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Perceived factors of choosing anesthesiology as a career among medical students in Umm Al-Qura University: A cross-sectional study

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ABSTRACT

Background and aims: Medical school graduates must choose a specialty to practice medicine, and choosing a specialty is an important decision that is influenced by several factors. This study aimed to identify the factors that would influence anesthesiology choice as a future career among medical students at Umm Al-Qura University, Saudi Arabia. *Methodology:* This comparative uni-centre cross-sectional study was conducted between March and June 2022, using an electronic survey. The survey was distributed to female and male medical students of different years and levels of experience. It attempted to evaluate the influence of participants on their choice of anesthesiology as a future career. *Result:* This study enrolled 349 medical students from UQU with a mean age of 26.6 (SD=1.30). Students from clinical-based years represented more than students from pre-clinical-related years. The data shows that most students are not interested in choosing anesthesiology as a future career (72.2%). Furthermore, financial income is the most attractive influencer in choosing anesthesiology as a future career (29.23%). On the other hand, having different interests or passions is the most reported deterring factor (44.99%). Moreover, students in the 4th and 6th years don't consider anesthesiology as a future career (P-value, 0.003). *Conclusion:* According to the study's findings, increased exposure to the anesthesia specialty among medical students is advised to encourage more students to consider anesthesiology as a career.

Keywords: Medical students, future specialty, anesthesia, factors

1. INTRODUCTION

Anesthesiology is the branch of medical specialties that deals with pain relieve and anesthetic medication administration during surgical and medical

procedures. Anesthesia can be divided into multiple categories, like general, regional, local, and monitored anesthesia care. General anesthesia affects the entire body and results in loss of consciousness. In contrast, regional anesthesia is characterized by the loss of sensation in a specific part of the body that does not affect the level of consciousness. However, anesthesia is not limited to anesthesiologists; various medical practitioners use local anesthesia in their practice (Seraj, 2006).

The year 1956 can be considered the beginning of anesthesiology in Saudi Arabia (Seraj, 2012), while The late 1980s and early 1990s were seen as the golden era in the kingdom, with the beginning of residency training programs in anesthesia and intensive care (Seraj, 2006; Seraj, 2012). Career options vary by country and even over time within the same country. The ramifications of this topic for national workforce planning are significant (Khan et al., 2021). A study published in 2021 at king Abdulaziz University on 248 under-graduated senior students showed that 79.8% of participants had not considered a career in anesthesiology (Alnajjar et al., 2021). In addition, another study, published in 2018, was conducted at King Saud Bin Abdulaziz University on 236 students, revealed that the percentage of senior medical students interested in anesthesiology was only 1 % (Alkhilaiwi et al., 2018).

Our study aims to understand better the attitude of senior medical students in Makkah city toward anesthesia and identify the influencing factors of choosing anesthesia as a future career.

2. METHODOLOGY

Study design, sitting, and participants

This is a descriptive Uni-center cross-sectional electronic survey held at Umm Al-Qura University between March and June 2022. The ethical approval was granted by the Umm Al-Qura University ethics committee. This survey followed the principles of the Declaration of Helsinki.

Our study's inclusion criteria were undergraduate female and male medical students of 2nd, 3rd, 4th, 5th, and 6th-year and graduated interns from the Faculty of Medicine, Umm Al-Qura University. A convenient sampling technique was used for sampling collection, while our sample size was calculated using Stat Calc of Open Epi software of Rollin School of Public Health, Emory University, USA (Sullivan et al., 2009), in consideration of a confidence interval of 95% and 5% margin of error, the minimum sample size was calculated as 303. However, we increased our sample size to 350, considering the chances of non-response. Our last recorded data was 349.

Data collection

Data collection was done duringMarch 2022 to June 2022. The survey was distributed via online social media channels such as Facebook, Twitter, Instagram, Snapchat, and WhatsApp and consists off a self-managed, structured survey. Participants were asked to give their online consent for participation. Additionally, the research team answered all inquiries and questions from participants.

The survey consisted of four sections. Firstly, we gathered participants' demographical profiles. Then the second part was aimed at collecting participants' academic profiles. Furthermore, we followed the idea of the third and fourth parts from previous research (Alnajjar et al., 2021; Alkhilaiwi et al., 2018), which aimed to assess participants influencing attractors and deterrent factors of choosing anesthesiology as a future career.

Statistical analysis

The recorded data was extracted to the spread sheet using Microsoft excel. Then, data were transferred to a Statistical Package for the Social Studies 23, spreadsheet after checking for completeness and minor typographical errors (IBM, Armonk, NY). Descriptive analysis were expressed as percentages for categorical variables, and mean, standard deviation for continuous variables, and a p-value less than or equal to 0.05 was considered significant. The categorical variables were compared using the independent Chi-square test.

3. RESULTS

A total of 349 medical students from the college of medicine were electronically interviewed using a self-structured online survey. Their demographical profile is shown in Table 1. The students' age mean was 26.6 (SD, 1.30); most of students were aged between 21–23-year-old (n=240, 68.8), while male represent the highest responding (n=192, 55%) compared with female participants. Moreover, students of clinical years (4^{th}, 5^{th}, and 6^{th} academic years) representing most responses (n=135, 38.7%), (n=98, 28.1%), and (n=92, 26.4%), respectively. On the other hand, students from 3^{rd} year have the lowest responding rate among all participants, followed by interns and 2^{nd} year students (n=5, 7, and 12, respectively) (Table 1).

Table 1 Students' demographic profile			
Variables	Categories	N.	%
Age groups	18-20	15	4.3%
	21-23	240	68.8%
	24-26	94	26.9%
Gender	Male	192	55.0%
	Female	157	45.0%
Academic years	2nd year	12	3.4%
	3rd year	5	1.4%
	4th year	135	38.7%
	5th year	98	28.1%
	6th year	92	26.4%
	Intern	7	2.0%
Age (Mean) (standard deviation)	(Mean=26.6) (SD=1.30)		

The vast majority of respondents show no interesting in choosing an anaesthesia residency program (n= 252, 72.2%). Simultaneously, most students do not consider anesthesiology a future career (n= 252, 72.2%). Only 7.4% of students did take an elective rotation in the anesthesia speciality (Table 2). Surprisingly, the vast majority of students had a previous contribution in both voluntary and research work (n=271, 77.7%), (n=247, 70.8%), respectively (Table 2). Most participants reported the presence of a relative or friend in the medical field (n=256, 73.4%). However, most of the participants had no relative/friend in anaesthetic medicine (n=273, 78.2%) (Table 2).

Table 2 General responses to anesthesiology/other specialties questions			
Variables	Categories	N.	%
Interesting in choosing anesthesia residency program	Yes	97	27.8%
	No	252	72.2%
Present of relative/friend in anesthetic medicine	Yes	76	21.8%
	No	273	78.2%
Present of relative/friend in medical field	Yes	256	73.4%
	No	93	26.6%
Contribution in voluntary work	Yes	271	77.7%
	No	78	22.3%
Contribution in research work	Yes	247	70.8%
	No	102	29.2%
considering anesthesiology as future career	Yes	97	27.8%
	No	252	72.2%
take an elective anesthesia rotation	Yes	26	7.4%
	No	323	92.6%

The results show that the influences that may attract the students' decision to choose anesthesiology are as follows: Financial income 29.23%, Impact of the patient rewarding 15.19%, students who have a previous interests 14.61%, Verities of cases 11.17%, Competitive speciality 9.17%, Have role model 7.74%, Opportunities of a research 7.45%, and Prestige 5.44% respectively (Figure 1). On the other hand, the influences that may deter the students' decision to choose anesthesiology are as follows: had different interests or passionate 44.99%, Lifestyle/work balance 23.21%, Stress 17.77%, Long training 8.31%, Gander diversity 2.87%, and high Competitive 2.87% respectively (Figure 2).

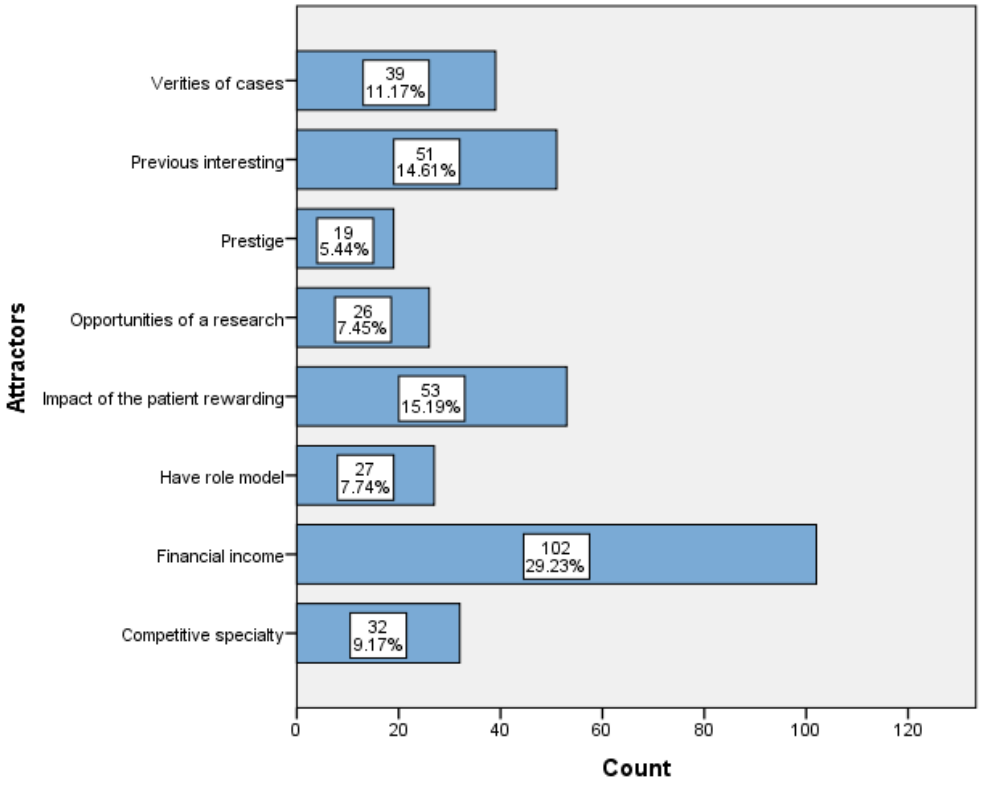

Figure 1 Students' attractors to choose anesthesiology

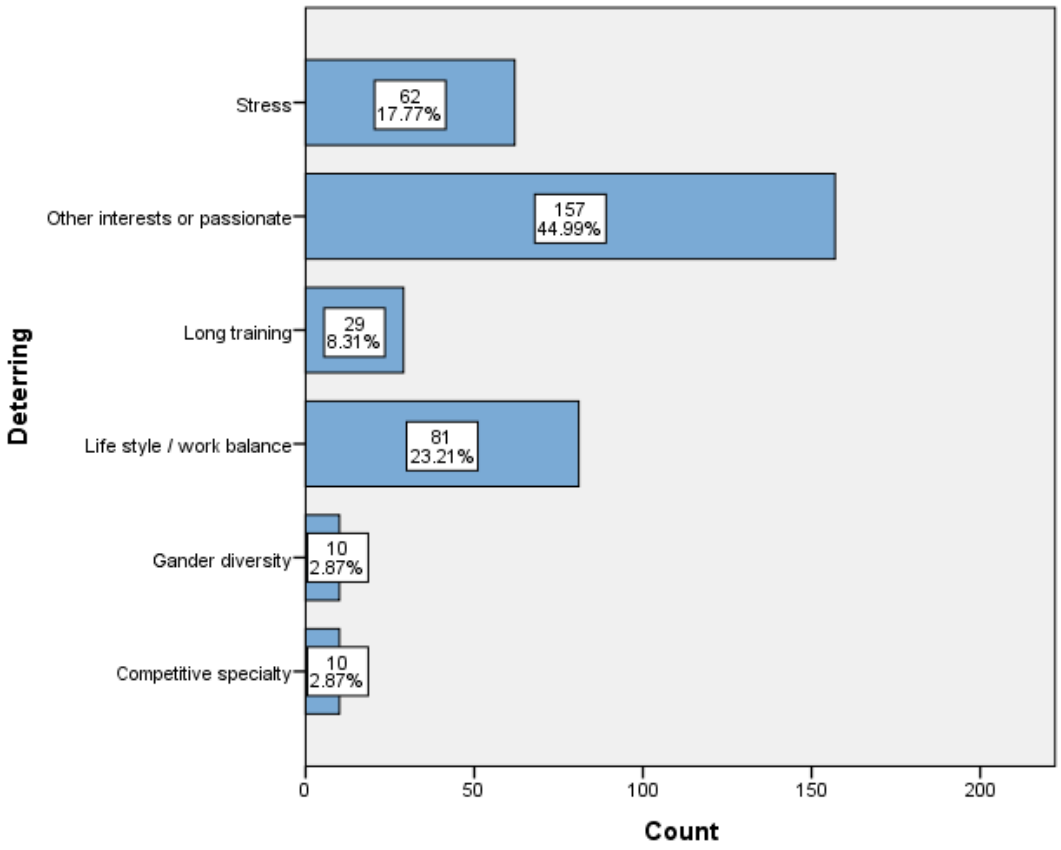

Figure 2 Students' deterring factors to choose anesthesiology

Participants' gender shows no statistical significant variation with consideration of anesthesiology as future career (P-value, 0.295) (Table 3). On the other hand, students in the 4th year corresponded significantly with no consideration of anesthesiology as a future career (n=100), followed by students from 6th year (n=74) (P-value, 0.003) (Table 3).

Table 3 The association between participants' consideration of anesthesiology as future career and [gender and academic years].

Gender	Consideration of anesthesiology as future career		*p-value*
	Yes (N.)	No (N.)	
Male	49	143	0.295
Female	48	109	
Academic year	Consideration of anesthesiology as future career		*p-value*
	Yes (N.)	No (N.)	
2nd year	8	4	0.003*
3rd year	3	2	
4th year	35	100	
5th year	29	69	
6th year	18	74	
Intern	4	3	

4. DISCUSSION

Little is known about factors influencing the selection of an anaesthesia speciality as a future career. Thus, our study aimed at investigating the factors influencing medical students' choice of the speciality at Umm Al-Qura University. Our study revealed that most medical students at UQU were not interested in choosing the speciality as a future career. This could result from the absence of clinical rotation in this speciality in medical school. Regarding attractors, financial income came first as the most common attractor toward anaesthesia, with approximately one-third of the respondents choosing it over the influencing factors. A previously published study about the choice of future speciality for interns and medical students in Saudi Arabia demonstrated that only 4.8% considered financial income as the main motivating factor (Alshahrani et al., 2014). Another published study about anaesthesia as a future career for medical students at King Saud bin Abdulaziz University for Health Sciences ranked financial income as the third most important factor for the speciality after controllable lifestyle and doctor-patient relationship (Alkhilaiwi et al., 2018).

The least chosen factor is prestige with 5.44%. This factor varied thought literature ranging from 2% to 58.9% (Khader et al., 2008; Kamat et al., 2015). To the best of our knowledge, this is the first study that demonstrated deterring factors for anaesthesia as a future career. The most common factor found was other interests or passions followed by lifestyle, stress, and long training.

Our study carried some possible limitations; including non-responsive biases as the utilized methods in this study is online survey. Furthermore, this study is conducted in a single academic center. Accordingly, we recommend additional investigation among Saudis Universities. Moreover, students from 2nd, 3rd, and interns show the lowest responding rates among all participants.

5. CONCLUSION

Our findings suggest inadequate consideration of anaesthesia as a future speciality. Therefore, it is necessary to make a more significant effort to promote the number of medical students who chose anaesthesia by stressing the benefits of the speciality to undergraduates. In addition, medical students need to be familiarised with the national prerequisites that apply.

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Ethical approval

The study was approved by the Medical Ethics Committee of Umm Al-Qura University (ethical approval code: HAPO-02-K-012-2022-05-1091).

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Conflicts of interest

The authors declare that there are no conflicts of interests.

Data and materials availability

All data associated with this study are present in the paper.

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