences ANOVA: Analysis of Variance
ENT: Ear, Nose, and Throat OB/GYN: Obstetrics and Gynecology

Declarations

Availability of data and materials

The datasets generated and/or analysed during the current study are not publicly available due to restricted permission from SCFHS but are available from the corresponding author on reasonable request and with permission of SCFHS.

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