

ANAESTHESIOLOGY AS A FUTURE SPECIALTY

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ABSTRACT

Objective: To ascertain the various aspects directing the undergraduates at Quetta Institute of medical sciences towards anesthesiology as future profession/specialization.

Study Design: Cross sectional study.

Place and Duration of Study: Quetta Institute of Medical Sciences, Quetta Pakistan, from Mar to Apr 2019.

Methodology: Study was conducted among final year medical students with the help of a printed questionnaire consisting of 15 Multiple Choice Questions. The questionnaire provided the required database to explore various factors that influence undergraduates to select their future specialization based on demography and specialty preferences.

Results: A total of 65 undergraduates completed the response sheet. While 45 (68.8%) participants were females and 20 (31.2%) were males, 62 (95.4%) were single (unmarried or divorced) and had no children 63 (96.9%). Medicine proved to be the most favourite specialty with 20 (31.4%) student opting for it whereas anesthesiology was chosen by 4 (6.1%) students.

Conclusion: Anesthesiology still remains a less popular choice among the medical students of Pakistan particularly Quetta Institute of Medical Sciences due to multifaceted factors. Inferior prestige of the specialty was the most significant factor in deciding against anaesthesiology.

Keywords: Anesthesiology, Profession, Undergraduates.

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INTRODUCTION

Anesthesiologists are considered per operative physicians when the patients are undergoing different elective and emergency surgical procedures and provide them care when they are not aware. They induce a state of sedation, paralysis and analgesia collectively termed as general anaesthesia to facilitate the surgical procedures and they are responsible to keep them stable throughout the surgical procedure. On the other hand, regional anaesthesia is another anaesthetic technique practiced by many anaesthesiologists that does not affect the level of consciousness and is confined to a certain part of the body¹. Although advancements in anaesthesia and surgery started simultaneously after Second World War, anaesthesia training started worldwide including Pakistan in eighties. However, due to limited training slots available, severe national and worldwide shortage of anesthesiologists occurred as described by Seraj *et al* in their study performed at KSA in 2006².

Multiple studies have been conducted worldwide in order to ascertain the mindset of medical students while picking up a specialty for their future. Such a study was conducted in Israel in which Orbach-zinger concluded that flexible working conditions and

financial benefits led to a greater number of students opting anaesthesia in American group i.e. 12% vs 0% in Israeli group³. Similarly, Tyagi *et al* from UCMS Delhi anaesthesia and critical care department concluded in their study conducted in 2012 that financial security (67.7%) was the key factor while opting anaesthesia as a future specialty whereas the influence of doctor-patient relationship was minimal⁴. Gender of the students proved to be another important factor having females (4 vs 2) twice more likely to adapt anesthesiology as a specialty as shown by Zulkifli *et al* in their Malaysian study conducted in 1997⁵. Similarly a study conducted in Pakistan by Rehman *et al*, in 2011. Concluded that females were more interested (9.9% vs 4.5%) in pursuing anaesthesia as medical practitioners⁶.

However, limited work has been done in Pakistan to understand the various factors influencing the undergraduates in choosing anesthesiology as future career specialty.

The aim of this study was to understand the pros and cons of the specialty from a student's perspective enabling us to ascertain the factors influencing the undergraduates in choosing anesthesia as future career. Moreover, this will help us address the drawbacks of the specialty (as perceived by medical students) wherever possible, making the specialty more attractive for medical students to choose and practice in future, thus overcoming the acute national shortage.

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METHODOLOGY

A cross-sectional study was carried out at Quetta Institute of Medical Sciences, Quetta, Pakistan, from March 2019 to April 2019. Institutional Ethical Review Board approved the study vide letter number 23-05/READ-IRB/001. Informed consent was obtained from all recruited students. The questionnaire was developed after a thorough literature search on similar works. The questionnaire was dispersed among all the fifth year medical students present in the class, to be completed without declaring identity. All final year medical students present in the class were included in the study. The students absent from the class those days were excluded from the study. The sample size was calculated based on a similar previous study⁷, using openepi. Com with a confidence interval of 95% and 5% margin of error. The total available strength of the target class was 65 students. Consecutive sampling was utilized for sampling purposes.

Information was gathered through a written set of 15 items questionnaire which was ratified through pilot study. The research details were clarified to the recruited students. The questionnaire consisted of statistical data regarding population attributes, specialization priorities, what characteristics fascinate Pakistani medical students to select their favored specialization and how they consider selecting anaesthesia as a profession. The questionnaire was handed over to the students during the problem-based learning sessions and formal lectures, and, gathered 15 minutes later.

Microsoft Excel was utilized to record the acquired information, and all data analysis was carried out using SPSS-21. The descriptive statistical analyses were performed for the research study variables, and indicated as number and percentage.

RESULTS

A total of 65 students filled the questionnaire. Descriptive statistics of the participants were shown in table-I. Of those who participated in the study, majority students 44 (67.7%) were females. Most of them were singles 62 (95.4%) and had no children 63 (96.9%). The specialty interest was found to be: 20 (30.7%) internal medicine, 13 (20%) surgery, 12 (18.46%) obstetrics and gynecology, 5 (7.6%) pediatrics and 15 (23.1%) other fields (including 4 (6.1%) anesthesiology).

Based on information depicted in the table-III from student's responses to the questionnaire we can draw the inference that overall, mandatory clinical

rotations had negligible impact on students opting in favor of anesthesiology as 60 (92.3%) of respondents had a compulsory clinical rotation in anesthesiology and despite this fact they had no plan of joining anesthesiology. Certain other factors that were very much likely to persuade the medical students of Quetta Institute of Medical Sciences in favor of specialty were the residents in the department 16 (24.6%), family expectations 28 (43%) and teachers in various departments 21 (32.3%). Another obvious and significant finding was lack of doctor-patient interaction/relationship against the specialty 35 (53.8%) while a small number 11 (17%) thought there are not enough areas for research in this specialty. However, the surprising and most significant finding was that nearly half 34 (52.3%) responded that the inferior prestige of the specialty when compared to other major specialties compel them against the choice for anesthesiology (most likely due to lack of knowledge about the role of anaesthesiology and its sub specialties in overall clinical management spectrum).

Table-I: Demographic Profile of participants (n=65).

Variables	n (%)
Gender	
Boys	21 (32.3)
Girls	44 (67.7)
Marital Status	
Couples	3 (4.6)
Bachelors	62 (95.4)
Off-Springs	
Present	2 (3.1)
Absent	63 (96.9)

Table-II: Specialty preferences.

Specialty	n (%)
Medicine	20 (30.7)
Surgery	13 (20.0)
Gynaecology/Obstetrics	12 (18.46)
Pediatrics	5 (7.6)
Anesthesiology	4 (6.1)
Others	11 (16.9)

Our study findings also revealed that salary/extra allowance was not significantly contributing to influence the mindset of students to pursue anesthesiology as a future specialty 41 (63%) of the respondents). Finally, respondents reported their priorities regarding specialty selection based on: 35 (53.8%) doctor-patient relationship, 28 (43%) pressure from family and peers, 11 (17%) academic/research aspects, and only 9 (14%) income related aspects as 41 (63%) were not persuaded to join anaesthesia even after an extra allowance of salary by the government).

Table-III: Questionnaire to ascertain speciality selection (n=65).

Questions (Variables)	n (%)
Q1. Would you intend to follow anaesthesia as a postgraduate subject?	
Agreed	04 (6.1%)
Not agreed	61 (93.9%)
Q2. Is it obligatory or optional to attend Anaesthesia department rotation during 5th year of MBBS?	
It is obligatory	60 (92.3%)
It is optional	05 (7.7%)
Q3. If yes, how long was the rotation?	
14 days	58 (89.2%)
28 days	05 (7.7%)
More than 30 days	02 (3.0%)
Q4. Do you have an essential component in examination syllabus related to anaesthesia?	
Yes	41 (63.0%)
No	24 (36.9%)
Q5. What did you decide after the clinical rotation in anaesthesia?	
In favor of speciality	03 (4.6%)
Against speciality	62 (95.3%)
Already chosen my favourite subject for post-graduation.	Nil
Q6. Which years in med school have enabled you to decide your future speciality?	
Initial years	06 (9.2%)
Middle years	07 (10.8%)
Final Year	52 (80.0%)
Q7. Which individuals have enabled/influenced you to decide your future speciality?	
Close relatives	28 (43.07%)
Teachers	21 (32.3%)
Trainees in respective field	16 (24.61%)
Q8. What speciality characteristics/attractions have enabled you to choose in favor of a career?	
Availability of free time for other tasks	10 (15.3%)
Financial benefit	09 (13.8%)
Patient-physician interaction probability	35 (53.8%)
Research opportunities	11 (16.9%)
Q9. Does the workload related to the field affect your choice?	
Yes it affects	39 (60.0%)
It does not affect	26 (40.0%)
Q10. Does an extra allowance of salary announced by the MOH Pakistan attracted you to select residency in anesthesiology?	
Extra allowance attracted me	24 (36.9%)
Extra allowance did not affect my choice	41 (63.07%)
Q11. Are you aware of world anaesthesia day?	
Yes	2 (3.1%)
No	63 (96.9%)
Q12. Are you aware of various sub-fields of anaesthesia?	
Yes	10 (15.38%)
No	55 (84.62%)

Q13. Which sub-field may motivate you to select anaesthesia as your postgraduate field.

Pain medicine	40 (61.53%)
Intensive care	22 (33.84%)
Cardio- anaesthesia	03 (4.61%)

Q14. Does general perception about anaesthesia and its sub-specialties pushes you to perceive an inferior prestige of speciality compared to others?

Yes	34 (52.30%)
No	31 (47.70%)

Q15. Would you select Anaesthesia as a last resort in case of unsuccessful attempt in pursuing other medical fields.

Yes	31 (47.69%)
No	34 (52.30%)

DISCUSSION

The main objective of our descriptive study was to evaluate the perceptions of medical students with regard to anaesthesia as a preferred specialty in future. The reasons varied from one individual to another individual but somehow certain common factors such as prestige of specialty, doctor-patient relationship, research opportunities and modifiable lifestyle were found to be important elements in the decision making process.

Anaesthesia was found to be within the least 4 (6.1%) popular specialties among the students of Quetta Institute of Medical Sciences, Quetta, however Internal Medicine 20 (30.7%), Gynecology/Obstetrics 12 (18.46%), Surgery 13 (20%), Pediatrics 5 (7.6%), and others 11 (16.9%) were the top ranking popular specialties among the students locally. Surprisingly, interest of medical students in radiology (0.3%) is less than anesthesiology (6.1%) and a possible explanation of an improved profile of anesthesiology here compared to radiology could be because of a mandatory anaesthesia clinical rotation introduced in this medical college. Lack of doctor-patient relationship or physician-patient interaction probability was an important consideration for majority of respondents 35 (53.8%) in selecting against the anaesthesia specialty. Literature review on impact of Patient-doctor interaction probability on specialty selection revealed variable results with a study by Rahman *et al* conducted at UAE in 2016⁸, showing 12% student's choices of specialty influenced by this factor whereas another study by Grasreiner *et al*⁹, has revealed that 47% students choices of specialty were influenced by this factor.

The contribution of prestige or respect of the specialty in the community, in selecting a specialty was 52% in our study. This factor affected 45% students in choosing their specialty as shown by Al-Khilaiwi *et al*

in their study conducted at King Saud bin Abdulaziz University for Health Sciences (KSAU-HS) Saudi Arabia in 2018¹⁰. Only 37% of the respondents in our study were persuaded by financial security and extra allowance by the Government of Pakistan. Similarly, Imran *et al* in their study conducted in Karachi, Pakistan found that financial reward could influence 13% of the respondents in favor of specialty¹¹. Unfortunately, 15.3% of the students in our study reported that lack of controllable lifestyle or finding free time to manage other tasks was an important issue in deciding against anaesthesiology as future specialty. Similar study conducted by Yang *et al*, in their Meta-analysis and Systematic review showed that for 53% students controllable lifestyle or flexible work schedule was important in deciding for/against a specialty¹². Personality on the other hand had no significant influence on career choices as concluded by Chai *et al* in a Malaysian study conducted in 2018¹³. Presence of Research opportunities was important to 16.9% in our study whereas Nemri *et al*, at King Abdul Aziz University Saudi Arabia in 2015 found that 56.9% students considered it important in career decision making¹⁴. Another insight to the mindset of students opting for a specialty was that they were heavily influenced by the faculty members/residents of their respective specialty.

In our study at least 32% of the responders were influenced by faculty and 25% of the responders were motivated by the residents of the specialty as compared to Khader who found that only 11.1% of medical students considered the advice of a faculty member¹⁵. A study conducted by Alkhaneen *et al*, in Riyadh, Saudi Arabia, in 2018 found that the influence of mentors on specialty choice was low in all four groups studied, (ANOVA $F 2.93$, p -value 0.033)¹⁶. However, it was ranked as the second most influential factor on medical students' choice of a career in EM and the first most influential factor for their choice of other specialties in US medical colleges as shown by Boyd *et al* in their study conducted at USA in 2009¹⁷. The clinical role models are significant elements of the specialty related decision making process within the students as compared to the influence of family members. Kamat *et al* in his study conducted in India in 2015 found only 9.4% of participants preferring family opinion for choosing a specialty¹⁸.

CONCLUSION

Anesthesiology still remains a less popular choice among the medical students of Pakistan particularly

Quetta Institute of Medical Sciences due to multifaceted factors. This has led to an extreme shortage of trained anesthesiologist nationwide especially in peripheries. Efforts should be made to announce joining anesthesiology as a part of national cause that can address the problem. Moreover, strategies should be developed to bring forward and enhance the attractiveness of the specialty using means of telecommunication, social media and conferences that can further elevate the prestige of specialty/sub specialties.

Moreover, all the faculty members and residents of anesthesiology should strive hard to improve the profile of specialty by having more interactions with students at foundation level persuading them for anesthesiology and clearing misconceptions.

CONFLICT OF INTEREST

This study has no conflict of interest to be declared by any author.

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