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Title

The Role of Calling in Medical Students' Migration Intention

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Abstract

Background:

A sense of calling—defined as viewing work as a meaningful contribution to society—has been linked to job satisfaction and overall well-being. In medicine, this intrinsic motivation may interact with systemic challenges and influence physicians’ career trajectories, including their desire to work abroad.

Aim:

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To examine the relationship between medical students' sense of calling and their willingness to work abroad, comparing first- and final-year students.

Methods:

This cross-sectional study was conducted at a Turkish medical school in 2024. A total of 278 students (140 first-year, 138 final-year) completed a structured online questionnaire. The survey included sociodemographic characteristics, perceptions of the medical profession, intention to work abroad, and the Turkish version of the Calling and Vocation Questionnaire (CVQ). Descriptive and comparative statistical analyses were conducted, with statistical significance set at $p<0.05$.

Results:

More than half (56.8%) of students expressed a desire to work abroad, primarily citing a higher quality of life and income. First-year students reported significantly higher interest in working abroad and marginally higher "presence of calling" scores than final-year students. Dissatisfaction with the healthcare system and anticipated income were significantly associated with the intention to migrate. The presence of calling was slightly, though not significantly, higher among students intending to relocate.

Conclusion:

Medical students' vocational ideals decline over time, influenced by systemic dissatisfaction and perceived limitations within the national healthcare system. Addressing structural barriers in medical education and professional practice is essential to preserving professional motivation and mitigating physician migration.

Keywords: Vocational calling, Medical students, Work abroad intention, Physician migration

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Background and aim

The professional roles individuals take throughout their lives constitute a significant part of their life cycle, with job goals varying from person to person. While some pursue careers primarily for financial gain, others consider their profession central to their identity and purpose. However, some individuals may have a profound sense of professional love for their jobs, which they connect with on a deeper level. The concept of "calling," as described by Duffy et al., suggests that job satisfaction and well-being are not solely derived from financial rewards but from perceiving work as a meaningful contribution to society (1). Employees who experience this sense of calling tend to have higher levels of job-related well-being.

Beyond income, life satisfaction is influenced by socio-demographic factors, including age, gender, education, employment status, institutional structures, and cultural aspects such as ethnic identity and experiences of discrimination. Throughout undergraduate education, idealism regarding career aspirations, lifestyle, and professional prestige begins to decline. According to social comparison theory, individuals tend to experience greater happiness when their income surpasses that of their peers, while the opposite scenario often leads to dissatisfaction. This dynamic plays a significant role in migration decisions, where individuals seek better financial prospects, educational opportunities, career growth, security, and quality of life (2,3).

The concept of a calling presence reflects the extent to which individuals perceive a strong sense of meaning, purpose, and personal mission in their current or future profession. Research conducted among employees has indicated that a sense of calling is positively associated with organizational commitment, job satisfaction, work engagement, professional competence, life satisfaction, and overall well-being. Furthermore, it has been shown to fully mediate the relationship between academic satisfaction and life satisfaction (4–8). On the other hand, the concept of search for calling captures the degree to which individuals are actively seeking to

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discover a deeper purpose or calling in their professional lives, which may affect their overall well-being.

This interplay between financial, professional, and personal fulfillment is particularly evident in the context of international migration, especially among healthcare professionals. One of the fields most affected by this migration trend is medicine, where the movement of skilled professionals has become increasingly prominent. International migration follows a pattern in which healthcare workers move from lower-resource regions to countries with better working conditions (9,10). Studies indicate that financial security is a primary motivator for physician migration; however, factors such as access to education, research, and professional development also significantly contribute to this decision (11). Increasing numbers of medical students are studying abroad, particularly within OECD and EU countries (12,13).

Social networks and digital communication tools also influence migration decisions, as individuals compare their living and working conditions with those in other countries. In cases of brain drain, highly skilled professionals relocate to regions that offer better career prospects and a higher quality of life. While most medical students initially choose their field enthusiastically, many begin to consider migration as they confront the socioeconomic, political, and professional realities of their education. Many medical students from various countries choose to study medicine abroad for several reasons, including gaining clinical training in a higher-income country, seeking educational opportunities, and paying lower tuition fees (14,15).

In Türkiye, the migration intent of students is increasing. The willingness of Turkish medical students to emigrate is comparable to that of medical students in other developing countries, but the tendency for permanent residency abroad is notably higher. While push factors are linked to working conditions in Türkiye, pull factors are related to the effects of the social environment or lifestyle abroad (16).

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Against this backdrop, this study compares medical students in their first and final years of training to explore the relationship between their sense of calling and their desire to work abroad. Understanding this dynamic can provide valuable insights into the factors shaping future healthcare workforce trends. Students in different years can differ significantly in their experience, knowledge, and plans. First-year students are often less informed about their careers and working conditions and may still be making decisions about their plans. Seniors, on the other hand, are in a period where their awareness of job opportunities, living conditions, and career plans increases as they approach graduation. Therefore, the study aimed to gain a better understanding of the factors influencing students' migration intentions by identifying differences between these two groups.

Method

Study Design and Setting

This cross-sectional study was conducted at a Medical School of a university between February and September 2024.

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Study Population

The target population included first- and final-year medical students enrolled at a medical school during the 2023–2024 academic year. The total number of first-year students was 301, and the total number of final-year students was 307.

Sample Size

The required sample size for this study was calculated using G*Power software (version 3.1). A priori power analysis was conducted for a t-test. The analysis was based on the following parameters: a medium effect size ($d = 0.3$), α error probability = 0.05, power ($1–\beta$) = 0.80, and an allocation ratio ($N2/N1$) = 1. The analysis indicated that 139 participants were needed per

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group, resulting in a total required sample size of 278 participants. The actual power achieved with this sample size was 0.802, indicating sufficient power to detect a statistically significant difference. A total of 278 students (140 from Term 1 and 138 from Term 6) participated in the study.

Inclusion and Exclusion Criteria

The study's inclusion criteria were that participants must be first— or final-year medical students during the study period and voluntarily agree to participate in the study. International students studying in these classes were excluded from the study. There were 88 international students among first-year students and 11 international students among final-year students.

Data Collection

A convenience sampling method was used. Students were reached during lecture breaks and invited to participate in the study. The questionnaire was administered online via Google Forms. Participation was voluntary and anonymous. Google Forms was designed to ask questions after receiving written consent.

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Measurement

Data were collected through a structured questionnaire consisting of four sections.

The first part included questions about student characteristics (age, gender, grade, hometown, living arrangement, income status, Credit and Dormitories Institution scholarship (government scholarship) status, foreign language proficiency, and whether students had traveled abroad).

The second part had perceptions about medicine and career aspirations (students' current psychological state, childhood aspirations to become a doctor, reasons for choosing medical school, enjoyment of studying medicine, preferred specialty for future practice, aspirations to

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pursue an academic career, expected income satisfaction as a doctor, satisfaction with the healthcare system in Turkey) (Supplement 1).

The third part consisted of students' interest in working abroad (whether they were interested in working abroad, their reasons for this interest, and their preferred destinations).

The fourth part comprises the Turkish version of the Calling and Vocation Questionnaire-CVQ. The CVQ (Calling and Vocation Questionnaire) scale, developed by Dik and colleagues, assessed calling in the profession (17). The scale is a four-point Likert-type instrument. The version used in this study consists of two levels (search for calling and presence of calling). Cronbach's alpha values are 0.837 for the "search for calling" subscale and 0.828 for the "presence of calling" subscale (18). The instrument evaluates two higher-order dimensions: the "Presence of Calling", which reflects the extent to which individuals already experience meaning, purpose, and prosocial motivation in their career, and the "Search for Calling", which reflects active efforts to discover or develop such meaning and purpose. Items were rated on a Likert scale, and negatively keyed items were reverse-coded. Subscale scores for Presence of Calling and Search for Calling were calculated by averaging their respective items, with higher scores indicating stronger levels of each construct. Before computing the scores, item distributions and internal consistency were examined to ensure that the subscale structure was retained in our sample. Internal consistency analyses supported the reliability of the scale in our sample (Presence of Calling: Cronbach's $\alpha = .81$; Search for Calling: Cronbach's $\alpha = .79$).

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Statistical Analysis

All statistical analyses were performed using SPSS version 29. The Kolmogorov-Smirnov test was used to verify the normal distribution of the data. Descriptive statistics were reported as mean ± SD (standard deviation) for continuous variables and as counts (percentages) for categorical variables. The data followed a normal distribution; therefore, parametric tests were

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used to compare the groups. Univariate analyses were conducted between questions, CVQ scores, and the year of students (1st year and 6th year). T-test, ANOVA, and chi-square were used in accordance with the data distribution. Statistical significance was set at $p<0.05$.

Ethics

Participants were informed about the study, and verbal and written consent was obtained. Students filled out forms anonymously. The university's Non-interventional Clinical Research Ethics Committee approved the research (Date: 17.01.2024; no: 2024/03-16).

Results

The sample consisted of 278 medical students (50.4% first-year students; 49.6% final-year students), with 51.8% of the students being male. The mean age was 21.93 ±0.18. Regarding hometowns, 14.7% of students reported that they originated from rural areas. Of the students, 15.8% (n = 44) lived in family homes, 20.5% (n = 57) lived alone, 29.9% (n = 83) lived with friends, and 33.8% (n = 94) resided in dormitories. In terms of financial status, 25.2% (n=70) stated their allowance was insufficient, 54.7% (n=152) reported their allowance was sufficient, and 20.1% (n=56) indicated their allowance exceeded their needs. When asked about foreign language proficiency, 52.2% reported having no foreign language knowledge; among those proficient in a foreign language, 91.4% (n = 109) identified English as their best-known foreign language. Additionally, 55.8% of students reported having traveled abroad at least once for educational purposes, tourism, or to visit family or friends. Most students (88.1%, n = 245) reported an interest in the profession as their primary reason for pursuing a career in this field. Other reasons included job security and family or personal reasons (21.9%).

Table 1 compares the psychological well-being, career-related perceptions, and vocational calling of first-year and sixth-year medical students. The self-reported psychological state did not significantly differ between the two groups ($p = 0.55$), indicating stability in perceived well-

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being throughout medical education. Similarly, the proportion of students who considered becoming a doctor and their childhood dream remained comparable between first-year (59.3%) and sixth-year (54.3%) students ($p = 0.40$). Enjoyment of studying medicine also showed no significant difference ($p = 0.49$).

Regarding satisfaction with the healthcare system in Turkey, a statistically significant difference was found between first-year and final-year students ($p = 0.04$), as shown in Table 1.

More than half of the participants (56.8%) expressed a desire to work abroad. Among those who expressed this desire ($n = 158$), the most frequently cited reasons were the higher quality of life and salary abroad (50.6%), followed by better working conditions (24.1%). Additionally, 13.3% mentioned opportunities for education and career advancement, while 12.0% expressed a desire to live abroad regardless of their profession. As for preferred destinations, Europe was the most favored region ($n = 94$), followed by the United States ($n = 48$) and other countries ($n = 16$).

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However, students' satisfaction with their future income exhibited a borderline significant difference ($p = 0.05$), with a higher proportion of first-year students reporting dissatisfaction (40.0% vs. 23.2% in sixth-year students). Notably, satisfaction with the healthcare system in Turkey has declined significantly over time ($p = 0.04$), as sixth-year students reported lower satisfaction (2.30 ± 0.95) compared to first-year students (2.53 ± 0.89).

A significant difference was observed in students' interest in working abroad ($p = 0.02$), with first-year students (63.6%) expressing a more significant interest compared to sixth-year students (50.0%). Regarding vocational calling, the Presence of Calling scores showed a borderline significant decrease ($p = 0.05$) over time, suggesting that students' intrinsic sense of calling may slightly diminish throughout medical school. However, the Search for Calling

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scores remained stable between the two groups (p = 0.67), indicating that the quest for meaning and purpose in medicine has not changed significantly over the years.

Table 2 presents a comparative analysis of medical students' willingness to work abroad. The gender distribution did not differ significantly between students who expressed interest in working abroad (p = 0.31), with a slightly higher proportion of males in the group (59.7% vs. 40.3%). Similarly, students' current psychological state (p = 0.36), childhood dreams of becoming a doctor (p = 0.84), and enjoyment of studying medicine (p = 0.56) showed no statistically significant differences between those who wanted to go abroad and those who did not. Future preferred specialty choice (p=0.51), aspirations to pursue an academic future career (p=0.05), previous experience abroad (p=0.05), or holding a Scholarship (Turkish Credit and Dormitories Institution) (p=0.76) do not affect the decision to work abroad.

However, significant differences were observed in career satisfaction and perceptions of the healthcare system. Students who wanted to work abroad reported significantly lower satisfaction with their future income (p < 0.001), with only 15.2% expressing satisfaction compared to 36.7% of those who did not want to go abroad. Additionally, those considering working abroad had significantly lower satisfaction with the Turkish healthcare system (2.25±0.92) compared to those who preferred to stay (2.63±0.89) (p < 0.001).

Regarding academic aspirations, a significantly higher proportion of students interested in working abroad (41.1%) reported wanting to pursue an academic career than those who wished to stay (30.0%, p = 0.05). Language proficiency was also significantly higher in the group wanting to go abroad (55.1% vs. 38.3%, p = 0.006) than in the group with previous travel experience abroad (60.8% vs. 49.2%, p = 0.05). However, receiving a scholarship from the Credit and Dormitories Institution (government scholarship) was not significantly associated with the desire to work abroad (p = 0.76).

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Regarding vocational calling, the Presence of Calling scores were slightly higher in those who wanted to work abroad (21.28 ± 4.60) than in those who did not (20.29 ± 4.79). However, this difference was not statistically significant ($p = 0.08$). Similarly, the Search for Calling scores showed no significant difference between the two groups ($p = 0.51$).

Discussion

This study explored the relationship between medical students' sense of calling and their desire to work abroad, comparing first- and final-year students. The findings reveal a complex interaction between intrinsic vocational motivation and external systemic factors, including economic concerns, healthcare infrastructure, and academic aspirations. The results offer insights into the migratory intentions of future physicians and highlight the gradual erosion of professional idealism throughout medical education.

A key finding of this study is that more than half of the participants (56.8%) expressed a desire to work abroad. The primary motivators of the participants were a higher quality of life and better salaries abroad, followed by better working conditions, professional development opportunities, and a general desire to live outside of Turkey. These findings are consistent with previous studies, which demonstrate that physician migration is predominantly driven by a combination of "push" and "pull" factors (2, 3, 19). Poor working conditions, dissatisfaction with the national healthcare system, and concerns about violence against healthcare workers serve as major push factors in the Turkish context (16).

Interestingly, first-year students were more likely to express interest in working abroad than final-year students. This may be explained by the presence of greater idealism and higher "presence of calling" scores in early medical education. Over time, this idealism appears to decline, potentially due to academic burnout, exposure to the healthcare system's shortcomings, and increasing concern over income and job security. These findings align with previous

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research, which shows that professional identity and well-being diminish throughout medical training, while feelings of impostor syndrome and dissatisfaction increase (20, 21). Gazibara et al. (2019) also found that sixth-year students, although more pragmatic, remained concerned about employment prospects in their home country and preferred practicing abroad (22).

In this study, the relationships between students' levels of Presence of Calling, which refers to the extent to which individuals feel they have discovered a meaningful and purpose-driven vocation, and Search for Calling, which refers to the extent to which individuals are actively seeking or exploring their sense of calling, and their intention to work abroad were examined. The findings of this study are consistent with previous literature, indicating that the presence of calling plays a decisive role in people's career goals (1). In our research, students intending to work abroad demonstrated high levels of calling presence and low levels of search for calling, suggesting that they have clearly defined professional orientations and a strong sense of purpose in their career goals. This aligns with Su et al. (2024), who highlighted the positive effect of calling presence on career decision self-efficacy and motivation (23). Low search for calling scores may indicate limited exploration of alternative career options; therefore, educational programs should aim to strengthen students' sense of calling and support their psychological resources, such as self-efficacy, hope, and resilience, to enhance motivation and facilitate the achievement of international career goals. Moreover, students who perceive medicine as a meaningful and socially valuable vocation are sensitive to the context in which they will practice. When national systems are perceived as incapable of supporting their professional ideals—due to limited resources, inadequate recognition, or ethical challenges—such students may seek alternative environments where their sense of calling can be fulfilled. This aligns with Duffy et al.'s conceptualization of calling, emphasizing meaningful work as a source of well-being and societal contribution (1). When comparing medical students to students from other disciplines, research consistently demonstrates that medical students tend to exhibit higher

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levels of calling, mainly driven by altruistic motives and a profound sense of purpose in patient care (24, 25). Despite medical students often reporting a stronger sense of calling compared to peers in other academic disciplines, their actual intention or ability to work abroad may be comparatively lower. This paradox can be attributed not to a lack of motivation but rather to the structural and regulatory barriers that limit international mobility for medical professionals. Medical graduates face complex licensure processes, limited transferability of medical qualifications, and competitive residency placements abroad—factors that do not equally affect fields like engineering, IT, or business, where professional credentials are more portable and job markets more accessible (26). This suggests that for medical students, a strong sense of calling may fuel their desire to make a meaningful contribution to society. However, practical limitations inherent in the profession are significant deterrents to pursuing international careers, even when such aspirations exist. On the other hand, a sense of calling may influence career choice and professional stability. In this respect, it may protect against negative feelings such as burnout or dissatisfaction with work (27).

Additional variables associated with a desire to work abroad included proficiency in foreign languages and prior travel experience. These findings align with previous literature, which shows that individuals with more substantial cultural capital or international exposure are more likely to pursue opportunities abroad (28). Importantly, students who were more dissatisfied with their future income and the Turkish healthcare system were significantly more inclined to seek employment overseas, a finding consistent with previous studies (16).

The observed decline in calling scores—especially the “presence of calling”—from the first to the final year of medical school is a noteworthy finding. It suggests systemic issues within the educational and healthcare systems may negatively affect students’ professional motivation. Structural challenges, such as high workloads, inadequate compensation, exposure to workplace violence, and a lack of institutional support, may erode the meaningful connection

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students initially feel toward the profession of medicine. When left unaddressed, these systemic barriers risk undermining the professional commitment of the future healthcare workforce and may exacerbate physician brain drain.

International organizations, such as the World Health Organization (WHO), the International Labour Organization (ILO), and the OECD, have emphasized the importance of ethical international recruitment and mobility management frameworks to balance the global distribution of the health workforce (29, 30). Although such frameworks lack legal enforcement, they provide critical norms that shape policy. Nonetheless, urgent domestic interventions are necessary in contexts like Turkey, where physician shortages are prevalent. These include improving working conditions, increasing wages, protecting healthcare professionals, and enhancing the quality of medical education to retain skilled labour and curb the growing migration trend.

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Limitations

Several limitations should be acknowledged in this study. First, its cross-sectional design limits the ability to infer causal relationships or track changes in attitude over time. Second, participation was voluntary, potentially introducing self-selection bias, as students with stronger opinions or personal interest in the subject may have been more likely to respond. Third, as the data were collected via self-reported questionnaires, social desirability bias and recall bias may have influenced the responses. Lastly, the findings are limited to one institution and may not be generalizable to all medical students in the country or other cultural contexts.

Conclusion

The decline in calling scores throughout medical education, particularly the reduction in “presence of calling” by the final year, should be interpreted as an individual phenomenon and a systemic concern. Structural reforms in medical education and the healthcare system are

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crucial for supporting students' professional meaning-making and mitigating migration pressures. Strengthening academic and clinical support systems, improving working conditions, and addressing the psychosocial well-being of students are critical to retaining passionate and committed physicians. Future policies addressing physician migration should consider both economic incentives and the vocational and identity-related dimensions of medical professionalism.

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References

1. Duffy RD, Dik BJ, Douglass RP, et al. Work as a calling: A theoretical model. J Couns Psychol 2018;65(4):423-439. doi:10.1037/cou0000276

2. Bartram D. Inverting the logic of economic migration: happiness among migrants moving from wealthier to poorer countries in Europe. Journal of Happiness Studies 2015;16(5): 1211–1230.

3. Stillman S, Gibson J, McKenzie D et al. Miserable migrants? Natural experiment evidence on international migration and objective and subjective well-being. World Development 2015;65: 79–93.

4. Xie B, Zhou W, Huang JL, et al. Goal facilitation theory was used to explain the relationships between calling and organization-directed citizenship behavior and job satisfaction. Journal of Vocational Behavior 2017;100: 78–87.

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5. Seco V, Lopes MP. Calling for authentic leadership: The moderator role of calling on the relationship between authentic leadership and work engagement. Open Journal of Leadership 2013;2(4): 95-102.

6. Cao Y, Liu J, Liu K, et al. The mediating role of organizational commitment between calling and work engagement of nurses: A cross-sectional study. Int J Nurs Sci. 2019;6(3):309-314.

7. Lysova EI, Jansen PG, Khapova SN, et al. Examining calling as a double-edged sword for employability. Journal of Vocational Behavior 2018;104: 261-272.

8. Duffy RD, Torrey CL, England J, et al. Calling in retirement: A mixed methods study. The Journal of Positive Psychology 2017; 12(4): 399-413.

9. Bach S. Migration patterns of physicians and nurses: Still the same story?. Bull World Health Organ 2004;82(8):624-625.

10. Kandrack R, Martsolf GR, Reid RO, Friedberg MW. Primary care physician migration patterns and their implications for workforce distribution. J Gen Intern Med 2019;34(7):1108-1109.

11. Dohlman L, DiMeglio M, Hajj J, Laudanski K. Global brain drain: how can the Maslow theory of motivation ımprove our understanding of physician migration?. Int J Environ Res Public Health 2019;16(7):1182.

12. Organisation for Economic Co-Operation and Development (OECD). Recent Trends in International Migration of Doctors, Nurses and Medical Students, OECD Publishing, Paris, https://doi.org/10.1787/5571ef48-en. (2019, accessed on 01 Aug 2025).

ARTICLE IN PRESS

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13. Organisation for Economic Co-Operation and Development (OECD). What Do We Know about Young People's Interest in Health Careers?, OECD Publishing, Paris, https://doi.org/10.1787/002b3a39-en (2025, accessed on 01 Aug 2025).

14. Ojo TO, Oladejo BP, Afolabi BK, Osungbade AD, Anyanwu PC, Shaibu-Ekha I. Why move abroad? Factors influencing migration intentions of final year students of health-related disciplines in Nigeria. *BMC Med Educ*. 2023;23(1):742. Published 2023 Oct 10.

15. Ossai EN, Una AF, Onyenakazi1 RC. Nwonwu EU. Emigration plans after graduation of Clinical Medical students of Ebonyi State University, Abakaliki, Nigeria: policy implications. Niger J Clin Pract. 2020;23:995–1003. doi: 10.4103/njcp.njcp_705_19.

16. Eser E, Cil E, Sen Gundogan NE, et al. Push and Pull Factors of Why Medical Students Want to Leave Türkiye: A Countrywide Multicenter Study. *Teach Learn Med*. 2024;36(5):588-600. doi:10.1080/10401334.2023.2229810

17. Dik BJ, Eldridge BM, Steger MF, et al. Development and validation of the Calling and Vocation Questionnaire (CVQ) and Brief Calling Scale (BCS). Journal of Career Assessment 2012;20(3): 242-263.

18. Ögül T, Özer PS. The mediating role of psychological capital in the relationship between academicians' levels of calling and job satisfaction. The Journal of Business, Economics and Management Research 2023; 1: 31 – 51 (Abstract in English, article in Turkish).

19. Botezat A, Ramos R. Physicians' brain drain - a gravity model of migration flows. Global Health 2020;16(1):7.

20. Rivkin, A. Impostor phenomenon in pharmacy students as it relates to professional identity formation. Am J Pharm Educ 2023;87(4):ajpe9175.

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21. Houseknecht VE, Roman B, Stolfi A, et al. A longitudinal assessment of professional identity, wellness, imposter phenomenon, and calling to medicine among medical students. Med Sci Educ 2019;29(2):493-497.

22. Gazibara T, Kurtagić I, Marić G, et al. Perception of first-year versus sixth-year medical students in Serbia on studying medicine and postgraduate career. Acta Clin Croat 2019;58(2):371-378.

23. Su X, Ahmad A, Alias J. Examining Career Calling Through Career Exploration: The Influence of Decision Self-Efficacy and Openness. Social Sciences 2024;13:685. https://doi.org/ 10.3390/socsci13120685

24. Bonvin S, Stiefel F, Gholam M, Bourquin C. Calling situated: a survey among medical students supplemented by a qualitative study and a comparison with a surveyed sample of physicians. BMC Med Educ 2022;22(1):619.

25. Lu GF, Luo Y, Huang MQ, Geng F. The impact of career calling on learning engagement: the role of professional identity and need for achievement in medical students. BMC Med Educ 2025;25(1):238.

26. Crossman JE, Clarke M. International experience and graduate employability: stakeholder perceptions on the connection. High Educ 2010; 59: 599–613.

27. Laura SM, Friedrich S, Mehdi G, et al. Calling: Never seen before or heard of- A survey among Swiss physicians. Work 2022;72(2):657-665.

28. Mollahaliloğlu S, Çulha ÜA, Kosdak M, et al. The migration preferences of newly graduated physicians in Turkey. Medical Journal of Islamic World Academy of Sciences 2014; 22(2):69–75.

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29. World Health Organization (WHO). International migration of health personnel: A challenge for health systems in developing countries. World Health Organization. https://apps.who.int/gb/ebwha/pdf_files/eb122/b122_16rev1-en.pdf (2008, accessed on 01 Aug 2025).

30. Organisation for Economic Co-operation and Development (OECD). Health at a Glance 2015: OECD Indicators, OECD Publishing, Paris, https://doi.org/10.1787/health_glance-2015-en (2015, accessed on 01 Aug 2025).

Table 1. Comparison of First-Year and Final-Year Medical Students on Psychological, Career, and Vocational Calling Factors

	Total (n=278)	1st year (n=140)	6th year (n=138)	p
Age (years), Mean ± SD	21.93 ±0.18	18.95± 0.72	24,97±0.76	<0.001
Current psychological state (1 very bad- 5 very good)	2.99±1.11	2.95±1.10	3.03±1.12	0.55
Was becoming a doctor your childhood dream job?				0.40
Yes	158(56.8)	83(59.3)	75(54.3)	
No	120(43.2)	57(40.7)	63(45.7)	
Enjoyment of studying medicine (1 very low-5 very high)	3.17±1.11	3.21±1.09	3.12±1.13	0.49
Satisfaction with future income in career*				0.05
Yes	68(24.5)	35(25.0)[a]	33(23.9)[a]	
No	129(46.4)	56(40.0)[a]	32(23.2)[b]	
No idea	81(29.1)	49(35.0)[a]	32(23.2)[b]	
Satisfaction with the healthcare system in Turkey (1 very low-5 very high)	2.42±093	2.53±0.89	2.30±0.95	**0.04**
Are you interested in working abroad?				**0.02**
Yes	158(56.8)	89 (63.6)	69(50.0)	
No	120(43.2)	51(36.4)	69(50.0)	
CVQ score				
Presence of calling	20.85±4.70	21.39±7.52	20.30±4.57	0.05
Search for calling	16.91±4.42	16.80±4.72	17.02±4.12	0.67

*post hoc **n=158 [a,b] indicate significant pairwise differences

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Table 2. Comparison of Medical Students Based on Their Willingness to Work Abroad

	Total (n=278)	Willing to go abroad (n=158)	Not willing to go abroad (n=120)	p
Age (years), Mean ± SD		21.58 ± 3.08	22.41 ± 3.09	**0.028**
Grade				**0.02**
First-year		89 (63.6)	51(36.4)	
Final year		69(50.0)	69(50.0)	
Satisfaction with future income in a career*				**<0.001**
Yes	68(24.5)	24(15.2)[a]	44(36.7)[b]	
No	129(46.4)	85(53.8)[a]	44(36.7)[b]	
No idea	81(29.1)	49(31.0)[a]	32(26.7)[a]	
Satisfaction with the healthcare system in Turkey (1 very low-5 very high)	2.42±093	2.25±0.92	2.63±0.89	**<0.001**
Foreign language proficiency				**0.006**
Yes	133(47.8)	87(55.1)	46(38.3)	
No	145(52.2)	71(44.9)	74(61.7)	
CVQ score				
Presence of calling	20.85±4.70	21.28±4.60	20.29±4.79	0.08
Search for calling	16.91±4.42	16.76±4.79	17.11±3.90	0.51

*post hoc [a,b] indicate significant pairwise differences