

Factors Affecting the Career Choice of Saudi Medical Students Towards General Surgery, Saudi Arabia

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ABSTRACT

Objective: The purpose of this research was to explore the key elements that shape Saudi medical students' inclination to pursue general surgery as a future specialty.

Methods: A descriptive cross-sectional survey was carried out. Data were gathered through structured online questionnaires that students completed independently. The responses were statistically examined using SPSS version 29 to highlight influential variables.

Results: A total of 441 students took part in the study. Of these, about one-third (136; 30.8%) showed an interest in general surgery, whereas the majority (305; 69.2%) preferred other career options. The most common source of influence was advice from family and peers (72; 51.8%). Significant associations were detected between gender ($p=0.003$), GPA ($p=0.032$), and having relatives in healthcare ($p=0.013$) with the choice of general surgery. Moreover, the perception of rapid achievement and gratification from surgical practice emerged as a major motivating factor [AOR=1.39; 95% CI: 1.009–1.900; $p=0.044$].

Conclusion: The findings indicate that immediate satisfaction derived from surgical procedures is a strong motivator for students choosing general surgery. Support and encouragement from family and peers—especially those with medical backgrounds—also play a crucial role. Male students and those with higher academic performance demonstrated greater interest in this field. The study highlights the importance of mentorship, early surgical exposure, and family influence in guiding medical career pathways.

Keywords: General surgery, medical students, future career, Bisha, KSA

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1. INTRODUCTION

General surgery is one of the most reputable and coveted careers that often comes with prestige and perceived intellectual superiority.¹ Moreover, surgery is a critically important profession within the medical field because through the intervention of surgical procedures, lives are saved, quality of life is improved, and medical knowledge is advanced.² However, despite the perceived high status and importance of surgery, there has been a significant decline in the proportion of medical students who show interest in becoming general surgeons.³ A 2012 study by Ganschow reported that the United States, Great Britain, New Zealand, Switzerland, and Germany were all experiencing a decline in the proportion of medical students showing interest in pursuing a surgical career.⁴ Other studies have shown that as learners progress through medical school, their interest in a surgical career also declines further.⁵

The reasons for this decline are diverse and can range from individual characteristics to field-related factors, such as the demanding nature of the specialty and the difficulty of achieving a favorable work-life balance.⁶ The long working hours, irregular schedules, and time constraints that characterize a career as a surgeon have been found to increasingly influence the likelihood of medical students to pursue surgery.⁷ Additionally, becoming a surgeon demands a lengthy training period in which the learner must take part in residency and fellowship programs.⁸ The length of time required to train as a surgeon, which often far exceeds the time spent by other specialties in the medical field, can be a major discouraging factor.

However, most of these factors have been developed based on studies conducted in Europe and the Americas. The conditions in the Middle East and Saudi Arabia often differ greatly from the West. For instance, views on work-life balance are heavily influenced by cultural backgrounds,⁹ and the cultural difference between Saudi Arabia and Western countries is huge. Moreover, some studies conducted in Saudi Arabia have shown that medical students in the country have not necessarily lost their willingness or desire to pursue a career in surgery. One study conducted in Abha estimated that about 26% of medical students preferred a career in general surgery,¹⁰ while another Riyadh study established that 27% of medical students were interested in general surgery.¹¹ Given these differences, this study seeks to establish the factors that influence Saudi medical students' decision towards general surgery as a future career.

2. METHODOLOGY

Study Design and Population

This study employed a cross-sectional design targeting medical students enrolled in various universities across the Kingdom of Saudi Arabia. The study aimed to assess the factors influencing their decision to pursue general surgery as a future career. Participants included both male and female undergraduate medical students in their 4th, 5th, and 6th years, as well as general practitioners (GPs) and medical interns. These groups were specifically selected because they are more likely to have sufficient clinical exposure and career awareness, making them better positioned to form informed opinions about future specialties. Inclusion criteria required participants to be currently enrolled in a medical program in Saudi Arabia or to be recent graduates (GPs/interns) and to provide informed consent. Students from non-medical colleges or those unwilling to participate were excluded from the study.

The sample size was determined using the Cochran formula for cross-sectional studies, based on a 95% confidence level, a 5% margin of error, and an assumed response distribution of 50%, resulting in a minimum required sample of 385 participants. However, a total of 441 medical students completed the questionnaire, which enhanced the reliability and generalizability of the findings. Participants were recruited through a convenience sampling technique from various universities across Saudi Arabia.

Data were collected using a structured, self-administered online questionnaire in Arabic. The questionnaire comprised four main sections: (1) demographic information (age, gender, academic year, and university); (2) interest in general surgery as a future career; (3) factors influencing career choice, including personal interest, perceived lifestyle, income expectations, mentorship exposure, and academic performance; and (4) perceived barriers and motivators related to selecting general surgery. A pilot test was conducted with 10% of the final sample (approximately 44 students) to assess the clarity, relevance,

and internal consistency of the items. The questionnaire demonstrated high reliability with a Cronbach's alpha of 0.857. Necessary revisions were made based on pilot feedback to ensure clarity. The final questionnaire was distributed via popular student communication channels for medical students such as WhatsApp, Telegram, and X (formerly Twitter).

Ethical approval was obtained from the Institutional Review Board (IRB) at Bisha University [Approval No.: UB-RELOC H-06-BH-087]. Informed consent was obtained electronically from all participants. Participation was voluntary, and no personal identifiers were collected. Data were kept confidential and used solely for research purposes.

Data Analysis

Collected responses were initially reviewed and cleaned in Microsoft Excel to eliminate incomplete or inconsistent entries. The data were then imported into SPSS (Statistical Package for the Social Sciences), version 27, for statistical analysis. Descriptive statistics (frequencies and percentages) were used to summarize demographic data and responses related to general surgery interest. Chi-square and Fisher's exact tests were employed to examine associations between student characteristics and their interest in general surgery. Univariate logistic regression was used to identify significant predictors of interest in general surgery. A p-value of <0.05 was considered statistically significant.

3. RESULTS

The students' demographic data indicated that more than half were male (283; 64.2%), and the majority were single (421; 95.5%). A considerable proportion (184; 41.7%) reported a monthly income of less than 5,000 SAR, and nearly half (217; 49.2%) had a family member working in the healthcare field. Approximately 136 students (30.8%) expressed an interest in specializing in general surgery after graduation. Among these, 49 students (36.0%) had made this decision before entering medical school, 45 (33.1%) decided during the basic years, 36 (26.5%) during the clinical years, and only 4 (4.4%) during the internship.

Table 1: Demographic information

Demographics	Category	N (%)
Gender	Female	158 (35.8%)
	Male	283 (64.2%)
Age (Years)	Mean $\pm$ SD	23.06 $\pm$ 2.443
Marital status	Married	19 (4.3%)
	Single	421 (95.5%)
	Widow/Divorce	1 (0.2%)
Family income monthly	Less than 5000 SAR	184 (41.7%)
	5000-10000 SAR	76 (17.2%)
	More than 10000 SAR	181 (41.1%)
Academic year	4 th year	184 (41.7%)
	5 th year	112 (25.4%)
	6 th year	108 (24.5%)
	GP	9 (2.0%)
	Intern	28 (6.3%)
GPA	Less than 3	125 (28.3%)

	3-4	160 (36.3%)
	4-5	156 (35.4%)
Family member at health care field	Yes	217 (49.2%)
	No	224 (50.8%)
Has anyone previously advised you or influenced your decision to pursue your current medical specialty?	Yes	139 (31.5%)
	No	302 (68.5%)
If yes, mention source of advice	Doctors	21 (15.1%)
	Family and friends	72 (51.8%)
	Others	46 (33.1%)
Having a desire to specialize in general surgery after graduation	Yes	136 (30.8%)
	No	187 (42.4%)
	I do not know	118 (26.8%)
If yes, when was the decision made?	Before starting medical school	49 (36.0%)
	During basic years	45 (33.1%)
	During clinical years	36 (26.5%)
	During internship	4 (4.4%)

Demographic information presented in frequencies (n) and proportion (%)

Figure 1 illustrates the sources of advice students received regarding the choice of general surgery as a future career. Of the 139 students who received advice, the majority 72 students (51.8%) were advised by family and friends. Advice from doctors was reported by 21 students (15.1%), while nearly one-third 46 students (33.1%) received guidance from other sources.

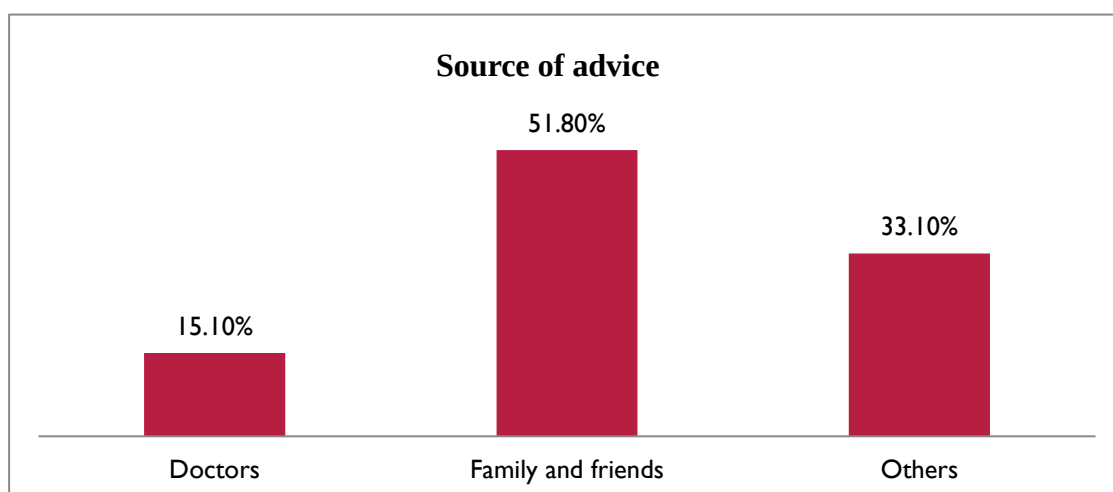


Figure 1: Source of advice

Figure 2 illustrates the students' interest in pursuing general surgery as a future career. Out of 441 students, 136 (30.8%) expressed a desire to pursue general surgery, while the majority 305 students (69.2%) did not consider it as a future career option.

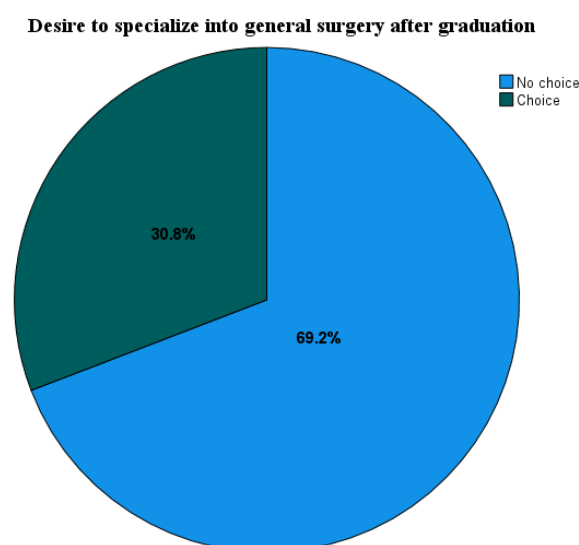


Figure 2: Desire to specialize into general surgery after graduation

Table 2: Factors influencing the decision of choosing general surgery as future career

Influential factor	Agree	Disagree	Neutral	Strongly agree	Strongly disagree
Training hours	86 (19.5%)	44 (10.0%)	103 (23.4%)	176 (39.9%)	32 (7.3%)
On-call schedule	111 (25.2%)	38 (8.6%)	89 (20.2%)	161 (36.5%)	42 (9.5%)
Expected income	124 (28.1%)	22 (5.0%)	120 (27.2%)	154 (34.9%)	21 (4.8%)
Specialty's reputation	114 (25.9%)	30 (6.8%)	123 (27.9%)	150 (34.0%)	24 (5.4%)
Lifestyle within specialty	89 (20.2%)	30 (6.8%)	87 (19.7%)	192 (43.5%)	43 (9.8%)
Sufficient time to pursue hobbies and personal interest	97 (22.0%)	34 (7.7%)	91 (20.6%)	172 (39.0%)	47 (10.7%)
Family responsibilities	106 (24.0%)	26 (5.9%)	107 (24.3%)	163 (37.0%)	39 (8.8%)
Research opportunities	90 (20.4%)	49 (11.1%)	155 (35.1%)	106 (24.0%)	41 (9.3%)
Teaching opportunities	93 (21.1%)	38 (8.6%)	157 (35.6%)	123 (27.9%)	30 (6.8%)
Length of residency program	106 (24.0%)	41 (9.3%)	132 (29.9%)	126 (28.6%)	36 (8.2%)
Opportunities for fellowship training after specialty	106 (24.0%)	35 (7.9%)	126 (28.6%)	140 (31.7%)	34 (7.7%)
Job prospect	125 (28.3%)	22 (5.0%)	122 (27.7%)	151 (34.2%)	21 (4.8%)
Immediate gratification from	111 (25.2%)	38 (8.6%)	131 (29.7%)	135 (30.6%)	26 (5.9%)

general surgery procedures					
Long-term patient care	90 (20.4%)	63 (14.3%)	129 (29.3%)	114 (25.9%)	45 (10.2%)
Stigma of being a female in a male-focused specialty	92 (20.9%)	29 (6.6%)	144 (32.7%)	105 (23.8%)	71 (16.1%)

The results revealed a statistically significant association between gender, GPA and having a family member in the healthcare field and the students' decision to specialize in general surgery as a future career ($p=0.003$; $p=0.032$; $p=0.013$). A considerable proportion of males 101 (35.7%); those who had GPA of less than 3 (50, 40.0%) and those who had family members in health care field (79, 36.4%)) expressed interest in this specialization.

Table 3: The association between students' attributes and their decision to specialize in general surgery after graduation

	Decision to specialize in general surgery			p value
Variables	Category	No	Yes	
Gender	Female	123 (77.8%)	35 (22.2%)	0.003*
	Male	182 (64.3%)	101 (35.7%)	
Marital status	Married	12 (63.2%)	7 (36.8%)	0.679
	Single	292 (69.4%)	129 (30.6%)	
	Widow/Divorced	1 (100.0%)	0 (0.0%)	
Family income monthly	Less than 5000 SAR	124 (67.4%)	60 (32.6%)	0.716
	5000-10000 SAR	52 (68.4%)	24 (31.6%)	
	More than 10000 SAR	129 (71.3%)	52 (28.7%)	
Academic year	4 th year	128 (69.6%)	56 (30.4%)	0.107
	5 th year	77 (68.8%)	35 (31.3%)	
	6 th year	80 (74.1%)	28 (25.9%)	
	GP	3 (33.3%)	6 (66.7%)	
	Intern	17 (60.7%)	11 (39.3%)	
GPA	Less than 3	75 (60.0%)	50 (40.0%)	0.032*
	3-4	116 (72.5%)	44 (27.5%)	
	4-5	114 (73.1%)	42 (26.9%)	
Family member at health care field	Yes	138 (63.6%)	79 (36.4%)	0.013*
	No	167 (74.6%)	57 (25.4%)	
Having previously been advised on the decision to pursue the current medical	Yes	89 (64.0%)	50 (36.0%)	0.113
	I do not know	216 (71.5%)	86 (28.5%)	

specialty				
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* Significant at $p < 0.05$ level.

The results of the multiple logistic regression analysis (Table 4) identified immediate gratification from general surgery procedures (AOR=1.39; 95% CI: 1.009–1.900; $p=0.044$) as the significant factor influencing the decision to specialize in general surgery after graduation.

Table 4: Factors influencing the decision to specialize in general surgery

Variables	AOR	95% CI	P-value
Training hours	0.90	0.685 – 1.193	0.477
On-call schedule	0.75	0.547 – 1.034	0.079
Expected income	1.22	0.913 – 1.626	0.180
Specialty's reputation	1.34	0.990 – 1.810	0.058
Lifestyle within specialty	0.89	0.648 – 1.225	0.477
Sufficient time to pursue hobbies and personal interest	1.08	0.793 – 1.463	0.633
Family responsibilities	0.96	0.728 – 1.259	0.754
Research opportunities	1.21	0.896 – 1.622	0.216
Teaching opportunities	1.36	0.979 – 1.884	0.067
Length of residency program	1.04	0.765 – 1.415	0.799
Opportunities for fellowship training after specialty	1.33	0.980 – 1.792	0.067
Job prospect	1.06	0.751 – 1.502	0.733
Immediate gratification from general surgery procedures	1.39	1.009 – 1.900	0.044*
Long-term patient care	0.98	0.754 – 1.278	0.893
Stigma of being a female in a male-focused specialty	0.88	0.697 – 1.097	0.248

AOR – Adjusted Odds Ratio; CI – Confidence Interval

* Significant at $p < 0.05$ level

4. DISCUSSION

General surgery is increasingly recognized as a vital field within healthcare; however, the factors influencing medical students' selection of this specialization remain unclear, particularly in Saudi Arabia.^{12,13} This study seeks to address this gap by examining the factors that influence medical students at Bisha University in their consideration of general surgery as a potential future career.

The study found that nearly one-third of the participants 136 students (30.8%) expressed interest in pursuing general surgery as a future career, with a significant number having made this decision before entering medical school. This finding aligns with a Saudi study by Mann-Isah et al., which reported that general surgery was the most preferred specialty among

26.5% of students.¹⁴ These results underscore the importance of early exposure to career options in supporting more informed career decisions

The study identified family and friends as the most common source of advice students received when considering general surgery as a future career, with nearly half of the participants (217; 49.2%) reporting a family member working in the healthcare field. These findings align with those of Asiri et al., who found that approximately 50.4% of medical students received advice from family members regarding their specialty choices.¹⁵ This underscores the significant role of family and social influence in shaping students' future career decisions.

There was a significant gender difference in the selection of general surgery, with a considerable proportion of male students considering it as their future career ($p = 0.003$). Similarly, a Saudi study by Kaliyadan et al. reported that general surgery was the top choice for 54% of male students, compared to only 23% of female students.¹⁶ These findings underscore the growing interest in a general surgery career among male medical students in Saudi Arabia.

The study observed an upward trend in the preference for general surgery with advancing academic years, with a notable proportion of general practitioners expressing interest in the specialty. However, this difference was not statistically significant. This finding suggests that interest in the specialty may increase as the medical student progress through their academic years, possibly due to greater clinical exposure and experience in the medical field. Additionally, there was a significant difference in specialty choice based on students' GPA, with a considerable proportion of those with a GPA less than 3 expressing a preference for this career ($p=0.031$). This finding underscores the importance of interest, passion, and potential influences from family and mentors in specialty selection factors that may not necessarily correlate with academic performance.

The study identified a significant association between having a family member in the healthcare field and students' decisions to pursue general surgery as a future career ($p = 0.013$). These findings are consistent with those of Zaheer et al.¹⁷ and Albinsaad et al.¹⁸ who reported that family influence played an important role in shaping students' choice of a career in general surgery. This underscores the importance of early exposure and mentorship particularly from family members in guiding career decisions.

The multiple logistic regression analysis identified immediate gratification from general surgery procedures (AOR = 1.39; 95% CI: 1.009–1.900; $p = 0.044$) as the most significant factor influencing the decision to specialize in general surgery after graduation. This finding may be attributed to a deep professional and psychological need for visible, immediate impact in clinical practice.

This study acknowledges several limitations. Its cross-sectional design allows for the identification of associations but does not establish causality. The reliance on self-reported online survey data may introduce recall and social desirability biases, potentially affecting the accuracy of responses. Furthermore, since the study was conducted at the University of Bisha in Saudi Arabia, the findings may not be generalizable to other institutions or populations.

5. CONCLUSION

The study found that immediate gratification from general surgery procedures was the most significant factor influencing the decision to specialize in general surgery after graduation. Family and friends were identified as common sources of advice, with having a family member in the healthcare field serving as a crucial influence on students' career choices. A notable majority of male students and general practitioners also expressed interest in the specialty. These findings highlight the importance of career guidance, mentorship, and early exposure to the medical field particularly through family members in shaping students' career decisions.

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