

Is Anesthesia an attractive career choice for undergraduates and young doctors of Pakistan?

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^{1,2,3} Experimentation/Study conduction

^{1,2,5,6} Analysis/Interpretation/Discussion

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Abstract

Objective: To evaluate the factors that act as a barrier for medical students and young doctors in Pakistan to choose anesthesia as a career choice.

Study design: Cross-sectional study.

Study settings: CMH Lahore.

Study duration: From January to June 2021.

Materials and Methods: A total of 163 medical students and house officers who were on rotation in operation theatre in various specialties were recruited for this study. A questionnaire was distributed to all the participants. Participants had to select their specialty of choice and the reason for not choosing anesthesia. They also had to choose the most important factor for choosing the specialty and the person who influenced them the most to choose the specialty.

Results: Only 10 (6.1%) participants chose the anesthesia specialty for their post-graduation, out of these ten, 5 (50%) were male and 5 (50%) were female. The most commonly chosen option {62 (54.87%)} for not selecting anesthesia was "no personal interest". In response to "What is the most important factor while choosing a specialty?" most of the participants (55%) chose the option "Scope of the specialty". In response to "Who had the most influence in choosing a specialty?" most of the participants {63 (38.7%)} chose the option "Teachers of the clinical rotations".

Conclusion: It is concluded in our study that only a very small number of students and young doctors willingly opt for anesthesia for their post-graduation which results in a shortage of workforce in this specialty. It is recommended that anesthesia rotation be made compulsory and that the barriers to mentorship in anesthesia be properly addressed.

Keywords: Anesthesia, career choice, Influencing factors, specialty, workforce.

Introduction

Many factors influence the decision-making of undergraduate medical students and young doctors while choosing a specialty.^{1,2,3} This decision-making can affect the supply and demand of various specialties especially those that are not very well presented.^{4,5} Anesthesiology is, unfortunately, one such specialty that has not been able to attract medical students and young doctors which has resulted in an immense deficiency of qualified anesthesiologists.

There is an overall shortage of anesthesiologists worldwide.⁶ Pakistan is no exception to this. There are about 3000 qualified anesthesiologists that have registered with Pakistan Medical Council (1 anesthesiologist per 80000 people).⁷ Compared to these figures; in the United States of America, there is 50921 registered qualified anesthesiologist (1 anesthesiologist per 6634 people).⁸

This study aims to evaluate the factors that act as a barrier for medical students and young doctors of Pakistan to choose anesthesia as a career choice.

Materials and Methods

This cross-sectional study was conducted at operation theatre Combined Military Hospital (CMH) Lahore from 1st January to 30th June 2021. Prior approval was sought from the Ethical Review Board of the institute (ERB letter Number 1214/2020/Trg/Adm) before the commencement of the study. A total of 163 medical students of 3rd, 4th, final year and house officers who were on rotation in operation theatre in various specialties were recruited for this study. The sample size was calculated with a confidence level of 90%, a margin of error of 5%, a population proportion of 50%, and a population size of 400. The following questionnaire was handed over to all who were willing to participate in the study.

A total of 195 copies of the questionnaire were distributed out of which 32 people failed to submit the questionnaire after completion. Data was compiled and Statistical Package for Social Sciences version 24 was used to analyze the data.

Questionnaire

Please choose/write down the appropriate response

Name: Age:
Gender: MBBS year/House Job:

Q1. Do you plan to pursue post-graduation after MBBS?

a. Yes b. No

Q2. If yes, then what would be the choice of specialty for post-graduation?

Q3. What do you consider the most important factor for choosing a specialty?

a. Working hours b. Income
c. Job security d. Scope of the specialty
e. Other

Q4. Who do you think had most influence in choosing the specialty?

a. Medical College teachers
b. Teachers of clinical rotations
c. Class fellows of medical college
d. Friends outside medical college
e. Family
f. No one

g. If others, please specify

Q5. Would you consider specialty of Anesthesiology for post-graduation?

a. Yes b. No

Q6. If no, then why?

a. Limited interaction with patients b. Long working hours
c. Stressful Job d. Dependence on surgeons
e. Limited recognition of specialty f. No personal interest
g. Please specify if any other reason

Q7. What is your level of awareness about anesthesiology?

a. No idea b. little bit c. I know a lot

Q8. Have you taken clinical rotation in anesthesiology?

a. Yes b. No

Q9. Would you consider taking clinical rotation in anesthesiology if it was optional?

a. Yes b. No

Q10. What do you think is the role of anesthesiologist? You can choose more than one option.

a. Putting patients to sleep during surgery
b. Chronic and acute pain management
c. Intensive care d. None of the above
e. All of the above e. I don't know

Results

A total of 163 people participated in this study with an age range from 20 to 27 years with a mean and standard deviation of 23.15±1.6 years. Out of 163 participants, 74 (45.4%) were male and 89 (54.6%) female, with a male-to-female ratio of 0.83:1. Details of the distribution of years-wise students and doctors, are given below in Table 1.

Table 1: Details of Participants

<i>Status</i>	<i>Number and Percentage</i>
3 rd Year	22 (13.5%)
4 th Year	50 (30.7%)
Final Year	38 (23.3%)
House Job	53 (32.5%)
Total	163 (100%)

Out of 163 participants, 5 (3.1%) were not interested in post-graduation while 158 (96.9%) want to pursue post-graduation after completion of MBBS. Only 10 (6.1%) participants chose the anesthesia, out of these ten, 5 (50%) were male and 5 (50%) were female. Details of the choice of specialty chosen by 158 participants are given below in Table 2.

Table 2: Choice of Specialty

<i>Specialty</i>	<i>Number (Percentage)</i>
Internal Medicine	27 (16.6%)
General Surgery	21 (12.9%)
Haven't decided yet	21 (12.9%)
Gynecology and Obstetrics	11 (6.7%)
Dermatology	11 (6.7%)
Anesthesiology	10 (6.1%)
Cardiology	10 (6.1%)
Pediatrics	9 (5.5%)
Gastroenterology	6 (3.7%)
Orthopedics	6 (3.7%)
Neurosurgery	6 (3.7%)
Neurology	4 (2.5%)
Psychiatry	4 (2.5%)
Radiology	4 (2.5%)
Others	4 (2.5%)
Cardiac Surgery	2 (1.2%)
ENT	2 (1.2%)
Oncology	2 (1.2%)
Ophthalmology	2 (1.2%)
Pathology	1 (0.6%)

In response to "What is the most important factor while choosing a specialty?" most of the participants (55%) chose the option "Scope of the specialty". Further details are given in Table 3.

Table 3: Most important factor for choosing a specialty

<i>Factor</i>	<i>Number (Percentage)</i>
Scope of the specialty	55 (33.7%)
Working Hours	32 (19.6%)
Others	25 (15.3%)
Income	23 (14.1%)
Job security	11 (6.7%)
Passion	7 (4.3%)
Personal Interest	4 (2.5%)
Working Environment	4 (2.5%)
None	2 (1.2%)

In response to "Who had the most influence in choosing a specialty?" most of the participants chose the option "Teacher of the clinical rotations". Further details are given in Table 4.

Table 4: Who influenced the most in choosing the specialty?

<i>Influencer</i>	<i>Number (Percentage)</i>
Clinical Teachers	63 (38.7%)
None	34 (20.9%)
Family	25 (15.3%)
Medical College Teachers	24 (14.7%)
Media/Social Media	7 (4.3%)
Others	4 (2.5%)
Class fellows of medical college	3 (1.8%)
Friends outside the medical college	3 (1.8%)

In response to considering anesthesia for post-graduation, 50 (30.7%) participants said yes, while 113 (69.3%) said they will not consider it. When asked why would they not consider it most of them chose the response "no personal interest". Details are shown in Table 5.

Table 5: Reason for not choosing Anesthesia

<i>Reason</i>	<i>Number (Percentage)</i>
No personal interest	62 (54.87%)
Limited interaction with patients	24 (21.24%)
Stressful Job	13 (11.5%)
Dependence on surgeons	6 (5.31%)
Limited recognition of specialty	3 (2.65%)
Long working hours	3 (2.65%)
Income not up to my liking	1 (0.88%)
Other	1 (0.88%)

When asked about the anesthesia specialty, 8 (4.9%) said they know a lot about the specialty; 145 (88.96%) participants stated that they have some knowledge while 10 (6.1%) participants said they have no knowledge about this specialty. Out of 163 participants, only 74 (45.4%) had done a rotation in anesthesia. When participants were asked if anesthesia rotation is made optional would they take it? Out of 163 participants, 28 (17.2%) said "no", 132 (81%) said "yes" and 3 (1.8%) said, "maybe". When asked about the role of the anesthesiologist, most [126 (77.3%)] of the participants knew the exact role of an anesthesiologist in a hospital.

Discussion

There is a shortage of qualified doctors globally.⁹ This shortage is intensified disproportionately in the field of anesthesia. The anesthesia workforce plays a vital role in the smooth and efficient functioning of the hospital. Unfortunately, a major chunk of the world's population does not have access to qualified, safe, timely, and affordable anesthesia care.^{10,11,12} This article was aimed at finding the root cause that has resulted in this deficiency in the field of anesthesiology, especially in Pakistan.

In our study, out of 163 participants, only 10 (6.1%) picked the anesthesia specialty as their top choice which actually sums up this crisis. The top most choice for the majority was internal medicine and general surgery. In a similar study conducted by Chan DM et al¹³, a similar result was observed. In their study, only 2.5% of participants chose anesthesia as their top choice for post-graduation.

In our study, the most influential factor for choosing a specialty came out to be the "Scope of the specialty". 55 (33.7%) participants chose this option. 2nd and 3rd most commonly chosen options were "Working hours" and "Income" respectively. Results were a bit surprising as in most of the similar studies conducted in various regions of the world, most participants opted for income and job security as their first choice.^{14,15,16} This may be due to the fact that almost all of the participants of this study were of CMH Lahore medical college; where most of the students belong to an upper and upper middle class with a sound financial background. Results could have been different if we would have included participants from government medical colleges.

In our study, the majority (63/163) of the participants were influenced by the teachers of clinical rotation; no other option came near to this figure. The second most

commonly chosen influencer was "Medical College Teachers" (24/163). This clearly depicts that anesthesiologists fail to attract their students to choose this specialty. Mentorship plays a vital role and it is an integral part of career development and training in the field of medicine.^{17,18,19} Anesthesiologists will have to play this important role in order to make an impact on students during their clinical rotations.

The limitation of this study was that we only collected data from one hospital, results could have been different if the data was collected from different hospitals. It is recommended that a study with participants from various hospitals including government and private set up be done to get a holistic view of this matter.

Conclusion

It is concluded in our study that only a very small number of students and young doctors willingly opt for the anesthesia specialty for their post-graduation which results in a shortage of workforce in this specialty. It is recommended that anesthesia rotation be made compulsory and that the barriers to mentorship in anesthesia be properly addressed.

References

1. Vohra A, Ladyshevsky R, Trumble S. Factors that affect general practice as a choice of medical speciality: Implications for policy development. *Australian Health Review*. 2019;43(2):230. doi:10.1071/ah17015.
2. Olsson C, Järnbert-Pettersson H, Ponzer S, Dahlin M, Bexelius T. Swedish doctors choice of medical speciality and associations with cultural capital and perceived status: A cross-sectional study. *BMC Medical Education*. 2019;19(1):1-9. doi:10.1186/s12909-019-1691-y.
3. Arora V, Gupta P, Sharma V, Mehta N. Factors affecting future specialty choice among dental students in Haryana. *Journal of Scientific Dentistry*. 2017;7(1):12-17. doi:10.5005/jsd-7-1-12.
4. Berry C. Anaesthesia in the United States. Anaesthesia is an unpopular specialty in the United States. *BMJ (Clinical research ed.)*. 1996;313(7055):495-496. <https://doi.org/10.1136/bmj.313.7055.495b>.
5. Hoyler M, Finlayson SR, McClain CD, Meara JG, Hagander L. Shortage of doctors, shortage of data: A review of the global surgery, obstetrics, and anesthesia workforce literature. *World Journal of Surgery*. 2013;38(2):269-280. doi:10.1007/s00268-013-2324-y.
6. Yang L, Zhu T, Li J, Liu J. Anesthesia workforce and workload in China: A national survey. *Journal of Anesthesia and Perioperative Medicine*. 2017; 4(2):67-75. doi:10.24015/japm.2017.0006.
7. 'Only 3,000 qualified anaesthetists registered with PMC'. (2020, October 16). *The News*. Retrieved from <https://www.thenews.com.pk/print/730061-only-3-000-qualified-anaesthetists-registered-with-pmc>.

8. Number of specialist doctors in U.S. by field. (2021, June 17). Retrieved from <https://www.statista.com/statistics/209424/us-number-of-active-physicians-by-specialty-area/>.
9. Cawley JF, Hooker RS. Determinants of the physician assistant/associate concept in global health systems. *International Journal of Healthcare*. 2018;4(1):50-60. doi:10.5430/ijh.v4n1p50.
10. Kudsk-Iversen S, Shamambo N, Bould MD. Strengthening the anesthesia workforce in low- and middle-income countries. *Anesthesia & Analgesia*. 2018;126(4):1291-1297. doi:10.1213/ane.0000000000002722.
11. Vreede E, Bulamba F, Chikumba E. Developing the anesthesia workforce: The Impact of Training Nurse Anesthetists. *Anesthesia & Analgesia*. 2019;129(5):1199-1201. doi:10.1213/ane.0000000000004432.
12. Cohen C, Baird M, Koirola N, Kandrack R, Martsolf G. The surgical and anesthesia workforce and provision of surgical services in rural communities: A mixed-methods examination. *The Journal of Rural Health*. 2021;37(1):45-54. doi:10.1111/jrh.12417.
13. Chan DM, Wong R, Runnels S, Muhizi E, McClain CD. Factors influencing the choice of anesthesia as a career by undergraduates of the University of Rwanda. *Anesthesia & Analgesia*. 2016;123(2):481-487. doi:10.1213/ane.0000000000001433.
14. Lefebvre C, Hartman N, Tooze J, Manthey D. Determinants of medical specialty competitiveness. *Postgraduate Medical Journal*. 2019;96(1139):511-514. doi:10.1136/postgradmedj-2019-137160.
15. Phillips JP, Wilbanks DM, Rodriguez-Salinas DF, & Doberneck DM. Specialty income and career decision making: A qualitative study of medical student perceptions. *Medical Education*. 2019;53(6):593-604. doi:10.1111/medu.13820.
16. Thornton J. Physician choice of medical specialty: Do economic incentives matter? *Applied Economics*. 2010;32(11):1419-1428. doi:10.1080/00036840050151494.
17. Flexman AM, Gelb AW. Mentorship in anesthesia. *Current Opinion in Anaesthesiology*. 2011; 24(6):676-681. doi:10.1097/aco.0b013e32834c1659.
18. Ergun, S, Busse JW, Wong A. Mentorship in anesthesia: A survey of perspectives among Canadian anesthesia residents. *Canadian Journal of Anesthesia/Journal canadien d'anesthésie*. 2017;64(4):402-410. doi:10.1007/s12630-017-0816-1.
19. Bin Ghali K, AlSubaie A, Nawab A. Mentorship in anesthesia: A perspective survey among anesthesia residents in Riyadh, Saudi Arabia. *Saudi Journal of Anaesthesia*. 2021;15(2):144. doi:10.4103/sja.sja_1145_20.