

MAIN TRENDS IN MIGRATION OF ROMANIAN PHARMACISTS BETWEEN 2015 AND 2022

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Abstract

Romanian pharmacists tend to relocate to more developed countries, as also happens in other European states. In this study, we have addressed a relevant issue for the national health system in landscaping the migration phenomenon of professional pharmacists. Descriptive analysis has been conducted based on the reports of current professional certificates issued by the competent authority. The main finding is the consistency of the migration phenomenon, which seems almost significantly unaffected by economic crises, Brexit or the COVID-19 pandemic. The authorities should take charge and adopt measures that will retain and ease the pharmacists' return to their home country, providing, at the same time, the modernisation and improvement of the healthcare system and increasing the patients' accessibility to qualitative pharmaceutical care.

Rezumat

Farmaciiștii români aspiră să se mute în țări mai dezvoltate, așa cum se întâmplă și în alte state europene. În acest studiu, am abordat o problemă relevantă pentru sistemul național de sănătate referitoare la descrierea fenomenului de migrație a farmaciștilor. Analiza descriptivă a fost efectuată pe baza rapoartelor certificatelor profesionale în vigoare emise de autoritatea competentă. Constatarea principală este consistența fenomenului migrației, care pare a nu fi afectat semnificativ de crizele economice, Brexit sau pandemia de COVID-19. Autoritățile ar trebui să preia și să adopte măsuri care să rețină și/sau să faciliteze întoarcerea farmaciștilor în țara de origine, realizând, în același timp, modernizarea și îmbunătățirea sistemului de sănătate și creșterea accesibilității pacienților la îngrijiri farmaceutice de calitate.

Keywords: pharmacists, migration, current professional certificate, healthcare

Introduction

Worldwide, in recent years, there has been an increase in the migration of physicians, pharmacists and nurses, in fact, all categories of health workers. Healthcare professionals leave their home countries searching for better working conditions and career opportunities (advancing or specialising in monitoring the therapy, surveilling the administration and use of food supplements, examining the antibiotic consumption) and prefer the states with more advanced economic and medical systems. [1, 2, 8, 11].

This phenomenon has been debated in the specialised medical literature and journals on bioethics, economics and sociology [3-5].

International organisations produce numerous studies and statistics to suggest policies leading to balancing the figures that characterise one country or another [14, 15, 16, 19].

According to Eurostat statistics, in 2020, over 2 million emigrants have left an EU Member State [19, 21]. This value is not just about flows migration to or from the European Union but also the flows recorded between the different Member States. Of the EU member states, 24 have one higher share of immigration than emigration, considered importing countries in 2020 (Germany reported 728,600 immigrants, Spain 467,900, France 283,200 and Italy 247,500). However, in Croatia, Latvia and Romania, the number of emigrants has exceeded the number of immigrants. Official statistics from Romania estimate the annual flows of international migration in the database the provisions of Regulation (EC) no. 862/2007 [20]. Components definitions of international migration provided for in the regulation delimit the number of emigrants, respectively immigrants according to the notion of residence ordinary and the criterion for 12 months and over. An additional remark is related to the definition of immigrants, which includes people

who "return home" after having established habitual residence in another state for 12 months or more.

Between 2003 and 2018, the flow of people who left our country for at least 12 months recorded significant variations from one year to another [19, 21]. However, especially from one period of economic development to another, international migration is also influenced by the social and political context of the national and European communities [22].

An outstanding specific feature of international migration is circular migration or the exchange of inter-state populations. The person's nationality or domicile are no longer criteria essential for defining the concept of international migration [18, 23]. For example, Romanian immigrants registered in countries that until 2010 were natural reservoirs in terms of international migration (Italy and Spain) are supposed to have "emigrated" to the United Kingdom and Germany, the main criterion being economic and political stability.

The year 2012 marked a balance of the annual flow of immigrants and emigrants from Romania, given that the year 2007 was considered the peak of departures abroad [21].

At the national level, access to health care services depends mainly on the existence and distribution of the health system's infrastructure, human and financial resources available. The small number of medical units in rural areas, especially hospitals, distances too far to a specialist clinic, costs or waiting lists are the most relevant factors determining the disparities in population access to medical services. Such obstacles, although indirect, adversely affect the state general health of the population. In essence, a high level of well-being reflects a state of better health and better coverage of medical needs, which produces this.

From 1990 to the present, inequalities in the population's access to health services have remained between areas of residence (rural and urban) and different development regions.

The differences are in terms of the number of pharmacists and the average medical staff in 2018. The number of inhabitants belonging to a pharmacist in rural areas was almost four times higher than in urban areas.

The population's access to medical services is different, between urban and rural, and in territorial profile. Thus, in 2018, in all regions of the country, the number of consultations given to patients with domiciles in urban areas was higher. However, the region stands out South-Muntenia. The difference between the weights of the consultations by areas of residence in the unlimited consultations in the region in 2018 was only 5.8 percentage points in favour urban environment [16, 19].

Although the most significant disparities in an average of residence were registered, in 2018, in the Bucharest-Ilfov Region, this situation is an exception, given

that the rural environment is found only in Ilfov County, which is not a large county in terms of population.

However, the number of units providing medical services has steadily increased, and specific categories of units have disappeared permanently, especially in rural areas (e.g. rural polyclinics, pharmacies) [21]. The most significant increases were registered among pharmacists from 2005 to 2018. Their number reached 17.6 thousand in 2018. Between 2005 and 2018, the number of pharmacists *per* 10,000 inhabitants elevated from 4.4 to 9.0.

In this study, we have analysed the migration phenomenon of Romanian pharmacists, which, among other health professionals, may decide to exercise their right to work and live in another country. The resettlement is a growing trend that confirms the workers' discontent with the national healthcare systems and policies adopted.

This research is actual and relevant because the loss of pharmacists' means sacrificing the expenditures invested in the education and training of human resources, a decrease in competitiveness, a reduced innovation potential, and less attractiveness for development, all of these affecting the national economy and the well-being of the citizens.

The migratory flow can only be reduced, not stopped. The responsibility for identifying the modalities of an intervention lies with the donor states, including Romania. They can and must take the necessary measures to encourage the circular migration of professionals, thus enabling the development and modernisation of the national healthcare system through the transfer and use of specific practices and attitudes [7].

Materials and Methods

The materials used were the reports on the current professional certificates (CPC) issued by the Romanian College of Pharmacists in the last eight years [12]. Romanian pharmacists must prove their professional qualifications in the following situations: working abroad, advancing in management or superior positions, and setting up a pharmacy [13, 17]. We analysed the requests from pharmacists who wanted to work in a different country. The number of pharmacists, gender, country of destination, and geographical home region (according to the county) were evaluated.

Statistical analyses

Statistical analyses was performed using the Helmer-Pearson non-parametric test and the formula:

$$\chi^2_{(R-1)(C-1)} = \sum (O_i - E_i)^2 / E_i,$$

where, R = number of rows and C = number of columns of the contingency tables.

Results and Discussion

According to collected data, 1123 Current Professional Certificates (CPC) were asked for in the analysed

period. The number of certificates demanded was high in 2015 (198) and 2016 (228), then decreased to 146 and 123 respectively in 2017 and 2018 (Figure 1).

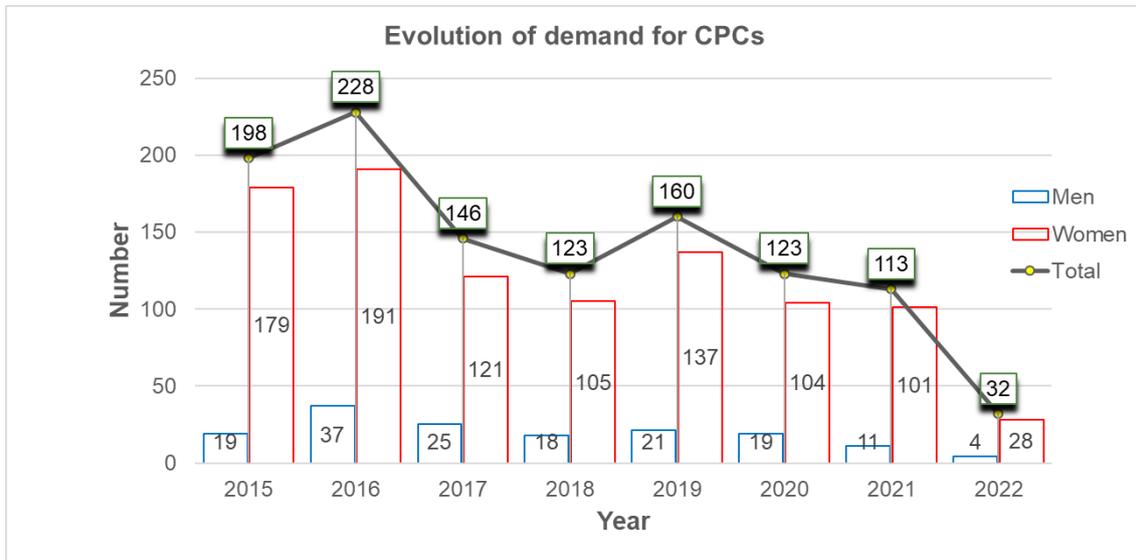


Figure 1.
Number of CPCs requested between 2015 and 2022

The national economic crisis explains the decrease in CPC applications required for the migration of Romanian pharmacists observed in 2017 and 2018. Economic recovery followed, and requests increased in 2019 (160). The cycle 2020 - 2022 was dominated by the COVID-19 pandemic, when Romania, similar to

other countries, applied measures to restrict population mobility which was reflected in a lower demand for current professional certificates for pharmacists (123 in 2020, 113 in 2021 and 32 in 2022). Concerning the gender distribution, significantly more CPCs were issued for women than for men in the analysed period.

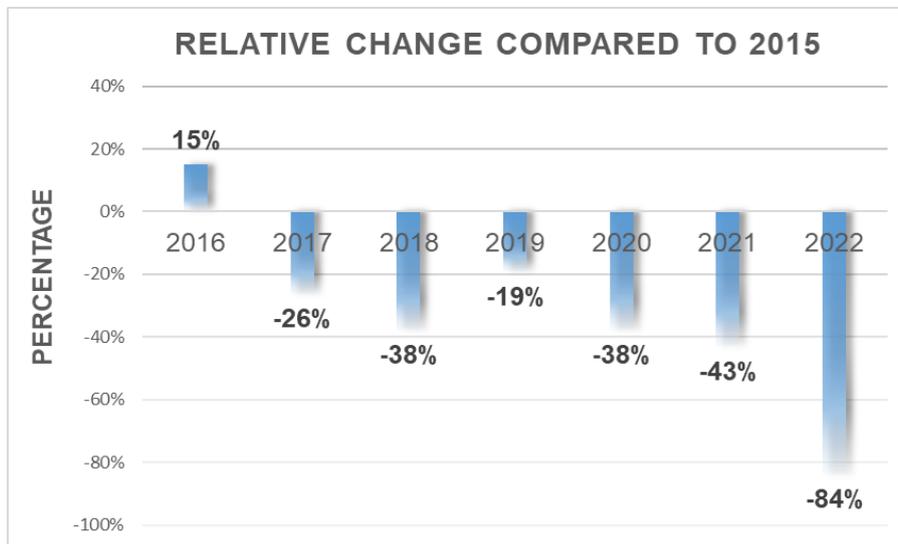


Figure 2.
Evolution of the relative change between 2016 - 2022

The tendency of pharmacist's migration decreased continuously compared with the values from 2015, the most significant discrepancies being observed in 2018 (with 38% fewer applications) in the context of the economic crisis and 2021-2022 (with 43% less)

As presented in Figure 2, 2016 was the only year when more CPCs were issued than in 2015 (an increase of 15%), suggesting that health professionals are dissatisfied even in times of economic stability. The leading causes for which pharmacists, similar to physicians, want to practice abroad are political turmoil,

the downward trend in public resources, low wages, low working standards, limitations in financial, human and logistical aspects, the discretionary cost-quality-

opportunity ratio of medical and pharmaceutical services, the perspective of professional development and the professional status [2, 5, 9, 10].

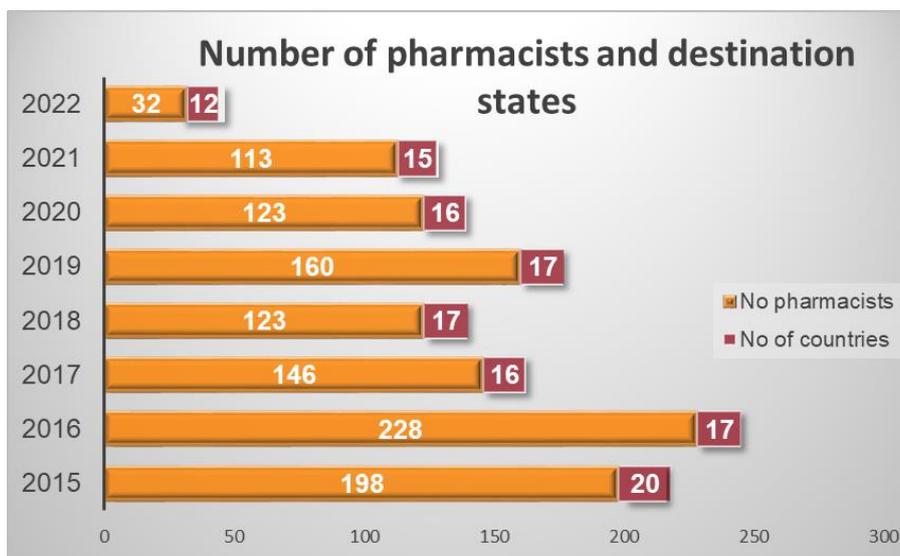


Figure 3.
Evolution of the number of pharmacists and their preferred emigration states

From the data presented in Figure 3, it is observed that the decreasing trend is also maintained regarding the number of states in which Romanian pharmacists choose to emigrate: out of 20 in 2015 to just 15 in 2021. The preferred destination countries are located on four continents: Europe, America, Africa and Australia

(Figure 4). The number of applicants that have chosen Europe as the destination is significantly higher (over 100 each year, in 2016 more than 200, the exception been 2022 - only 30) compared to the other three mainland.

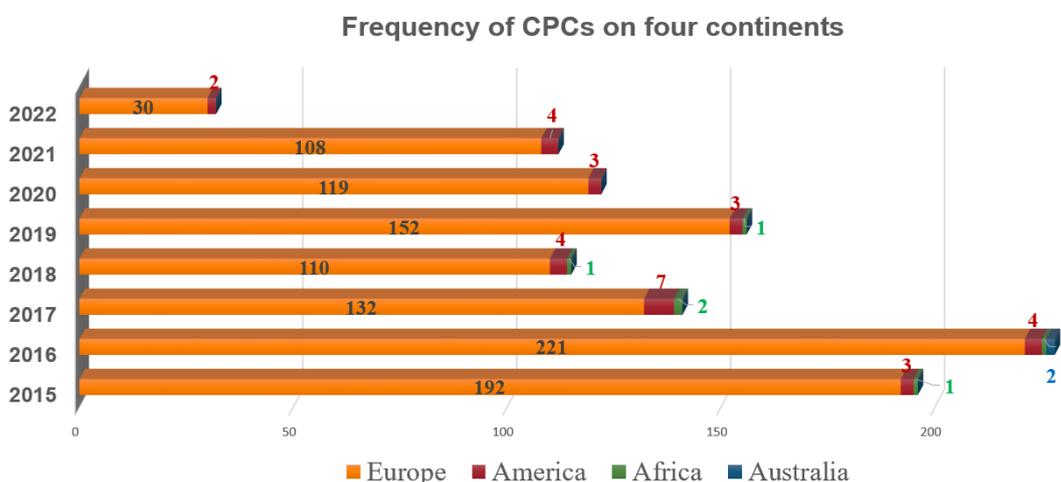


Figure 4.
Distribution of the number of CPCs between 2015 and 2022

This fact can be explained by the closeness of European countries as opposed to the United States, Canada and Africa. Another reason is the freedom of movement inside the common European market with simplified procedures to recognise professional qualifications.

The phenomenon of circular migration is also a determinant when choosing the destination continent. Some pharmacists consider returning to Romania after training and developing different competencies, and this is easier and less costly in Europe than in America or Africa.

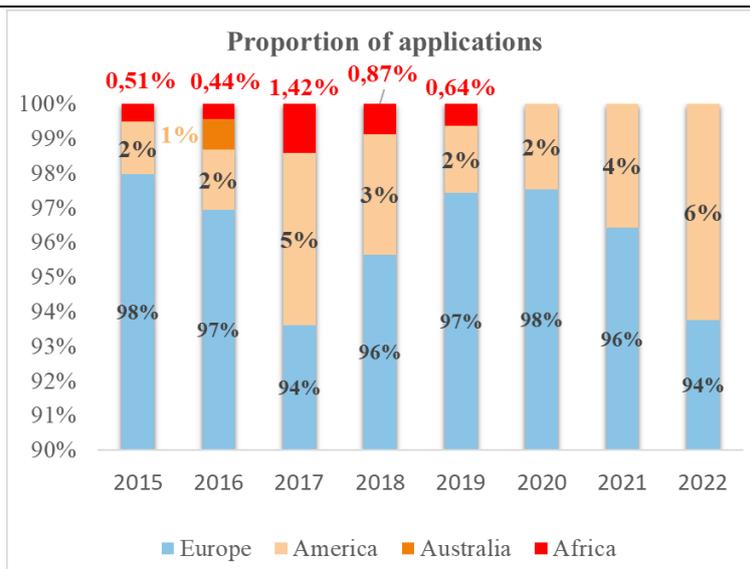


Figure 5.
Distribution of migrant Romanian pharmacists

As shown in Figure 5, over 90% of pharmacists choose to migrate to another European country. 2% to 6% prefer the United States and Canada, and only 1% Australia and Africa (United Arab Emirates). The percentages remained unchanged in the pre-COVID-19 (2015 - 2019) and COVID-19 periods (2020 - 2022). The high values (more than 90%) suggest that the reasons and motivation for movement became fundamental needs for these citizens, not just a temporary caprice.

We used the Helmer-Pearson test (χ^2) to compare the distribution of CPC applications during the analysed period. The tested hypothesis were: H_0 : The distribution of the number of applications does not differ significantly, with a 95% confidence between the four continents vs. H_A : The distribution of the number of applications is different between the continents. The results are presented in Table I.

Table I
Comparison of the distribution of the number of applications on four continents

Year	Observed O_i						Expected E_i					
	Europe	United States	Canada	Australia	Middle East	Total	Europe	United States	Canada	Australia	Middle East	Total
2015	192	2	1	0	1	196	189	3	2	0	1	196
2016	221	1	3	2	1	228	220	3	3	0	1	228
2017	132	6	1	0	2	141	136	2	2	0	1	141
2018	110	2	2	0	1	115	111	2	1	0	1	115
2019	152	0	3	0	1	156	151	2	2	0	1	156
2020	119	1	2	0	0	122	118	2	2	0	1	122
2021	108	2	2	0	0	112	108	2	1	0	1	112
2022	30	2	0	0	0	32	31	0	0	0	0	32
Total	1064	16	14	2	6	1102	1064	16	14	2	6	1102

$$\chi^2_{(8-1)(5-1)} = \chi^2_{28} = 31,68 < 41,33 = \chi^2_{28 \text{ from tables}}$$

a result that confirms the H_0 hypothesis that the distributions of applications between Europe, the USA, Canada, Australia and the Middle East are not significantly different over the years.

The findings obtained after applying the Helmer-Pearson test for distribution of Europe applications showed significant variability between the seventh regions (Central, Northern, Northwestern, Southern, Southeastern, Southwestern and Western Europe)

$$\chi^2_4 = 224,20 >> \chi^2_{42} \text{ from the statistical tables} = 58,124.$$

The results concerning the demand in specific European regions (Figure 6) indicated that most Romanian pharmacists prefer the Northwestern (England - 469 requests), followed by Central (238 requests: Germany 205, Switzerland 17, Austria 12 and Hungary 4), Northern (Sweden 66, Norway 18, Denmark 4) and Western Europe (186 requests: Ireland 75, France 66, Belgium 39, Luxembourg 6, Netherlands 6, Scotland 1). There were only two requests for Southeastern European states (Bulgaria and Moldova), both in

2018, probably because of the start of the financial crisis in Romania.

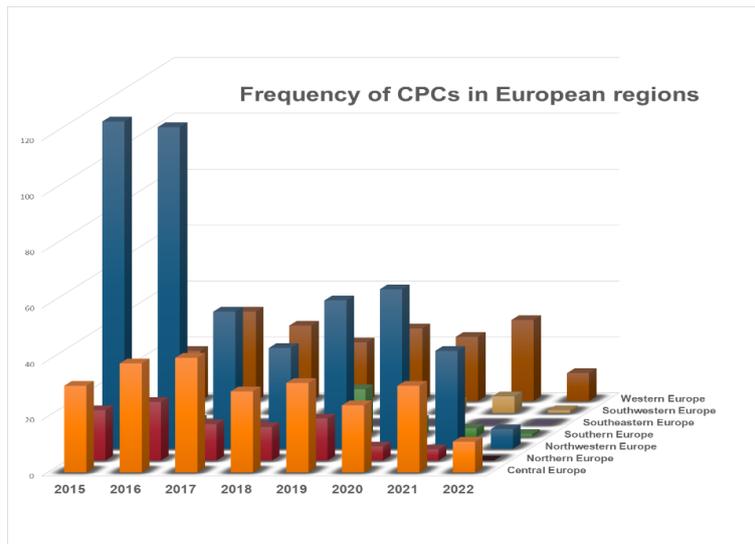


Figure 6.
Trends in the distribution of CPC applications in Europe

At the top of the countries regarded as potential destinations are the United Kingdom, Germany, France, Sweden, Belgium, Switzerland and Austria.

The main reasons for choosing those states were: the expectancy of a higher standard of living than in Romania, the attractive and easily accessible promotion, publicity (YouTube), the possibility of employment full time and part-time (up to 5 hours a day) also in the industry for medical and healthcare jobs. The

salary is motivating and may grow depending on the accumulated experience. There are also offered retirement plans, health insurance, and opportunities for professional development - internal and external courses.

COVID-19 restrictions in the last years and the process of Brexit determined a reduction in the number of applicants for the United Kingdom (57 in 2020, 35 in 2021).

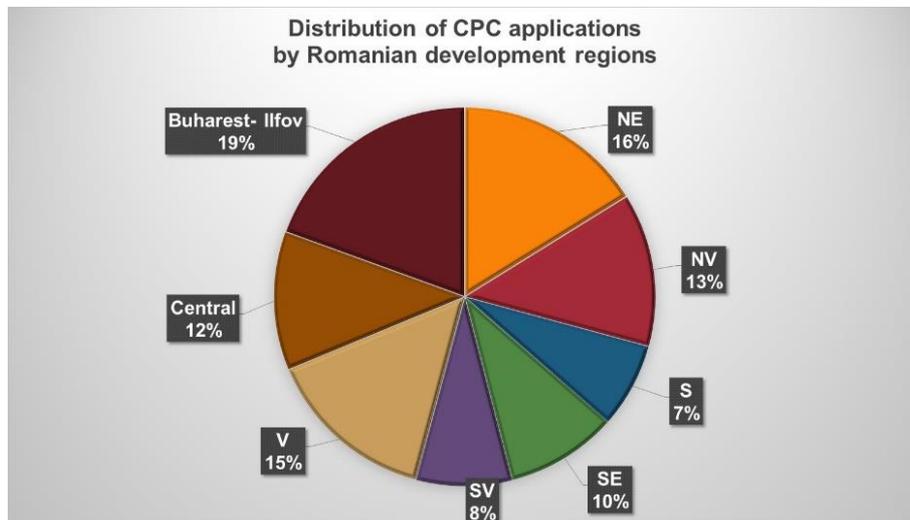


Figure 7.
Dispensations of current professional certificates among developing regions of Romania

Referring to the applications for CPCs in the eight developing regions (Bucharest-Ilfov, Central, West, Southwest, South East, South, North West, North East), the observed frequencies were slightly higher in the northern regions (16% in NE, 13% in NV) compared to the southern ones (7% S, 8% SV, 10%

SE). The exception is represented by the Bucharest-Ilfov part, where there were registered 19% of the requests, a proportion not much higher than in the other areas, considering the density of the pharmacist population.

The World Health Organization [15, 23] recommends adopting a global strategy for human resources, because resettlement can also affect positively, not only negatively, the development of a healthcare system. To control the migration of health professionals and promote the returning home after developing new competencies and abilities, WHO urges all nations to implement effective policies to strengthen health systems, train, retain the workforce and increase health financing by 2030.

The Romanian authorities should consider the apparent imbalance in the cost of training a pharmacist and the lack of following benefits when he chooses to emigrate. They are leaving from all eight developing regions of Romania, concluding that migration is a nationwide phenomenon. Considering that the dissatisfaction with the health system management continued throughout the analysed period, we can ascertain those measures are needed.

The main actions that the Romanian authorities should take in order to control the pharmacist migration better can be: to ensure decent wages (for both community and hospital pharmacists), improve the working conditions (suitable endowment, modernisation of hospitals), create opportunities for professional development and job promotions and also adopt measures (public campaigns, public conferences) for restoring patient's trust and respect in the pharmacists. In order to have the expected effect, these acts need to be politically regulated because the economic consequences of the international migration of pharmacists from the health system are felt at the social level.

Conclusions

The migration of pharmaceutical staff is a global phenomenon that affects the states regardless of their development level. The results of our study attested that liberalisation of the labour market had facilitated the migration of Romanian pharmacists, as in the case of other health professionals.

Our research analysed recent data on the number of current professional certificates issued by the Romanian College of Pharmacists between 2015 and 2022. The pursued goal was to provide an image of the migration of pharmacists and its effects on healthcare. The relocating trend continues during the evaluated period, registering a decrease caused by the COVID-19 pandemic. The destination countries attract pharmacists using motivating salaries, technical endowments and professional development opportunities. A migration regression is expected only when the developed destination countries become saturated. The countries favoured by emigrants United Kingdom, France, Germany, Sweden, Belgium and Norway, are also confirmed by the national and international statistics published over time.

Migration cannot be stopped without breaching human rights to free movement, self-improvement and a better quality of life. However, a feasible and sustainable approach to pharmacist migration is a must in Romania to prevent the shortage of professionals and limit the community's access to professional and quality healthcare services.

Conflict of interest

The authors declare no conflict of interest.

References

1. Boboia A, Florea LS, Turcu-Știolică A, Tăerel AE, Rais C, Revnic C, Florea A, Vedeanu NS, Nastasă C, Oniga O, Decision analysis of antibiotic use. *Farmacia*, 2020; 68(4): 757-765.
2. Buchan J, Wismar M, Glinos IA, Bremner J, Health professional mobility in a changing Europe: new dynamics, mobile individuals and diverse responses. WHO Regional Office for Europe, UN City, Marmorvej 51, DK-2100 Copenhagen Ø, Denmark World Health Organization, 2014; 1-398.
3. Cehan I, Teodorescu C, The migration of medical staff between social responsibility and the right to free movement. *Romanian Journal of Bioethics*, 2012; 10(4): 35-43.
4. Cehan I, The migration of Romanian doctors and the ethics of international recruitment. *Romanian Journal of Sociology*, 2013; 24(3-4): 327-335.
5. Crăciun P, Pană M, Lupuliasa D, Crăciun MD, Tăerel A, Prescription drug (RX) evolution in Romania between 2010 and 2020. *Farmacia*, 2021; 69(5): 980-987.
6. Păuunică M, Pitulice IC, Ștefănescu A, International migration from public health systems. The case of Romania. *Economic Amphitheater*, 2017; 19(46): 560-573;
7. Săcălean L, Boglarka G, Migration of medical staff, the consequence of economic disparities in Europe - case study - Mureș county, 2007; available at: <https://journals.indexcopernicus.com/api/file/viewBy/123773.pdf> (in Romanian).
8. Stancu E, Tăerel A.E, Soroceanu V, Rais C, Ghica M, Ethical aspects of food supplements in EU and Romania. *Farmacia*, 2019; 67(4): 736-742.
9. Stoica I, The temptation of migration - necessity and opportunity in a globalised world, Militară Publishing House, Bucharest, 2011, p. 55 (in Romanian).
10. Suciș M, Popescu CA, Ciumageanu MD, Buzoianu AD, Physician migration at its roots: a study on the emigration preferences and plans among medical students in Romania. *Hum Resour Health.*, 2017; 15(1): 6: 1-9.
11. Tuula A, Volmer D, Jöhvik L, Rutkovska I, Trečiokienė I, Merks P, Waszyk-Nowaczyk M, Drozd M, Tatarević A, Radovanlija M, Pacadi C, Meštrović A, Viola R, Soós G, Rais C, Tăerel A-E, Kuzelova M, Zare M, Peymani P, Oona M, Scott M, Factors Facilitating and Hindering Development of a Medication Use Review Service in Eastern Europe

- and Iran-Cross-Sectional Exploratory Study. *Healthcare*, 2021; 9(9): 1207: 1-11.
12. xxx - Reports of the Romanian College of Pharmacists on Current Professional Certificates issued for the purpose of going abroad, www.colegfarm.ro (in Romanian).
 13. xxx – Decision no. 2 of June 21st 2019 regarding the modification of the Decision of the National Council of the Romanian College of Pharmacists no. 1/2007 on the preparation and issuance of the current Professional Certificate, published in the *Official Gazette*, 2019; 608 (in Romanian).
 14. xxx - Internation Organisation for Migration (IOM), Migration Trends, in selected applicant countries, Romania, 2015; : <https://publications.iom.int/books/iom-romania-annual-report-2013>.
 15. xxx- Addressing the international migration of health workers, WHO: www.who.int/activities/addressing-the-international-migration-of-health-workers.
 16. xxx - Global Pharmacy workforce and migration report. A call for action, FIP 2006, available at: www.fip.org/files/fip/publications/PharmacyWorkforceMigration.pdf.
 17. xxx - Romanian Parliament, Law no 95/2006 regarding Reform in the health system. *Official Gazette*, 2006; 372 (in Romanian).
 18. xxx - National Strategy on Immigration for the period 2021-2024. *Official Gazette*, 2021; 839 bis (in Romanian).
 19. xxx - Eurostat statistics, available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Migration_and_migrant_population_statistics#Acquisitions_of_citizenship:_EU_Member_States_granted_citizenship_to_729_000_persons_in_2020.
 20. xxx - Regulation (EC) No 862/2007 of the European Parliament and of the Council of 11 July 2007 on Community statistics on migration and international protection and repealing Council Regulation (EEC) No 311/76 on the compilation of statistics on foreign workers: <http://data.europa.eu/eli/reg/2007/862/oj>.
 21. xxx - Social trends, National Institute of Statistics, INS, 2019, available at: <https://insse.ro/cms/ro> (in Romanian)
 22. xxx - Directive 2005/36/EC: all you need to know about recognition of professional qualifications. User guide, European Commission, Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs, as amended by Directive 2013/55/EU: <https://data.europa.eu/doi/10.2873/49563>.
 23. xxx - Global strategy on human resources for health: Workforce 2030, WHO, 2020, 64p, available at: www.who.int.