

Factors predicting the motivation to study abroad in Turkish medical students: a causal investigation into the problem of brain drain

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ABSTRACT

Aim: We aimed to examine the frequency of plans to practice medicine abroad in medical school students and the related variables, in relation to the recently increasing brain drain in physicians in our country.

Material and Method: A total of 82 volunteer students in the 5th and 6th grades were included in the study. Our study is a descriptive and cross-sectional study. A questionnaire was directed to the participants about sociodemographic data, attitudes towards the medical profession, the reasons that make it difficult to practice medicine in our country, the idea of working abroad, and the attractive features of abroad opportunities for students. In addition, the World Health Organization Quality-of-Life Scale (WHOQOL-Bref) to measure the quality of life of the students and the Perceived Stress Scale-14 (PSS-14) to measure the stress level were applied. The data were analyzed in SPSS (21.0) program.

Results: 56% Of the participants were female (n=46), 44% (n=39) were male, and the mean age was 24.07 ± 1.65 . Majority of the students (94%, n=77) stated that they thought of doing medicine abroad, and nearly half of them (46%, n=38) stated that they were determined on this issue. The answers given by the students to the question why they preferred medical school were as follows: Job guarantee (79%), income comfort (77%) and prestige (70%). Majority of the participants stated that they felt regret from time to time for choosing medical school (58.5%, n=48) and 45% (n=37) stated that they thought of leaving medical school in the past. The following answers were frequently given to the question of the most important reasons that make it difficult to practice the profession of medicine in our country: Heavy working conditions and long working hours (90%), verbal/physical violence against physicians (87%), mobbing and pressure applied by seniors/administrators in the workplace. (67%). The countries respondents considered to immigrate frequently were: Germany, UK and USA. The mean PSS-14 score of the participants was found to be 1.98 ± 0.49 , and there was no significant difference between those who thought to practice medicine abroad and those who did not. In the Pearson correlation test, it was determined that there was a significant and negative correlation between the WHOQOL-Bref and PSS-14 scores ($r = -0.620, p < 0.05$).

Conclusion: The results show that most of the medical students have the idea of brain drain. Special attention should be given to the problems of physicians and medical students in the issue of physician brain drain, which causes the loss of qualified workforce in our country and has been increasing in recent years, and solution-oriented interventions should be implemented rapidly.

Keywords: Brain drain, medical students, quality of life, perceived stress, abroad

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INTRODUCTION

Brain drain is the migration of highly educated and qualified workforce to countries that offer better living and working opportunities (1). The movement of displacement, seen in every period of humanity, has generally been in the form of searching for resources and changing living conditions in order to meet the needs of people, although it has gained different qualities. Brain drain is the category of migration whose share has increased the most in international migration movements in recent years (1,2).

Brain drain has different meanings for developed and developing countries. While the developed countries can meet their increasing job and service demands because of the high population growth, expensive education and high demand for manufactured products, through immigrants, they can meet their demands more cheaply and profitably; In developing countries, immigrants contribute to the strengthening of their countries' human capital and economic development through ways such as business, trade, technology transfer, and academic cooperation (1,3). However, the International Labor

Organization reports that in developing countries, where the number of highly qualified people is less than 5% of the total population and more than 20% of the skilled workforce migrates, the positive effects of migration on development are not valid (4).

Health workers are at the forefront of the occupational groups with the highest brain drain. Globalization, the disappearance of borders between countries, the increase in transportation-communication opportunities, the development of technology and the policies of developed countries that encourage migration have been effective in the increase of migration in both medical and other fields (2,5). In our country, it is thought that there has been an alarming increase in the rate of emigration of doctors and doctor candidates due to reasons such as increasing violent behavior towards physicians, harsh working conditions, low wages, and some health policies in recent years (6).

In this study, it was aimed to investigate the relationship between the perceived stress level and quality of life in medical school students, as well as their attitudes towards the profession of medicine, and their plans to practice the profession of medicine abroad. In addition, it was aimed to examine the sociodemographic data of the participants, the features that make it difficult to practice medicine in our country, and the attractive features of the opportunities abroad for students. It is thought that the results will be a guide for the necessary precautions and interventions against the increasing brain drain in medicine, which is one of the most qualified occupational groups in our country.

The hypotheses of our study: As the perceived stress level in medical students increases and their quality of life decreases, there is an increase in their plans to study abroad.

MATERIAL AND METHOD

The study was carried out with the permission of Mersin University Social and Human Science Ethics Committee (Date: 30.03.2022, Decision No: 157). All procedures were carried out in accordance with the ethical rules and the principles of the Declaration of Helsinki.

The 5th and 6th grade students of the Faculty of Medicine were included in the study. Our research is a cross-sectional descriptive study. Our research was conducted between 01/04/2022-10/05/2022. A questionnaire was applied on the sociodemographic information of the participants and their attitudes towards the profession (including questions such as age, gender, marital status, what grade they are in, the attitudes of physicians about working conditions in our country and abroad, whether they are considering immigration). In addition, the Quality of Life Scale-Short form (WHOQOL-Bref) developed by the World Health

Organization to measure the quality of life of the students and the Perceived Stress Level Scale to measure the stress level were applied. The Perceived Stress Scale is a 14-item scale developed by Cohen, Kamarck, and Mermelstein (7) in 1983, the validity and reliability study of which was conducted by Eskin et al. (8) in 2013. The scale we used in our study was obtained from the publication of the validity and reliability study. The validity and reliability study of the Quality of Life Scale-Short form was conducted in 1999 by Erhan Eser et al. (9). This scale used in our study was obtained from the website of the World Health Organization. The scales were delivered to the volunteers via an online questionnaire. The data were analyzed in the SPSS (21.0) program. Descriptive statistics, Kolmogorov-Smirnov, Student-T test, Chi-square and Pearson correlation analysis tests were applied.

RESULTS

Out of a total of 498 students attending the 5th and 6th grades of the medical faculty, 82 (16.4%) students volunteered to participate in the research. A total of 82 students were included in our study, of which 56% were female (n=46) and 44% (n=39) were male. The mean age was 24.07 ±1.65 years. 95% (n=78) of the students were single. The answers given by the students to the question why they preferred medical school were as follows: Job guarantee (79.3%), economic reasons (76.8%) and prestige (69.5%) (Table 1). The majority of the participants stated that they sometimes felt regret for choosing medical school (58.5%, n=48), and 45% (n=37) stated that they thought of leaving medical school (Table 1).

Table. Sociodemographic characteristics of students and some attitudes towards medical school		
	Count (n)	Rate (%)
Gender		
Female	46	56
Male	39	44
Marital status		
Married	4	4.9
Single	78	95.1
Reasons for choosing medical school		
Job guarantee	65	79.3
Economic reasons	63	76.8
Prestige	57	69.5
Interest in medical science	56	68.3
Willingness to help	47	57.3
Family pressure	15	18.3
Regret for choosing medical school		
Often	25	30.5
Sometimes	48	58.5
Never	9	11.0
Thoughts to drop out of medical school		
Yes	37	45.1
No	45	54.9

The following answers were frequently given to the question of the most important reasons that make it difficult to practice the profession of medicine in our country: Heavy working conditions and long working hours (90.2%), verbal/physical violence against physicians (86.6%), and the practice of senior/administrators in the workplace environment, mobbing and pressure environment (67.1%), performance system and the obligation to examine patients in a short time (56.1%), physicians' salaries (54.9%), high amount of malpractice lawsuits (48.8%), political pressures (% 25.6%), merit problems in academic units (17.1%), retirement conditions (17.1%) (Figure 1).

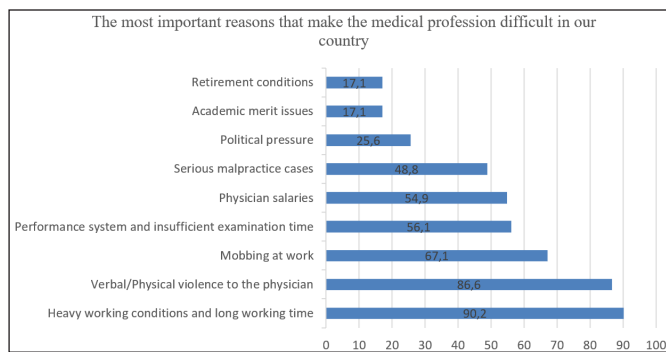


Figure 1. The most important reasons that make the medical profession difficult in our country

Majority of the students (94%, n=77) stated that they thought of doing medicine abroad, and nearly half of them (46%, n=38) stated that they were determined on this issue (Figure 2).

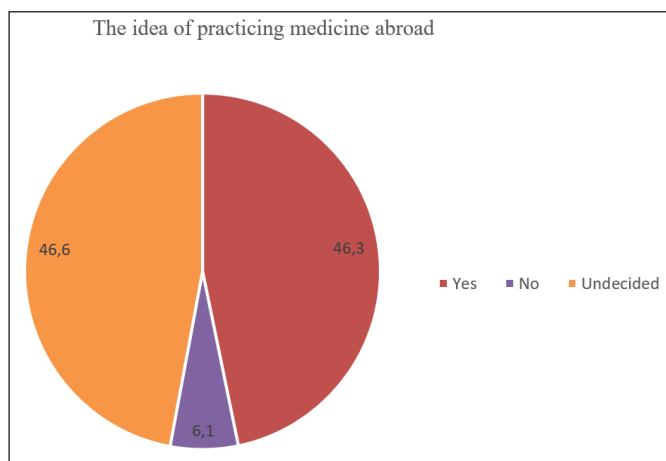


Figure 2. The idea of practicing medicine abroad among medical students

According to gender and marital status, there was no significant difference between the groups who thought to practice medicine abroad and the others. The answers given to the question of what are the most important reasons for students to consider practicing medicine abroad were as follows: Comfortable working conditions (89%), lifestyle and high living standards (77%), comprehensive laws and measures to protect physicians (71%) (Figure 3).

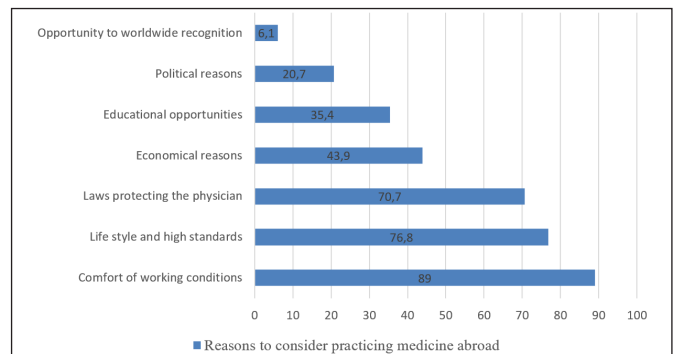


Figure 3. The most common reasons to consider practicing medicine abroad

The countries that respondents considered to migrate were, in order: Germany, UK, USA and other European countries. Participants considering immigration stated that they mostly prepared for the German and English language proficiency exams and the equivalence exams required to practice medicine in these countries. When asked about the reasons that prevent them from practicing medicine abroad, the participants frequently gave the following answers: Not wanting to stay away from family and friends (74%), foreign country exams and financial difficulties (62%), possible problems about immigration and fear of exclusion (44%) (Figure 4).

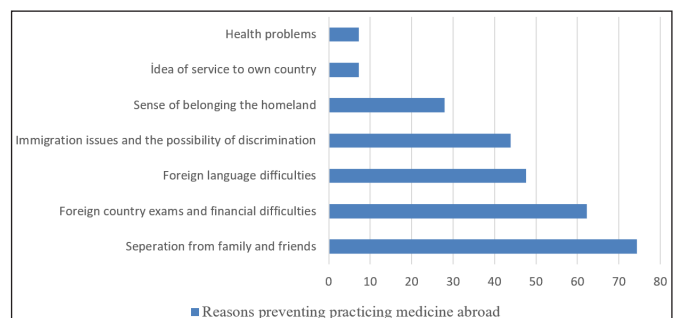


Figure 4. The most common reasons that prevent them from practicing medicine abroad

The students most frequently gave the following answers to the areas of specialization they intend to pursue after graduation: Psychiatry, Dermatology, Obstetrics and Gynecology.

The average quality of life percentile total score of the participants was 49%. The average field scores of the participants in the study on quality of life are as follows: General health status 47%, Physical health 47%, Psychological 55%, Social relations 61%, Environment 51%. While the social sub-score averages of the quality of life scale were higher for those who wanted to go abroad, their mental, physical sub-scores and total scale score averages were found to be lower. However, the findings are not statistically significant.

The mean score of the perceived stress level of the participants was determined as 1.98±0.49, and there was no significant difference between those who thought of practicing medicine abroad and the others.

The mean quality of life scores of the students who were considering dropping out of medical school were lower than the others. When the general health ($p=0.037$), physical health ($p=0.019$), psychological health ($p=0.019$) subgroups and total score ($p=0.016$) of the quality of life scale were evaluated, the difference between the groups was statistically significant.

Perceived stress scale mean scores of those who were considering dropping out of medical school were higher than the other group, but it was not statistically significant ($p=0,125$).

There was no significant difference in quality of life scale and perceived stress level scores according to gender, marital status and regret about choosing a medical school.

It was determined that there was a significant and strong negative relationship between Quality of Life and Perceived Stress ($r=-0.620$, $p<0.05$).

DISCUSSION

In this study, in which the thought of practicing medicine abroad and some related factors in the 5th and 6th grade students of the medical school was investigated, it was understood that the reasons for choosing the medical school were often the guarantee of profession, income comfort and prestige. More than half of the students (58%) stated that they felt regret from time to time for choosing medical school, and 45% stated that they thought of leaving medical school. According to the results obtained, the perceptions that make the medical profession attractive have changed due to the heavy working conditions and long working hours of the physicians, verbal/physical violence, mobbing in the workplace, performance system, malpractices and low economic standards. As a result of these conditions, it is seen that hopes for the future have decreased and some students regret that they chose medical school. The fact that psychiatry and dermatology are among the fields they want to specialize in after graduation may be due to the relatively low workload and malpractice risk. This suggests that branches with high risk of malpractice such as emergency medicine, surgery and cardiology may have problems in terms of the number of physicians in the future. The number of studies investigating the plans for brain drain in medical school students is not enough, and it has been observed that the tendency to this issue has increased both in our country and in the world in recent years (5,10,11). The difference of our research from the previous ones is that it examines the predictors such as perceived stress level and quality of life and contributes to the solution of the problems related to the underlying cause (12-14).

The fact that the idea of brain drain is widespread not only among medical students but also among students of nursing and other health professions shows that the negative effects of health policies on these groups should not be underestimated (15-17).

Medical faculties around the world have an education process that requires intense effort due to placement in the department and then challenging exams. Intense intellectual rumination and professional concerns about exams and the fields they will choose in the future are the results of these processes (18). In addition to all these, it does not seem easy at all to draw a new route to their education and professional life. Despite this, observed that there has been an increase in the number of students and physicians who consider practicing medicine abroad in better conditions as a way out, and the number of physicians who have migrated, especially in recent years. In our study, the majority of the students (94%) stated that they were considering practicing medicine abroad for reasons such as more comfortable working conditions, lifestyle and high living standards, comprehensive laws and measures to protect physicians. Half of the students stated that they were determined on this issue. This situation reveals that the concerns of medical students about their future are very serious in our country, so these concerns should be eliminated as soon as possible and precautions should be taken about brain drain in physicians. The countries that were considered to immigrate were Germany, England, the USA and other European countries, respectively. This result may be related to the laws, health system conditions, economic welfare and other living standards in these countries (19, 20).

In this study, it was thought that it would be useful to reveal the quality of life and perceived stress levels in order to embody the factors that predict brain drain. While the social sub-score averages of the quality of life scale were higher for those who wanted to go abroad, their mental, physical sub-scores and total scale score average scores were found to be lower. These results show that individuals who have a low quality of life but feel more socially secure are more motivated to go abroad. The lack of statistical significance of the findings may be due to the insufficient number of participants.

Intensive workload, care for severe and terminally ill patients, problems in relationship and task sharing in the workplace, disruption of sleep patterns, night shifts, dealing with patient relatives and economic problems cause work-related stress and tension (21-23). In this context, the scores of quality of life and perceived stress levels in physicians and physician candidates gain importance (23). The perceived stress level mean score perceived by the participants was determined

as 1.98 ± 0.49 , and there was no significant difference between those who intend to practice medicine abroad and others. This suggests that the factors causing brain drain are independent of the perceived stress level. While there are good aspects of practicing medicine abroad, there are also various difficulties such as adaptation to a foreign culture, language problems, social problems, preparation process and exams, which may be the reason for this situation.

On the other hand, the students stated that they mostly avoided practicing medicine abroad due to reasons such as not wanting to be away from their family and friends, foreign exams, lack of financial power for the migration process, possible immigration problems and fear of exclusion. These findings explain that although the idea of brain drain is very common in our country, it is less visible in practice due to various concerns.

The total quality of life scores and general health, physical health, psychological health subscale scores of those who were considering leaving the medical school were found to be significantly lower. According to this result, it is speculated that the students blame the medical faculty as the reason for feeling worse, they think that if they leave, they will feel better and their quality of life will increase. The idea of leaving medical school may be the result of more negative feelings in these areas.

Perceived stress scale mean scores of those who were considering dropping out of medical school were higher than the other group, but it was not statistically significant. Perceived stress may not directly affect the idea of dropping out of medical school, or the low number of participants may have prevented us from achieving significant statistical results. In addition, the fact that possible plans were very stressful after leaving the medical school due to the economic and social conditions in our country may have affected this result.

According to our study, the existence of a significant and strong negative relationship between students' quality of life and perceived stress can be explained by the negative effect of stress on their quality of life, and this result is expected.

The limitations of our study are the low number of participants, the inclusion of only medical school students in certain classes, and the inability to examine familial, environmental and other individual factors.

CONCLUSION

The results show that most of the medical students are intend to practicing medicine abroad. Heavy working conditions, violence at work and economic reasons make it difficult to practice medicine in our country and the other reasons strengthens the idea of brain drain

among medical students. Special attention should be paid to the problems of physicians and medical students regarding the issue of brain drain in physicians, which has caused the loss of qualified workforce in our country and has been increasing recently, and solution-oriented interventions should be implemented rapidly.

ETHICAL DECLARATIONS

Ethics Committee Approval: The study was carried out with the permission of Mersin University Social and Human Science Ethics Committee (Date: 30.03.2022, Decision No: 157).

Informed Consent: All patients signed the free and informed consent form.

Referee Evaluation Process: Externally peer-reviewed.

Conflict of Interest Statement: The authors have no conflicts of interest to declare.

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