



BRAIN DRAIN IN ROMANIA: FACTORS INFLUENCING PHYSICIANS' EMIGRATION

Irina BONCEA¹

Abstract: Brain drain in the medical sector is not a new phenomenon, Romania facing this issue since the fall of the communism. Before the integration in the European Union, the warning of an acceleration of the phenomenon was raised, but, until today, no measures were adopted in order to diminish the exodus. Between 2007 and 2010, 8131 medical doctors leaved the country. With some of the poorest health indicators among EU countries, Romania cannot afford to lose more physicians.

The first step in the attempt of stemming the emigration of medical doctors is the identification of the reasons behind it. This study aims to identify the main determinants of the decision to emigrate. The research design includes literature review and a questionnaire which was distributed among Romanian physicians with an international work experience.

The conclusions confirm one more time that the gap in levels of payment between Romania and destination countries is not the most important cause of migration.

Although this gap is significant, a policy measure proposing the increase of the physicians' salaries would not solve the emigration issue. The main reasons behind the decision to emigrate are the working conditions and the availability of facilities. Opportunities for career development and continuing education instigate Romanian physicians to emigrate. Economic and political stability or personal factors have a lesser influence.

The major preoccupation among policy makers in the health system should gravitate around the implementation of a set of adequate measures to stem the emigration.

Keywords: brain drain; Romania; push factors; pull factors; medical sector

1. Introduction

Brain drain in the health sector is not a new phenomenon and its evolution became a global growing concern. The effects on developing countries attracted the interest of research studies, starting from 1960 until today. However, research on the determinants of the migration process is still insufficient and inconclusive. Recent evolution of the

¹ PhD student at the Department of International Business and Economics, Bucharest University of Economic Studies, Romania. Email: irinaboncea@gmail.com

emigration of medical doctors and the disastrous consequences reported in countries severely affected requires an understanding of the main factors behind it.

Romania has been facing this issue since the fall of the communism. Before the integration in the European Union, the warning of an acceleration of the phenomenon was raised, but, until today, no measures were adopted in order to diminish the exodus. The consequences should be disastrous, not only for the medical system, but also for the national security, even more in the context of a weak health system.

Romania has some of the poorest health indicators among EU countries. Health care expenditure as a share of GDP represented, in 2011, 5.84% GDP while in European Union 9.59% GDP. Moreover, health care expenditure PPP\$ per capita represented in 2011, in Romania, 902 USD/inhabitant, while in European Union 3231.02 USD/inhabitant (European Health for All Database).

Although the number of physicians per 100 000 inhabitants followed an ascendant trend in the years, from 188.13 physicians per 100 000 in 1999 to 238.53 in 2011, Romania still lag behind the EU average (to 346.1 physicians per 100 000, in 2011). Other parameters confirm the idea of having some of the poorest health indicators among EU countries: in 2011, Romania recorded a number of 68.15 general practitioners per 100 000 inhabitants (79.14 at EU level), 62.13 dentists (66.79 at EU level) and 550.84 nurses per 100 000 inhabitants (in EU the value of this indicator is 835.53) (European Health for All Database).

The total number of physicians followed an ascendant trend in Romania, from 42251 physicians in 1999, to 51153 physicians in 2011. Another indicator that followed the same trend in Romania is the number of physicians graduating in given year: in the last 20 years, this indicator increased from 2006 graduates to 3031 graduates in 2011 (European Health for All Database).

Infant mortality rate is among the highest in Europe, although a decrease is observed over time: in 2010, in Romania, there were 9.79 infant deaths per 1000 live births (compared to 4.04 in EU (European Health for All Database).

In Romania, life expectancy at birth was, in 2012, 78.1 for females (71.0 for males). EU 27 average was, in 2012, 83.1 years for females (77.5 for males) (Eurostat).

In addition, an increasing number of medical doctors who leaved the country (according to Romanian College of Physicians President, Prof. Vasile Astarastoiaie, between 2007 and 2013 a number of 20.000 medical doctors leaved the country) and a decreasing rate of enrolment in medical schools (the number of applicants at the University of Medicine and Pharmacy Carol Davila decreased from 8 candidates per place in 1990s to 0.9 candidates per place (WHO, 2011), only last year an increase was registered at 3 candidates per place), an ageing population (in 2007, only 21% of all medical doctors were in the 25-35 age group (WHO, 2011)) contribute to the worsening of the already weak health system.

In this context, a better understanding of the magnitude of the brain drain in medical system is required in the attempt of implementing a set of adequate and urgent measures. The first stem in this process is the identification of the reasons behind it.

2. Literature review

Theories explaining the international migration evolved over time, however, no coherent theory has been established due to the complex nature of this phenomenon and to the level of analysis each theory focused on.

The oldest papers (neoclassical theory of migration) explained the international migration as a consequence of the geographical differences in the supply of and demand for labor (Massey et al, 1993:433). At microeconomic level, the rational individual takes the decision to migrate based on a cost-benefit calculation leading him to expect a positive net return from movement. People will move where they can obtain the maximum benefit from their skills. However, some costs are associated with the decision of moving: material cost of travelling, the cost of maintenance while moving and looking for work, the effort involved in learning a new language and culture, the adaptation to the new labor market, the psychological costs of emigration (Massey et al, 1993:434).

The new economics of migration theory brought in the approach according to which the decision to migrate is not taken by isolated individual actors, but by larger units of related people. Acting collectively leads to the maximization of the expected income and also to the minimization of risks associated with market failures (Massey et al, 1993: 436).

The neoclassical theory and the new economics of migration theory lead to divergent conclusions, however their common point is that they are micro-level decision models (Massey et al, 1993:440).

The dual labor market theory argue that the international migration is determined by a permanent demand for immigrant labor that is inherent to the economic structure of developed nations. Pull factors in receiving countries (the need for foreign workers) are the main determinants of immigration, and not the push factors in sending countries (low wages or high unemployment (Piore, 1979, in Massey et al, 1993:440).

The world systems theory link the international migration with the development of the world market, considering it a natural outgrowth of disruptions and dislocations occurring with the progress of the capitalism (Massey et al, 1993:445)

From another perspective, the theoretical approach on the determinants of migration has its roots in Ravenstein's "*laws of migration*" (1885, 1889). The push-pull theory of migration, proposed by Lee (1966) and identifying four factors that influence the decision of emigration: factors associated with the area of origin, factors associated with the area of destination, intervening obstacles and personal factors became the most popular migration model, in spite of its limitations.

2.1. *Push and pull factors of migration*

Literature on brain drain evolved over the past 60 years, passing through the early stage of research works to the new economics of brain drain theory, from the nationalist to the internationalist approach attracting the interest of economists, sociologists or

anthropologists, geographers or historians. The particular case of physicians emigration attracted the interest of research community.

Recent studies focus on the identification of the main determinants of the decision to emigrate among medical doctors from different countries. The majority of them target low- and middle-income countries, mainly from Africa, situation that is not fortuitous, as it represents the continent the mostly affected by medical brain drain phenomenon. Most important recipient countries include USA, Canada, UK and Australia - 40% of the international medical graduates in Australia and 75.2% in United Kingdom are from lower income countries (Mullan, 2005:1813). The percentage of foreign-born medical doctors practicing in OECD member states is 18% and the tendency in the last 25 years is of continuous growth (OECD, 2007).

Also, another trend identified in the last 5 years is the diversification of origin countries: India, Philippines and Pakistan still play an important role, but more other countries became important exporters of health professionals (OECD, 2007). The most affected countries are Grenada, Dominica, Saint Lucia, Ireland, Liberia, Jamaica and Fiji (Docquier and Rapoport, 2009). Dominica has an emigration rate of health professionals of 98.1% (2 doctors out of 100 educated will remain in the country), followed by Grenada – 97.9% and Santa Lucia – 69.8% (Docquier and Schiff, 2009). Beside Africa and Latin America, the emigration of medical doctors from Central and Eastern Europe also recorded an increasing trend (OECD, 2007).

Regarding the push and pull factors of emigration, an unanimous conclusion is that the financial aspect (level of payment) is not the most important factor in the decision making process, but the professional one, confirming that highly skilled emigrants are attracted to emigrate by career development possibilities and working conditions that are unavailable in their destination countries. The conclusions of some studies identified the following determinants of the decision to emigrate:

- professional factors: 88% of a total number of 74 Libyan medical doctors declared their initial leave was based on the desire to have access to education and research and 50% of the respondents stated the professional reason as the main factor influencing them to remain abroad (Benamer et al, 2009); the professional factor influenced primary migration among surgeons from LMICs (low- and middle-income countries) to United States – valid number responses being 66 (Hagander et al, 2012); the lack of opportunities for career advancement ranked second (73%) in a study conducted on 115 Zimbabwean medical doctors practicing worldwide, while unsatisfactory working conditions ranked fourth (63.5%) (Chikanda, 2010)
- economic and political situation: this factor was mentioned as the most important in a study conducted among 39 international medical graduates practicing in Ontario, Canada (Lofters et al, 2013), 31% of the Libyan doctors questioned mentioned that the economic reason influenced their decision to stay abroad, bad political environment is the most important factor identified among medical doctors from Zimbabwe (73.9%), poor economic conditions in Zimbabwe was ranked third (71.3%).

- Family-related issues: this factor was ranked second in the study conducted among medical graduates practicing in Canada, 19% of the Libyan doctors mentioned it as one of the most important factors influencing their decision to stay abroad)
- Financial factor: this factor ranked third in the study conducted among medical doctors practicing in Canada, only 12% of the Libyan doctors mentioned the better income and living standard as the main reasons for having gone abroad initially, inadequate remuneration and benefits ranked fifth among medical doctors from Zimbabwe (61.7%)
- Infrastructural factor: unsatisfactory working conditions ranked fourth (63.5%), while the collapse of healthcare system (52.2%) was ranked sixth among medical doctors from Zimbabwe, healthcare system funding, quality of primary healthcare system, quality of facilities and equipment, patient load/work hours were mentioned in Lofters's study)

The authors of all of the studies recognize the limitations due mainly to the low response rate, which may not conduct to representative results for the entire population. However, the target population – physicians – is considered a sensitive one, with a response rate between 14%-34% (Lofters et al, 2013). The sensitive topic and the distribution of questionnaires among emigrants contribute to the decrease of the likelihood of obtaining a sufficient number of responses. Online distribution, using electronic email, became a popular technique for surveys distribution, eliminating the costs associated with printing. Studies concluded that the response rate of email based surveys is of about 20% (Kaplowitz et al, 2004, in Chikanda, 2010). The recruitment of participants is also a challenge in this field, as in most of the cases, official databases with medical doctors practicing abroad are very hard to be obtained.

Despite the limitations imposed by the research techniques and the target population, some valuable conclusions could be drawn from these studies, representing a first step in the attempt of identifying a set of adequate measures to stem the medical brain drain phenomenon.

In Romania, the emigration of medical doctors is under researched, although our country is confronting with this phenomenon since the fall of the communist regime. The main studies are presented in the following lines.

Results of Prometheus project place on the top of the list the role of income, followed by the poor working conditions, the lack of opportunities for career development, the lack of social recognition and the low esteem (WHO, 2011). Dragomiristeanu (2008) added the constant aggression from mass-media and the lack of support from the community regarding the working conditions and transport.

According to a study realized in 2011 by Romanian College of Physicians (RCP), more than a half of Romanian doctors are totally unsatisfied by their salary, while 25.52% are unsatisfied. However, other recent studies conducted by RCP identified as main determinants of emigration the absence of job openings, difficult working conditions and the lack of respect for their profession.

Another study (Suciu et al, 2012), concluded that the main reason why Romanian doctors emigrate is the possibility of obtaining better salaries in the country of destination. According to other sources (Vasilcu, 2010), 88% of 106 medical doctors practicing in France and Ile-de France declared the socio-professional factor as the main representative in the decision of emigration.

One other exploratory study (Teodorescu, 2011) aimed to identify the main reasons behind the decision to emigrate among medical doctors. The results are based on a number of 8 in-depth interviews with medical doctors who practiced in France and Belgium and who returned in Romania, before the year of accession to the European Union. The most important factors are the desire for professional development and family-related factors (family reunification as the spouse was already working abroad). The economic factor is of lesser importance, none of the medical doctors interviewed mentioned the financial aspect as fundamental in the decision making process.

As a conclusion, literature on this topic is scarce and inconclusive in Romania. Some of the studies concluded that the level of payment is an instigator factor for emigration among medical doctors. On the other hand, the professional factor is mentioned as fundamental in the decision making process in other recent studies.

3. Research design

Starting from the conclusions of the existent studies in the literature, the research question raised is the following: “is the level of payment the most important factor instigating Romanian medical doctors to emigrate?” The main objective of the study is to identify the main determinants behind the decision to emigrate. Secondary objectives include: to rank the push and pull factors, to identify the factors influencing the choice of a destination country.

The research design includes literature review and a questionnaire which was distributed among Romanian physicians (trained in Romania) with an international work experience (currently working abroad or those who worked abroad and returned).

The first step is the survey of the literature on the push and pull factors influencing the decision to emigrate. This step has a double significance: firstly, it provides valuable information on the research methodology used in the literature and secondly, it contributes to the identification of the main determinants of the decision to emigrate.

The most important factors are then included in a questionnaire, containing different types of items: single choice, multiple choice questions and open questions. As mentioned above, the target population is difficult to be reached, that's why testing the validity of the questionnaire by administering it to an initial number of respondents is not an adequate option. The validity was tested through face-to-face short discussions with medical doctors working abroad.

The second stage includes the distribution of the questionnaire. The questionnaire is original, anonymous, written in Romanian language. Firstly, it was distributed online, to medical doctors and resident physicians working abroad, via electronic email addresses, personally obtained by the author. The snowball technique was then used, the initial

respondents being asked to forward the email to other colleagues and friends. The scope of the questionnaire was explained in the invitation email, a reminder was sent after two weeks. Due to the cost limitations, no incentives were offered for completing. Due to the fact that institutions in Romania don't hold databases with physicians working abroad or don't want to cooperate, the approach was a difficult one. Initially, a number of 34 questionnaires were obtained.

The second distribution modality included the post of the web link to the questionnaire on different social media groups of medical doctors working in different countries. The period of distribution was 6 months. A number of 139 responses were obtained, among them only 90 valid and complete. From these, I excluded the responses from medical doctors practicing in countries outside the European continent, as the purpose of this study is to identify the main determinants of the decision to emigrate among European countries. Finally, a number of 73 questionnaires were included in the analysis. The response rate is not relevant, as no initial target existed.

The survey collected information about the participants' socio-demographic characteristics, the push and pull factors, the return intention, the role of diaspora and the remittances. The current paper focuses on the determinants of the decision to emigrate, the results for the other aspects explored being presented in a different paper. Data was analyzed using SPSS software.

4. Main findings

The first part of the questionnaire offers information on the socio-demographic characteristics of the respondents. The profile of the emigrant includes young medical doctors (the mean age is 32.28 years, Standard Deviation=6.674), without family obligations (52.1% of the respondents are not married), leaving the country at the early stage of the career (63% of the respondents). The sample includes 22 general practitioners and 51 specialists, graduated from 8 out of a total of 12 medical universities existing in Romania: UMF Bucharest (27), UMF Timisoara (12), UMF Iasi (11), UMF Craiova (9), UMF Cluj Napoca (8), UMF Constanta (4), UMF Galati (1) and UMF Targu Mures (1). Destination countries are: France (43.8%), Germany (21.9%), United Kingdom (12.3%), Spain (8.2%), Belgium (6.8%), Sweden (5.5%) and Holland (1.4%). Most of the respondents (76.7%) were directly recruited by the employer (hospital in the destination country). Only 14 respondents mentioned that they found a job abroad through a recruiting agency from Romania (6) or from the destination country (8).

The two questions regarding the salary received in Romania and the salary received in the destination country confirm the gap in the levels of payment between Romania and destination countries. 80.8% of the respondents declared their salary in Romania was less than 2000 RON, while only 12.3% declared they earned less than 2000 euros in then destination country. 8 respondents declared they earn more than 6000 euros. The highest salaries received by medical doctors are in UK, Sweden and Germany.

Regarding the main determinants of migration, the working conditions (19.87% of the respondents) and availability or quality of facilities and equipment in the medical system

in destination country (19.87%) are the most important factors of emigration. Financial factor (remuneration) was ranked third (18.27%), followed by the career development (16.35%). Specialization opportunities and the respect or recognition for the medical profession are of lesser importance.

Table 1. Main determinants of migration

| Main determinants | Percent | Percent of Cases |
|--------------------------------|------------------|------------------|
| | Level of payment | |
| Working conditions | 19.87% | 84.93% |
| Career opportunities | 16.35% | 69.86% |
| Resources in the health system | 19.87% | 84.93% |
| Specialization opportunities | 12.82% | 54.79% |
| Respect/Social recognition | 12.82% | 54.79% |
| | 100.00% | 427.40% |

*Dichotomy group tabulated at value 1.

Source: Author's calculations using SPSS

Another objective of the study was to identify the main push and pull factors. The ranking of these factors are presented in Table 2.

Table 2. Push and pull factors

| Push factors | Rank | Pull factors | Rank |
|--|------|--|------|
| Low pay | 1 | Higher pay | 2 |
| Poor working conditions | 2 | Better working conditions | 1 |
| Lack of resources in the health system | 4 | Better resourced health systems | 3 |
| Limited career opportunities | 3 | Better career opportunities | 4 |
| Limited educational/specialization opportunities | 6 | Opportunities for medical education/specialization | 6 |
| Economic and political instability | 7 | Economic and political stability | 7 |
| Lack of respect for the medical profession/low self-esteem | 5 | Travel opportunities/better life | 5 |

Source: author

As it could be observed from the above table, low level of payment in Romania was ranked first among the seven push factors, thus reflecting the actual situation regarding the remuneration of health professionals. The salary of a doctor should be three times more than the average salary in an economy. In February 2014, net national average wage was 1760 RON, while in the health system (the whole workforce included) the average wage was 1495 RON (INSSE). The salary of a resident physician is about one half of the national average wage.

Among the factors attracting Romanian medical doctors to destination countries, the possibility of obtaining a better salary is not perceived as the most important pull factor. Highly skilled emigrants are not mainly attracted by the financial aspect, but by the working conditions from abroad.

The choice of the destination country was influenced by the following factors, according to their importance: the language skills (24.5% of the respondents mentioned thus factor), the infrastructure of the health system (23.9%) and the remuneration in the health system in the destination country (19%). Other important factors are the personal ones – family reunification or friends already working or living in the destination country (14.1%) and the previous experience in the destination country - gained through participation in medical conferences, internships or periods of temporary work in the receiving country (9.8%). Of lesser importance are the bilateral agreements between universities from Romania and from host country (4.9%) and the geographical proximity (3.8%).

The most important barriers against emigration considered by the respondents are: the recognition of the diplomas obtained in Romania (28.1% of the respondents), language-related barriers (18.13%), psychological costs of emigration - costs associated with integration in the destination country or the leave of family and friends (16.88%), financial costs of emigration - all the expenses associated with moving from one country to another (16.88%). Of lesser importance are the issues related to obtaining the work/residence permit (12.5%) and the lack of information regarding labor market (7.5%). The latter are perceived as less important because all of the respondents had a work agreement before leaving Romania.

5. Conclusion and limitations

The aim of this paper was to identify the main determinants of the decision to emigrate among medical doctors in Romania. The conclusions are consistent with the scholars' statements existent in the international literature and some of the studies from Romania.

The most important determinants of the decision to emigrate among medical doctors are the infrastructural ones, including working conditions and availability or quality of facilities and equipment in the medical system. The poor financing of the health care sector in Romania affects the medical profession. Low performance equipment in public hospitals and the absence of drugs in some cases affects the quality of the medical care and instigate physicians to emigrate in countries where they can practice their profession in adequate conditions.

Financial aspect (remuneration) was ranked third among the most important factors. The results of the study confirm one more time the gap in the level of payment between Romania and destination countries. However, when separating push and pull factors, a difference in the position of the level of payment is observed: medical doctors are more instigated to emigrate pushed by the low salary they receive in Romania than attracted to work abroad by the possibility of earning more money.

Career prospects play also a significant role in the decision making process. A system of career development based on performance and excellence, integrity and transparency, lifelong learning and specialization opportunities could be considered by policy makers in the health system as a measure in the attempt of dealing with physicians' emigration. The possibility of research or academic career opportunities could also be taken into account.

Another important factor is the respect for the medical profession. The constant aggression from mass-media, the denigration of medical doctors and the lack of support from the community instigate medical doctors to leave.

Although the gap in the level of payment between Romania and destination countries is significant, a policy measure proposing the increase of the physicians' salaries would not solve the emigration issue. Better working conditions, access to high performance equipment, career development or specialization opportunities instigate Romanian physicians to emigrate. In this respect, the major preoccupation among policy makers in the health system should gravitate around the implementation of a set of adequate measures, containing all the aspects that determine medical doctors to emigrate.

Main limitations of this paper are linked to the methodology used, as already described. However, it constitutes a starting point in the attempt of developing a model on the determinants of the decision to emigrate among medical doctors at national level, which could serve as a valuable instrument for policy makers, helpful in adopting the right policy measures.

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Information about the author

Irina Boncea is a PhD student at the Department of International Business and Economics, Bucharest University of Economic Studies. Her research interests include international migration, especially skilled migration and brain drain. Her doctoral thesis investigates the brain drain phenomenon in the Romanian health sector.