

# Trends in postgraduate professional orientation of young doctors graduated from the Medical University-Sofia

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## Abstract

Professional choice is a complex decision-making process, determined by social and personal factors, as it is driven not only by the needs of society but also by the interests, opportunities, needs, and inclinations of the individual. In view of this, this article will present and analyze data from an empirical study examining trends in the professional orientation of young doctors who have graduated from the Medical University-Sofia in 2021, 2022, and 2023.

## Keywords

Orientation, postgraduate, professional development, trends, young doctors

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## Introduction

The professional division of labor emerged in order to achieve the fullest utilization of people through their professional specialization, which in turn leads to the further development of the profession and professional differentiation. The profession represents a set of specialized and generalized functions or knowledge, skills, work habits, and formed abilities acquired through training or work, through which a person realizes himself, performing socially useful activity, determining his place in the social structure (Vodenitcharov 1986).

The profession is perhaps the only domain where the personality and society are closely and inseparably intertwined. Historical development and the stages of demographic transition through which humanity has passed convincingly show that the professional division of labor aims to achieve the fullest realization of individuals

through their professional specialization and their best unification within a certain socio-economic formation.

The need of the mature individual for self-affirmation is a single whole with his professional and labor activity and with the successful realization in it. For this reason, the professional choice is a complex decision-making process, determined by social and personal factors, since it is driven not only by the needs of society but also by the interests, opportunities, needs, and inclinations of the individual (Kirkov et al. 2024).

According to Ts. Vodenitcharov, 1986 the psychological profile of professions is reduced both to certain requirements for a person and their reverse impact on him, and to the personal aspirations and goals that a person achieves in his profession. Abilities are formed in the process of mastering and practicing professions, are functions of labor activity, and characterize the personality in work, its achievements, and its successes.

The division of labor is the first impetus for their manifestation and development. The following are considered to be signs of the concept of “ability”: the individual-psychic peculiarity of a person; the peculiarity determining the possibility of success in some activity; the peculiarity not reducible to specific knowledge, individual skills, and habits. Endowments are naturally conditioned prerequisites of abilities. Throughout all known human history, there is no example of a significant achievement in any field without the application of colossal labor. Abilities are not given once and for all. They develop and form in active, intense activity and are maintained by the fire of ambition (Vodenitcharov 1986).

The uniqueness of the medical profession has been known since antiquity, when the Father of Medicine, Hippocrates, in his works “On Honorable Conduct” and “On the Physician,” listed the rich palette of cognitive, temperamental, emotional, and character qualities that a good doctor must possess. Individuals who choose the medical profession face specific professional requirements that shape their personality much more fully only when this choice meets the capabilities and interests of young people.

The training of future young doctors in higher medical schools in the Republic of Bulgaria is a six-year course and is regulated by the Regulation on the Unified State Requirements for Acquiring Higher Education in the Specialty of Medicine and is conducted in accordance with the Higher Education Act, the Act on the Development of Academic Staff in the Republic of Bulgaria, and the internal regulatory documents of the respective medical university (Kirkov et al. 2022; Kirkov 2023). The training of medical staff does not end with their student training, during which they acquire theoretical and practical knowledge and skills and thus build labor and theoretical preparation for independently solving organizational, prophylactic, therapeutic-diagnostic, and other professional tasks (Kirkov 2023). The medical profession provides a rich opportunity for young doctors after completing their undergraduate education for postgraduate training, thus achieving professional differentiation among doctors to ensure that the current and future healthcare needs of Bulgarian citizens are met (Kirkov et al. 2024).

Postgraduate training of young doctors is carried out by higher medical schools in the Republic of Bulgaria and is regulated by the state through Regulation No. 1 of 2015 on acquiring a specialty in the healthcare system of the Council of Ministers. According to this regulation, postgraduate training varies between 3 and 5 years depending on the specialty chosen by the young doctors. According to the nomenclature of specialties in the healthcare system, medical staff in Bulgaria can choose from 61 clinical and 15 non-clinical specialties.

The purpose of this article is to present and analyze the trends in the postgraduate professional development of young doctors who graduated from the Medical University—Sofia in 2021, 2022, and 2023.

To achieve this purpose, the following TASKS were set and investigated:

- Study and analysis of the preferences of young doctors when choosing a specialty after completing their undergraduate education;
- Study of the expectations of young doctors for their future realization and the prerequisites for this;
- Identifying the motivations and conditions for choosing the postgraduate professional qualification of young doctors.

## Materials and methods of the study

The object of the study is the graduating students in medicine. The technical unit of observation is Medical University—Sofia. A questionnaire survey was distributed among the young doctors from Classes 2021, 2022, and 2023.

The study was conducted during the October 2021–December 2023 period in the city of Sofia and included 801 young medical doctors, whereby the percentage ratio of male to female participants was 41.70% to 58.30%, respectively (Table 1).

**Table 1.** Number of respondents in total and by gender who participated in the survey in the period October 2021–December 2023.

Class Year	Total	Male	Female
2021	274	110	164
2022	288	115	173
2023	239	109	130

A wide range of sociological and statistical methods are used in the survey: the documentary method; the questionnaire survey method—medical students from MU-Sofia were surveyed with an independently developed questionnaire card; descriptive analysis; analysis of variance; Pearson’s  $\chi^2$  test; and graphical analysis—for visualizing the results obtained. The indicators were assessed at the  $\alpha = 0.05$  level of significance.

The quantitative analyses were performed with the SPSS 17.0 statistical software package. MICROSOFT OFFICE products were used for tabular and graphical processing and presentation.

## Results and discussion

To explore the trends among young doctors who graduated from the Medical University—Sofia in the period 2021–2023 regarding the choice of specialty for their postgraduate qualification, we asked the first question of the survey. The results of Table 2 show that the most desired therapeutic specialties are “Cardiology,” in which there was an over two-fold increase in those wishing to pursue this specialty for the analyzed period, as well as “Pediatrics,” in which a peak of 12.33% was observed in 2022. Other desired specialties

from this group are “Psychiatry,” “Gastroenterology,” “Nephrology,” and “Neurology,” in which for the period 2021–2023, similar trends are observed with small variations in individual years, with the exception of “Endocrinology,” in which there was an over three-fold decrease (from 6.60% for 2021, up to 1.93% for 2023) of those wishing to specialize in this specialty for their postgraduate qualification. It is noteworthy that over the analyzed period, the percentage of those wishing to specialize in the major specialty “Internal Medicine” has also decreased almost threefold, which is due to the trend of the last 10 years for increasingly narrow specialization of medical staff in therapeutic specialties. From the group of surgical specialties, as can be seen from Table 2, the most desired among graduated doctors in the analyzed period are “Surgery,” in which a slight rate of increase is observed, and “Obstetrics and Gynecology,” in which there is an almost twofold increase in those wishing to specialize in this specialty. It is noteworthy that among young doctors graduated in the period 2021–2023. There is an over twofold increase from (5.20% in 2021 to 12.22% in 2023) in those wishing to specialize in “Anesthesiology and Intensive Care,” which may be due to the acute need and shortage of these specialists who were tested by health systems during the COVID-19 pandemic. There is also a constant interest, with small variations across the years, in the specialties “Ophthalmology” and “Dermatology and Venereology”. The share of respondents expressing a desire for professional development in non-clinical specialties for the entire analyzed period is extremely low. Throughout the three years of the study, an almost similar trend has persisted among respondents who have not decided which healthcare specialty to pursue.

**Table 2.** In which field of medicine do you plan to specialize after completing your higher education?

Reply	2023	2022	2021
Anesthesiology and Intensive Care	12.22%	6.00%	5.20%
Surgery	9.97%	8.66%	7.00%
Midwifery and Gynecology	9.36%	7.00%	5.60%
Cardiology	8.39%	9.00%	3.80%
Pediatrics	6.75%	12.33%	5.80%
Ophthalmology	4.82%	5.66%	4.20%
Psychiatry	3.86%	1.33%	3.40%
Internal Medicine	3.86%	7.30%	10.02%
Dermatology and Venereology	3.22%	2.23%	4.40%
General Medicine	3.22%	1.66%	3.00%
Imaging	2.57%	3.33%	6.40%
Gastroenterology	2.25%	5.00%	3.20%
Clinical Immunology	2.25%	1.00%	0.00%
Endocrinology	1.93%	2.66%	6.60%
Orthopedics and Traumatology	1.93%	4.66%	5.60%
Nephrology	1.28%	2.33%	1.90%
Neurology	1.28%	1.66%	0.60%
Infectious Diseases	1.00%	1.00%	4.40%
Otorrhynolaringology	1.00%	1.00%	0.00%
Pathology	0.64%	1.00%	0.00%
Pulmonology	0.64%	0.66%	0.00%
Emergency Medicine	0.64%	0.66%	1.00%
Non-clinical specialty	0.32%	0.87%	0.32%
Undecided	16.90%	13.00%	17.56%

The planning of the professional and labor development of doctors is a complex process influenced by numerous determinants. The leading determinants among young doctors when choosing a specialty are, on one hand, economic factors, i.e., the opportunities that the respective specialty provides for additional work and income in private outpatient practice or in ambulatory medical care (Michalik et al. 2024). On the other hand, determinants such as gender and personal preferences/interests in the respective specialty, since it has been proven in practice that most surgical specialties require greater physical endurance from doctors than usual, given the high workload and the lack of predictability of the duration of the respective surgery, which defines these specialties as “demanding” or more “masculine.” On the third hand, there are determinants related to working conditions and, more specifically, the balance between personal and professional life. Since this group of factors is of crucial importance, consider that some of the specialties are accompanied by a high workload, difficult shifts, both day and night, and work in addition to hospital conditions and outpatient settings. All this defines these specialties as burdensome for the psycho-emotional health of the individual, which in turn inevitably affects the doctor’s family and personal life (Smith et al. 2017; Kumwenda 2019; Michalik et al. 2024).

The second question of the survey examines the expectations of young doctors graduating in the period 2021–2023 regarding their future career development. The analysis of the data in Table 3 shows that in all three years of the survey, approximately 90% of respondents see themselves as doctors in clinical practice, and a gradual increase is observed (from 5.90% in 2021 to 8.99% in 2023) among respondents expecting to realize themselves as general practitioners or specialists in pre-hospital care. In all three years, less than 3% of the participants in the survey intend to pursue a career as researchers, which in turn requires them to continue their work in a university hospital and to go through a competition for an academic position at one of the higher medical schools or to develop as scientific and teaching staff in one of the non-clinical departments of the medical universities. The trend is similar among respondents (about 0.50% each year) who see their career in one of the health institutions of the state health service, dealing with the organization of the healthcare system and with public healthcare trends and problems.

**Table 3.** How do you see your future career development?

Reply	2023	2022	2021
As a doctor in clinical practice	87.11%	86.75%	89.10%
As a doctor in pre-hospital care (GP, specialist)	8.99%	8.00%	5.90%
As a research worker	2.73%	3.00%	2.40%
As a medical representative for a pharmaceutical company	0.78%	1.75%	2.00%
In an administrative structure (MoH, NHIF, etc.)	0.39%	0.50%	0.60%

To explore the respondents' opinions regarding their expectations of whether they will have better career opportunities in Bulgaria or abroad, we asked the third question in the survey. The results show that during the analyzed period, there was an increase of about 13% in those wishing to continue their professional and labor path in Bulgaria (Table 4). The analysis of these data indicates a reversal of the trend of the last 10 years, with more than 50% of those graduating from „medicine“ in Bulgaria seeking their professional opportunities abroad.

**Table 4.** In your opinion, where can you achieve better career opportunities?

Reply	2023	2022	2021
In Bulgaria	62.5%	50%	49%
Abroad /highly developed EU countries and the USA/	37.5%	50%	51%

To clarify the motivations of young doctors who graduated in the period 2021–2023. for their desire to pursue a career in Bulgaria, we asked the following question in the empirical study. The analysis of the data from Table 5 shows that among this group of respondents, a similar trend is observed among the leading reasons for their desire to work in Bulgaria, namely „National consciousness and moral obligation to Bulgaria“, as well as „Family and friends“, i.e. on the one hand, the moral obligation to the homeland, which has invested in their development as individuals, in order to guarantee the future provision of the health needs of Bulgarian society, and on the other hand, the family and social environment of the individual. It is noteworthy that the growth rate among respondents from this group (from 23.11% for 2021. up to 30.86% for 2023), who point out as a reason for pursuing a professional career in Bulgaria the easier „development of personnel in Bulgaria.“

**Table 5.** Your desire to pursue a career in Bulgaria is due to.

Reply	2023	2022	2021
National self-awareness and moral obligation to Bulgaria	31.58%	29.28%	30.21%
Family and friends	30.86%	27.00%	29.34%
Human resource development in Bulgaria becomes much easier	30.86%	28.56%	23.11%
Life is much better in Bulgaria	4.45%	9.00%	9.67%
Higher level of medical science and practice	1.79%	4.00%	3.39%
Other	0.46%	2.16%	4.28%

To clarify the motivations among the significant percentage of young doctors who would like to work abroad, the following question was asked in the survey. The data from Table 6 show that the leading motivation for seeking work abroad among the respondents is “better material remuneration,” i.e., economic determinants, and for the analyzed period there was an increase in the relative share of this motivation. Next, with about and a little over 20% for the individual years of the survey, respondents indicated “the better organization of the healthcare system” of highly developed countries in the EU and the USA.

**Table 6.** Your desire to pursue a career abroad is due to.

Reply	2023	2022	2021
Better material compensation	39.58%	39.28%	30.21%
Better organization of the healthcare system	19.79%	18.71%	24.66%
Human resource development in Bulgaria is becoming much more difficult	16.86%	14.85%	15.11%
Higher level of medical science and practice	16.86%	16.00%	20.35%
Life is much better abroad.	6.45%	8.00%	5.39%
Other	0.46%	3.16%	4.28%

The final question of the empirical study examines and analyzes the opinion of young doctors who graduated in the period 2021–2023 from Medical University—Sofia, regarding the conditions for their successful professional development. As can be seen from Table 7, for the analyzed period, there is an increase rate of about 15% of respondents who indicate as the leading condition „Quality education,“ consisting of the material and technical infrastructure, teachers, and curricula, which is in line with the traditional first position of MU-Sofia in recent years in the Rating System of Higher Education Institutions in the Republic of Bulgaria. About 1/3 of the respondents in all three years answered with „Motivation and desire,“ a similar percentage of respondents in the period 2021–2023, indicating as a condition for their professional success „Persistence and patience.“ The analysis of the data shows that the development of medical personnel is a complex process, uniting both the personal qualities and preferences of individuals, as well as numerous social determinants that cannot be influenced by young doctors but are determined by the respective country, through the organization of the health system and the organization of higher medical education (Kirkov et al. 2024).

**Table 7.** In your opinion, what is the most important condition for successful career development?

Reply	2023	2022	2021
Quality education /base, teachers, curricula/	48.44%	35.63%	33.80%
Motivation and desire	36.33%	33.37%	33.20%
Persistence and patience	15.23%	16.75%	19.40%

## Findings

The quality of human capital in healthcare systems is determined to the maximum extent by its professional education and training, which is a complex and multifaceted process of national importance for each country. The relationship between the level of training, potential, and competitiveness of medical specialists and the state of the healthcare system, whose main function is to meet the current and future health needs of the population served, is particularly strong.

Based on the results of an empirical study on the trends in the career development of young doctors who graduated from the Medical University of Sofia in the period 2021–2023, we conclude that professional orientation is a process that unites both the personal characteristics and preferences of individuals, as well as numerous societal determi-

nants. As can be seen from the data analysis, a significant share of the respondents in the study will pursue a career as doctors in clinical practice, choosing specialties according to their personal characteristics, allowing them, on the one hand, a balance between the professional and family-life environment, and on the other hand, providing them with opportunities for additional work and income in private and outpatient practice. The leading reasons among this group of young doctors are the economic determinants. During the analyzed period, there is also a reversal of the well-known trend of the last ten years; more than half of the young graduating doctors in Bulgaria sought professional careers abroad, with the larger share of young doctors seeing their professional and work path in Bulgaria and indicating, on the one hand, the quality training and qualification they receive at MU-Sofia, and on the other, personal motivation and desire, as a leading condition for this.

## Conclusion

Therefore, the provision and production of quality medical personnel is of strategic importance for every society in order to carry out healthcare activities based on the best examples of medical knowledge and health practice, in accordance with ethical principles and standards and on the basis of scientific evidence.

## Author's notes

This study was approved and supported by the authorities of the Medical University in Sofia. Medical University, as a higher education institution, is subject to regular external quality assurance by an agency, which has successfully

demonstrated that it meets the standards and guidelines for quality assurance in the European Higher Education Area (EHEA) through a registration in the European Association for Quality Assurance in Higher Education (EQAR).

## Additional information

### Conflict of interest

The author has declared that no competing interests exist.

### Ethical statements

The authors declared that no clinical trials were used in the present study.

The authors declared that no experiments on humans or human tissues were performed for the present study.

The authors declared that no informed consent was obtained from the humans, donors or donors' representatives participating in the study.

The authors declared that no experiments on animals were performed for the present study.

The authors declared that no commercially available immortalised human and animal cell lines were used in the present study.

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The funding agencies have no role in the design, conduct, data analysis, or report preparation for the study.

### Author contributions

The author solely contributed to this work.

### Data availability

All of the data that support the findings of this study are available in the main text.

## References

- Grancharova G, Velkova A, Aleksandrova S (2009) Social medicine, Pleven.
- Kim YY, Kim UN, Kim YS, Lee JS (2016) Factors associated with the specialty choice of Korean medical students: a cross-sectional survey. *Hum Resour Health* 14(1): 45. <https://doi.org/10.1186/s12960-016-0141-8>
- Kirkov V (2023) A training quality optimisation model for the undergraduate internship in Medical university – Sofia, Sofia 2023. PhD Thesis, Medical University of Sofia.
- Kirkov V, Zlatanova-Velikova R, Vodenicharova Al, Leventi N (2022) Quality of the practical education during undergraduate internship at the Medical university Sofia. *Acta Medica Bulgarica* 49(4): 48–53. <https://doi.org/10.2478/amb-2022-0042> [ISSN: 0324-1750]
- Kirkov V, Zlatanova-Velikova R (2022) Approaches and methods for quality assurance of medical education in Bulgaria regulated in normative documents. *Man, society medicine, Kardzhali*, 380-386. [ISBN 978-954-652-037-1]
- Kirkov V (2024) The impact of the COVID-19 pandemic on the quality of higher medical education. *Pharmacia* 71: 1–5. <https://doi.org/10.3897/pharmacia.71.e128039>
- Kirkov V, Vodenicharova A, Ivanova K, Markova K (2024) Trends and motives in the post-graduate professional orientation of the young doctors of the 2023 class of Medical University-Sofia. *Pharmacia* 71: 1-5. <https://doi.org/10.3897/pharmacia.71.e138245>
- Kumwenda B, Cleland J, Prescott G, Walker K, Johnston P (2019) Relationship between sociodemographic factors and specialty destination of UK trainee doctors: a national cohort study. *BMJ Open* 9: e026961. <https://doi.org/10.1136/bmjopen-2018-026961>
- Law on Higher Education in the Republic of Bulgaria (2020) Law on Higher Education in the Republic of Bulgaria.
- Law on Public Education in the Republic of Bulgaria (2015) Law on Public Education in the Republic of Bulgaria.
- Papapanou M, Routsis E, Tsamakidis K, Fotis L, Marinos G, Lidoriki I, Karamanou M, Papaioannou T G, Tsiptsios D, Smyrnis N, Rizos E, Schizas D (2021) Medical education challenges and innovations during COVID-19 pandemic. *Postgraduate Medical Journal* 98(1159): 321–327. <https://doi.org/10.1136/postgrad-medj-2021-140032>
- Petrova-Gotova Ts, Markova K, Penev L, Kirkov V (2024) Investments in scientific teaching staff – main determinant of quality medical ed-

- ucation. *Acta Medica Bulgarica* 51(2): 1–5. <https://doi.org/10.2478/amb-2024-0016> [ISSN: 0324-1750]
- Michalik B, Kulbat M, Domagała A (2024) Factors affecting young doctors' choice of medical specialty-A qualitative study. *PLoS ONE* 19(2): e0297927. <https://doi.org/10.1371/journal.pone.0297927>
- Ministry of health – Republic of Bulgaria. National Health Strategy 2021-2030 (2021) Ministry of health – Republic of Bulgaria. National Health Strategy 2021-2030. <https://www.mh.government.bg/bg/politiki/strategii-i-kontseptsii/strategii/proekt-na-nacionalna-zdravna-strategiya-2030/>
- Regulation No. 1 (2015) On acquiring a specialty in the health care system of the Council of Ministers. [13.06.2023]
- Regulations for management, structure and criteria of a system for evaluating and maintaining the quality of education and the academic staff at MU-Sofia (2019) Regulations for management, structure and criteria of a system for evaluating and maintaining the quality of education and the academic staff at MU-Sofia, adopted by decision of the Academic Council dated 23.07.2019. <https://mu-sofia.bg/za-universiteta/normativni-dokumenti/pravilnici-mu/> [found on 05/01/2024]
- Regulations for preparation and organization of the 2020/2021 academic year at MU-Sofia (2024) Regulations for preparation and organization of the 2020/2021 academic year at MU-Sofia. <https://mu-sofia.bg/za-universiteta/normativni-dokumenti/pravilnici-mu/> [found on 01.05.2024]
- Regulations for the organization and activities of Medical University-Sofia (2024) Regulations for the organization and activities of Medical University-Sofia. <https://mu-sofia.bg/za-universiteta/normativni-dokumenti/pravilnici-mu/> [found on 01.05.2024]
- Regulations for the organization and conduct of educational practices and internships at Sofia University (2024) Regulations for the organization and conduct of educational practices and internships at Sofia University. <https://mu-sofia.bg/za-universiteta/normativni-dokumenti/pravilnici-mu/> [found on 01.05.2024]
- Smith V, Bethune C, Hurley K (2017) Examining Medical Student Specialty Choice Through a Gender Lens: An Orientational Qualitative Study. *Teaching and learning in medicine* 30: 1–12. <https://doi.org/10.1080/10401334.2017.1306447>
- Soethout MBM, Heymans MW, Olle J (2008) Career preference and medical students' biographical characteristics and academic achievement. *Medical Teacher* 30(1): e15–e22. <https://doi.org/10.1080/01421590701759614>
- Southworth E, Gleason SH (2021) COVID 19: A Cause for Pause in Undergraduate Medical Education and Catalyst for Innovation 33: 125–142. <https://doi.org/10.1007/s10730-020-09433-5> [Published: 22 January]
- UNESCO (1989) International Conference on Education. 41<sup>st</sup> session. Higher Education Policy and Strategy and its Diversification, Paris.
- Vodenitcharov Tz (2018) *Beyond the Limits of the Possible*. GorexPress.
- Vodenitcharov Tz (1986) *Profession doctor. Medicine and physical education*.
- Vodenitcharov Tz, Borisov V (2021) *The Public Health Phenomenon in a Changing World, Second Revised Edition*. Gorex Press. [ISBN 978-954-616-311-0, c. 229]
- Vodenitcharov Tz (1992) *Way in medicine, Sofia*.
- WHO (2019) *The Global Action Plan for Healthy Lives and Well-being for All (SDG3 GAP)*. <https://www.who.int/initiatives/sdg3-global-action-plan>