

Career Intentions and their Influencing Factors among Medical Students: A Study on Brain Drain

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ABSTRACT

Background: “Brain drain” is defined as the migration of educated and highly skilled professionals to developed countries, especially in pursuit of better opportunities. The objective of this study was to determine the career intentions of medical undergraduates and their influencing factors.

Subjects and methods: A descriptive cross-sectional study was conducted after approval from the Institutional Research Committee from May to September 2023 with no IEC/244-23. By using non-probability convenience sampling, all 3rd, 4th, and final years MBBS were included in the study as a whole sample of 350. Data was collected with the help of a closed-ended questionnaire. Additionally, the Quality-of-Life Scale (WHOQOL-Bref), designed by the World Health Organization, and the Perceived Stress Scale-14 (PSS-14) were used. Data was analyzed in IBM SPSS version 25. Descriptive statistics, Chi-square, T test, and Pearson correlation were used for analysis, and a p-value of ≤ 0.05 was considered significant.

Results: In this study, 53.8% of the participants were female (n=188) while 46.2% (n=162) were male, with the mean age of 23.05 ± 1.45 years. Most of the students were unsatisfied after choosing the medical field (55.8%, n=195). The PSS-14 score mean was 1.88 ± 0.48 , and it was found that those participants who thought of practicing abroad were not statistically different from those who wanted to work in this country. After applying the Pearson correlation test between the WHOQOL-Bref and PSS-14 scores, it was found it be significant and negative ($r = -0.520$, $p < 0.05$).

Conclusion: The study's results indicate that the majority of medical students intend to pursue their careers abroad. Key factors contributing to this decision include long working hours, physical/verbal violence, and mobbing in their workplace.

Keywords:

Brain drain, Medical students, Quality of life

INTRODUCTION

“Brain drain” is defined as the migration of literate and highly skilled professionals to developed countries, especially in pursuit of high salaries or better living standards.¹ It is a huge problem that is mainly caused by the fact that highly skilled and educated medical professionals prefer to leave their countries for better job opportunities and a higher standard of living elsewhere.²

The migration trends of well-trained health professionals first came into light in 1940, when a vast number of trained health care professionals moved from Europe to the United States and the United Kingdom.

According to a survey conducted by the House of Commons in the year 2020, 13.8% of the total NHS staff were not British in origin. It also showed that a greater proportion of doctors had a foreign nationality (29%) as compared to other health care professionals, and a vast majority of them were of an Asian descent (13.5%), including Pakistani.³

A lot of Pull factors are responsible for the migration of medical professionals, like good earnings and good quality of life, better career, and stable economy, and push factors like unemployment, political-economic instability, and low standards of quality of life. Pakistan, a developing country, expends massive amounts to provide medical training, infrastructure, and professional education to these individuals; however, these educated and highly skilled individuals choose to depart from Pakistan due to both pull and push factors.⁴ Two most important factors that are responsible for medical students to choose their potential career are classified into two major types: Intrinsic and Extrinsic. The intrinsic factors are associated with personal preferences, while the extrinsic factors are connected with the working conditions.⁵

According to the report of the Bureau of Emigration and Overseas Work (BEOE), an incredible amount of

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862,625 Pakistanis searched for employment abroad in 2023, and over 165,457 migrations were recorded during the first half of 2024, and Pakistan got the third position in emigration.^{6,7} The reasons preventing these migrants from returning are deprived facilities, unsatisfying jobs, scarce job opportunities for professional growth, biased distribution of post-graduation seats, abundant workload, lack of appreciation, insufficient motivation, unreal research funding by the government, political instability, insecurity, and less educational opportunities for children.⁸

For lower-middle-income countries, the migration of physicians is very costly, as it was estimated that LMICs lose US\$15.86 billion per year due to physician migration to higher-income countries (HICs).⁹ Brain drain has severe implications for Pakistan. It stands on the fifth rank among the highest population in the world; however, by spending 38 US dollars on healthcare per capita, with only half of its 224 million population having access to healthcare, it is far behind in attaining the global UHC Service Coverage Index target of 80+ by 2030.⁹

The objective of this study was to ascertain the career intentions attitude of medical undergraduates and their influencing factors for brain drain. Although a few similar surveys have been carried out, most are dated to a significant number of years ago, and the topic hasn't been looked into in the thorough detail that it requires

SUBJECTS AND METHODS

A descriptive cross-sectional study¹ was carried out in Aziz Fatimah Medical and Dental College, Faisalabad. The duration of the study was 6 months from May to

September 2023, after approval from the Institutional Research Committee with no IEC/244-23. Non-probability convenient sampling was done after taking informed consent from the participants. All 3rd, 4th, and final years MBBS were included in the study as a whole sample of 350, while 1st and 2nd year classes were excluded as their exposure is less than that of senior classes. Socio-demographic determinants of the participants (such as age, gender, marital status, and education year), and their attitudes about working in this country. Additionally, the Quality-of-Life Scale-Short form (WHOQOL-Bref) developed by the World Health Organization for measurement of quality of life of the students and the Perceived Stress Level Scale for stress level were used. In 1983, Cohen, Kamarck, and Mermelstein designed the Perceived Stress Scale, which is a 14-item scale, and in 2013, Eskin et al. measured the validity and reliability of this scale. Statistical analysis was done by IBM SPSS version 25. Descriptive statistics, Chi-square, T test, and Pearson correlation analysis tests were used in this study.

RESULTS

A total of 350 responses were received from the participants, out of which 162(46.2%) were male and 188 (53.8%) were female medical students. among all the respondents, 141 (40.4%) were from the 3rd year, 109 (31.2%) 4th year, and 100 (28.4%) were from the final year medical students, with a mean age of 23.05 ±1.45 years.

Students' responses to reasons for choosing medical college were as follows: 79.3% (172) were in favor of job guarantee, while 74.3 % (161) and 67.4% (146) were in favor of economic reasons and prestige (Tables 1 & 2).

Table 1: Socio-demographic determinants of medical undergraduates

Gender	Frequency	Percentages
Male	162	46.2
Female	188	53.8

Table 2: Causes of choosing medical studies among medical undergraduates

Job assurance	94	26.8
Economical causes	78	22.2
Status	75	21.4
Interest in medical studies	42	12.0
Commitment to helping others	35	10.0
Family pressure	26	7.42
Total	350	100

Table 3: Quality of Life between those who wanted who move abroad than those who do not

QOL Subscale Scores	Percentages	p-value
General Health Status	46 %	0.015
Psychological Health	52%	0.025
Physical Health	43%	0.016
Social Connections	58%	0.018
Physical Environment	48%	0.015

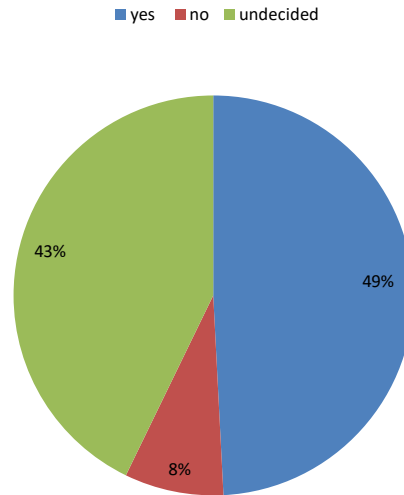


Figure 1: Views of practicing abroad among medical undergraduates

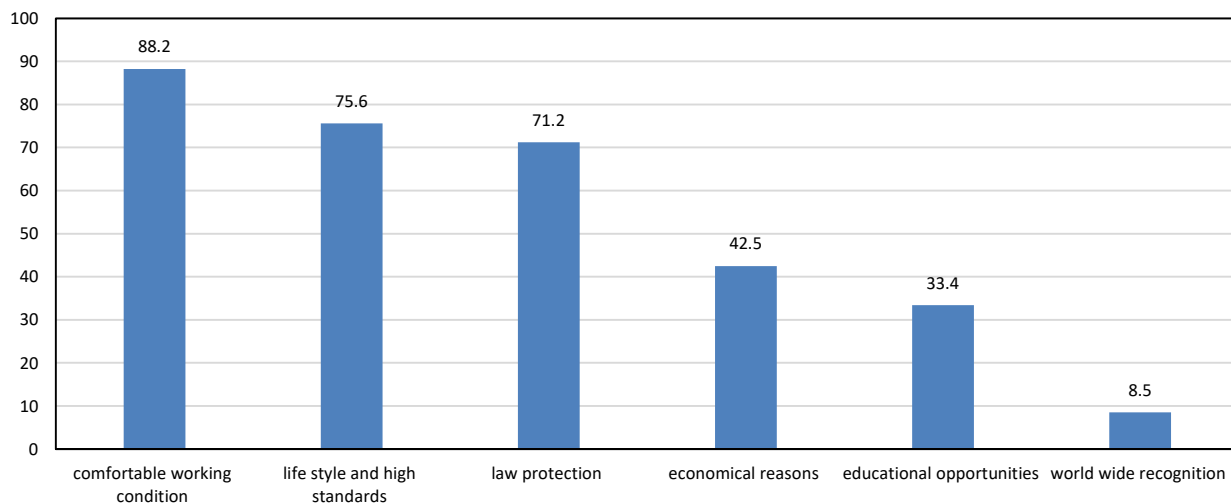


Figure 2: Common reasons for practicing abroad among medical undergraduates

Perceived stress scale scores of those medical students who desired to leave medical college were greater than the other group, but a statistically significant difference was not found ($p=0.135$).

When comparing quality of life scale and perceived stress level scores regarding gender, marital status, and the reason for choosing a medical college, no statistically significant difference was found between them $p = 0.459$.

A strong negative and significant relationship between Perceived Stress and Quality of Life ($r=-0.520$, $p<0.05$) was recorded.

DISCUSSION

The objective of this study was to ascertain the career intentions attitude of medical undergraduates and their

influencing factors for brain drain. The global shortage of doctors affects not only Pakistan but nearly all nations and continents.¹⁰ and emigration of the already limited number of physicians from developing countries to other countries can significantly reduce access to healthcare.¹¹

This study was conducted among medical students of AFMDC Faisalabad. Most of the students were in favor of brain drain (49%), which is similar to a study conducted in India, where 59% of the students wanted to leave their country for better opportunities.¹⁰ Another research among medical students of Karachi shows that over 95% of Aga Khan University (AKU) and over 65% of Baqai University (BU) medical students intend to proceed abroad for their postgraduate training.¹²

We found that the most common reasons for choosing medical studies were the assurance of career stability, financial security, and social status, which is consistent with the result of the study, high-quality training facilities (83.7%), and the impact of residency training on their respective fields (83.6%).¹⁰ another study concluded that the primary drivers for graduates' inclination to seek opportunities abroad are the significant influence of residency training on their future career prospects, the financial situation of medical professionals, and the availability of job opportunities.¹² The existing literature on the phenomenon of brain drain among medical students is insufficient, and recent trends indicate a rising inclination towards this issue both nationally and globally.¹³

In addition to the previously mentioned factors, medical students (88%) are also drawn to practicing abroad due to good working conditions, improved lifestyle, and higher living standards in other countries. Laws and protective measures for physicians abroad, such as regulations ensuring safer work environments and better compensation, further strengthen the appeal of relocating. These benefits create a stark contrast to the challenges faced in their home country, making foreign practice a more attractive option for many aspiring healthcare professionals. This further accelerates the brain drain phenomenon within the medical field.^{14, 15}

In this study, it was considered appropriate to assess the quality of life and perceived stress levels for a better understanding of factors predicting brain drain among medical students.

Studies suggested that participants experienced low quality of life but felt more sociable, and were better inclined to seek opportunities overseas. However, the dearth of statistical significance in the findings might be attributed to the finite number of participants. Despite this, the results align with other similar studies conducted in Turkey, further highlighting the complex relationship between quality of life, social security, and the motivation to practice medicine in other countries. A strong negative and significant relationship was found among medical students' quality of life and perceived stress, and this result was expected as established in another study.¹⁶

Perceived stress level mean score among medical students was 1.88 ± 0.48 , and no significant difference was found between those who desired to move from their home country and others. This showed that the major factors responsible for the brain drain are distinct from the perceived stress level. Meanwhile, there are good sides of moving foreign country; they have to face many problems as well, which are adjustments to a distant culture, exam preparations, language barriers, and social

challenges. These are the common reasons for this condition.¹⁷

The results demonstrated that the mean quality of life or general health scale of health-related quality of life and its physical and psychological health subscales was significantly lower for individuals contemplating leaving medical school. These findings highlight the importance of quality of life and stress perception in the context of making decisions by physicians as well as by medical students. In this situation, the quality of life of current and future physicians becomes significant, as it is low and stressful enough to make them opt out of the course or the profession of their choice, which aggravates the problem of brain drain. Solving these problems is essential for keeping the medical manpower.¹⁸

CONCLUSION

The study shows that most medical students plan to work abroad, driven by long hours, workplace violence, and mobbing. These challenges, along with other factors, fuel the growing brain drain as talented individuals seek better opportunities overseas.

Recommendations: To effectively reduce brain drain among medical students and healthcare professionals, it is essential to address the underlying push factors that drive them to seek opportunities abroad. Improving working conditions can help retain talent by reducing the economic gap between local and foreign opportunities.

Limitations: The limitations of our study are the small sample size, involvement of only medical students from three classes, and, due to a single-center study, the results of the study cannot be generalized.

Contribution of Authors to the Original Manuscript:

Dr Uzma Sagheer: Conception and design, analysis and interpretation of data, drafting the article, critical revision for important intellectual content, and final approval.

Dr. Muhammad Talal Tayyab: Conception and design, analysis and interpretation of data.

Dr. Fatima Jafar: Analysis and interpretation of data, drafting the article.

Dr. Umair Masood: Acquisition of data, conception and design, analysis and interpretation.

Dr. Rafia Tahir: Analysis and interpretation of data, and proofreading.

Dr. Humayun Suqrat Hasan Imam: Conception and design, analysis and interpretation of data.

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