

Factors associated with medical students' career choices at a private university: a cross-sectional study

Sana Saeed,¹ Mahanoor Raza,² Areeba Hussain,³ Muhammad Maisam Ali,⁴ Farah Khalid⁵

Abstract

This study aimed to identify the factors associated with students' career choices and the decision whether they wanted to be trained abroad or in Pakistan. The study utilised a cross-sectional design and was conducted between July 2021 and February 2022. An anonymous survey was distributed among the medical students at Aga Khan University, Karachi, Pakistan. All analysis was carried out using Stata 17. A total of 269 students participated in the study. The most sought-after specialties were surgery 68 (25.3%), medicine 25(9.3%), and paediatrics 14(5.2%), and the decision was highly influenced by positive mentors and lifestyle. In addition, 259 (96%) of the students expressed a desire to practice abroad for training due to higher financial prospects and quality of training. This study revealed that providing enthusiastic mentors may encourage medical students to pursue a broader range of specialties. Furthermore, there is a need for advances in postgraduate training and increase in salaries to restore trust in Pakistan's healthcare system.

Keywords: Medical student, Career choice, Medical education, Mentorship.

DOI: 10.47391/JPMA.8013

Submission completion date: 03-10-2022

Acceptance date: 27-06-2023

Introduction

Many factors influence medical students' choice of career speciality. These include inclinations before joining the medical school, early exposure to a particular speciality, academic interest, income, response of speciality patients to treatment, and influence of speciality mentors.^{1,2} In addition, a significant amount of literature exists about the lifestyle priorities of medical students who value time for family and friends in their work lives,³ and hence may prefer specialties with a more flexible approach to

.....
¹⁻³Department of Paediatrics, Aga Khan University Hospital, Karachi, Pakistan,
⁴4th Year MBBS Student, Aga Khan University Medical College, Karachi, Pakistan,
⁵Aga Khan University Hospital, Karachi, Pakistan.

Correspondence: Sana Saeed. Email: sana.saeed@aku.edu

ORCID ID. 0000-0001-6157-6327

training. Several classifications for studying career choices of medical students are available in the literature, including selecting primary care versus non-primary care specialties, family medicine versus speciality medicine, career choices at the beginning and end of medical school, and specialties demanding more interaction with people or involving more technical expertise.^{4,5}

Although the current doctor-to-patient ratio in Pakistan is comparable to the recommended WHO ratio of 1 doctor to 1,000 patients,⁶ this does not exclude the significant degree of brain drain, or the migration of physicians out of low- and middle-income countries (LMICs) to financially established ones, leading to poorer healthcare services for the population.⁷ As brain drain is predominantly due to the pursuit of better financial and career prospects abroad, it is essential to explore and address these factors to augment both doctor and patient satisfaction and alleviate the state of healthcare provision in the country.⁸

The Aga Khan University (AKU), like any other medical institute, offers its students exposure to a variety of career choices, including Community Health Sciences, Family Medicine, and a broad range of Medical and Surgical specialties. The MBBS (Bachelor of Medicine, Bachelor of Surgery) programme at AKU is of five years' duration; the first two years include basic sciences, and the last three years have clinical rotations. Almost each clinical rotation is either four or eight weeks in duration and equips the students with the essentials of that speciality. Students at AKU graduate to pursue a broad range of specialties abroad and within Pakistan.

This study aims to determine the factors associated with the career choices of students of a private medical university and preference for training abroad or in Pakistan, and will serve as a baseline study for the same. Understanding how medical students select their area of specialisation is key to achieving a balanced distribution of doctors among all specialties. Furthermore, determining their reasons for training abroad and/or coming back to Pakistan will give more insight into improvements that can be made to our healthcare system.

Subjects and methods

A cross-sectional survey was conducted at the Aga Khan University Medical College (AKUMC), Karachi, Pakistan, from July 2021 to February 2022. After receiving approval from the University's Ethical Review Committee (ERC No.2021-6101-17213), medical students from the classes of 2021 through 2025 [N=500 (100 students per class)] of AKU were invited to participate via email. All the students who voluntarily consented to fill the survey were included in the study. Informed consent was obtained from the students via email before they clicked on the link to fill out the survey. A structured questionnaire was developed, based on the opinion of medical students along with evidence available in the literature. Before distribution, the questionnaire was pilot-tested on 10 students and interns, and all the necessary revisions were made before the final implementation. The survey comprised four sections: i) demographic information (age, gender, class), ii) perception regarding factors affecting the selection of speciality, iii) opinion regarding factors affecting the preferred place of training (abroad or within Pakistan), and iv) perceptions regarding possible factors affecting the decision of returning to Pakistan after postgraduate training. A 5-point scale was used to allow the students to grade the factors from 1 (least important) to 5 (most important). The survey was administered anonymously and confidentiality of responses was ensured throughout the process.

Descriptive statistical analysis was performed using Stata Version 17. For continuous variables, mean \pm SD or Median \pm IQR was used, based on the normality of data. For categorical variables, numbers with percentages were used. Chi-square was used to determine the gender-based preferences in the chosen specialities, factors influencing career choice, country preference, and practice settings. A p-value of <0.05 was considered significant. Univariate and multivariate analysis was performed using logistics regression, and odds ratios with 95% confidence interval were reported.

Results

A total of 500 medical students were approached, out of which 269 (53.8%) responded to the questionnaire. More than half of the respondents, i.e. 151 (56.1%) were males. The proportion of students who had decided their speciality was 124 (48%). The most frequent choices of speciality among these students were surgery 68 (25.3%), followed by medicine 25 (9.3%) and paediatrics 14 (5.2%). A large majority of students, i.e., 259 (96%), expressed their desire to practice abroad. Among these 159 (59.1%) students expressed the intention to ultimately return and practice in Pakistan.

Table-1: Students' Preferences by Gender.

Students' preference	Male	Female	Total	p-value
Have you decided what speciality you want to pursue?				0.13
No	75 (49.7%)	69 (59.0%)	144 (53.7%)	
Yes	76 (50.3%)	48 (41.0%)	124 (46.3%)	
Specialty				$<0.001^*$
Anaesthesia	2 (1.3%)	0 (0.0%)	2 (0.7%)	
Emergency Medicine	0 (0.0%)	1 (0.9%)	1 (0.4%)	
Family Medicine	2 (1.3%)	4 (3.4%)	6 (2.2%)	
Medicine	18 (11.9%)	7 (6.0%)	25 (9.3%)	
Neurology	2 (1.3%)	3 (2.6%)	5 (1.9%)	
Oncology	1 (0.7%)	0 (0.0%)	1 (0.4%)	
Orthopaedic	2 (1.3%)	0 (0.0%)	2 (0.7%)	
Paediatrics	1 (0.7%)	13 (11.1%)	14 (5.2%)	
Psychiatry	4 (2.6%)	1 (0.9%)	5 (1.9%)	
Surgery	48 (31.8%)	20 (17.1%)	68 (25.4%)	
Where will you want to obtain your postgraduate training?				0.045
Abroad	143 (94.7%)	116 (99.1%)	259 (96.6%)	
Pakistan	8 (5.3%)	1 (0.9%)	9 (3.4%)	
Do you want to practice in Pakistan in the future?				0.11
No	55 (36.4%)	54 (46.2%)	109 (40.7%)	
Yes	96 (63.6%)	63 (53.8%)	159 (59.3%)	

*p value <0.05

Gender-based preferences of medical students were also identified, as shown in Table 1. The proportion of male students 48 (31.8%) who selected surgery as their speciality of choice was noted to be significantly higher as compared to female students 20 (17.1%) with a p-value <0.001 . Conversely, paediatrics was more popular among females 13 (11.1%). In addition, the proportion of female students who opted to pursue postgraduate training abroad was noted to be slightly higher than male students and was reported as 116 (99.1%) and 143 (94.7%), respectively (p <0.045).

Most of the students perceived better opportunities to manage their lifestyle 145 (54%) and rotation experience 128 (48%) during undergraduate training as the most likely reasons affecting their decision about their future speciality. Better opportunities for training 207 (77%) were perceived as one vital aspect that pushes these students to pursue their training abroad. Finally, most students perceived that the desire to serve their community is the most important factor to return to their country of origin.

In multivariate regression analysis, the role of a mentor was positively associated with field selection and was noted to be statistically significant (OR: 1.09; CI: 1.03-1.16; p= 0.017). Future income and lifestyle were noted to be inversely associated and remain significant. In addition, better training was the most prominent reason for students to pursue postgraduate training abroad (OR:1.09; CI: 0.15-0.54; p= 0.012). With regards to

Table-2: Univariate Analysis.

Factors associated with selection of specialty	OR (95% CIs)	p-Value	AOR*(95% CIs)	p-Value
Work experience before med school	0.85 (0.70-1.04)	0.132		
Personal/family preference	1.06 (0.85-1.33)	0.554		
The rotation experience	0.79 (0.58-1.07)	0.129		
A mentor/role model	1.51 (1.07-2.12)	0.017	1.09 (1.03-1.16)	0.003
Future income	0.64 (0.47-0.87)	0.004	0.94 (0.88-0.99)	0.042
Lifestyle/work-life balance	0.54 (0.39-0.75)	0.000	0.89 (0.83-0.95)	0.001
Less competitive field	0.73 (0.57-0.93)	0.012		
Interesting patients/intellectual challenge	1.23 (0.93-1.63)	0.141		
Interest in research	0.88 (0.71-1.10)	0.276		
Need of specialty in Pakistan	0.90 (0.71-1.15)	0.434		
Factors associated with postgraduate training (Pakistan/abroad)				
Job security	0.90 (0.47-1.75)	0.773		
Family reasons	1.26 (0.73-2.16)	0.393		
Lifestyle	1.18 (0.57-2.44)	0.652		
Income	1.01 (0.99-1.03)	0.101		
Loan repayment	1.01 (0.97-1.00)	0.26		
Patient diversity	0.98 (0.96-1.00)	0.120		
Better training	1.09 (0.15-0.54)	0.012	1.07 (1.00-1.15)	0.026
Factors associated with practicing in Pakistan in the future				
Family reasons	1.23 (0.99-1.52)	0.058		
Cultural/religious reasons	1.42 (1.17-1.73)	<0.001	1.07 (1.03-1.12)	0.001
Lifestyle	1.07 (0.89-1.29)	0.426		
Income	0.84 (0.68-1.03)	0.109		
Wanting to help your community	1.88 (1.37-2.57)	<0.001	1.12 (1.05-1.20)	<0.001

* Multivariate models were also adjusted by age and gender.

practicing in Pakistan in the future, the desire to help their community was reported as the chief reason (OR: 1.88; CI: 1.37-2.57; $p < 0.001$) (Table 2).

Conclusion

This study highlighted the extent to which the brain drain phenomenon is imminent among medical students in Pakistan. A strong desire was expressed by the students to come back to their country of origin after completion of training for serving the communities. Better career prospects and lucrative financial compensation were observed to have a key role in pushing medical students to leave their homeland. This, in turn, calls for some rigorous policy changes by the government to ensure

physical and financial security for the physicians who choose to stay in the country and improve the quality of training being offered in hospitals across the nation.

Disclaimer: None.

Conflict of Interest: None.

Source of Funding: None.

References

1. Yang Y, Li J, Wu X, Wang J, Li W, Zhu Y, et al. Factors influencing subspecialty choice among medical students: a systematic review and meta-analysis. *BMJ Open* 2019;9:e022097. doi: 10.1136/bmjopen-2018-022097.
2. Sarikhani Y, Ghahramani S, Bayati M, Lotfi F, Bastani P. A thematic network for factors affecting the choice of specialty education by medical students: a scoping study in low-and middle-income countries. *BMC Med Educ* 2021;21:99. doi: 10.1186/s12909-021-02539-5.
3. Dorsey ER, Jarjoura D, Rutecki GW. Influence of controllable lifestyle on recent trends in specialty choice by US medical students. *JAMA* 2003;290:1173-8. doi: 10.1001/jama.290.9.1173.
4. Peel JK, Schlachta CM, Alkhamesi NA. A systematic review of the factors affecting choice of surgery as a career. *Can J Surg* 2018;61:58-67. doi: 10.1503/cjs.008217.
5. Puertas EB, Arósquiza C, Gutiérrez D. Factors that influence a career choice in primary care among medical students from high-, middle-, and low-income countries: a systematic review. *Rev Panam Salud Publica* 2013; 34:351-8.
6. The World Bank. Physicians (per 1,000 people) – Pakistan: World Health Organization's Global Health Workforce Statistics, OECD, supplemented by country data. [Online] 2019 [Cited 2023 October 22]. Available from URL: <https://data.worldbank.org/indicator/SH.MED.PHYS.ZS?locations=PK>
7. Saluja S, Rudolfson N, Massenburg BB, Meara JG, Shrimo MG. The impact of physician migration on mortality in low and middle-income countries: an economic modelling study. *BMJ Glob Health* 2020;5:e001535. doi: 10.1136/bmjgh-2019-001535.
8. Ali A, Mirza N, Zaidi MH, Imtiaz F, Hamid H, Naim H, et al. Specialty Preference of Medical Undergraduates and Graduates of a Public Sector Medical University of Karachi. *J Dow Uni Health Sci* 2018;12:96-102.