

Aus der Praxis für Innere Medizin und medizinisch-wissenschaftliche
Sachverständigengutachten

Leiter Prof. Dr. med. Ursula Gresser

**WHAT CONTRIBUTION CAN DOCTORS TRAINED IN ROMANIA
BRING IN ORDER TO REMEDY THE MEDICAL DEFICIT IN
GERMANY?**

**COMPARISON OF MEDICAL STUDIES AND SPECIALIST
TRAINING BETWEEN ROMANIA, GERMANY, AND POLAND,
USING AS AN EXAMPLE THE FIELDS OF INTERNAL MEDICINE,
GENERAL MEDICINE AND ANESTHESIA**

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Aus der Praxis für Innere Medizin und medizinisch-wissenschaftliche
Sachverständigengutachten

Leiter Prof. Dr. med. Ursula Gresser

**Welchen Beitrag können in Rumänien ausgebildete
Ärzte zur Behebung des Ärztemangels in
Deutschland leisten?**

**Vergleich von Medizinstudium und Facharztweiterbildung in
Rumänien im Vergleich zu Deutschland und Polen am Beispiel von
Innerer Medizin, Allgemeinmedizin und Anästhesie.**

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Zusammenfassung

Zielsetzung

Heutzutage ist der wachsende Ärztemangel in Deutschland ein in den Medien viel diskutiertes Thema. Eine Möglichkeit dieses Problem zu lösen besteht darin, Ärzte zu beschäftigen, die im Ausland studiert haben.

Das Ziel dieser Studie ist es herauszufinden, in welchem Maße fehlende Mediziner in Deutschland durch solche aus Rumänien oder Polen ersetzt werden können, wobei diese quantitativ bereits mehr als ein Viertel aller praktizierenden Ärzte in der Bundesrepublik stellen.

Unter diesem Aspekt möchte diese Arbeit spezifische Unterschiede und Gemeinsamkeiten zwischen dem Medizinstudium und der Facharztausbildung in Rumänien, Polen und Deutschland herausarbeiten und exemplarisch für die Fachrichtungen darstellen, die den größten Fachkräftemangel aufweisen, nämlich Innere Medizin, Allgemeinmedizin und Anästhesie.

Material und Methoden

Einen guten Einblick in das Problem konnten eine Literaturrecherche und das Studium der Statistischen Jahresdaten gewähren, die von der Kassenärztlichen Bundesvereinigung veröffentlicht werden.

Darüberhinaus wurden von der Verfasserin zwei Fragebögen mit 12 selbstkonzipierten Fragen erstellt, die an rumänische Mediziner adressiert wurden.

Der erste mit 129 Respondern war an Ärzte gerichtet, die in Rumänien studiert hatten und schon in Deutschland arbeiteten, der zweite hingegen, mit 59 Respondern, sprach rumänische Studenten an, die sich wünschten, in Deutschland zu leben und hier zu arbeiten.

Diese Doktorarbeit vergleicht außerdem in diesen drei Ländern die typischen Bildungswege für Ärzte und die sozialen Gegebenheiten, die diese Migration hervorrufen.

Ergebnisse

Die Ergebnisse der rumänischen Umfrage wurden mit ähnlichen Studien in Polen verglichen, wobei sich große Ähnlichkeiten in Ausbildung, Motivation, Denkweise und in der Wahrnehmung der Arbeitsbedingungen zwischen den ausgewählten Gruppen ergaben. Die daraus resultierenden Graphiken und Abbildungen liefern eine bildliche Darstellung dieses Phänomens und bekräftigen die Schlussfolgerung, dass die Lücken beim Medizinischen Personal in Deutschland größtenteils mit ausländischen Ärzten geschlossen wurden, trotz aller sprachlichen Probleme.

Diskussion und Schlussfolgerung

Berücksichtigt man Deutschlands alternde Bevölkerung, die Feminisierung des Berufsstandes, den wachsenden Trend zu Teilzeitbeschäftigungen, das schwer zu bestehende Auswahlverfahren zum Medizinstudium und die unverminderte Abwanderung deutscher Medizinerin die USA, nach Großbritannien, Österreich und in die Schweiz, so kann man daraus sicher die Erkenntnis gewinnen, dass in Deutschland ein hoher Bedarf an im Ausland ausgebildeten Menschen besteht. Allerdings wurde auch klar, dass sich nicht alle Informationen, die den Ausbildungsweg betreffen, absolut vergleichen lassen, auch lassen sich gewisse Diskrepanzen zwischen Anspruch und Wirklichkeit vermuten.

Auch wenn man dies alles berücksichtigt, so wurde die Fragestellung dieser Arbeit uneingeschränkt mit "Ja" beantwortet, wofür auch der wachsende prozentuale Anteil an in Deutschland arbeitenden Ärzten ein Beweis ist, die in Polen und Rumänien ausgebildet wurden.

Abstract

Aim

The growing shortage of doctors in Germany is a subject that is currently well documented in the mass media. One of the measures to correct this problem is employing doctors who have studied abroad. The objective of this study is to assess the extent to which the deficit of trained medics in Germany can be amended with doctors trained in Romania and Poland. Physicians who studied in these two countries make up more than a quarter of the doctors who are currently practicing in Germany. In this context, this research emphasizes the differences and similarities between general medical study and specialist training in Romania, Poland and Germany, using as an example the fields with the biggest deficits: internal medicine, general medicine, and anesthesia.

Subject and methods

A very good overview of this phenomenon was acquired by putting together a compilation of the available literature with the annual statistical data provided by the German Medical Association. The study included processing the data obtained through two self-made questionnaires addressed to Romanian doctors. The first, with 129 respondents, was addressed to physicians who studied in Romania and were already working in Germany. The second, with 59 respondents, was addressed to Romanian students who wish to come and work in Germany.

The dissertation also compares the educational process which leads to graduating as a medical doctor in the three above-mentioned countries, and the social background which leads to the migration of physicians.

Results

The results of the Romanian survey were compared with similar studies carried out in Poland, revealing great similarities between the selected groups in training, motivation, way of thinking and perceptions of working conditions. The resulting graphics and figures provide a visual representation of the phenomenon, strengthening the conclusion. So far, the shortage of medical personnel in Germany has been largely covered with foreign doctors, despite any language deficits.

Discussion and conclusion

Taking into account the aging population in Germany, the increasing numbers of females in the medical profession, the growing trend of part-time work, the difficult medicine admission process and the unabated emigration of German doctors to the US, UK, Austria, and Switzerland, it is safe to conclude that Germany needs foreign-trained doctors. It became evident that not all the information regarding the training process in the three studied countries completely overlaps. There were also

discrepancies between what is documented and the actual numbers of completed procedures that are required in order to complete the training. When taking all of this into account, the question this paper set to answer was positively answered, proof of which is the growing percentage of Polish and Romanian trained doctors working in Germany.

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Table of contents

Zusammenfassung	3
Abstract	5
1 Introduction	11
1.1 Structure of the current study.....	16
2 Objectives	17
3 Materials and Methods	17
3.1 Data	17
3.2 Survey	17
3.2.1 Survey instrument	18
3.2.2 Subscriber selection	18
3.2.3 Procedure	19
4 Medical care in Germany	19
4.1 Deficit of doctors in Germany.....	20
4.2 Physician numbers in Germany	22
4.2.1 Development of the total numbers of doctors and the medical structure	22
4.2.2 Development of the number of doctors per inhabitant	23
4.2.3 Development of the medical community with regard to gender, age and number of newcomers	25
4.3 Measures taken against the lack of physicians.....	28
4.4 Immigration of foreign specialists.....	29
4.4.1 The Certificate of Good Standing	29
4.4.2 The language prerequisite	29
4.4.3 The medical license - the legal basis of professional recognition	30
4.5 Development of the number of foreign doctors in Germany	31
5 Medical care in Romania.....	33
5.1 Romania as a country of emigration	33
5.1.1 Networks of people of Romanian nationality	35
5.1.2 Language skills of the Romanian population - German as a foreign language	36
5.1.3 Corruption	37

5.2 Medical services in Romania	39
5.2.1 The development of the number of doctors in Romania	40
5.2.2 Development of the total number of doctors and the medical structure	40
5.2.3 Development of the number of doctors per inhabitant	41
5.2.5 Migration rates of physicians from Romania.....	43
5.3 Measures taken by the Romanian Government against emigration of medical personnel.....	45
6 Parallels between medical and specialist training in Germany, Poland, and Romania	46
6.1 Legal basis	47
6.2 Medical training in Germany	48
6.2.1 Legal principles of the medical profession in Germany	49
6.2.2 Basic medical training in Germany.....	49
6.2.3 Specialist training in Germany	50
6.3 Medical training in Poland.....	51
6.3.1 Legal principles of the medical profession	51
6.3.2 Basic medical training in Poland	52
6.3.3 Specialist training in Poland	52
6.4 Medical training in Romania	53
6.4.1 Legal principles of the medical profession in Romania.....	54
6.4.2 Basic medical training in Romania	55
6.4.3 Specialist training in Romania.....	56
6.5 Comparison of specialist training in Germany, Poland and Romania	57
6.5.1 Anesthesiology	58
6.5.2 Internal medicine	60
6.5.3 General medicine	62
6.6 Problems arising from migration of doctors from west to east	65
7 Surveys	66
7.1 Evaluation of the survey	67
7.2 Survey of Romanian physicians in Germany	67
7.2.1 Survey participants.....	67
7.2.2 Language prerequisite.....	71
7.2.3 Reasons for migration to Germany	72
7.2.4 Recognition and integration in the workplace	73

7.2.5 Future plans	75
7.3 Survey of Romanian students and doctors aspiring to work in Germany.....	76
7.3.1 Survey participants	76
7.3.2 Interest in working in Germany	80
7.3.3 Language qualifications	81
7.3.4 Future plans	82
7.4 Survey discussion.....	83
7.5 Survey conclusions.....	84
8 Comparison of the Romanian study with similar studies about Polish doctors	84
8.1 Similarities and differences	84
8.2 Language challenges.....	88
8.3 Integration.....	89
8.4 Comparative discussion and conclusions	90
9 Discussion	91
10 Limitations	94
11 Conclusion	94
12 Abbreviations	96
13 Appendices	98
Survey 1	98
Survey 2	105
14 Bibliography	110
Certificate	125
Eidesstattliche Versicherung	126

1 Introduction

Across the globe there are almost 60 million health workers, but unfortunately their distribution is uneven across countries and even regions. In order to correct this, in 2014 the Health Worker Migration Policy Council (Aspen Institute) produced the WHO Code of Practice on the International Recruitment of Health Personnel. The agreement has the purpose of advocating for the integrity of health systems and overseeing the migration and individual rights of health workers. The importance of having “the right staff in the right place” is the result of the continuing need worldwide for almost 2.5 million additional medical personnel and almost 2 million more paramedical personnel. The global shortages in the health workforce sector look certain to worsen in the years ahead (Siyam and Dal Poz, 2014, p.1). The complexity of this issue, sometimes falsely understood only as the “brain drain” phenomenon from underdeveloped countries toward richer ones, has resulted in the publication worldwide of a wide selection of newspaper articles and scientific articles (Siyam and Dal Poz, 2014, p.X).

In recent years there has been a shortage of suitable physicians in multiple medical fields in Germany. The growing number of specializations and scientific developments has resulted in the need for more staff (BÄK, 2018a). This means that there are a growing number of medical positions that cannot be filled by German doctors alone, and as a result, Germany requires the services of foreign doctors. Nowadays, about 24,000 highly specialised foreign medical practitioners are employed in Germany, and it has been forecasted that the demand will continue to rise until the year 2030 (Vogler-Ludwig and Düll, 2013, p.163). The federal statistical office of Germany predicts that the average life expectancy of males living in Germany will increase until the year 2060 (Destatis, 2019). The German Medical Association gives a more exact prognosis, stating that in 2030 the average life expectancy for males will change from the current 78 to 82 years and for women from 83 to 86 years (BÄK, 2016a). Along with this rise, in 2030 there will be around 111,000 unoccupied positions for doctors in hospitals and rehabilitation clinics (BÄK, 2014a).

The increasing exodus of doctors abroad has worsened the shortage of medical personnel (BÄK, 2014a). Popular destination countries of emigration are Switzerland, Austria, and the USA, and in 2013 a total of 3035 physicians emigrated (BÄK, 2014b). The number of emigrating physicians of German origin was slightly lower in 2014, namely 2364 doctors (BÄK, 2015), and of the total number of emigrating physicians, 60.5% were German citizens (BÄK, 2015).

The reasons for this deficit are diverse, starting with the emigration of German doctors in search of a higher income and better working hours, the long duration of study, the great demands on young people embarking on a medical career, the aging population, faster medical progress, the large number of refugees who are unable to practice their trades, and a rising trend among physicians towards part-time work. Furthermore, advances in medical technology enable a greater range of services and lead to an

increasing number of available treatments, so that larger numbers of doctors are necessary (Kopetsch, 2010). Likewise, the demographic trend toward an aging population has an influence on the medical profession. A study of the distribution of doctors by age group showed a movement towards the higher age groups (BÄK, 2017a). This development leads to a high number of physicians who are unable to retire because they lack a successor. The trend towards more females in the profession brings about a reduction in the working hours of each doctor. On average, female doctors work fewer hours than their male colleagues, which can only be compensated with an increasing number of physicians (Kopetsch, 2010). At the same time, it can be observed that more and more doctors lean toward a better balance between work and family life or leisure time, which leads more often to an increase in part-time schedules (BÄK, 2016a).

The rising number of doctors who have trained abroad and are currently employed in Germany can be seen in statistics from the German Physicians Chamber, which states that numbers have grown from 14,173 in 2003 to 34,706 in 2014. As a result, around 10% of the doctors employed in Germany are of foreign origin (BÄK, 2015). The largest reported share (73%) of foreign doctors come from European countries, in particular from Romania, Greece, Austria and Poland (BÄK, 2014b). These figures are particularly influenced by the emigration of foreign doctors from Eastern European countries which has occurred as a direct consequence of the accession of these countries to the European Union.

The expanding phenomenon of emigration of medics from Eastern to Western Europe has attracted considerable attention (e.g. Balaz and Allan, 2008; Buchan, 2006; Wiskow, 2006; Garcia-Perez, Amaya and Otero, 2007; Gerlinger and Schmucker, 2007; Krieger, 2007; Boboc, Boncea and Boboc, 2015; Driouchi et al., 2012). This movement of personnel is a major problem for the health sector in many underdeveloped countries, and benefits German hospitals in particular. Without these trained staff, the maintenance of the current level of medical care in Germany would otherwise not be possible (Kopetsch, 2010).

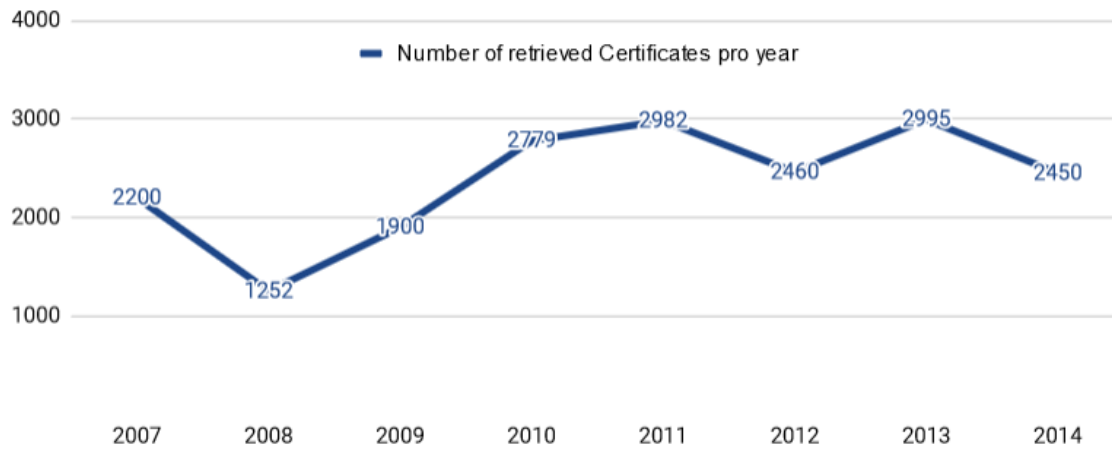
Poland belongs to one of the countries from which a large number of physicians have migrated to Germany (BÄK, 2014b). For a total of 1936 Polish doctors, Germany has been an attractive and popular destination country (Krajewski-Siuda et al., 2012). The reasons for working in Germany are not just the better income, but also the geographical proximity to home. An underfunded health-care system always creates structural difficulties as well as poor working conditions and below-average wages, and these factors constitute decisive reasons for the emigration of Polish doctors (Kolodziejska, Makulec and Szulecka, 2012). In the light of these facts, it is interesting to note that after the accession of Poland to the European Union in May 2004, the anticipated massive flow of workers from Poland to Germany did not occur. At the time, the mass media predicted that the competitive labour market of the European Union would mean that the Polish citizens would widely emigrate, especially Polish

health workers. It is difficult to gauge the real extent of the crisis in Poland's health workforce, as there is no register of the migration of health personnel. A requirement of medical professionals wishing to work in Germany is the certificate of good standing. This has allowed the Polish Chamber of Physicians to produce its own statistics, but it is unclear whether the number of certificates issued is equal to the number of physicians leaving the country. According to these figures, between May 2004 and February 2013, 939 dentists and 8857 medical doctors may have emigrated (Kolodziej, Gresser and Richartz, 2016).

The study conditions in Polish medical universities are roughly the same as the conditions in Western Europe, so new doctors are very well trained and therefore ready for the labour market of the Western world. Even in 2008, around 62% of medical students in their final years of university training were considering emigrating after their studies (Krajewski-Siuda et al., 2012), and in 2015 around 70% of them worked in German hospitals (BÄK, 2015). Due to the lack of financial resources and postgraduate courses in Poland, young doctors often emigrate in order to get a job in their preferred field of specialization (Krajewski-Siuda et al., 2012). Only the number of doctors out of Greece, Austria, and Romania was comparatively larger (BÄK, 2015).

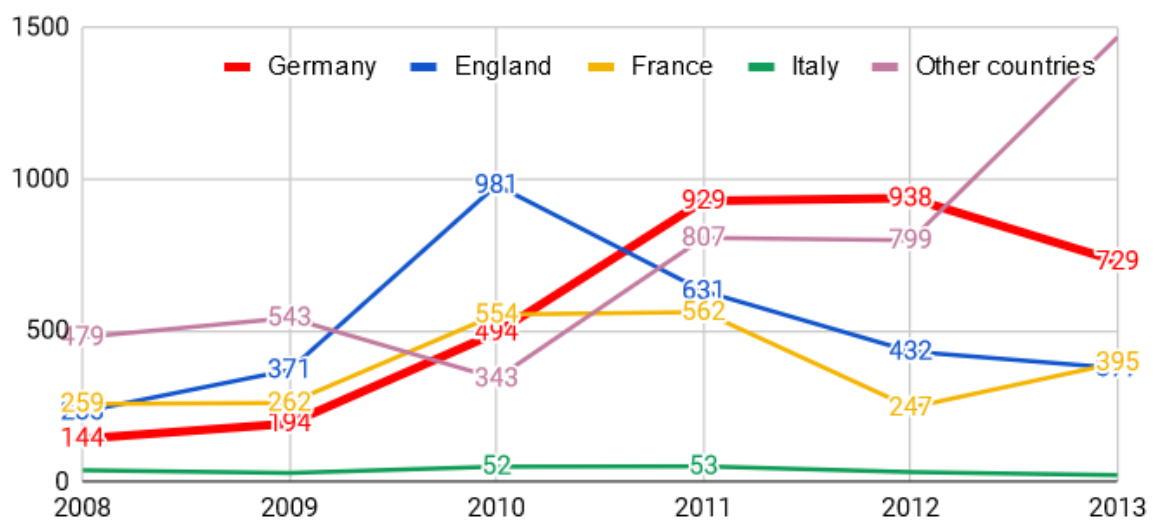
In Romania, the emigration of people with a high education level, oversimplified as the brain drain phenomenon, has been observed since the opening of borders in 1990. With the accession of the country to the European Union in 2007, a new wave of medical personnel emigrated. The numbers can be estimated using the 1421 requests for certificates of good standing that were received that year. A strong correlation between the number of requests for certificates of conformity and the economic crisis was evident in 2010, when the hardest effects of the crisis were felt in Romania and more than 2500 certificates were issued (Galan, Olsavszky and Vlădescu, 2011). While implementing austerity policies, some European countries reduced the salaries of health professionals (e.g. Romania, Portugal, Ireland and Greece), froze them (e.g. Slovenia and U.K.) or reduced the rate of salary increase as for example in Denmark (Mladovsky et al., 2012). The resulting salary imbalances between countries have the potential to increase the phenomenon known as "brain drain" in the health-worker field (Karan, DeUgarte and Barry, 2016). Along with lower income, other so called "pull factors", for migration are the difficulties in even finding a job in the country of origin, inferior working conditions, as well as fewer opportunities for family (e.g. children's education) and career development (Rohova, 2011). According to the Romanian College of Physicians, between 2007 and 2013 around 14,000 medics (*Figure 1*) left their positions in their country and went abroad to work (Moraru, 2016).

Figure 1. The number of Certificates of Good Standing retrieved from 2008 until 2013, Adapted from Moraru (2016) and Bumbulut (2015)



The drop of the number of qualified health personnel in 2012 to less than a critical level of 40,000 medical doctors was a warning sign for Romania. This trend was observed from 1990 with a drop in the number of physicians in the country from 55,000 to 41,799 in 2012; in early 2013 Romania had only 39,813 doctors (Boboc, Boncea and Boboc, 2015). According to the intended destination given in the application forms for the Certificate of Good Standing, Germany became the first choice for emigrating doctors (Figure 2). According to Brown and Gresser (2017), in 2012 the highest numbers of European doctors who migrated to Germany were those trained in Romania, with 2704 doctors. In 2015 4062 Romanian doctors migrated to Germany.

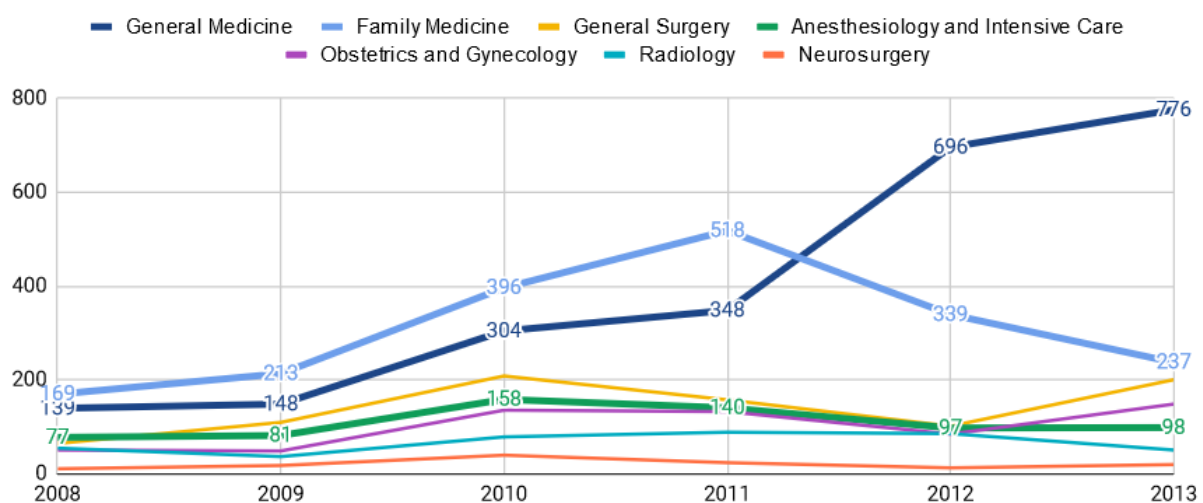
Figure 2. The number of requests for the Certificates of Good Standing in Romania, Adapted from Boboc, Boncea and Boboc (2015)



The predictions for further loss of trained medics in the future are not optimistic, taking into account the falling number of enrolments in medical schools, the number of graduating students, and the growing number of physicians who are leaving the country. Even though Romanian physicians already had a low income due to the economic crisis, the situation changed for the worse in July 2011, when the government issued a law that stipulated a 25% reduction in salary for doctors (Monitorul Oficial al României, 2010). This acted as a further incentive for doctors to move abroad. The situation was gradually corrected by December 2016. Law 153/2017 (Monitorul Oficial al României, 2017) increased the salaries of physicians and medical personnel by 25% on 1st January compared to December 2017. Even though in 2018 in an attempt to retain medical professionals the salary was again increased by 70%, many young doctors were still leaving the country. This led to another salary increase on 1st March 2018 of from 151% to 257%, depending on the residency speciality.

Similarly to the situation in Poland, most of the data regarding the movement of Romanian physicians can only be obtained from data gathered by the Romanian College of Physicians (CMR). Even though emigration is a matter of serious concern, there is no system for monitoring the mobility of health professionals (Galan, Olsavszky and Vlădescu, 2011), which means poor control of information regarding the international inflow and outflow of medical specialists. The president of CMR, Dr. Astărăstoiaie, recognises that the migration of physicians affects the mortality indicators in Romania, but currently there has been little done to combat this (Giurgeanu, 2011). It can be observed that the diseases having the highest contribution to the mortality rate are related to the medical specialties that register the highest emigration rates: Anesthetics, Internal Medicine, Emergency Medicine and Surgery (Figure 3).

Figure 3. The number of requests of Certificate of Good Standing according to specialization, Adapted from Boboc, Boncea and Boboc (2015)



In order to alter the situation in Romania, research has been focused on the causes and results of migration (Anghel et al., 2016, Roman and Goschin, 2014; Sandu, 2010; Silasi and Simina, 2008; Rotila, 2008; Constantin et al, 2004). There have also been studies investigating the aims and return expectations of emigrating doctors (Goschin, 2018; Roman and Goschin, 2012; Shima, 2009; Andreescu and Alexander, 2004).

For young specialist doctors, there are few opportunities for further education in their own country, which, as this thesis will show, is an important factor that drives them to emigrate. In Germany, it is easier for doctors to find a suitable working place and to undertake specialist training.

The current study will show that overworked resident doctors exist in hospitals in Germany as well as in Poland and Romania. This happens mainly due to insufficient personnel numbers, but the major difference between the three countries, apart from the salary aspect, is the feeling of recognition from patients and colleagues. In Germany, recognition comes at the end of the residency program and stems from the excellent mandatory practical education that boosts the self-esteem of new doctors. This is partly why statistics suggest that the largest expatriate community of Romanian medical doctors is located in Germany (Boboc, Boncea and Boboc, 2015). The major psychosocial reason for the emigration of physicians from Romania is an individual strategy to cope with the problems that exist in Romanian society (Dumitriu, 2010).

Not all of the effects of the migration of physicians are negative for the country of origin: The return of doctors to their home country brings with itself knowledge transfer. Another positive result of migration is the remittance inflow (Dustmann and Weiss, 2007). In the context of the international migration of medical doctors, a central role is played by the development of specialist skills. In this circumstance, doctors must adjust to new cultural and socio-cultural environments. Thus, working in a country different from the one in which the doctors studied and trained mandates the acquisition of new skills and abilities for the job. In fact, specialists consistently state that they develop improved communication and behavioural skills that enable better integration in a multicultural context (Toader, 2011).

1.1 Structure of the current study

After a brief introduction in *Chapter 1*, *Chapter 2* outlines the objectives of this study and *Chapter 3* explains how the information was gathered. *Chapters 4* and *5* provide a detailed overview of the medical care situation in Germany, Romania, and Poland, and investigate whether the Polish labour market, the Romanian labour market, or a combination of them can produce a sufficient number of medical specialists in order to partially eliminate the under-supply in the German healthcare system. *Chapter 6* contains a discussion of the manner in which medicine is taught and the medical specialist training in Germany, Romania, and Poland. We investigate whether Polish and Romanian medical training in Poland and Romania matches the quality of training

in Germany, and a comparison is made in the fields of anesthesiology, internal medicine, and general medicine. *Chapter 7* shows the results of a survey applied to Polish and Romanian physicians who already working in Germany, and to Romanian students or doctors who are considering working in Germany. A discussion of the results of the two questionnaires is provided in *Chapter 8*.

2 Objectives

This aim of the study is to establish whether Polish and Romanian medical specialists are suitable as medical personnel for Germany both from the quantity and quality point of view. The study examines the medical field in Germany, Romania, and Poland, with a special focus on university training and the content of specialist training courses. We will determine whether the three education systems can be compared and whether the number of doctors being trained in Germany, Romania, and Poland can fulfil the demand for doctors in Germany.

3 Materials and Methods

3.1 Data

For the comparison between the medical training systems in Germany, Romania, and Poland, a literature search using Pub Med, Medpilot, Google Scholar collected data, and information was collected from the official websites of the institutions that supervise the medical fields in the above-mentioned countries. The physical sources of data were the LMU University Library, Munich City Library, Library of the Romanian Academy - Iași and U.M.F Iași Library - România. The primary source of information about the Polish health system was the research of M. Kolodziej (Kolodziej, Gresser & Richartz, 2016) in her dissertation paper. Official reference data was extracted from various state sources: the websites of the Polish Ministry of Health "Ministerstwo Zdrowia" (<http://www.mz.gov.pl/>) and the Polish Ministry of Education "Minis Terstwo Nauki i Szkolnictwa Wyszego" (<http://www.nauka.gov.pl/>) for Poland and for Romania the website of the Romanian Ministry of Health "Ministerul Sănătății" (<http://www.ms.ro/>) and the National Romanian Ministry of Education "Ministerul Național al Educației" (<https://www.edu.ro>).

Particular attention was paid to legal texts and regulations regarding basic medical and specialist training in the three countries. The bibliographies of the collected texts were searched for relevant material.

3.2 Survey

Taking as an example the work of Kolodziej et al. (2016), two questionnaires were addressed to Romanian physicians, one to those who were already working in

Germany and the other to Romanian students who were considering working in Germany after the completion of their studies. Both surveys were offered in Romanian, German and English. For the first questionnaire, 115 respondents were obtained. The second survey was conducted with students and physicians from Romanian Universities who were not working in Germany. Here, 59 respondents were obtained. Because of the similarity in the questionnaires, the results for Romania were easy to compare with the Polish results obtained by Kolodziej et al. (2016).

Interview group 1:

Romanian doctors working in Germany answered 31 questions about the following topics (see Appendix 1):

1. The motivation for seeking employment in Germany
2. Recognition/integration in the workplace
3. Language problems
4. Job satisfaction, working conditions, future plans
5. Recommendations for young doctors in Romania

Interview group 2:

The research objective of this questionnaire was to determine the extent of doctors' interest in universities and jobs in Germany; 19 questions on the following subject areas were asked (see Appendix 2):

1. The interest and measures already taken for working in Germany
2. Decision-making criteria, the motivation for migration
3. Knowledge of the German language

3.2.1 Survey instrument

Taking inspiration from a previous study in Poland (Kolodziej et al., 2016), the interviews were offered as online questionnaires using Google Forms for both surveys, as well as physical questionnaires in a Medical University in Iași, Romania for the second survey. The surveys were conducted in German, Romanian and English in order to avoid misunderstandings due to a possible lack of language skills. The participants were able to choose the language of the survey. Some questions could be answered with `yes` or `no`, and others had an additional free text option. Two questions in each survey used scales as a response option. All questions provided examples of the type of answer that was expected written beneath the question.

3.2.2 Subscriber selection

Contact information for Romanian doctors working in Germany was obtained with the help of the Facebook group "Medici români în Germania" (Romanian doctors in

Germany), which has 5228 members. The second questionnaire targeted a group of medical students in the same social group, and a physical questionnaire was applied to students of the Medical University of Iași.

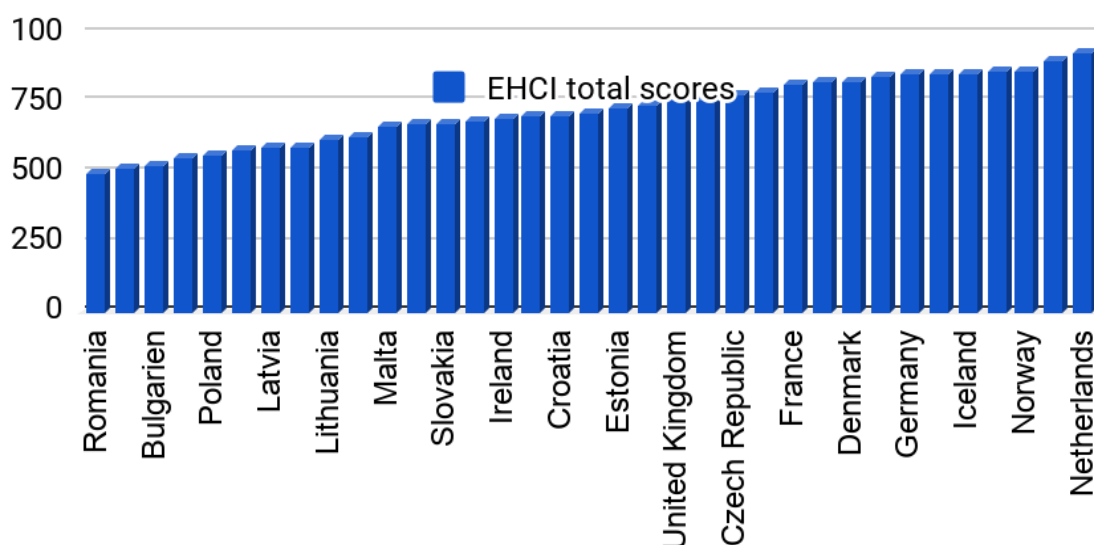
3.2.3 Procedure

The participants were informed about the subject of the survey and the target group in a cover letter and again on the first page of the survey. They were also informed of the scientific use of the data and anonymous data storage. The data collection began in January 2017 and ended three months later; 60% of the answers were obtained on the first day of the questionnaire. The respondents showed a great deal of interest in the results of the study.

4 Medical care in Germany

Germany has traditionally had the most restriction-free and consumer-oriented healthcare system in Europe. In 2016 the satisfaction rates of patients dropped as a response to “everything not being free anymore” and to the decreased number of hospitals (Björnberg, 2017). In a survey of 117 German hospitals in 2016, various indexes were used to monitor the level of satisfaction of patients, including satisfaction with the healthcare system, and the satisfaction rate ranged from 63% to 98% per hospital (Zinn et al., 2016). The Euro Health Consumer Index (EHCI) monitors the improvements and the problems of the health care system in Europe. This index has a maximum value of 1000 and a minimum of 333 points. Germany ranked 7th place in 2016 (*Figure 4*) after ranking 14th place in 2012 (Björnberg, 2017).

Figure 4. EHCI the total scores, Source: Euro Health Consumer Index Report, Adapted from Björnberg (2016)

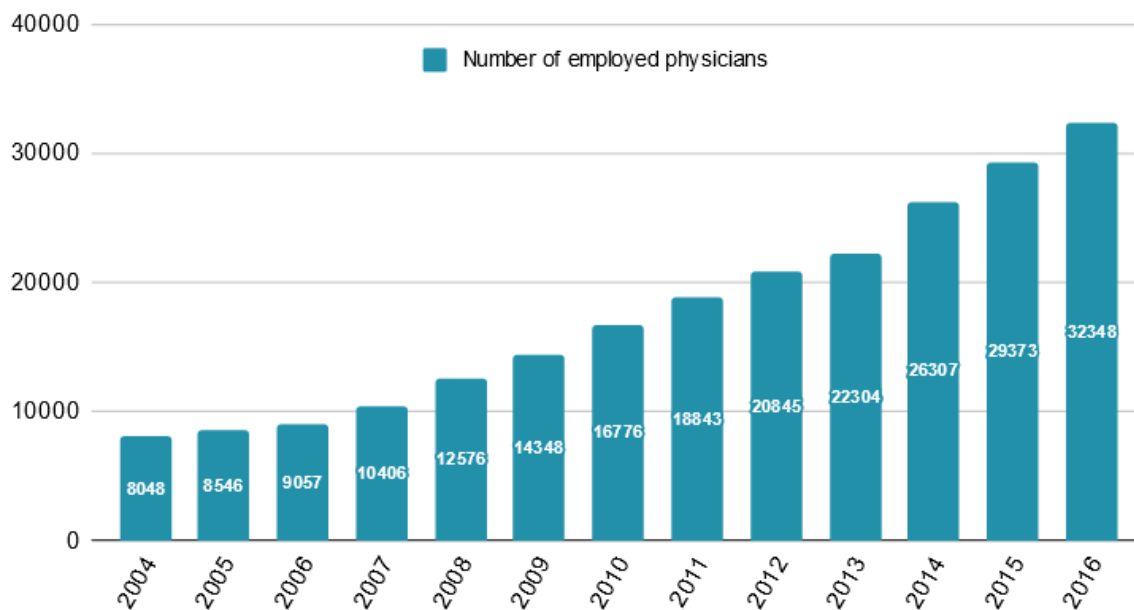


According to Wagstyl (2015), if the former East Germany still existed it would have the oldest population of any nation in the world, with an average age of over 47 years. At the end of 2014, 81.2 million people were living in Germany, of whom 22.2 million were aged 60 and over; there were even around 17,000 people aged 100 or older (Raimer and Theis, 2016). It is predicted that the German population will continue to age, and that along with innovations in the medical field, the demand for physicians will become even higher.

4.1 Deficit of doctors in Germany

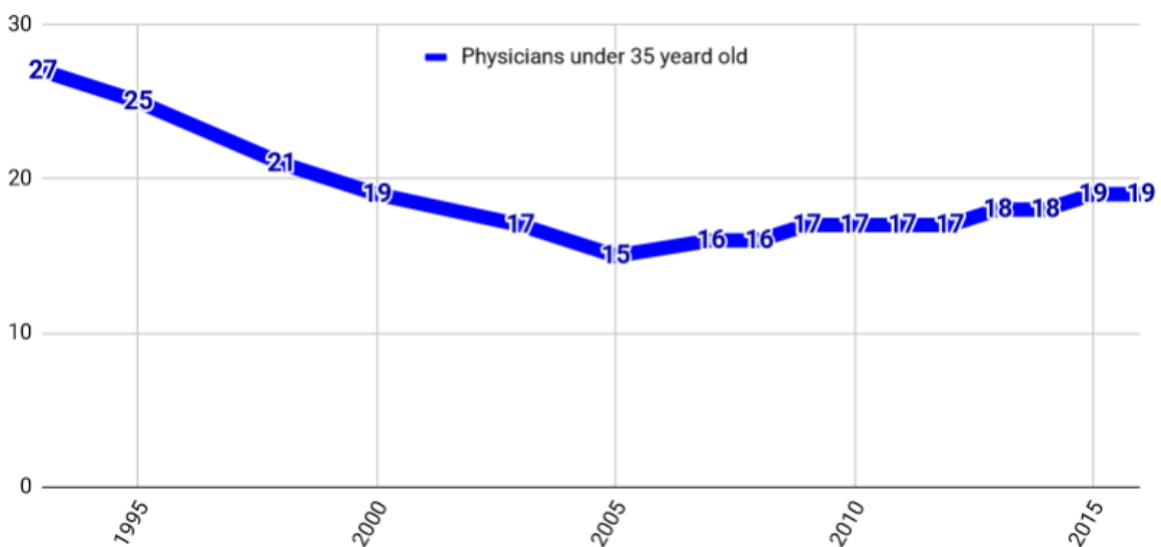
The German Medical Association annually publishes statistics on physicians, as well as the current developments of medical staff. The president of the Bavarian Chamber of Physicians estimates that nationwide there should be an increase of study places of at least 10%, because despite a rise in number of physicians, the number of physicians that are required is increasing even more rapidly (BÄK 2014a). The increasing numbers of female doctors brings about a reduction in the average weekly working hours for each doctor. “A very self-assured generation of doctors is growing. Obviously, she is no longer prepared to close care gaps unconditionally at the expense of her own life planning” (BÄK, 2018a). According to a study conducted by the research institute Prognos, the actual weekly working time of doctors in private practice fell from an average of 42.6 hours in 2011 to 40.2 hours in 2014. At the same time, the upcoming generation of doctors (including both males and females) more often require an increased amount of family and/or leisure time, which results in more part-time work (BÄK, 2014a). The number of female physicians working in Germany is rising, reaching 45% of the total number of physicians (Kolodziej, Gresser and Richartz, 2016). On average, female doctors work fewer hours than their male colleagues, which can only be compensated for by an increase in the total number of physicians (Kopetsch, 2010). There is also a tendency among female doctors to not open their own practice. According to the German Medical Association, the number of employed physicians increased by a factor of 4 between 2004 and 2016 (*Figure 5*). Taking into account this information, it becomes clear that Germany needs more doctors.

Figure 5. The evolution of the employed physicians in Germany. Adapted from BÄK (2017b)



The average age of the physicians working in Germany also represents a cause for concern. The number of working physicians under 35 years old was at its lowest in 2005 (see *Figure 6*), when only 15.4% of physicians were under 35 (BÄK, 2016b). In 2016 the number began to increase, reaching 18.8%. At the same time, because of the continuing high demand for physicians, it there has also been a rise of 0.9% of working physicians older than 59 years.

Figure 6. Percentage of physicians that are younger than 35 years old, Adapted from BÄK (2016b)



Advances in medical technology have enabled a greater range of services and specializations which has led to the availability of an increasing number of treatments, especially for the aging population, so larger numbers of doctors are required (Kopetsch, 2010; BÄK, 2014a). The lower number of specialists in many regions of Germany is made evident by the job placement problems that arise in clinics and hospitals nationwide (BÄK, 2014a). These deficits occur especially for general practitioners, but also in the basic care system (BÄK, 2014a), partly because of the increasing number of doctors who choose to work only in large cities or abroad.

Some German physicians have become unhappy working in the German system, and either emigrate or cease to practice curative medicine altogether. The reasons for this include the remuneration level (considered inadequate for the skill levels and amount of work performed), too little family and leisure time and the increasing bureaucracy. In 2016, 2050 physicians emigrated from Germany; of these physicians, only 844 had a previous migration background (BÄK, 2016b).

In summary, because of the abovementioned reasons which accentuate the increasing need for treatment with a simultaneous reduction in average working hours per doctor, an increasing number of physicians is required.

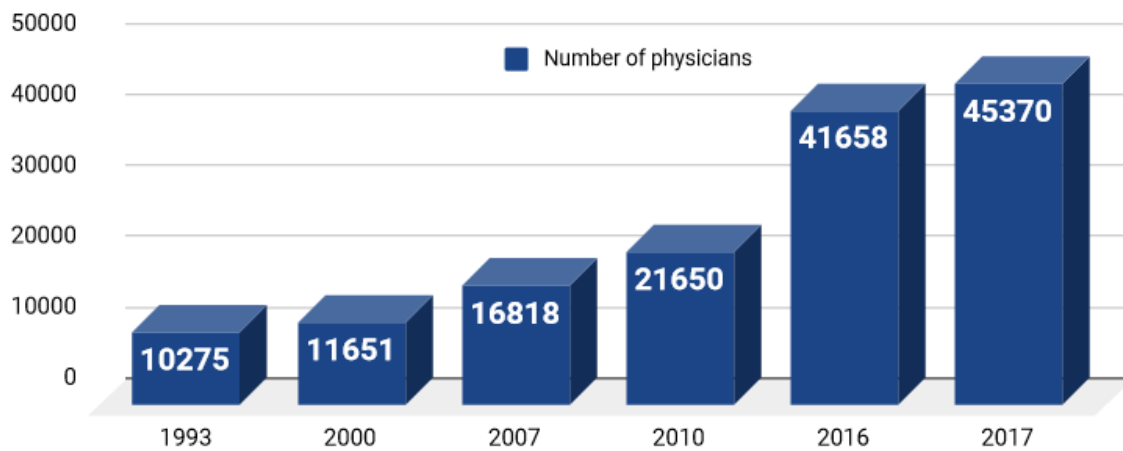
4.2 Physician numbers in Germany

In an aging society it can be easily predicted that the growing need for treatment will require a growing number of physicians. As reported by the BÄK data (2015b), in 2015 the number of medical practitioners registered with regional doctors' chambers rose only slightly by 1.7%. This means an increase of 6,055 physicians, which brings the total number to 371,302 medics nationwide. Of these, 189,622 were working in a hospital (+ 1.8%) and 150,106 physicians (+ 1.5%) were working with outpatients. According to the findings of the Federal Ministry for Economic Affairs and Energy (BMWi, 2013), the shortfall in physicians could rise to 32,000 posts by 2020 and ultimately to 75,000 full-time employees in 2030.

4.2.1 Development of the total numbers of doctors and the medical structure

There has been a continuous rise in the numbers of medical practitioners over the years (*Figure 7*). The statistics of BÄK confirm this fact, starting with 1960. At that time, there were 92,806 working doctors (BÄK, 2018b), and in 2014, 481,000 doctors were registered with the Medical Chambers. Of these medical specialists, 116,000 were not currently working or were retired (BÄK, 2015b). Of the working physicians, 40% were ambulant and 50% were stationary (BÄK, 2015b). The remaining 10% were distributed amongst corporations (9,800) and non-curative areas (21,200) (BÄK, 2015b).

Figure 7. The growth in the number of foreign physicians along the years. Modified from BÄK, 2015b

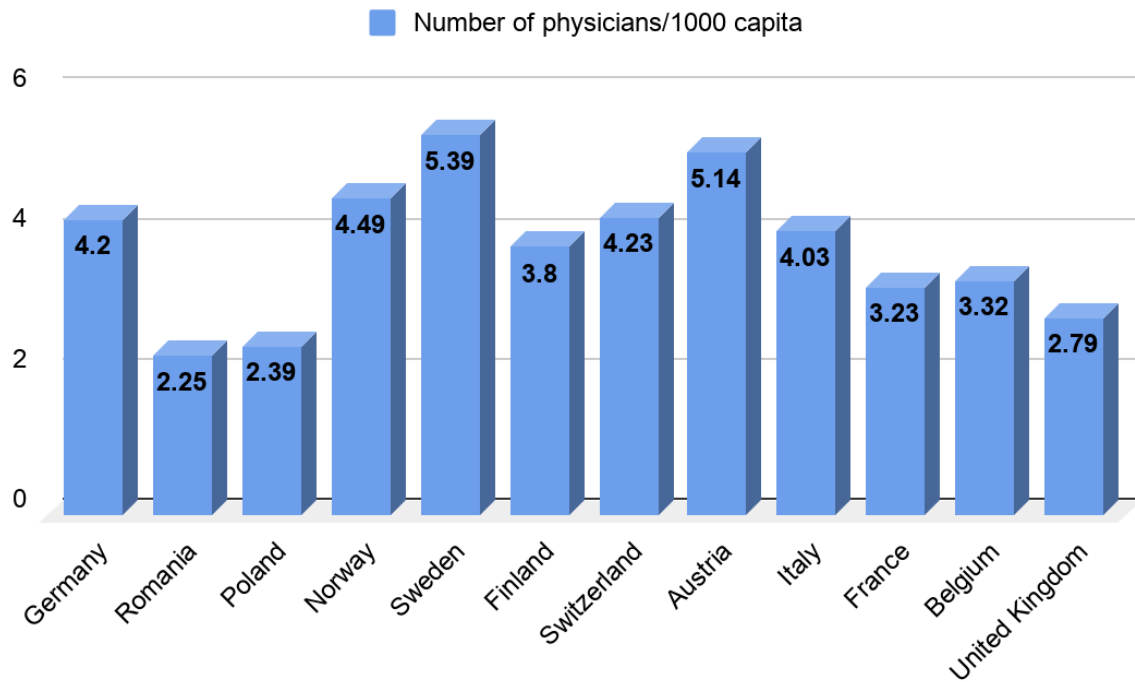


According to the German Medical Association, at the end of 2016 the number of foreign trained physicians was 41,658, higher than in 2015 when only 37,878 foreign physicians were registered (BÄK 2017a). In hospitals, the proportion of foreign doctors rose by 9.2% (2014: 11.6%). At the end of 2016, the strongest growth by country of origin was Syria (with a steep growth from 2,149 in 2015 to 2,895 in 2016). In 2016 the largest number of foreign doctors from the European Union came from Romania (+223, in total 4,385), followed by Greece (3,118). In 2017, Romanian physicians were still the largest group of European foreign doctors practicing in Germany (4505), accounting for 9.93% of the entire number of practicing physicians who had trained abroad (BÄK, 2017a). These developments will be examined in the following chapters.

4.2.2 Development of the number of doctors per inhabitant

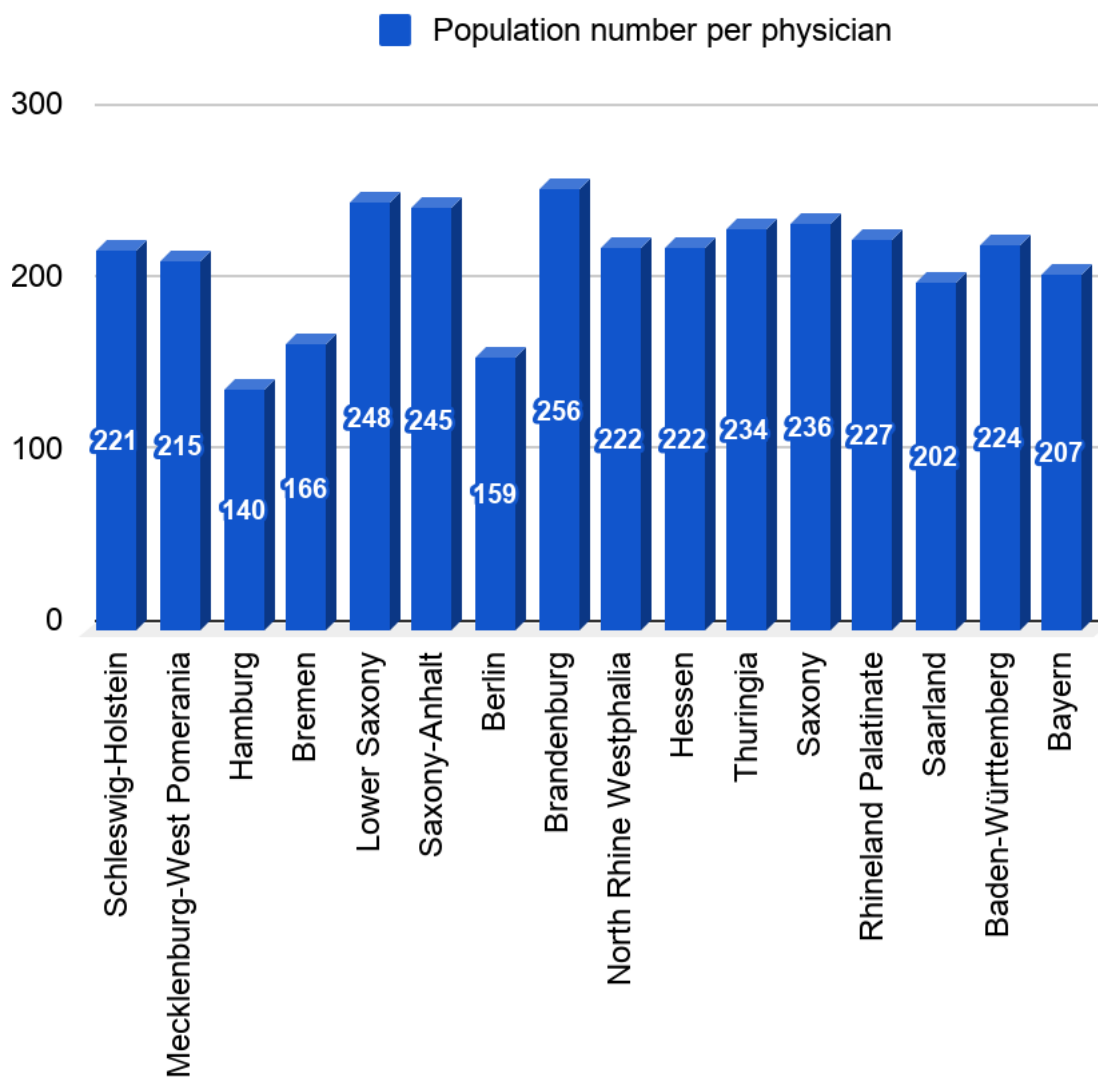
According to the available statistics from WHO (2018), in 2018 over half of the WHO member states had less than 1 medical doctor per 1000 population. In Europe, due to the better working conditions, the numbers are higher (*Figure 8*).

Figure 8. Physician's numbers in 2016 per 1000 population, Adapted from WHO (2018)



The distribution of physicians varies greatly among the German federal states, with Brandenburg having the greatest need for physicians in 2016 (*Figure 9*). It was also observed that doctors prefer to work in larger cities to the detriment of rural areas.

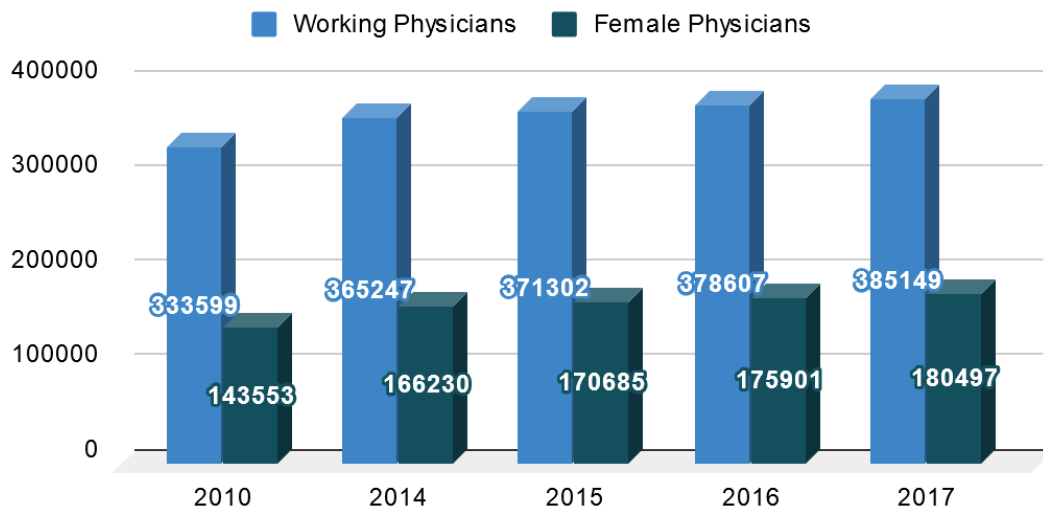
Figure 9. Number of inhabitants per working physician. Modified from BÄK (2016b)



4.2.3 Development of the medical community with regard to gender, age and number of newcomers

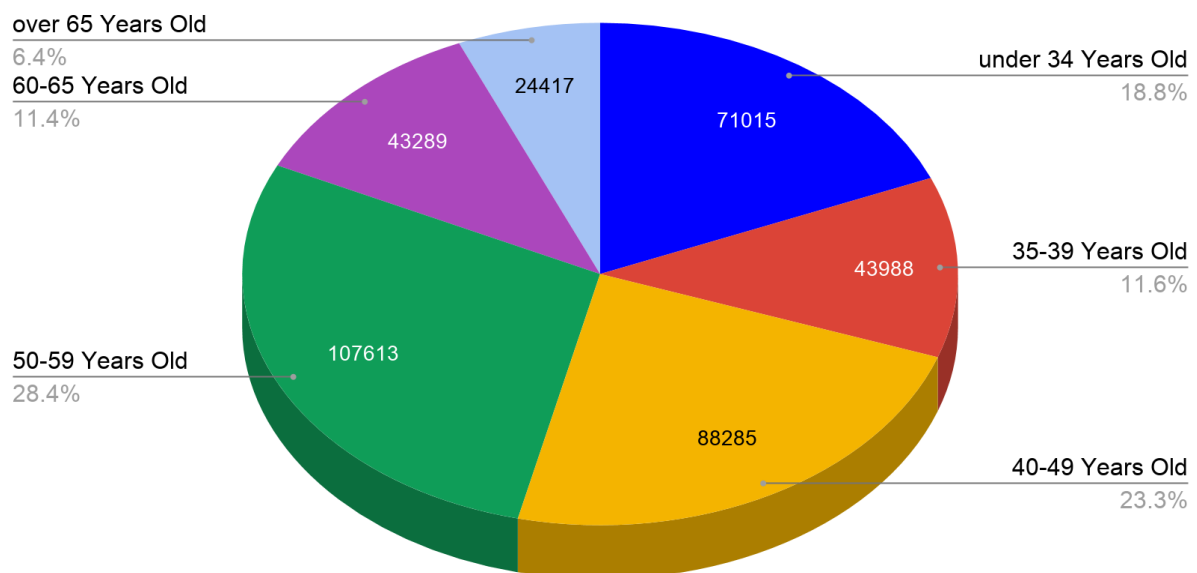
An essential parameter in the assessment of the changes in the medical community in Germany is the development of the number of female physicians. In 2010, only 43% of all physicians were female (BÄK, 2010); in 2015 there were 45.96% (BÄK, 2015b). The steadily growing rate continued to 2017, when 46.85% of doctors were female (BÄK, 2017b). This development, which can be seen in *Figure 10*, is due to the fact that more women than men commence medical studies. The increase in the number of females of the medical profession creates a complex reality which involves fewer actual working hours. Although an increase in the number of working physicians can be observed, Montgomery, the president of the Bavarian chamber of physicians, warns that only counting heads creates a simplistic perspective. He also predicts that without decisive action, (i.e. educating more doctors) this situation will worsen (BÄK, 2017a).

Figure 10. Proportion of female doctors employed in Germany. Modified from BÄK 2010, BÄK 2014b to BÄK 2017b



Another very important parameter is the age of practicing physicians (*Figure 11*). The age structure of the medical profession is changing, and is subject to demographic change as well reflecting the age distribution for the entire society. A growing number of older physicians means that it is becoming increasingly difficult for doctors to find a successor when it is time to retire.

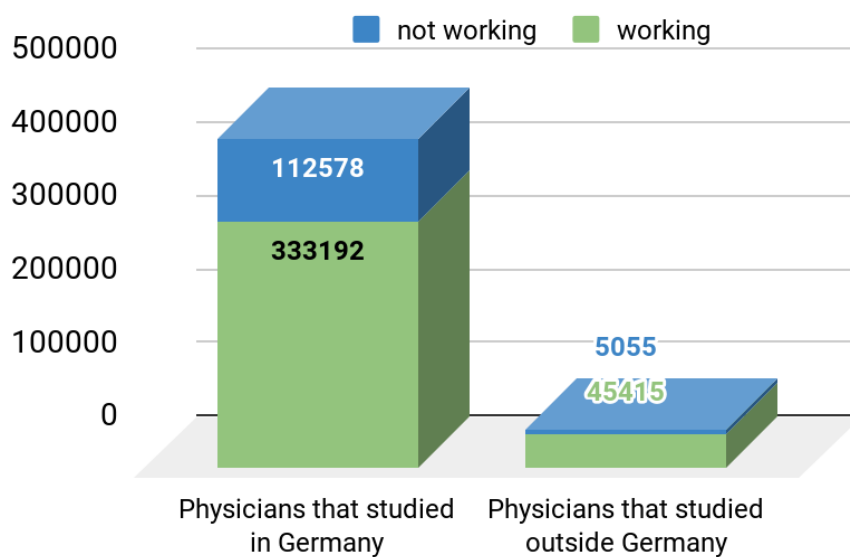
Figure 11. Physician's age distribution. Adapted from BÄK (2016b)



The number of newcomers to the profession is correlated with the numbers beginning their training. Despite the increase in numbers of students (Statista, 2019), the age

distribution of the medical profession is increasingly shifting towards the higher age group. In 1993, the average age of working physicians was 47 years, which increased 20 years later to 53 years (BÄK, 2015). According to the Chamber of Physicians, in the early months of 2017 in Rheinland Pfalz, every second working doctor was 50 years of age or older. This occurred because not all graduates are actually practicing medicine: some go into research and some decide to emigrate, thus reducing the personnel available for patient care. Between 2003 and 2008 there was a decrease of around 12% in graduates of training in human medicine (Kopetsch, 2010) and between the years 2007 to 2011, there was an average loss of 15.9% (Schmidt and Gresser, 2014a, 2014b). Out of 496,240 total working physicians, 10% had migrated to Germany from other countries (Figure 12). Without this percentage, it would be difficult for German hospitals and clinics to function. The already decreased number of hospitals would have had to have been reduced even further in order to continue functioning with fewer staff numbers.

Figure 12. Comparison between physicians numbers, accent on the working status, Modified from BÄK (2016b)



Physicians who have trained abroad continue to migrate to Germany, and 90% of them actually practice there (BÄK, 2016b); they do so in the sector where they are most needed - the outpatient sector. A statistical correlation of the unemployment rates of the German doctors (25%, source: BÄK, 2016b) and of immigrant physicians (10%, according to BÄK, 2016b) should not be made, as the causal factors in the situation are complex. The average age of physicians migrating to Germany is lower than the average age of German doctors. It should be taken into account that 66% of the 25% who are not working are retired (BÄK, 2016b).

4.3 Measures taken against the lack of physicians

There is a well observed global phenomenon of migration of doctors to large cities and a tendency to work part-time. German society is ageing, which means that in the future there will be a higher demand for healthcare services (Kovacheva and Grewe, 2015). The shortage of doctors forecasted by various well-known German institutes is at around 165,000 by 2030. Out of these, about 111,000 physicians will be missing from hospitals and the rest from private sector (BÄK, 2014a).

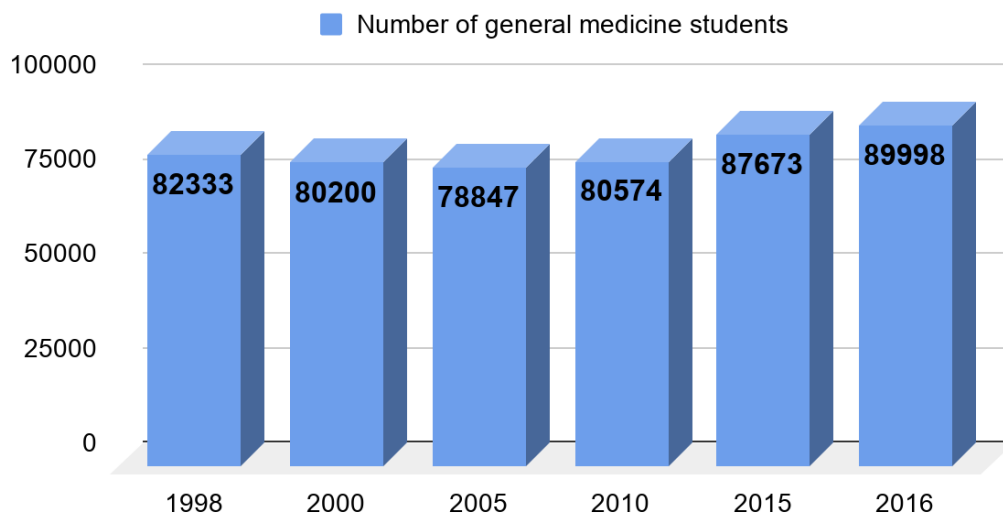
Telemedicine has emerged as a solution for the problem of a shortage of specialists and the reduced number of trained nurses. This leads to the development of medical centres (Hausarztzentren) as a coping mechanism, which seems to work at the moment. Furthermore, the basic working conditions for doctors in Germany has already improved, with more flexible working hours, as well as increasing salaries in recognition of individual performance (BÄK, 2014a). This has slowed the emigration of doctors and has encouraged immigration.

Recruitment from abroad has also been facilitated by the German Recognition Act of 2012, which improved the assessment and acknowledgment of foreign professional qualifications. This legislation aimed to reduce the gap between health professionals worldwide by standardising procedures for the recognition of foreign qualifications. This includes an assessment of equivalence regardless of the citizenship of the applicant, and the improved procedures of recognition have made it easier for immigrating physicians to find a job in Germany.

There are even recruitment programs (DAAD) that offer scholarships to foreign students during their studies. Some of the scholarships are offered if the medical students agree to work for two years in the rural regions of Germany at the end of their training. This ensures that young doctors have experience with rural practice, but the ideal length of these placements and the type of interaction (working/practicing) remains unclear (Steinhaeuser et al., 2014). The language barrier has been reduced by the introduction of German language training programs specially tailored for physicians, such as the “*telc Online Training und Coaching B2·C1 Medizin*”.

Germany is also trying to train more of its own physicians. According to various statistical institutes, the number of medical students is on the rise (*Figure 13*).

Figure 12. Comparison between physicians numbers, accent on the working status, Modified from BÄK (2016b)



4.4 Immigration of foreign specialists

Essentially, there are currently only three prerequisites for working as a physician in Germany: a Certificate of Good Standing, appropriate language skills and the physician's diploma.

4.4.1 The Certificate of Good Standing

This certificate provides unrestricted authorization to practice medicine, provided that there have not been any professional or disciplinary measures against the applicant in the past or in the present.

4.4.2 The language prerequisite

According to the BÄO (BÄO, 2014), in order to obtain an authorization or a permit for temporary work, physicians must have attained competency in German language to level B2 or C1. The European reference framework (GER) has the same recommendation; a certificate of language competency must be presented to the authority or chamber established by the respective country (GMK, 2014). The language test provides evidence of language skills at the C1 level, which is regulated in Annex 7.3 of the GMK Decision of 2014 (GMK, 2014).

The B2 and C1 certificates of language level have the following requirements:

B2 - "Can understand the main ideas of complex text on both concrete and abstract topics, including technical discussions in their field of specialization. Can interact with a degree of fluency and spontaneity that makes regular interaction with native speakers quite possible without strain for either party. Can produce clear, detailed text

on a wide range of subjects and explain a viewpoint on a topical issue giving the advantages and disadvantages of various options.” (GER, 2017)

C1 - “Can understand a wide range of demanding, longer clauses, and recognize implicit meaning. Can express ideas fluently and spontaneously without much obvious searching for expressions. Can use language flexibly and effectively for social, academic and professional purposes. Can produce clear, well-structured, detailed text on complex subjects, showing controlled use of organizational patterns, connectors and cohesive devices.” (GER, 2017)

4.4.3 The medical license - the legal basis of professional recognition

As one of the most regulated professions in Germany, the medical profession involves “occupational activities whose admission or exercise is carried out by law or by law rules on the possession of certain professional qualifications; a type of exercise is, in particular, the management of a professional title; is limited by law or regulation to persons who have professional qualifications” (BQFG, 2011; § 3, paragraph 5).

Governmental approval is a prerequisite for working as a doctor in Germany (i.e., approbation or a professional license), and membership in one of the 17 State Chambers of Physicians is compulsory in order to practice (BÄK). Germany has 16 federal states, and each of them have a State Chamber of Physicians, apart from North Rhine-Westphalia which has two. Approbation is a full professional license which is granted and issued by the Ordinance on Approval, Section 39 (ÄApprO, 2002; BÄO, 2014). However, without this document, physicians are still able to work for a limited period of two years by obtaining a work permit. The work permit is given only to applicants who meet the requirements for the approval of a professional license. This is covered by the Directive 2005/36 / EC and the Recognition Act, which grants the recognition of professional qualifications within the EU and the EEA and has the purpose of enabling job-related freedom of movement for workers and free access to the labour market (EU Directive 2005, BMBF, 2014). Since 1st November 2011, this directive also applies to Switzerland. For non-EU nationals, the 2012 Recognition Act was put in place, which essentially takes into account the EU regulatory approach and extends the guidelines to third-country nationals (BMBF, 2012). The goal is to provide people with foreign qualifications a rapid access to the German labour market in order to secure the needs of the market (BMBF, 2012). Doctors who studied outside the EU/EEA area or in Switzerland receive the approval following an equivalence test, provided that they meet the other requirements. If this test is not available, there is a possibility to take new examinations (knowledge/deficit tests) to demonstrate equivalence (BAMF, 2015). There are multiple ways to assess the qualifications of foreign doctors in Germany, provided that these physicians have the necessary knowledge to pass the examinations (BMBF, 2012). The Lisbon Convention and the Federal Expellees Act as pursuant to the Federal Law (BQFG) can also help with the procedure of recognizing the training abroad of physicians.

4.5 Development of the number of foreign doctors in Germany

A paradox in the German health-care system is that although every year the number of physicians is growing, the need for physicians grows even more. Foreign doctors exploit this need, and due to the better working conditions and especially because of the higher salaries, every year there are more physicians arriving in Germany. Usually “foreign” is understood as foreign-trained (according to the OECD report 2017) but Germany defines “foreign physician” by nationality and does not collect data on foreign-trained physicians (Klingler and Marckmann, 2016). Therefore, the real number of foreign-trained doctors working in Germany is difficult to assess because doctors who are not German citizens appear in the statistics as foreign doctors. This means that physicians who were born in Germany, or those that immigrated when they were young and studied there but are yet to become citizens are from the statistical point of view regarded as foreign doctors (Kopetsch, 2008).

According to data obtained from the German Medical Association, more than 25% of doctors working in Germany are from abroad (BÄK, 2018b). This percentage is low compared to numbers in other countries such as Israel (40%) or New Zealand (40%) (OECD, 2015).

About 70% of migrant physicians come from Europe (see *Figure 14*), and in 2018, of these, Romanian doctors (4666) were in first place, followed by Greek (3169), Austrian (2687) and Polish doctors (2139). In this respect Germany resembles other European countries, with the same migration tendencies being observed in Italy, Belgium and France (WHO, 2011).

A small number of these physicians have been returning to their countries of origin (*Figure 15*). In 2015 and 2016, only the number of physicians from Austria and Ukraine has increased.

Figure 14. Number of physicians migrating towards Germany in the last 5 years. Modified from BÄK (2014b, 2015, 2016b, 2017b and 2018b)

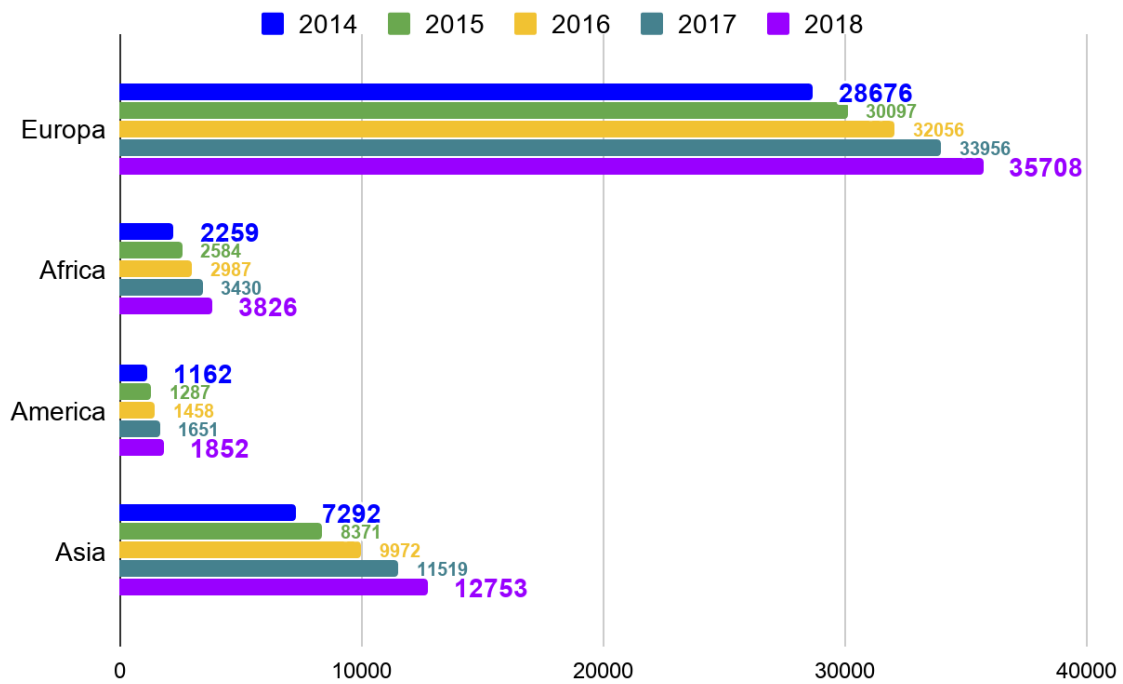
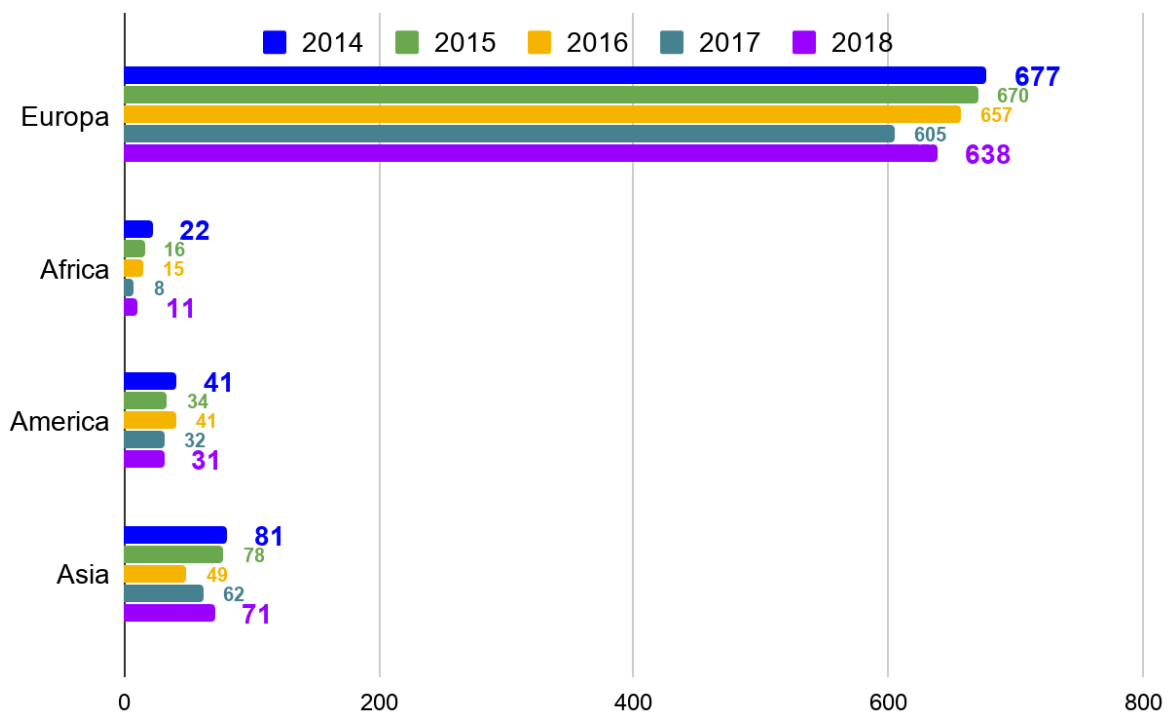


Figure 15. Number of physicians that studied abroad, worked in Germany and that are no longer living here. Modified from BÄK (2014b, 2016b and 2018b)



5 Medical care in Romania

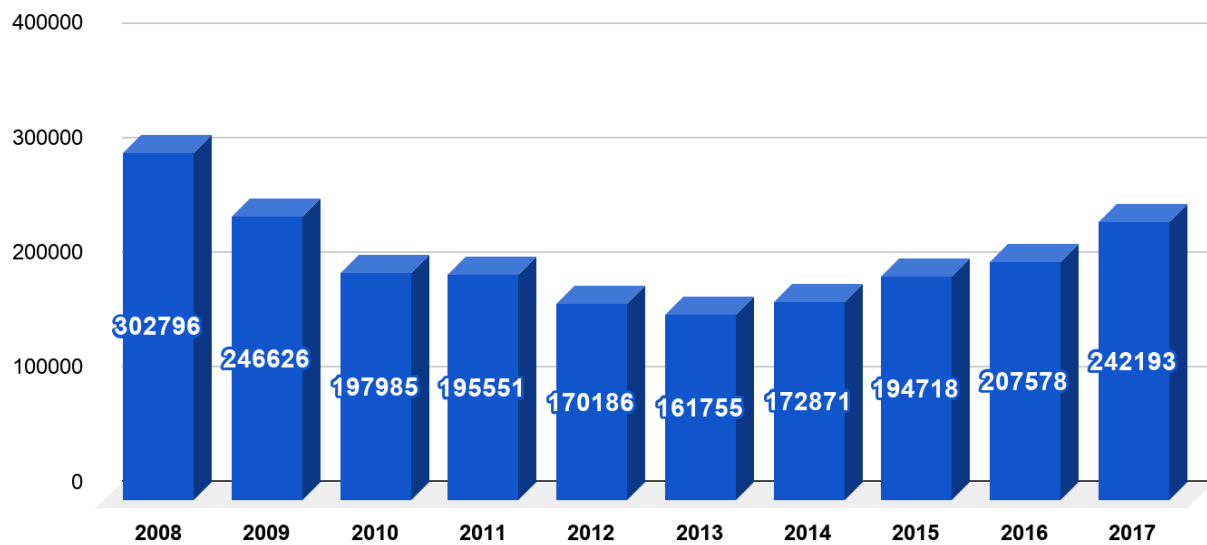
In Romania the primary, secondary and tertiary healthcare system, as well as public health campaigns, are financed by the state. Access to emergency medical care is free, and is guaranteed by Article 34 of the Romanian Constitution. All citizens contributing to the National Health Insurance House (Casa Națională de Asigurări de Sănătate - CNAS) are entitled to receive financial aid for prescriptions, and free contraceptives for teenagers and people with a modest monthly income are provided with a doctor's prescription. These patients can also receive free generic medicine for most chronic diseases, also through a doctor's prescription. Problems sometimes arise because of a lack of government funds or a shortage of medicine on the market.

The system has changed a lot since 1700, when the first concept of public health-care appeared (Puscas, 2010). In the post-communist period, the last major changes occurred in 2007, when Romania joined the EU. Currently, the focus has shifted to the private sector. Although at first these new clinics, most of which are equipped with state-of-the-art medical devices, appeared to solve the problems in the system, they could not replace public hospitals. According to a study done in 2016, the physicians working in public hospitals are professionally better prepared as those working in the private sector but they lack the people skills that lead to better satisfaction scores from patients (Marin-Pantelescu and Hint, 2020). The latter had more specialists and were only located in major urban areas. In order to make Romania more attractive for physicians, in 2017 the Ministry of Health promised to help build 8 new regional hospitals and a national hospital in Bucharest with government funds. This national hospital is designed as an emergency state-of-the-art research centre for all medical fields.

5.1 Romania as a country of emigration

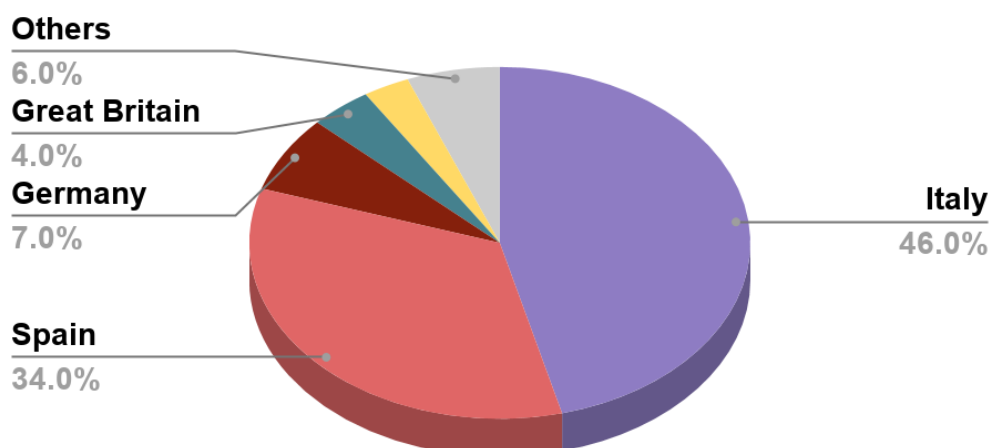
A certain number of new people entering or leaving a country is normal, and is to be expected all over the world. Usually, political or economic reasons are drivers of migration. In comparison with the trend in Romania before 1989 of permanent emigration (OECD, 2013), after 1991 the phenomenon continued to decrease and new types of migration were observed: migration driven by a wish for jobs, a better standard of living, for family reasons and for security and safety (Păunică, Pitulice and Stefanescu, 2017). Between the years 2000 and 2015, the average migration rate was 7.3% (Popa, 2017). According to the estimated data available from Eurostat (2019), Romania is one of the main countries in the EU in terms of emigration volume, with a six-figure number. The data can be seen in *Figure 16*, which covers a period of 10 years.

Figure 16. Romanian emigration numbers on a 10-year span. Modified from Eurostat (2019)



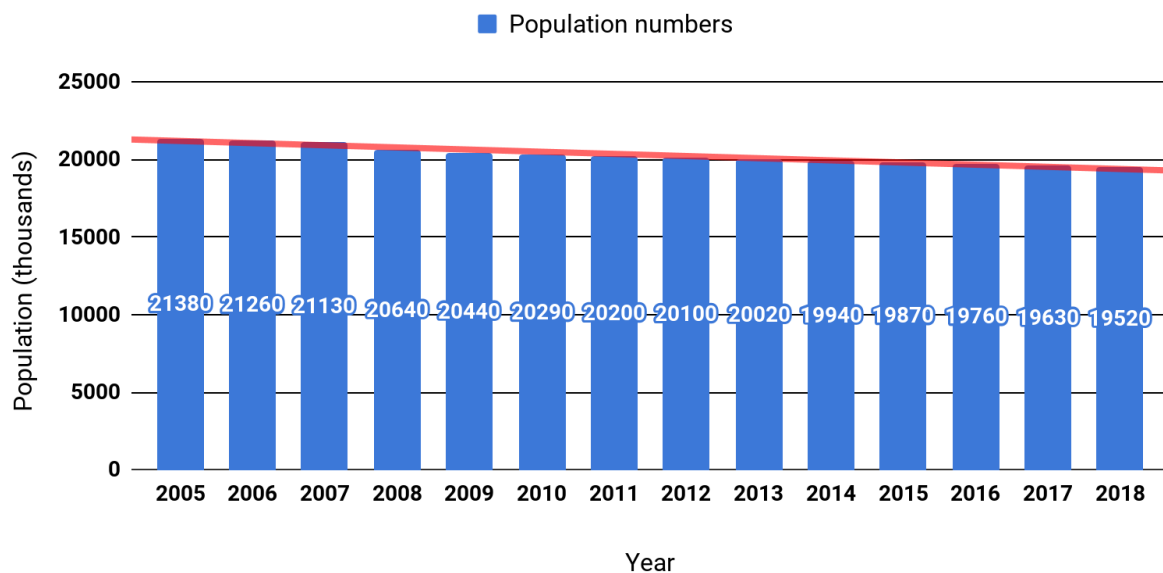
According to the Italian National Institute for Statistics, in 2017 the number of Romanians living in Italy was about 43,485 (ISTAT, 2017). This made the Romanian community the largest community of foreign residents in Italy, at almost 15% of the total immigrant population. In 2008 a very similar situation was registered in Spain, where the number of Romanian immigrants reached almost 700,000 (Şerban & Voicu, 2010). This movement of people continued through to 2012: *Figure 17* depicts the main destination countries for migrants from Romania. In Germany in the first half of 2013, immigrants from Romania (67,000) and Bulgaria (29,000) were the largest group behind Poland (93,000). In 2014, the Romanian community in Germany rose by 32.9% from the previous year (Destatis, 2014), and in 2016 the Romanian community was the third largest migrant community in Germany with EU background, after Poland and Italy (Destatis, 2017).

Figure 17. The main emigration destination for Romanian emigrants in 2012, Modified from INS 2014



This mass emigration is another reason why we are witnessing an aging and decreasing population in Romania (INS, 2014). According to the information available from INS, in 2014, Romania's population dropped to under 20 million. This demographic evolution can be observed in *Figure 18*.

Figure 18. Romanian's demographic evolution from 2005 to 2018. Data modified from INS 2018

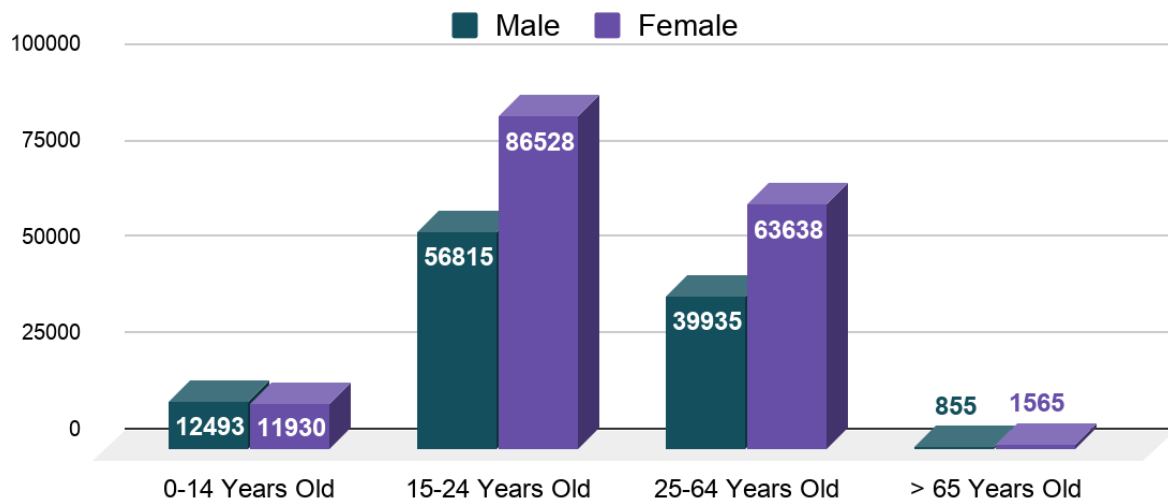


5.1.1 Networks of people of Romanian nationality

The large number of Romanian immigrants spread throughout the world has led to the establishment of many communities abroad where new migrants can find support in building themselves a new life. These networks have been formed through online social networks or around Romanian churches. Romanian consulates offer some cultural exchange programs and sometimes even language classes for small children, and in Germany, “German as a second language” courses for adults. The General Consulate of Romania in Munich, via its program “Bavaria from A to Z”, the “Rumăni Sommerfest”, helps Romanian people to meet once a year in different German cities and to socialize and smoothen the integration process. The fact that in Germany these networks of people are not very united is partly due to the education level of migrants and partly due to the fact that they want to be quickly integrated (Woellert et al., 2009).

As pointed out by the OECD (2012), the typical Romanian migrant in Italy is relatively young. The Romanian Institute of Statistics offers data from which it can be concluded that the great majority of Romanian immigrants are between 15 and 64 years of age and are emigrating in order to find better jobs (INS, 2018). Almost 61% of these are females (*Figure 19*). Due to their lower education level, these immigrants are employed mostly in lower skilled occupations compared to native Germans, (Landesmann et al., 2015).

Figure 19. Age distribution among Romanian migrants in 2012. Modified from INS, 2018



In Germany, Romanian immigrants have integrated themselves more than those from Spain or Italy. According to the Institute for Employment Research in Nuremberg, the integration of Romanian immigrants has been a success in Germany. Their unemployment rate is lower than for German citizens, and the number of “Hartz IV” (German unemployment benefit) cases is not representative, but has risen to 14% in 2014 (Brücker, 2018). Employment rates of Romanians in Germany rose by the same percentage between 2007 and 2014.

According to Intotero (the government minister for the Department of Romanians Everywhere), in 2019 about 9.7 million Romanians were living outside Romania (Radio Europa Liberă România, 2019).

5.1.2 Language skills of the Romanian population - German as a foreign language

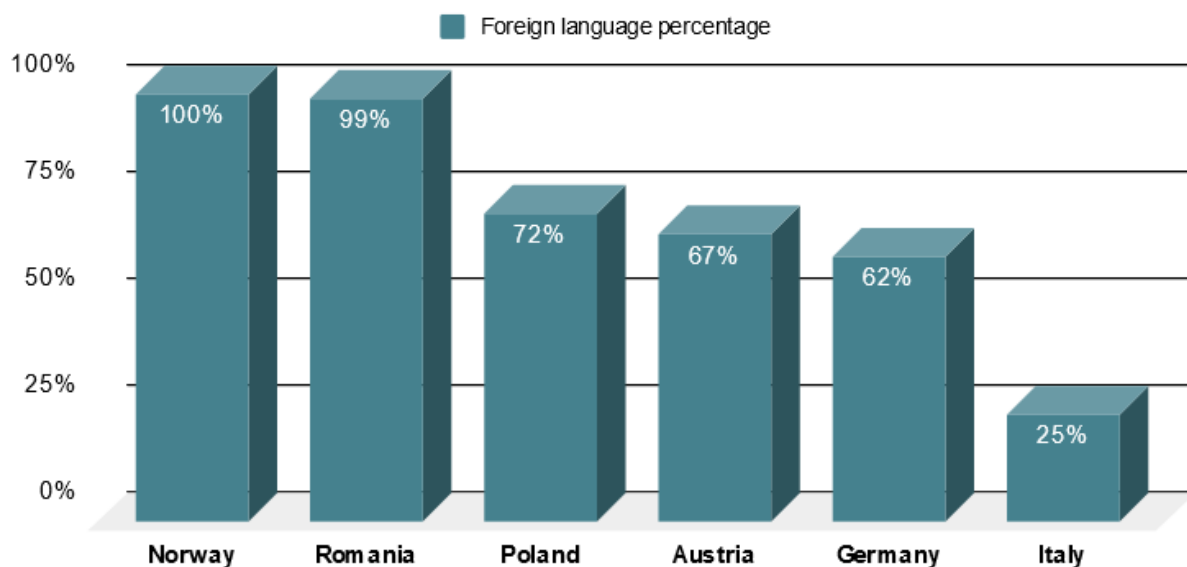
The Romanian language, the only official language in Romania according to the Romanian Constitution, is a fusion of Latin, recent Romance language loans, Slavic influences, Turkish, modern Greek, Hungarian, and German (Saramandu and Nevaci, 2009).

Germanic words, which represent about 2.47% of today’s spoken language (Gârlan, 2011), come mostly from ethnic Germans living in the region, who have been historically known as the Transylvanian Saxons and the Banat Swabians. In 1938 there were about 780,000 people of German origin living in Romania, but the 2002 Census reported that only 45,129 remained. Although during communism the main languages taught in school in Romania were Russian and German, English is the main

foreign language spoken today, while German language is in fourth place (Eurobarometer).

Considering that the majority of Romanians find it imperative for children to know at least one foreign language, and 70% think that every child should be able to speak at least two foreign languages (Ivan, 2010), it is difficult to understand why there are so few foreign language speakers. The Romanians have occupied 14th place among the European countries with respect to foreign language skills (Eurostat, 2013). According to Eurostat, in 2014 around 99% of Romanian students were learning two or more foreign languages (Figure 20).

Figure 20. Proportion of students that learn two or more foreign languages. Modified from Eurostat, 2016



Apart from the languages taught in schools, a multitude of German language courses are available in Romania. The best known and most trusted way of learning German is through the Goethe Institute. Online courses are also available, some of which are free of charge. The opportunities to access better German language development programs increases for those who already speak another foreign language, especially English. There are also schools and university programs that facilitate the study of German abroad, but unfortunately, they are not able to meet the demand. Along with the increasing work-related immigration in Germany, new language courses were made available on the market. In the medical field, there are even special courses to help with job-specific terms (DaÄ – Deutsch für ausländische Ärztinnen/Ärzte 2017).

5.1.3 Corruption

Corruption is an endemic problem across Eastern Europe. Prior to Romania's accession to the EU, Baroness Emma Nicholson, Rapporteur on the European Parliament Committee on Foreign Affairs, Human Rights, Common Security and

Defence Policy in the Report on Romania's progress towards accession from February 24, 2004 listed corruption as the first obstacle blocking the accession of Romania to the European Union (Baroness Nicholson of Winterbourne, 2004). During the negotiations for entering the EU, Romania adopted legislation (Monitorul Oficial al României, 2002) for the prevention, detection and sanctioning of acts of corruption.

Although the Romania government is making efforts to reduce the level of corruption within the country, in 2016 it occupied position 57 in the global corruption ranking (CPI, Transparency International). In 2012, 96% of Romanians stated that they were against bribery, but around 33% of them acknowledged that they had been involved in receiving or giving bribes (Engelhard, 2012). The corruption in Romania that can be found in every field and at every level is difficult to address, taking into account its variety: bribery, theft, fraud, money laundering, blackmail, election fraud, nepotism, favouritism, clientelism, traffic of influence, conflict of interest, abuse of power, tax evasion and use of foreign tax havens. There are four institutions that are tasked with reducing this phenomenon: DNA, DGA, ANI, and DIICOT, but the main one is DNA. According to its own internal reports, DNA resolved 10,000 cases of alleged corruption in 2015, an astonishing number of files taking into account that in 2016 there were only 90 prosecutors working in the institution. This was able to happen because in 2014 the director of the Romanian Information Service rated corruption as a threat to national security (Ciocan, 2014).

In December 2016, the health minister, Voiculescu, stated that in Romania the healthcare system is not “as much underfunded as it is chaotic and corrupt” (Mincu, 2016). He said that there was a lack of control mechanisms and therefore the safety of patients and doctors could not be guaranteed. After he became health minister following the resignation of the former minister because of a large scandal involving the use of diluted disinfectants in public hospitals, Voiculescu introduced transparency mechanisms (Pricopie, 2016). This involved an anti-corruption hotline, new rules for hiring hospital managers and a feedback mechanism for patients to alert the authorities to shortages of drug stocks. Unfortunately, bribery within the medical system starts early, with students; the numerous scandals regarding university admissions and scholarships or even the questioning of the fairness of exams prove this. Increasingly, news organizations report about teachers asking for bribes from both Romanian and foreign students (Gal, 2017). Once accustomed to the corrupt system, these students become physicians and some of them become teachers themselves. Probably the most publicised case in the media of fraudulent doctoral qualifications was that of the prime minister V. Ponta in 2012, which opened the door to questioning every doctor’s title, even those in medicine (Schiermeier, 2012).

At the beginning of 2017, an attempt by the Social Democratic Party to decriminalize several corruption offenses resulted in the largest street protests in Romania since the fall of communism in 1989. The anti-corruption street protests evolved in 2018 towards diminishing the power of the Social Democrat Party, as embodied by Liviu Dragnea.

In October 2019 the party failed to retain its leadership role in the government of Romania.

5.2 Medical services in Romania

Romania is the eighth largest EU country, and with 19,530,631 inhabitants has the tenth largest population (Ciucea et al., 2019). The population has decreased since the 1990s due to emigration, decreasing fertility and birth rates, and arguably higher death rates. Although some improvements have been made, the population still has the worst life expectancy and mortality rates in the EU. The abortion rate, which decreased to 423 per 1000 live births in 2014, is almost twice the EU average. Family planning and health education programs that were introduced in the mid-1990s are yet to achieve their intended results (Vlădescu et al., 2016).

The Romanian health system is represented by the Ministry of Health, the National Health Insurance House (NHIH) and various professional organizations. The key legislation that provides the basis of the reform process in the Romanian health system is Law 95/2006. Currently more than 1300 amendments have been made, but the centralized social health insurance system is only able to cover 85% of the population (Bara et al., 2002). The remaining population has access to a minimum package of benefits, even though it is a market-driven and market-orientated healthcare system.

Following the objective of strengthening the role of primary care, on government request the number of hospital beds has been lowered, and even though the hospitals had autonomy in using their assigned budgets, both primary and inpatient care suffered (Stanciu, 2013). Insufficient funding and inappropriate distribution of funds has led to a de-motivation of medical staff. The downgrading of the medical statutes, inadequate income, and poor working conditions are some of the reasons behind the decreasing numbers of physicians, and has also led to fewer nurses and medical doctors when compared with the EU average (Vlădescu et al., 2016). Unfortunately, in 2017 the lower staff numbers resulted in a greater number of new HIV/AIDS diagnoses and fewer immunizations (INSP, 2018). The HIV prevalence rate is also a factor affecting the emigration of physicians. The risk implied by treating patients with HIV/AIDS and the fear that the children of medical staff could be exposed to HIV has pushed some medical doctors to emigrate (Bhargava and Docquier, 2008).

Many of the problems in Romania's health services can be attributed to insufficient funds and mismanagement of the available money. WHO statistical data has revealed that in 2014, Romania held the last place among the EU member states in terms of health expenditure as a proportion of GDP, with 5.6% (Germany spent 11.3% of GDP). Despite, or perhaps because of this fact, Romania was the first country in Europe to introduce telemedicine (Alexa, 2014). The two telemedicine command centres in Bucharest and in Târgu Mureş can provide medical support in real time to any of the hospitals in the country, and also monitor the vital signs of patients.

5.2.1 The development of the number of doctors in Romania

Looking at the development of the numbers of doctors in recent history, one must take into account the situation in Romania prior to 1989 and the changes that have occurred after the fall of the communist regime. Between 1985 and 1989, the number of study places in medical universities was exactly calculated with regard to the need for doctors. It was very difficult to enter the system, but after training student were supported until receiving a place of work. The many restrictions imposed by the communist regime made conditions difficult for new graduates, with some of them being forced to work with a lack of resources. Actual statistics from that time cannot be found in the Internet, and the veracity of the recorded numbers is dubious. After the revolution, along with the decentralization of the health system and a reduction in the number of hospitals, the number of available jobs diminished. Between 1990 and 2012, the number of practicing physicians decreased from 55000 to less than 40000 (Boboc et al., 2015). The opening of the borders created the possibility of migration for medical specialists, and from 1990 to 2015 21,000 doctors emigrated (CMR, 2017). This migration is a normal phenomenon that happens throughout Europe, the only difference being that there have not been enough physicians entering Romania to replace those that are leaving. In an attempt to increase the number of available physicians, the number of study places was increased, but with the lack of workplaces, very low financial compensation and high levels of disillusionment, the outgoing migration continued. The complex relationship between doctors and their patients also changed. This was exacerbated by increases in the occurrence of chronic disease, new medical technologies, medical services cost reimbursement practices, the use of the internet, government regulations, changes of social norms and increases in the cost of health services (Teodorescu et al., 2013).

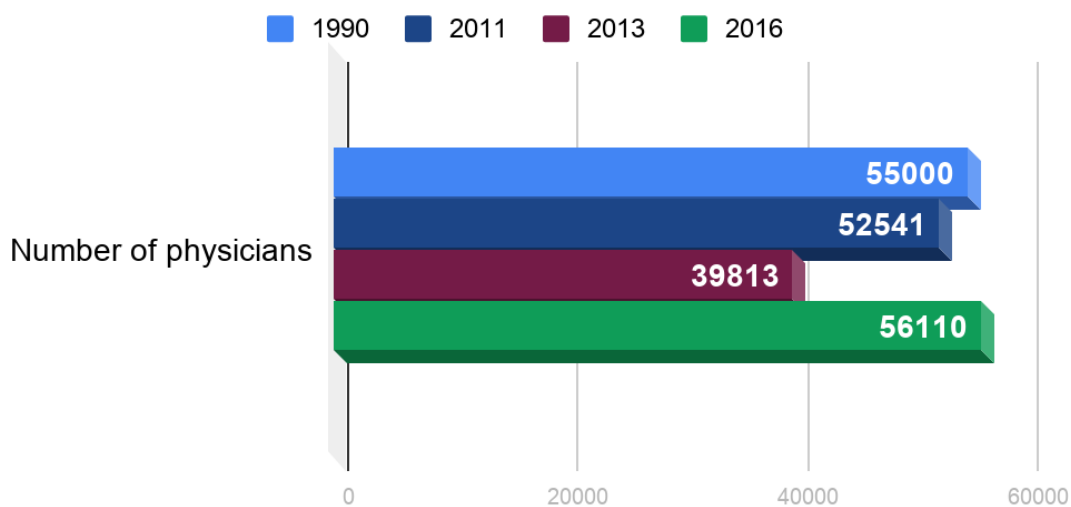
Between 2007 and 2015, 14,000 Romanian doctors left the country. In 2015, out of the 231,000 employees of the healthcare system, 14,000 were physicians (Suciu, 2017). The gravity of these numbers rises from the fact that half of the Romanian doctors left the country before the beginning of 2016. This ongoing problem continues to deepen, considering that every year approximately 3500 physicians choose to work abroad, while only 3000 doctors a year are entering the system; this has the potential to bring about the collapse of the healthcare system in the coming decade (Suciu, 2017).

5.2.2 Development of the total number of doctors and the medical structure

The Romanian medical system is comprised of dentists, general medicine doctors, nurses, and auxiliary personnel. As in many other EU countries, the distribution of doctors in Romania is uneven, with a chronic shortage of physicians in rural areas because the vast majority prefer either to work in large cities or to emigrate (Lăzărescu, 2017).

The total number of doctors has been dropping since 1990, when, according to the CMR, Romania had 55,000 physicians with the right to practice (Lăzărescu, 2017); in 2016 there were 51,422 physicians in Romania. The number of physicians who are leaving the system is worrying, taking into account that not all those with permission to practice are actually employed as doctors (Lăzărescu, 2017). The fluctuations of the numbers of doctors in the Romanian national health system can be seen in *Figure 21*.

Figure 21. The evolution of the number of physicians in Romania. Modified from Lăzărescu, 2017 and Dornescu & Manea, 2013



The number of doctors working in hospitals must also be taken into consideration. This number decreased from 20,648 doctors in 2011 to 14,487 in 2012. In 2014 there were only 13,521 doctors still working in hospitals (Suciu et al., 2017). Because working in the private sector is seen by some doctors as an alternative to emigration, between 2007 and 2017 about 21,000 physicians were recorded as working there, mostly because of the superior infrastructure (Tudorica, 2017). According to Eurostat statistics from 2018, the number of doctors working in hospitals is comparable with those in the private sector. In 2007 there were 21,854 state sector doctors, in 2011 25,808, and in 2016 the number rose to 27,981 (Eurostat, 2018).

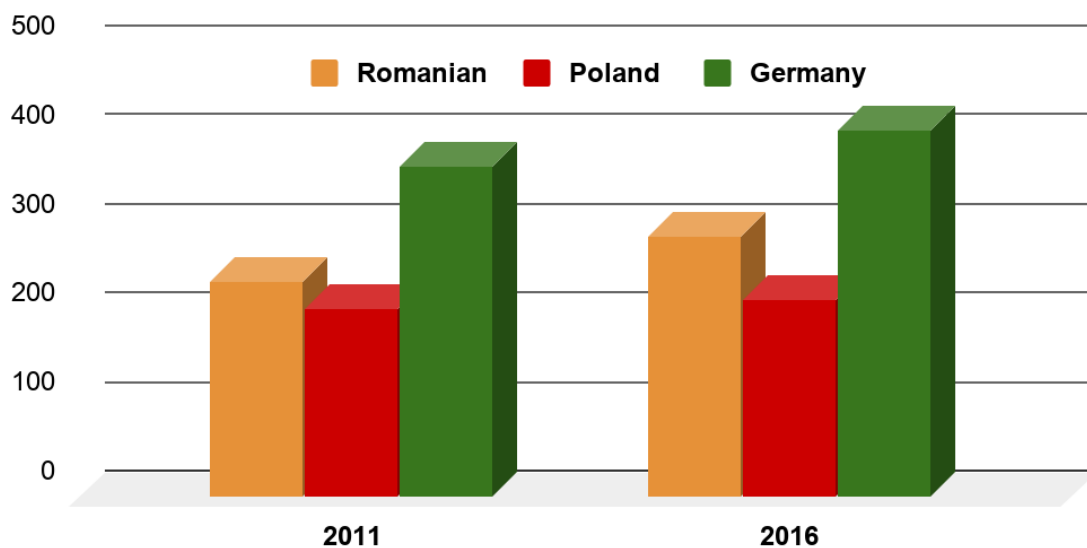
5.2.3 Development of the number of doctors per inhabitant

According to Eurostat, in 2011 Romania had fewer than 270 practicing physicians per 100,000 inhabitants, and therefore occupied one of the last positions among European countries (Eurostat, 2014). Other countries with the rates between 275 and 300 physicians per 100,000 population were Ireland, Luxembourg and the United Kingdom. Poland recorded the lowest ratio in 2015, with only 233 physicians. Between 2011 and 2016 the number of physicians per inhabitant increased in all EU countries, with the

exception of Spain (Eurostat, 2018). The increase in numbers of practicing physicians from Romania, Poland and Germany can be observed in Figure 22.

Between the years 2006 and 2016, the ratio of specialist to generalist physicians also rose in most EU countries. A more pronounced rise was observed in Romania and Poland than in Germany (Eurostat, 2018).

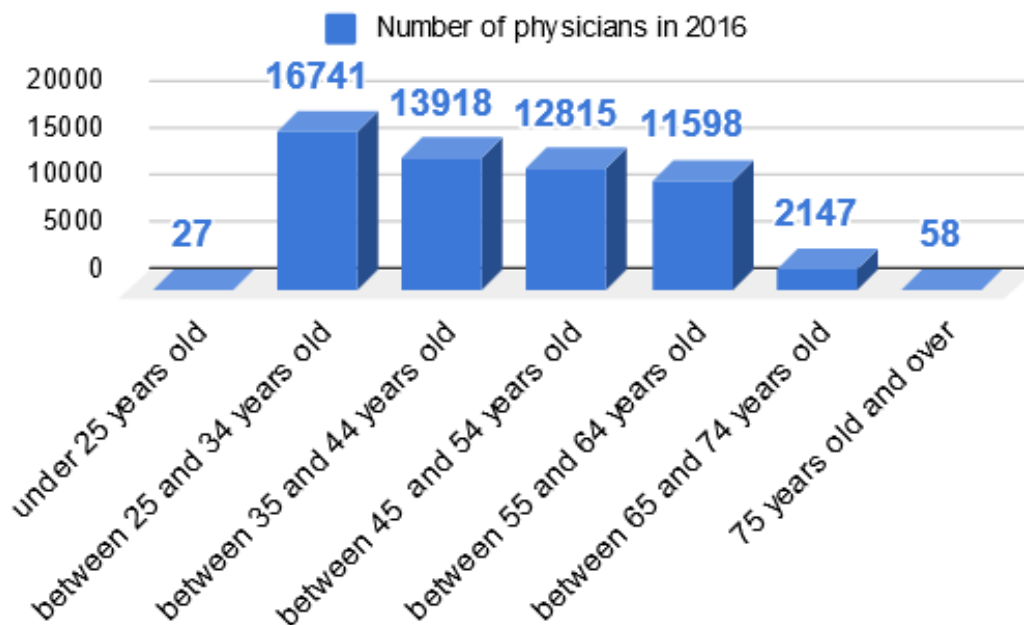
Figure 22. Comparison between the number of physicians per 100000 inhabitants. Modified from Eurostat, 2018



5.2.4 The development of the age structure and number of newcomers

Another problem that Romania is confronted with is the aging of its population, a phenomenon that is common throughout Europe. In Romania, this is a result of the emancipation of the female population, lower fertility, poor sexual health education and the misunderstood freedom that followed 1989, after the communist regime ended. Even though the abortion rate has decreased since the time when the largest number of legal and illegal abortions were registered, it is still almost twice the European average (Vlădescu et al., 2016). According to the INS, on the 1st of January 2015, Romania's population who were over 65 years officially surpassed the numbers under 15, meaning that there is also an aging of the doctors. In 2011 around 45% of working Romanian doctors were aged 45 years or older (Dornescu and Manea, 2013) and in 2016 more than 46% of the physicians were 45 years old or older (INS, 2017). A detailed chart showing the age distribution can be seen in *Figure 23*.

Figure 23. Age distribution of the Romanian physicians in 2016. Modified from INS, 2017

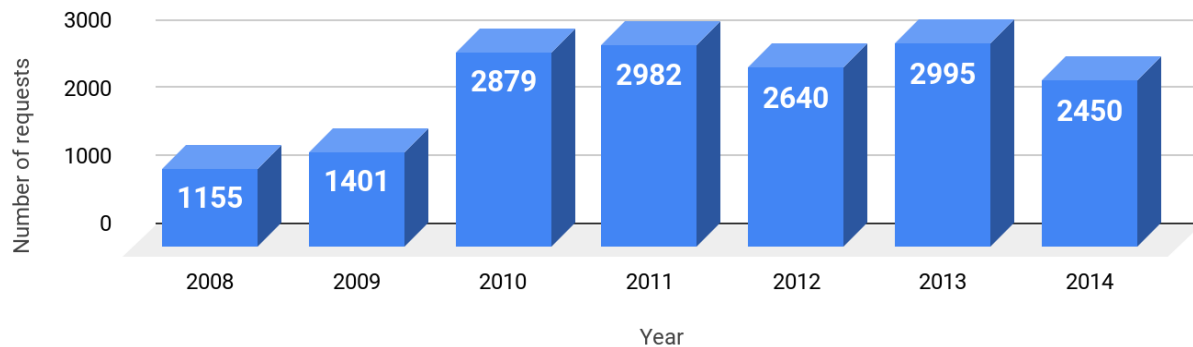


The number of emigrating doctors is larger than the number of specialists that Romania is able to train every year, making a pessimistic outlook for the Romanian health system from 2021 and onwards (Dornescu and Manea, 2013).

5.2.5 Migration rates of physicians from Romania

Since most young physicians need to find a job on their own after finishing the residency programme, and since there are too few jobs on the market despite the real deficit of doctors, there is no surprise that the age profile of the emigrating medical Romanian doctors is between 25 and 44 years of age (INS, 2017) (*Figure 24*). Actual data referring to the final destinations of emigrating physicians does not exist. The best-informed guess can be made by extrapolating from the destinations declared when requesting the Certificate of Good Standing (*Figure 24*) and from the diminishing numbers of members in the CMR.

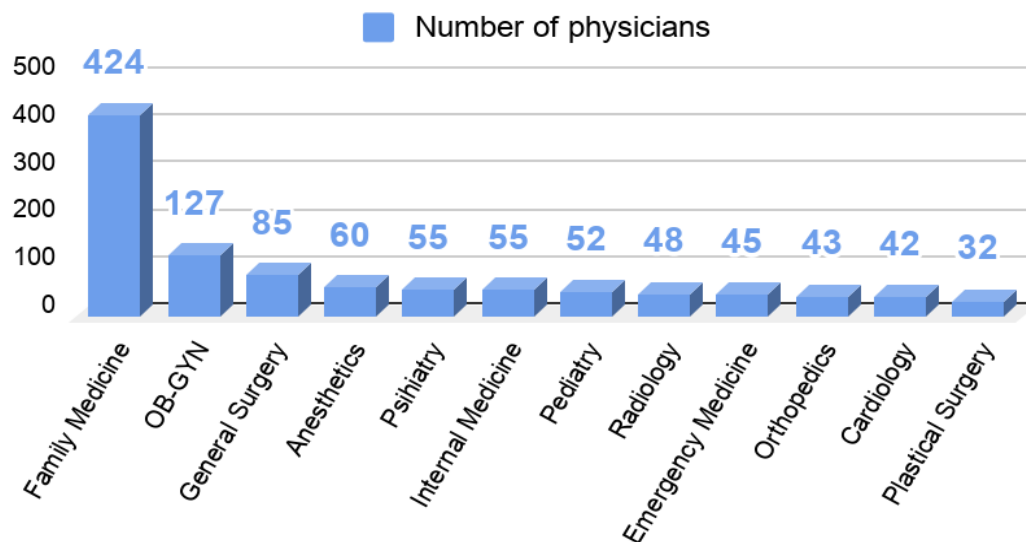
Figure 24. Number of physicians that requested the Certificate of Good Standing from 2008 to 2014. Modified from Séchet and Vasilcu, 2015



Other indicators regarding the number of possible emigrating doctors are the numbers of requests of up to 2 years of unpaid leave, or regarding the destination, the actual number of physicians registered at the various medical colleges in other countries.

The most requests for Certificates of Good Standing have come from the field of family medicine, followed by obstetrics and general surgery (Moraru, 2016), as can be seen from *Figure 25*. As a consequence of this highly specialized migration, some hospitals in Romania have been forced to close a ward when the only specialist working there goes on vacation.

Figure 25. Fields of practice for the Physicians that required the Certificate of Good Standing in 2014 in Romania, Modified from Moraru, 2016



Recruitment fairs have facilitated the migration of medical personnel by offering the possibility of face-to-face interaction between recruiters and the potential workforce. Although these fairs offer a lot of information not only about potential jobs but also about the countries to which migration could take place, the ethics of the whole

process have not been closely considered. According to a qualitative study by Cehan (2013), there is a lack of ethics regarding the international recruitment process.

5.3 Measures taken by the Romanian Government against emigration of medical personnel

Although Romania's interest in retaining health personnel has been seen to be limited (Paina et al., 2016), between the October 2016 and October 2018 the Government initiated the program "Diaspora Start-up". Through this program, returning Romanians can receive grants of up to 40,000€ to start up a business in their own country. These funds were also available to medical personnel in the private practice sector. Half a year later, on the 1st of April 2017, the National Centre for Human Resources was opened. This institution aims to help Romanian doctors working abroad who want to come back to Romania, by assessing the human resources needs and coordinating the training of physicians. Other initiatives have involved matching the number of places in residency programs in each specialty with the current needs of the system and of the population.

In his Ministry of Health Governing Program 2017-2020, health minister Bodog proposed the Multi-Annual Plan for the Development of Human Health Resources (Romanian Government Decision 1028 from 2014) with measures such as improving recruitment mechanisms, developing associated skills for healthcare professionals by reviewing training and residency programs, developing the concept of rural health, stimulating mobility in professional, academic and research practice, establishment of a result-based wage policy, and the creation of a single national database and common indicator system to monitor the dynamics of human resources in health.

Another measure intended to solve the low number of specialized medics in Romanian hospitals is allowing young doctors to become specialized on the job. In the residency program there is already the possibility that future specialists can work in a hospital, but in this case, they do not compete for the residency places provided by the medical university and they receive a salary from the hospital. At the end of the program, the newly trained specialist is given the right to practice, along with the choice of either working for that hospital for the same number of years as the years of specialist training, or paying back the salary they took during the residency. The duration of this training (offered by the university or a hospital) varies from 3 to 7 years.

Circular migration, which involves internships abroad and involvement in international projects and then a return to the home country, could be a win-win solution to the problems created by the emigration of the medical personnel.

According to a study by Boboc et al. (2015), the salaries of medical doctors should be three times the average salary in a country. Knowing that the salaries of specialists in Germany, France, Spain, Ireland, and the United Kingdom are 2.7 times higher than

the average salary, it is only to be expected that Romanian physicians see these five countries as destinations for emigration. In an attempt to solve this problem, Bodoc, a Romanian health minister, wrote about this approach on Facebook. His plan was to raise the salaries of state-employed physicians to European levels in 2018, and to modernize the equipment in state-owned hospitals. The intention was to stop the emigration of physicians and to bring many of the 21,000 doctors who are now working in the private sector back into the public system in order to solve the problem of the lack of doctors. However, this proposal provoked many comments in social media and did not have an impact on the number of physicians leaving the country, as many of the physicians pointed out the better working conditions when working abroad.

The Romanian Ministry of Research and Innovation created various programmes in order to promote the return of Romanians with professional training. One such example is "Grantul pentru tineri cercetători Regele Carol I" (The King Carol I grant for Young Researchers) which was approved in May 2017 by the Romanian Government. The recipients of the programme receive annual scholarships up to €3500. These scholarships are available for students that has extraordinary school results, if they decide to study in a university in Romania and agree to continue working in research in Romania for at least 4 years after completing their master's degrees (Lăzărescu et al., 2017).

6 Parallels between medical and specialist training in Germany, Poland, and Romania

The following chapter will discuss whether the training offered to Romanian and Polish medical students and specialists can be compared with education obtained in Germany. The high standard of medical care in Germany is a direct result of having good specialists. Supplementing the deficit in specialists in Germany with foreign trained specialists can be the key to maintaining this high standard.

Anyone who wishes to study medicine in Poland must choose the appropriate subjects during their high school education (i.e. biology, physics, and chemistry) and take an examination (Abitur) in the natural sciences. This is a prerequisite for application for a study place, and the grades attained in this examination are decisive in securing a study place (Kolodziej et al., 2016). In Romania, as in Germany, when applying for a study place, prior scientific knowledge is not decisive. In the past, the admission process for medical training in Romania did involve sitting an examination of knowledge in biology, physics, and chemistry. Although over time the number of examined disciplines has been reduced, this still means that Romanian and Polish undergraduate students generally have more prior knowledge of basic subjects of study. In contrast to students in Germany, Polish and Romanian students have the

possibility of studying for fees as well as studying in English. This means that these universities are preparing at least some of their students for the external labour market from the start.

6.1 Legal basis

The first group receiving attention in European legislation designed to facilitate free movement of workers within the EU were doctors (Peeters et al., 2010). The law broadly known as the 'Doctors' Directives' (Directives 75/362/EEC and 75/363/EEC from 1975) served as a model for the directives for other health professions such as dentists, pharmacists, nurses, midwives, and veterinary surgeons. Directive 2005/36/EC specifies the requirements for automatic recognition within Article 24, (which refers to basic medical training) and Article 25 (specialist training).

Recognition of basic medical training requires either a diploma or an examination certificate which states the university in which the study was completed, proof of 6 years of study or 5500 teaching hours of theoretical and practical training and proof of appropriate acquired knowledge and skills (Directive 2005/36/EC). According to Article 25 of the European law, 3 conditions must be fulfilled for the recognition of specialist training. It is important that all the conditions within Article 24 are fully met, and the appropriate authorities must approve the theoretical and practical training, which has a stipulated minimum duration. The third condition is that the training must be full-time, where trainees are actively and responsibly involved in patient care and are remunerated appropriately.

The Time Directive was introduced in order to prevent trainee doctors working the inhuman schedules that existed a generation ago. These working conditions were traditionally intended to make the best possible use of scarce human resources; the long working hours made the maximum use of personnel and improved the experience of young physicians, but often trainee doctors are unhappy to work in such programs.

The minimum duration of specialist training in the different subject areas is given in Annex V, point 5.1.3 (Directive 2005/36/EC) and is essential for the recognition of specialist training. A certificate of conformity is issued in order to confirm that the minimum requirements according to Annex V are met.

According to Peeters (2010):

The legal framework provided by Directive 2005/36/EC contains shortcomings and fails to resolve legal uncertainty. Within the EU, there are very different views about the acceptable relationship between the state and the health professional. This makes it difficult to ensure that relevant EU legislation takes account of the implications for health care.

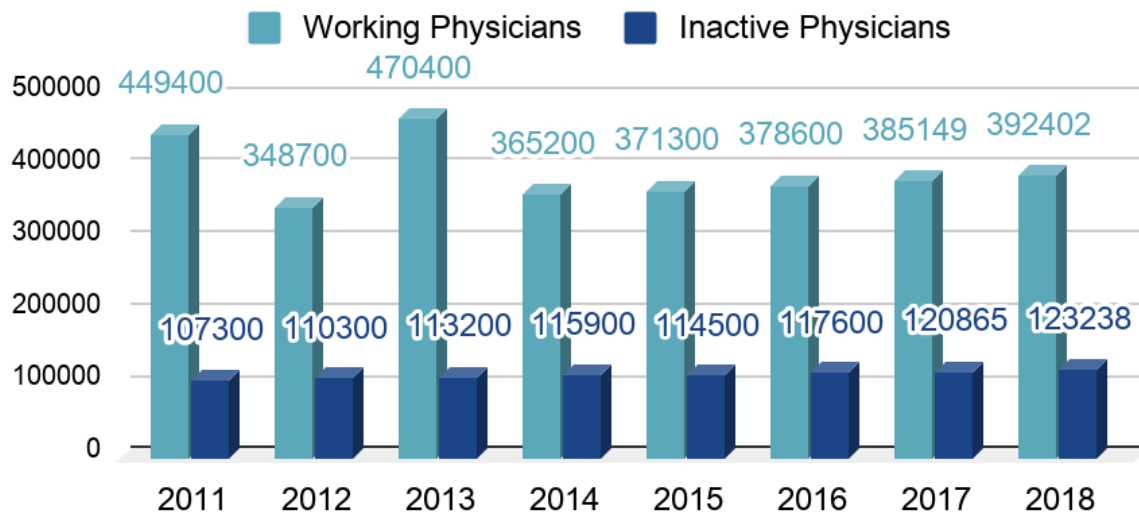
6.2 Medical training in Germany

In order to become a physician in Germany, it is necessary to apply to one of the 37 German medical universities. Preclinical studies take place over 4 semesters and the clinical ones another 6. At the end of these studies, every physician takes the state exams and fulfils a year of working under supervision, meaning that it takes at least 6 years to obtain a license to practice. According to BÄK (2017a), all practicing physicians must have a specialty and must hold a temporary or full license, which is valid for an unlimited time throughout Germany. This license can be issued by health authorities in each of the 16 German federal states, with the exception of North Rhine-Westphalia, which has two Chambers of Physicians.

In recent years the difficulty in gaining entry to the medical education program, the long time it takes to become a doctor and the discrepancy between the salary and the responsibility of the job have decreased the number of doctors who have trained. Thus, F. Montgomery, one of the presidents of BÄK, stated in 2016 that there are many regional problems with the number of physicians: "Whoever looks only at the slightly rising physicians' numbers closes their eyes to the whole truth. In fact, the gap between treatment needs and treatment capacities is growing."(BÄK, 2016a). In the same year, the Federal Unemployment Agency reported 1,943 vacancies for physicians (previous year: 1,807). Montgomery was also disappointed that in the "Masterplan Medizinstudium 2020", the number of study places was not increased by at least 10%, meaning that the promotion of medical training and the provision of the necessary resources cannot occur (Sartori, 2016).

In Germany, as in many European countries, it is compulsory for physicians to hold membership of a medical association. The German Medical Association gathers data in order to better serve physicians and patients (Busse and Blümel, 2014). This is the only organisation that recognizes professional and vocational qualifications obtained abroad and adopts the further training regulations as well as further training guidelines. This activity is regulated by the Recognition Act (Anerkennungsgesetz) of the Federal Government. According to this act, after the 1st of April 2012 it has been possible for individuals, regardless of nationality, to have their studies and professional qualifications recognised within Germany. Immediately after this law was enacted, the number of working physicians increased (*Figure 26*) then dropped again, and since 2014 a slight but constant rise has been seen. The number of physicians who are not working or are retired is also constantly rising.

Figure 26. The evolution of physicians working in Germany from 2011 to 2018. Modified from BÄK (2018b)



6.2.1 Legal principles of the medical profession in Germany

The basis of the German medical care system is the German Basic Law (Grundgesetz), which specifies that social services must be provided to German citizens, and that these services must comply with the basic principles of social rights. These principles - solidarity, social reconciliation and meeting needs - guarantee social security in case of disability, even for persons with below average income. In their paper "The German healthcare system", Döring and Paul (2010) state that approximately 1% of German citizens are uninsured. This occurs despite the legal obligation that began on the 1st of January 2009 that every individual must have health insurance. Only 9% of the population are privately insured, and the remainder are covered by the statutory health insurance system (Döring and Paul 2010). The principle of self-governance offers the insurer and insured the possibility to choose their own specific arrangement. The medical associations supervise compliance with professional codes such as medical ethics and the code of professional conduct. Physicians respect several codes of conduct, the best known being the Hippocratic Oath (written in Ionic Greek from the third to the fifth century BC), the Declaration of Helsinki (1964) and the Nuremberg Code (1947).

6.2.2 Basic medical training in Germany

All universities in the Federal Republic of Germany are subject to restrictions on admission for medical studies. The training of a medical student is costly and therefore the "numerus clauses" is implemented. The admission process is regulated by the 20-20-60 rule, where 20% of admitted students must have the best high school (Abitur) grades (1 or 1.1), 20% are allocated after a waiting time, and in the so-called "selection procedure of the universities" 60% are distributed by the universities according to their

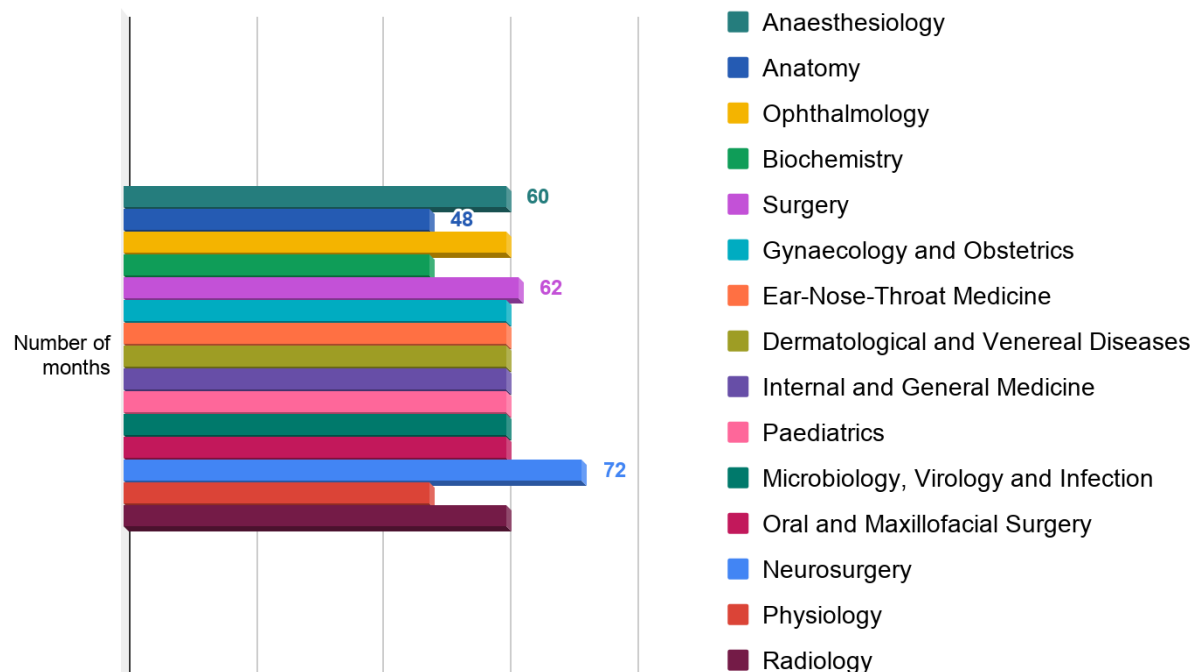
own criteria, (Gillard et al., 2016). Depending on the university, out of these 60% up to 5% of places are reserved for foreigners. The fact that the average waiting time for local students amounts to 14 semesters with a grade better than 2.6 (hochschulstart.de, winter semester 2017/18) and that foreign students do not have to wait creates a lot of discontent with the admission process (Gillard et al., 2016). The high-quality training and excellent international reputation, as well as the great opportunities available to graduates in medicine, make basic medical studies a very appealing proposition for Germans and foreigners alike.

The principles governing medical training are defined in the Licensing Regulations for Physicians (Approbationsordnung) of 27/06/2002 (most recent amended Art. 5 B from 18/04/2016). These regulations state that undergraduate medical studies must be comprised of 6 years and 3 months of basic medical training, which also includes a year of practical training. The university study takes at least 5500 hours and consists of 3 stages. The first stage ends with written and oral tests in the fields of physics, biology, chemistry, anatomy, physiology, and molecular biology, as well as sociology and psychology (ÄApprO, 2002). Three months of nursing experience and a first aid course must be completed during this stage. The second stage builds the knowledge and abilities for performing autonomous and independent medical treatments. The practical year is divided into three training courses in a clinical/practical specialty, general medicine, surgery or internal medicine. The third section of the medical examination consists of oral and practical examinations based on specific patient cases (ÄApprO, 2002). Basic medical training in Germany leads to graduation with an Approbation (License to Practice Medicine).

6.2.3 Specialist training in Germany

Junior physicians in Germany are able to complete their specialty training in a medical practice while receiving remuneration for their work. With basic medical training complete and a full or temporary license to practice, young medics can find a job as a junior physician working in their area of specialization while being supervised by a doctor who is licensed for medical training. There is a choice of 33 specialization fields. The information is available on the internet pages of the BÄK and DAAD organisations. As detailed in *Figure 27*, the training can take place in a university hospital, a clinic, or an outpatient unit and lasts between five and six years. It is supervised by the State Chamber of Physicians. After the fulfilment of the stipulated points of the training, the same institution assesses the level of successfully completed training in an oral examination. A committee comprised of three physicians (two being specialists in the chosen specialty of the examinee) decide if the physician will receive a specialist diploma (Facharzt Diplom).

Figure 27. The number of months necessary for different specialist training. Data obtained from the DAAD web page



The Medical Practitioners' Act (Bundesärzteordnung) and the Licensing Regulations for Physicians (Approbationsordnung) regulate the basic medical training and at a national level standardise the granting of licenses to practice. The content of the training is regulated and configured by the State Chambers of Physicians and respect the general rules of specialists training imposed by the German Medical Association.

6.3 Medical training in Poland

In order to complete medical training in Poland, students attend the medical colleges and medical faculties which belong to general education universities. There are 13 state-run Polish universities that are accredited for the study of medicine. In addition to doctors, higher education institutions also train specialists for all medical fields, such as pharmacists, nursing staff or nutritionists (MNiSW). In addition to training, universities also carry out research and treat patients (Kolodziej and Gresser, 2016).

6.3.1 Legal principles of the medical profession

In Poland, from 9th of May 2012 the legal basis of basic medical education has been regulated by the Ministry of Science and Higher Education (Kolodziej and Gresser, 2016). The courses take at least 12 semesters and amount to 3650 teaching hours and students who started their studies before October 2012 will need to become employed to complete a 13-month internship (Kolodziej and Gresser, 2016). The available medical fields include Internal Medicine, Pediatrics, General Surgery, Gynecology and Obstetrics, Psychiatry, Anesthesiology, Intensive care, Emergency as well as General Medicine. In addition to these fields, graduates can learn Bioethics

and Medicine Law. Trainees are supervised and managed by the regional doctors' chambers in their professional practice. The internship is remunerated (Kolodziej and Gresser, 2016). Private universities in Poland are currently not viewed as independent colleges for medical training (Kolodziej et al., 2016)

This study period is followed by the state exam known as “Lekarski Egzamin Końcowy” (LEK). According to the results of the LEK, new physicians are allocated to specialist training centres. The successful completion of the LEK and the completion of the internship are prerequisites for obtaining admission to professional practice as a doctor, as well as to start a specialist training course.

6.3.2 Basic medical training in Poland

In order to enter the Polish medical system, students must have good results at the equivalent of the German exam called Abitur, which in Poland is known as “Matura”. The Matura is taken after 12 years of schooling and this is the basis for entry to medical training. In the last two years of high school, a focus must be chosen (Anczewska and Charzyńska, 2012), and subjects such biology, chemistry, and physics are necessary for those wishing to undertake medical studies. For Polish citizens, studying is free of charge, as it is financed from the state budget. Those who do not receive a study place during the selection process have the possibility to study for a fee. A fee is also charged for the medical courses that are taught using English language, which are especially interesting for foreigners who have not received a place of study in their country of origin. Each university sets its own entrance requirements and can decide to host entrance exams (Lungu, 2017).

The number of study places per year and the allocation to a specific university is determined by the Minister of Health, in agreement with the Minister of Education, taking into account university capacities as well as the current need for doctors. Kolodziej et al. (2016) observed that private universities wish to profit from the lack of study places in public universities and are interested in opening medical faculties. Due to the high study fees, medical studies would be a lucrative source of income for private universities. The doctors' chambers fear a loss of quality in medical education if medical studies are carried out at private universities, which are currently not focused on medical studies but on applied sciences in general.

6.3.3 Specialist training in Poland

The specialist training system in Poland has been revised in recent years to enable faster training and an increase in the number of specialists. A new modular specialist training system was initiated on 1st October 2014. Students who qualified for the specialist training before this date continue through the previous specialist training system, so that currently two training systems run in parallel. According to the new regulation, there are 77 specializations, consisting of 5 basic modules and 41

additional modules, as well as 28 specializations that are completed as single-phase modules (Kolodziej et al., 2016).

New doctor's training intakes occur every six months. The number of vacancies in the departments is determined annually by the Minister of Health and depends on the current need for specialists, the capacities of the clinics, and the financial budget. Young physicians qualify within the framework of medical activities as full-time employees with a working time of 7.5 hours daily. The training takes place under the supervision of a specialist within the framework of the specialist doctors program. The employment contracts are limited to the time of the training, and guarantee a job for the entire period of the training. The level remuneration is fixed by the Minister of Health and is paid by the state. This form of specialist training can only be completed by students who have not yet completed a specialist training course. As the training places are limited, usually only half of the applicants have the opportunity to participate (Kolodziej et al., 2016). The final examination of the medical training occurs twice a year, and consists of a written and oral examination (Kolodziej and Gresser, 2016).

6.4 Medical training in Romania

According to the OECD (2017), the life expectancy of the population over 80 years of age will continue to increase at least until the year 2050. The Romanian National Institute of Statistics states that the gap between the life expectancy of men and that of women, who are expected to live 5 years longer than men, has narrowed by 1.5 years since 1990 (INS, 2018). These developments suggest that there will continue to be a growing demand for medical specialists (Rădoi and Postelnicu, 2016). In order to fulfil the need for doctors suggested by these predictions, Romanian medical universities are increasing the number of graduates every year.

Romania is preparing 4 times more young medical doctors as it did in 1990, but still has many unoccupied hospital positions, especially outside the big cities (Tiron, 2016). One possible explanation for this is the lack of forward planning by the universities, which do not implement numerus clausus. Another possible cause for this is the student selection process. V. Astărăstoae, former president of the Romanian College of Physicians, identifies 2 crises in the training of future physicians (Astărăstoae, 2017): The selection crisis refers to the exclusive focus on the use of memory in the training, not taking into account the fact that medicine is a humanist profession that only uses the results of technical sciences. He considers that selection processes that focuses mainly on the evaluation of motivation and vocation, instead of evaluating disciplines such chemistry, physics and biology would create better physicians. In his opinion, considering the results of general tests during high school and especially the extracurricular activities carried out by the candidates (volunteering, cultural activities, sports activities, humanitarian activities, etc.) is a much better way to select candidates with a real vocation for the profession. He also speaks about the crisis of the

educational process: on the one hand the excess of information and, on the other hand, the loss of motivation.

The fact that Romania pays for the education of medics who will mostly leave the country upon completion of their medical studies or even before that, with the help of scholarships, does not come as a surprise. Although this situation is much debated in the media, the current inadequate management of the situation perpetuates the problem.

6.4.1 Legal principles of the medical profession in Romania

The general principles of practicing the medical profession are stipulated by laws issued by the Romanian Parliament, published in the Official Gazette Nr. 372 of April 28, 2006. This states that the entire professional activity of a physician must be dedicated exclusively to the protection of the mental and physical health and integrity of the human being, and that the physician is obliged to defend his or her professional independence. Throughout all activities, doctors must respect colleagues and refrain from denigrating them. Doctors are forbidden to make any medical act or professional decision because of reasons of economic or administrative profitability. The principle of transparency refers to seeking and accepting sponsorship for activities performed strictly in the professional interest and the obligation of informing the local college within 60 days if the amount of sponsorship exceeds the amount established by the decision of the National Council of the Romanian College of Physicians. Doctors' relationships with patients must be exclusively professional and must be based on respect for human dignity, understanding and compassion for suffering. Physicians must obtain informed consent from all patients or their legal guardians. An exception to this rule may be made in case of vital urgency; only in this case can the principle of professional specialization be ignored, while in all other cases, doctors must act according to their specialty, skills and practice. Doctors must maintain professional confidentiality, even with family members and also after patients have been discharged or are deceased.

Derogations from the rule of professional confidentiality are only those expressly provided by law. The doctor has the professional and legal obligation to follow hygiene and prophylaxis rules, and must therefore inform the relevant authorities about any situation which represents a danger to public health. Doctors should be models of professional and ethical behaviour with respect to the authority and prestige of the medical profession.

In Romania, practising euthanasia and eugenics is forbidden by law, and are considered to be unethical. Other forbidden practices are refusal to provide medical services, the abandonment of a patient who requires emergency care, or the use of non-scientific diagnosis and treatment methods. In any litigation or professional conflict, a conciliation procedure within the professional body is mandatory before any

public action is taken. Doctors are obliged by law to provide mutual support and must act loyally towards their peers.

6.4.2 Basic medical training in Romania

Basic medical education in Romania takes six years and can be completed at one of the 11 available medical universities. With a teaching experience of 161 years, the oldest medical university is in Bucharest, the capital city (Medikal, 2006-2019). In 2017, the Medical University of Bucharest offered 520 full government grants for classes taught in Romanian language, 200 paid places (with tuition fees of almost 2000 euro/year) for classes taught in Romanian, and 250 places for classes taught in English (with tuition fees of 6000 euro per year), making it a very attractive place for foreign students to study medicine. *Figure 28* also shows that the majority of the Romanian universities are located on Romania's western border and in the centre of the country (Transylvania region). On the western border, German language is widely spoken, especially in Timișoara county (highlighted in green and yellow on the map in *Figure 28*).

Figure 28. The county, year of opening and location of the Medical Universities in Romania. Modified from Wikipedia (2019) and Medikal (2006-2019).

- Carol Davila University of Medicine and Pharmacy of Bucharest (1857)
- Grigore T. Popa University of Medicine and Pharmacy of Iași (1879)
- Iuliu Hațieganu University of Medicine and Pharmacy of Cluj-Napoca (1919)
- University of Medicine and Pharmacy of Târgu Mureș (1945)
- Victor Babeș University of Medicine and Pharmacy of Timișoara (1944)
- University of Medicine and Pharmacy of Craiova (1970)
- Ovidius University of Constanța – Faculty of Medicine (1990)
- Lucian Blaga University of Sibiu – Faculty of Medicine (1990)
- Vasile Goldiș West University of Arad – Faculty of Medicine and Pharmacy (1991)
- University of Oradea – Faculty of Medicine (1991)
- Transilvania University of Brașov – Faculty of Medicine (1995)

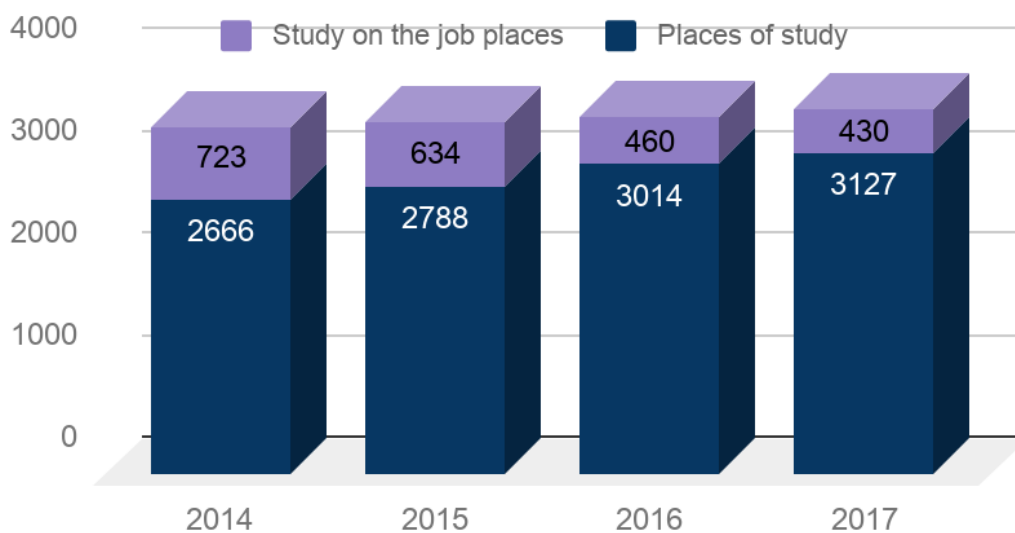


After written and practical examinations, students make an oral presentation of their diploma paper in order to become physicians. The duration and content of the studies are regulated by the Bologna process which means that completion of the medical studies grants young doctors automatic recognition in other EU countries.

6.4.3 Specialist training in Romania

In 2014 the national report from the Chamber of Physicians pointed out that there is still a lack of physicians in some specialties (anesthesiology and intensive care, radiotherapy, cardiovascular surgery, thoracic surgery, clinical allergology and immunology, haematology) which highlights a lack of strategic vision at the management level demonstrated by the Romanian national health system, and inefficient management of human resources. The currently practicing specialised physicians are aging, and medical residents are leaving the country due to the extremely low salaries. The Romanian Ministry of Health has attempted to solve this problem by increasing the number of study places, as can be seen in *Figure 29*. There are 2 ways to enter the residency program: competing for a place or competing for a job. The data available in the official portal of the Romanian Ministry of Health shows that although the overall number of specialists is growing, the number of specialists who will be able to work in the public sector is diminishing.

Figure 29. The evolution of residency places in Romania from 2014 to 2017. Modified from <https://rezidentiat.ms.ro>



In 2017 there were 58 specialisations with a training duration of between 3 to 6 years, with most of them taking 5 years. An exception is oral-maxillofacial surgery, which requires double licensing as a dentist and as a general physician, and 5 years of residency. Romania's alignment with EU education laws provides the young specialists who are trained in the country the possibility to work abroad with full recognition of their qualifications. The EU recognition of each particular study program

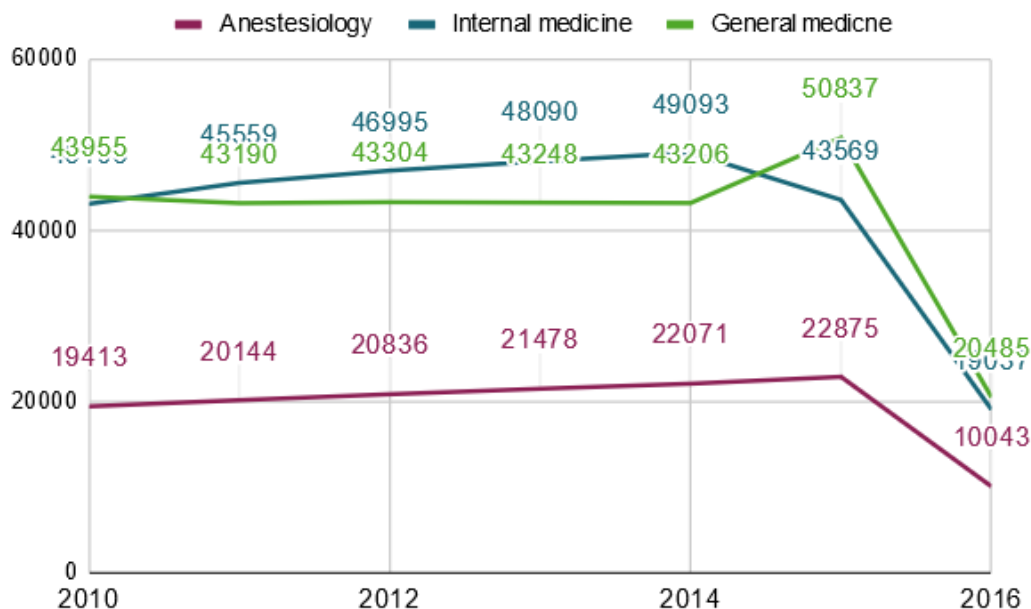
is certified by the Romanian Ministry of Health when the requirements of the DC/2005/36CE law are fulfilled.

The following subchapter will discuss three of these specialisations, in order to assess whether a medical specialist trained in Romania is able to work in other EU countries.

6.5 Comparison of specialist training in Germany, Poland and Romania

Although Romania, Poland and Germany, as EU countries, have similar training programs for their future medical specialists, the curriculums of the residency programs do not completely overlap but the similarities are sufficient to enable the awarding of equivalent diplomas which enable specialists to work in the EU country of their choice. The field of internal medicine, having the greatest numbers of German specialised physicians (Braun, 2017), was chosen for this comparison. The fact that there is a need for specialists in Germany in the fields of anesthesiology, internal medicine and general medicine can also be observed by analysing the information offered by the German Medical Association (BÄK, 2017b). By comparing the annual statistical reports and observing the evolution of the specialist numbers (*Figure 30*), coupled with their press releases, it becomes obvious that these fields are lacking personnel, as the number of doctors dropped in 2015.

Figure 30. The evolution of specialist numbers in Germany between 2010 and 2016. Modified from BÄK (2017b)



According to the data contained in the paper by Kolodziej et al. (2016), Polish specialists in anesthesiology and internal medicine have a great interest in leaving the country; this trend can also be observed in Romania. In Germany there is a great shortage of specialists in the field of general medicine (Kolodziej et al., 2016), and in Romania this is also one of the fields where the most requests for a certificate of conformity were made between 2010 and 2015. As the destination country must be specified in certificate requests, it is known that the majority of migrating doctors were considering working in Germany (Glinos, 2015).

In the EU, due to Directive 2005/36/EC which can be found in the European Parliament Directives, any formal qualification obtained in a member state is recognized throughout the other member states. These should mean that the university education and the specialist training are qualitatively equal in Germany, Romania and Poland, guaranteeing a high standard of medical care. This proposition will be investigated in the following 3 subchapters.

6.5.1 Anesthesiology

The minimum duration of continuing medical education in Anesthesiology is 3 years, according to the EU Directive (EU-Directive 2005, Annex V, point 5.1.3). In Germany and Romania, the training period is 5 years, while in Poland it is 6 years. In all 3 countries the training is significantly longer than the minimum standard according to European law (The German Medical Association - BÄK 2013; Polish Centre for Postgraduate Medical Education - CMKP 2014; The Romanian National Centre of Perfecting the Skills of the Medical Personnel - CNPDS 2007). A comparison between the studied subfields within the anesthesiology specialisation and the time allocated to their study is shown in *Tables 1, 2, 3 and 4*.

Subfields of study in the Anesthesiology specialisation process	Allocated time in Germany (total: 60 months/5 years)	Allocated time in Romania (total: 60 months/5 years)	Allocated time in Poland (total: 78.25 months/ 6.5 years)
Anesthesiology	48 months	36 months	44 months
Intensive care	12 months	24 months	17.75 months
Skills training	unclear	unclear	16.5 months

Table 1. Comparison between the studied subfields and the time allocated to their study in Germany, Romania and Poland, Source: for Germany - BÄK 2013, for Romania - CNPDS 2007 and for Poland - CMKP 2014

In order to quantitatively compare the requirements for trainees, *Table 2* compares the time required to study different subfields in the above-mentioned countries. In Germany, this assessment is difficult to make, as the training program may vary throughout the country and some subfields are studied alongside others.

Anesthesiology	Germany	Romanian	Poland
Cardiac Anesthesiology	unclear	2 months	1 month
Thoracic Anesthesiology	unclear	2 months	0.5 months
Neuroanesthesiology	unclear	2 months	0.5 months
Obstetric Anesthesiology	unclear	2 months	1.5 months
Infant anesthesiology	unclear	2.5 months	3 months
Pain Therapy	unclear	2 months	0.5 months

Table 2. Comparison between the time allocated to study different subfields in Anesthesiology in Germany, Romania and Poland, Source: for Germany - BÄK 2013, for Romania - CNPDS 2007 and for Poland - CMKP 2014

In all 3 countries, the training is divided between the study of anesthesia and intensive care. In Romania, as shown in the last subfield, the training takes 2 years and is divided between multivariate intensive therapy with its surgical and medical branches (diabetes, acute intoxication, neurological coma, cardiac diseases, nephrology, paediatric care), traumatic intensive therapy and emergency receiving unit (Table 3). In Germany, the intensive care education is divided into 2 modules of 6 months each, while in Poland, because of the skills training modules it is difficult to identify how much time is allocated to each subspecialty.

Intensive Care	Germany	Romania	Poland
Multivariate Intensive Therapy	unclear	18 months	17.25 months
Paediatric Intensive Care	unclear	minimum 3 months	0.5 months
Traumatic Intensive Therapy	unclear	3 months	unclear
Emergency Receiving Unit	unclear	3 months	unclear

Table 3. Comparison between the time allocated to study different subfields in intensive care in Germany, Romania and Poland, Source: for Germany - BÄK 2013, for Romania - CNPDS 2007 and for Poland - CMKP 2014

As the curriculum is slightly different in the three countries, only a small number of skills were chosen for comparison. The comparison of the minimum number of procedures, which can be seen in *Table 4*, reveals a large difference between the compared countries.

Skills Training	Germany	Romania	Poland
Central line	50 procedures	300 procedures	100 procedures
General and local anesthesia	1800 procedures	410 procedures	1500 procedures
Cardiopulmonary resuscitation	10 procedures	100 procedures	unclear
Infusions, transfusions, parenteral feeding	50 procedures	620 procedures	220 procedures
Artificial breathing	50 procedures	250 procedures	unclear

Table 4. Comparison between the minimum number of procedures that must be completed in Germany, Romania and Poland in order to complete the speciality training, Source: for Germany - BÄK 2013, for Romania - CNPDS 2007 and for Poland - CMKP 2014

6.5.2 Internal medicine

The training referred to in the EU Directive as "General (internal) medicine" has a minimum duration of 5 years. In order to receive the specialist diploma for internal medicine in Germany, a training period of 5 years is required (BÄK, 2013). The training is divided into 2 parts: "basic advanced training in the area of internal medicine" and "further training in internal medicine". In Poland, the basic training module has a 3-year duration and the main module a 2-year duration, which corresponds to the German training period (CMKP, 2014). Similarly, the 5 years training period in Romania is divided between the study of internal medicine (25.5 months) and complementary studies (34.5 months) (CNPDS, 2007). *Table 5* shows that although the length of these 2 modules may vary between Germany, Romania and Poland, the total specialisation time is the same: 5 years.

Fields of study in the internal medicine specialisation process	Germany	Romania	Poland
Module I	36 months	25.5 months	36 months
Module II	24 months	34.5 months	24 months
Total	5 years	5 years	5 years

Table 5. Comparison between the time allocated to the study of internal medicine in Germany, Romania and Poland, Source: for Germany - BÄK 2013, for Romania - CNPDS 2007 and for Poland - CMKP 2014

The explicit training periods in modules I and II and the comparison between countries can be seen in *Tables 6* and *7*.

Module I	Germany	Romania	Poland
	36 months of internal medicine	25.5 months of internal medicine, out of which: - 12 months in the years 1 and 5 - 1.5 months in year 4	36 months of internal medicine, out of which: - 17.5 months of Internal medicine - 1 month of Intensive care - 4 months of Cardiology - 1.5 months of Pulmonology - 1.5 months of Gastroenterology - 1.5 months of Endocrinology - 0.75 months of Nephrology - 0.75 months of Hematology - 0.75 months of Rheumatology - 0.75 months of Infectious disease - 0.75 months of Neurology - 0.5 months of Psychiatry - 1.75 months of Speciality courses

Table 6. Comparison between the studied subfields in the first Module and the time allocated to their study in Germany, Romania and Poland, Source: for Germany - BÄK 2013, for Romania - CNPDS 2007 and for Poland - CMKP 2014

Module II	Germany	Romanian	Poland
	24 months, out of which 6 months of intensive medicine	34.5 months, out of which: - 3 months of Cardiology - 3 months of Pneumology - 3 months of Gastroenterology - 3 months of Diabetes - 2 months of Rheumatology - 2 months of Hematology - 2 months of Neurology - 2 months of Psychiatry - 2 months of Nephrology - 2 months of Infectious disease - 3 months of Oncology - 3 months of General echography - 4 months of expertise in work capacity - 0.5 months of Bioethics	24 months of Internal medicine, out of which: - 11 months of Intensive medicine - 1 month of Cardiology - 1.5 months of Pulmonology - 1 month of Gastroenterology - 1 month of Endocrinology - 1.5 months of Nephrology - 0.75 month of Hematology - 1 month Rheumatology - 0.75 months of Infectious disease - 0.5 months Geriatry - 0.5 months Palliative medicine - 0.5 months Health care - 0.25 months of Speciality courses

Table 7. Comparison between the studied fields in the second Module and the time allocated to their study in Germany, Romania and Poland, Source: for Germany - BÄK 2013, for Romania - CNPDS 2007 and for Poland - CMKP 2014

In *Table 8*, a comparison is made between the minimum numbers of treatment procedures in the medical training of the specialists. In Germany, around 2400 procedures must be demonstrated throughout the training period. In Romania, the number of independent procedures stipulated by The Romanian National Centre of

Perfecting the Skills of the Medical Personnel (CNPDS, 2007) is 1585. Each training centre can add its own procedures to this number. According to the Polish training regulations, only 270 procedures must be carried out independently. Kolodziej also made a comparison between the number of procedures in Germany and Poland Kolodziej (2016). She assumed that newly trained Polish internal medicine specialists would complete further training in Germany.

Procedures	Germany	Romania	Poland
Abdominal ultrasound	500	170	unclear
Bronchoscopy	25	30	unclear
Colonoscopy	20	20	5
Electrocardiography	500	500	5
Punctures	100	67	20
Resuscitation	50	75	35
Spirometrie	100	100	5
Total	2375	1585 basis + different procedures depending on the formation center	269

Table 8. Comparison between the different minimum number of procedures during the study of Internal medicine in Germany, Romania and Poland, Source: for Germany - BÄK 2013, for Romania - CNPDS 2007 and for Poland - CMKP 2014

6.5.3 General medicine

The Romanian law regarding medicine nr. 95/2006 stipulates that the title of general practitioner can be offered only to graduates of medical faculties that were licensed prior to the 2005 and who have acquired the right to practice under the rules preceding this law.

Directive 2005/36/EC of the European Parliament and of the Council of 7th September 2005 regarding the recognition of professional qualifications was amended with Decision 790 on 13 January 2016. According to these decisions, the German language professional title of general practitioner is “Facharzt/Fachärztin für Allgemeinmedizin”, in Polish “Specjalista w dziedzinie medycyny rodzinnej” and in Romanian “Medic specialist medicină de familie”.

The general European tendency to prolong the length of residency can also be observed in Romania, Germany and Poland. According to the EU Directive of 2006, the general medicine study program requires a minimum training period of at least 3 years for future general practitioners. In Romania, this training took 3 years for those who commenced their training in 2007 (CNPDS, 2007); In 2016, according to the Ministry of Public Health (MS) order number 1109/2016, it was prolonged to 4 years.

For the training of family physicians, there is also a type of “part-time residency” that takes 5 years. In Poland, the residency program takes 4 years (CMKP, 2014) and in Germany 5 years (BÄK, 2013). In Germany, there are small differences between the training in the general medicine field in different regions of the country, but all of them require 5 years. For the purpose of comparison, the data for Germany will be taken from the guidelines on the content of continuing education from Bavaria (BLÄK - The Bavarian Chamber of Physicians 2016).

Table 9 lists the similarities and differences between the 3 training programs in the above-mentioned countries. The EU time requirements are clearly met in all 3 countries. It should be noted, however, that training in Germany takes one year longer than in Poland. Depending on the year of entry in the residency program and the type of residency (full-time or part-time), it is possible that some Romanian specialists could have trained for two years fewer than their German counterparts. As the first specialists with 4 years of training would have completed their education in 2015, and those with 5 years in 2020, the specifications of their training cannot yet be compared with the other 2 countries.

Training fields during general medicine training	Duration in Germany	Duration in Romania	Duration in Poland
Internal medicine	36 months	4 months	8 months
Family medicine	18 months	15 months	2 months
Surgery	6 months	2 months	0.75 months
Infectious diseases	unclear	1 month	1 month
Psychiatry	unclear	1 month	1 month
Neurology	unclear	1 month	1 month
Dermatology	unclear	1 month	1 month
Total	5 years	3 years	4 years

Table 9. Comparison between the studied fields and duration of training in general medicine in Germany, Romania and Poland, Source: for Germany - BLÄK 2016, for Romania - CNPDS 2007 and for Poland - CMKP 2014

The Polish advanced training system lists the practical abilities required by the trainee to successfully complete further training, but without specifying a minimum number of treatments (CMKP 2014). Romania, which until 2016 had the shortest training period of the 3 countries, required 3386 examinations and treatments to complete the training. As in Poland, there is no mention of the number of procedures to be performed by trainee Romanian physicians who started their 4 years training period in 2016. The number of mandatory procedures during the 5 years training is lower compared with those with 3 years training, 3311 versus 3386 respectively. For the purpose of this

comparison, the 3 years period of training in Romania will be taken into consideration. Comparing these numbers with the number of mandatory procedures in Germany (2335), it can be concluded that the 2 years difference between the specialisation processes in these countries does not make an important difference. As an example of some of the studied fields, the data concerning the minimum number of examinations and procedures can be seen in *Table 10*.

Examination and treatment methods	Minimum number in Germany	Minimum number in Romania	Minimum number in Poland
Diagnostic, consultation and therapy	100	550	unclear
Infusion, transfusion, enteral and parenteral nutrition	50	150	unclear
Electrocardiogram	500	50	unclear
Doppler sonography	300	unclear	unclear
Blood pressure measurement	50	unclear	unclear
Spirometry	100	30	unclear
Ultrasound	650	30	unclear
Proctoscopy	Basic knowledge	unclear	unclear
Effort test	100	unclear	unclear
Addiction treatment	25	unclear	unclear
Long term family medical care and documentation	20	50	unclear
Detection of behavioural problems children and adolescents	10	30	unclear
Interdisciplinary coordination	25	50	unclear
Diet regimes	25	200	unclear
Treating patients in their home	10	20	unclear
Vaccination and preventive measures	100	75	unclear
Prevention of violence and addiction	10	unclear	unclear
Monitoring physical therapy	10	20	unclear
Medical emergencies therapy	60	30	unclear
Wound care	50	70	unclear
Total	2335	3386	unmentioned

Table 10. Comparison between the minimum number of examinations and treatment required during the training in the General medicine field in Germany, Romania and Poland, Source: for Germany - BLÄK 2016, for Romania - CNPDS 2007 and for Poland - CMKP 2014

Following the Romanian latest law regarding the time requirements for specialisation, starting with 2016 some changes were made regarding the allocated time and number of procedures. A concise comparison of the 3 programs can be seen in *Table 11*.

Training fields during general medicine training in Romania	Duration before 2016, full-time	Duration after 2016, full-time	Duration after 2010, part-time
Internal medicine	4 months	5 months	8 months
Family medicine	6 + 9 months	6 + 18 months	9 + 12 months
General surgery	2 months	2 months	4 months
Infectious diseases	1 month	1 month	1 month
Psychiatry	1 month	1 month	1 month
Neurology	1 month	1 month	1 month
Dermatology	1 month	1 month	1 month
Pediatrics	4.5 months	5 months	8 months
Obstetrics and gynecology	2 months	2 months	3 months
Oncology	2 months	1 month	3 months
Diabetes	1 month	2 months	2 months
Bioethics	0.5 months	-	1 month
Emergency medicine	-	2 months	-
Cardiology	-	1 months	-
Total	3 years	4 years	5 years

Table 11. Similarities in the duration of the training subfields in general medicine in Romania, Source: for Romania before 2016 - CNPDS 2007, for Romania after 2016, full attendance - MS 2016 and for Romania after 2010, partial attendance - CNPDS 2010

6.6 Problems arising from migration of doctors from west to east

Currently, the direction of migration of doctors in Europe is from east to west and from south to north. For political and economic reasons, the direction of migration could possibly change in the future (Kolodziej et al., 2016).

European law ensures that all physicians trained within its borders are eligible to receive a work permit anywhere inside the EU. Annex V of the EU Directive represents

the legal basis that facilitates the work inside EU of a physician qualified in Germany (see *Berufsanerkennungsrichtlinie 2005/36 - Professional Qualifications Directive*). This means that the real obstacle for EU physicians wishing to work abroad is the language barrier.

In Romania, the regulation that confers the right of a foreign trained physician to work is Law no. 95/2006 on health reform, published in the Official Gazette no. 372 of 25 April 2006. According to this law, German physicians will receive the right to work in Romania as long they are in good health, do not have an interdiction from a judge or his previous chamber of physicians and are not engaged in selling medicine and medical supplies. A membership certificate from a Romanian chamber of physicians is mandatory for doctors working in Romania.

In Poland, physicians who have qualified in Germany and have received a work permit are also required to provide written evidence of their Polish language skills as a further prerequisite for working as a doctor. Knowledge of the language must be demonstrated in a centralized language test under the supervision of the Polish Chamber of Physicians, and a condition of admission to the language examination test is a German practicing certificate; this must be submitted to the Polish Ministry of Health for recognition of its equivalence (Kolodziej et al., 2016). The exact requirements for the language skills are defined in detail in the regulations of the Ministry of Health.

Learning the Romanian language can be a difficult task, but the Polish language is a major challenge for a German, since Slavic languages are not part of the school curriculum in Germany. The relatively lower level of difficulty involved in learning Romanian is because it is an Indo-European language, within the Oriental sub-group of Romance languages. Because of Germany's proximity to Italy, given that a lot of Germans want to retire on the Italian coast and the fact that German schools usually teach English, French or Spanish, it would be easier for a German physician to work in Romania than to do so in Poland. This could prove even easier if the doctor worked in a Romanian region where the German language is widely spoken, such as in the western part of the country.

7 Surveys

The Romanian National Statistics Institute (INS) is the main official provider of statistics that offers insight into the realities of Romanian society. Unfortunately, it does not provide detailed information about the phenomenon of the migration of doctors. As this type of detailed data also cannot be retrieved from the Romanian College of Physicians, the only way to see the extent of the migration is to consult the surveys performed by private individuals and by the media.

In the following subchapters, statistical information obtained from 2 physicians' groups will be presented. The first survey was completed by Romanian doctors already working in Germany, and the second questionnaire was aimed at students and physicians aspiring to work in Germany. The questionnaires were available in Romanian language (to avoid misunderstandings), in English and in German.

7.1 Evaluation of the survey

The first group surveyed was composed of physicians who had studied in Romania and were working in Germany. With the help of statistical analysis of their answers, one can see how this medical specialist phenomenon developed. Because of the reduced number of respondents (129), the data analysed in Subchapter 7.2 cannot be used to offer such an overview. Subchapter 7.3 presents the information obtained from students and physicians aspiring to work in Germany. Here, only 59 people responded to the questionnaire, so the resulting statistical representation cannot offer a complete overview of the situation.

7.2 Survey of Romanian physicians in Germany

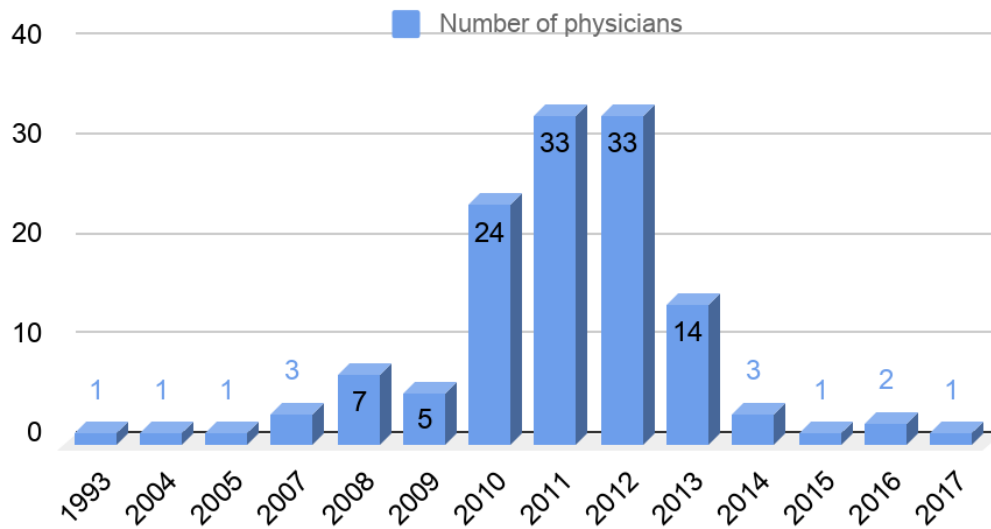
The online questionnaire consisting of 32 mandatory questions collected information such as the age, number and fields of practice of physicians who trained in Romania but were practicing in Germany. The subjects covered by the survey were their reasons for migrating, language prerequisites and their acclimatization to the new workplace.

7.2.1 Survey participants

The answers of the 129 respondents were recorded anonymously, but the eligibility of the physicians was checked with the help of their Facebook accounts. The information acquired this way could be processed without data interference due to the correlation response-responder. An interesting fact regarding the place of birth of the participants on the study is that 4 out of 129 participants were born in Germany.

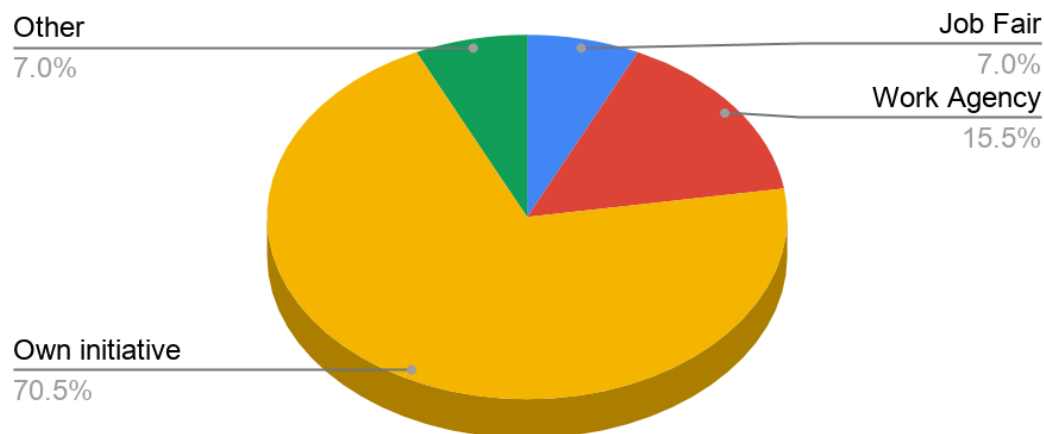
Figure 31 shows that the great majority of the doctors participating in the survey migrated from Romania in the period 2011-2012.

Figure 31. Romanian physicians' year of migration towards Germany, Source: own research based on own surveys, 2017



In *Figure 32*, it can be observed that more than 30% of the Romanian physicians who migrated to Germany did so by their own initiative.

Figure 32. Requirement method, Source: own research based on own surveys, 2017



Most of them were young physicians (*Figure 33*) who graduated between 2007 and 2011 (*Figure 34*) and were working in a hospital (*Figure 35*).

Figure 33. The age of the migrating physicians, Source: own research based on own surveys, 2017

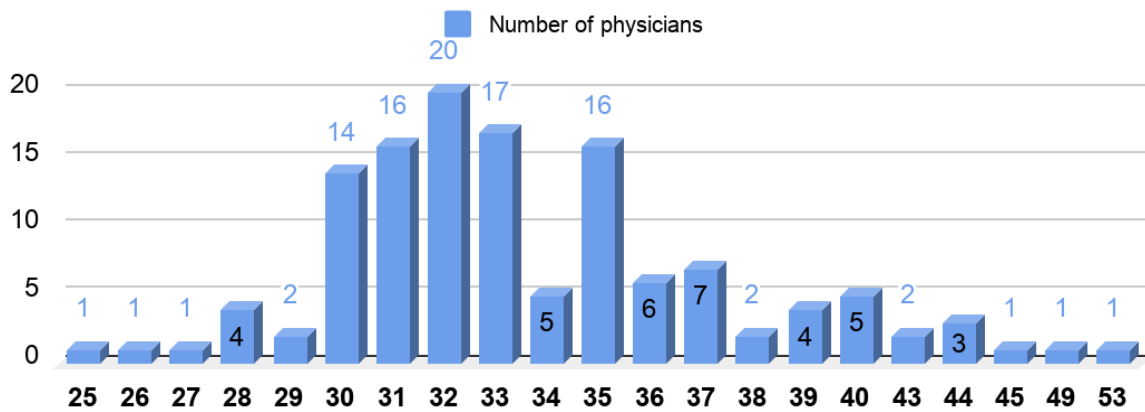


Figure 34. Year of study completion of the Romanian physicians that migrated to Germany, Source: own research based on own surveys, 2017

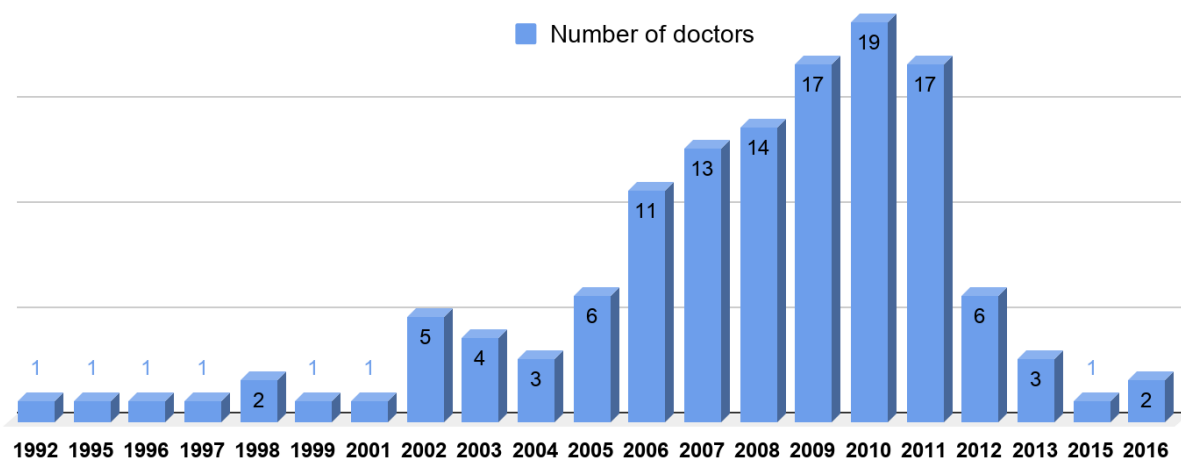
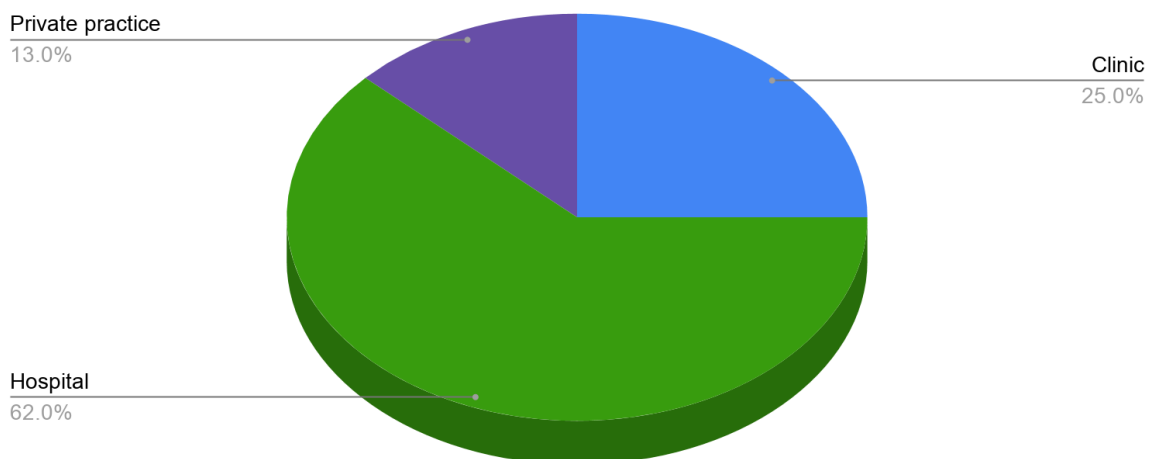
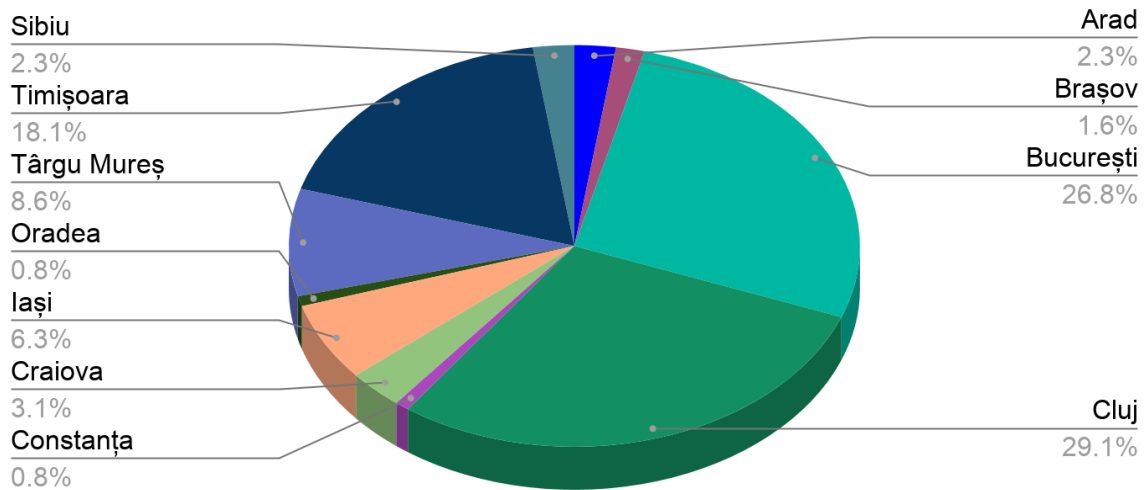


Figure 35. Place of work for the Romanian physicians in Germany, Source: own research based on own surveys, 2017



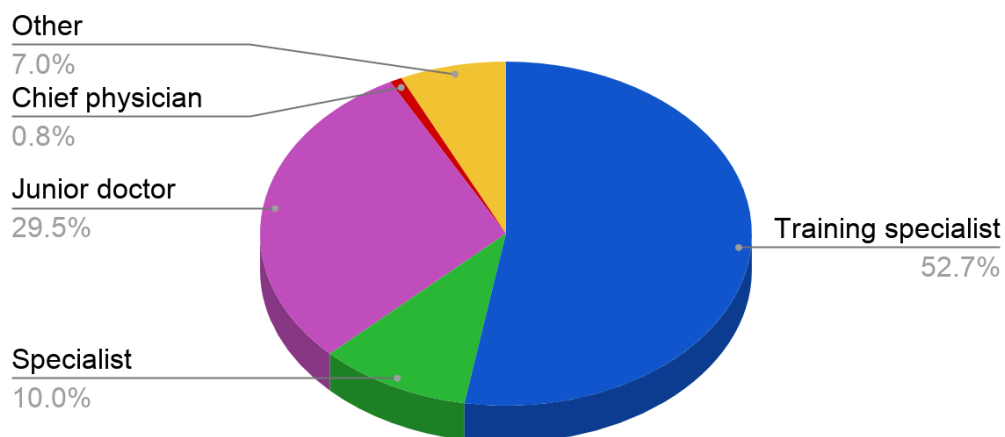
More than half of the respondents were females (59.7%) and most of them studied in Cluj. In second place were those who studied in Bucharest and in the third place are those who studied in Timișoara (*Figure 36*).

Figure 36. The university's city and the percentage of migrants from these cities, Source: own research based on own surveys, 2017



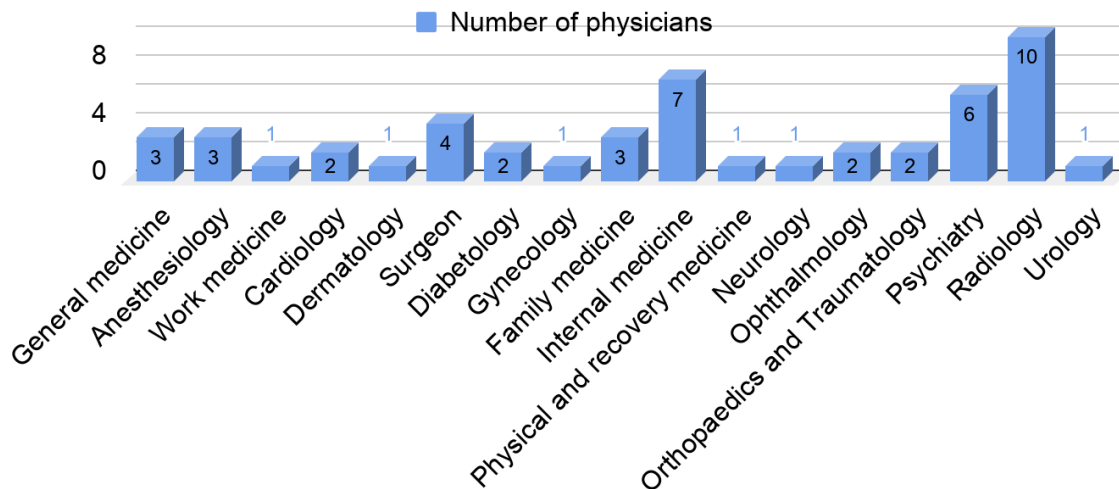
Almost half of the interviewed physicians (47.6%) completed their residency training in Romania, and the remainder trained in Germany. There were also some (29%) who studied in both countries. At the time of the survey, 10% of the physicians were doing their residency in Germany, and about 52% were working under supervision (*Assistenzarzt*) and 30% were specialists (*Figure 37*).

Figure 37. Level of specialization among interviewed physicians, Source: own research based on own surveys, 2017



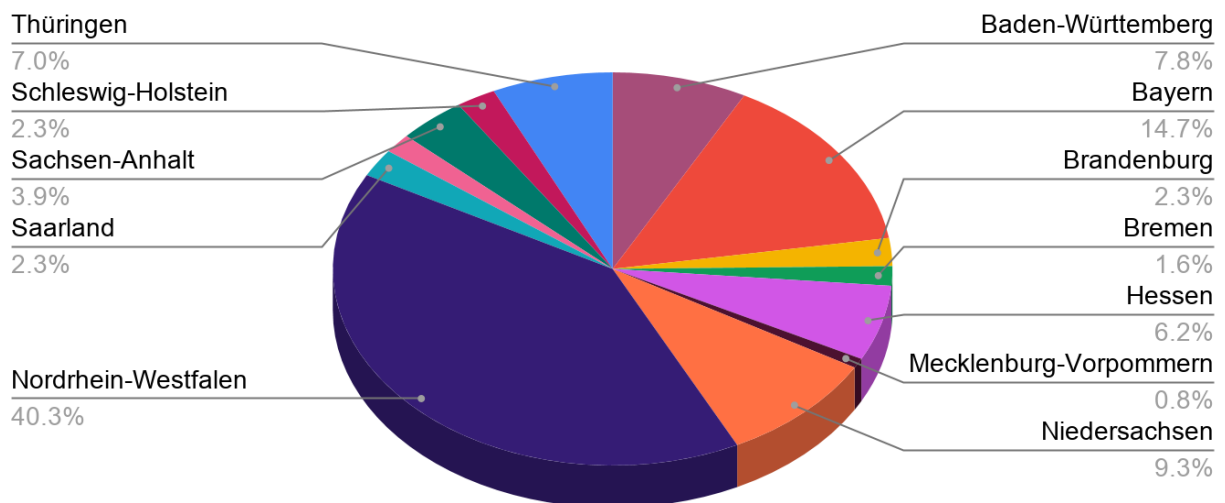
The fields of interest of the specialist physicians are shown in *Figure 38*.

Figure 38. Fields of interest for the Romanian physicians that are working in Germany, Source: own research based on own surveys, 2017



In Figure 39, one can observe that the vast majority of the physicians were working in Nordrhein-Westfalen.

Figure 39. Germany's regions where most of the interviewed Romanian physicians are working, Source: own research based on own surveys, 2017

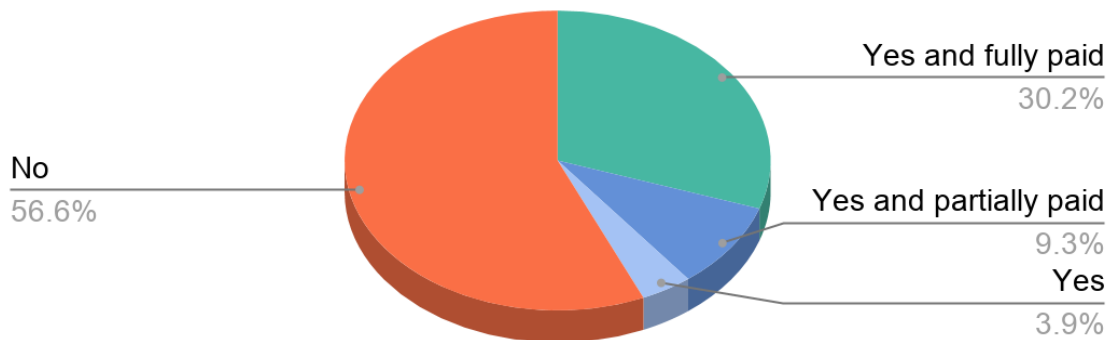


7.2.2 Language prerequisite

Being able to speak the local language, making yourself understood and understanding different nuances in the communication with patients is of great consequence for a physician. In the process of building mutual trust, the language prerequisites can be as important as the prior medical knowledge. Although 4 of the people interviewed were born in Germany, none of them declared that German

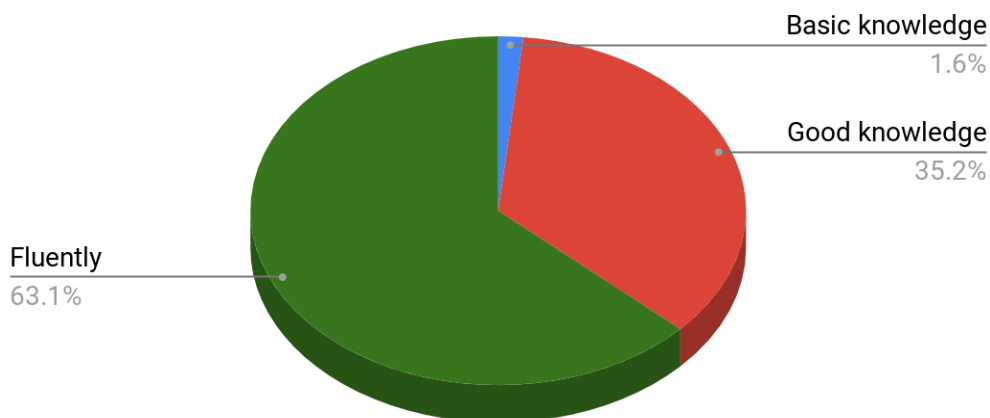
language was their mother tongue. Despite the fact that 76% of the respondents stated that they had problems with German language and that level B2 was the recommended language level when they left Romania, all of them found that it was necessary to have language level C1 in order to be able to effectively work. This is why 66.7% struggled learning alone or with the help of language classes; only 21.7% of respondents learned it in school. For some, language classes were paid by their employer (*Figure 40*).

Figure 40. Results of the question "Were German language classes provided by employer?" Source: own research, 2017



In the light of the information mentioned above, it is understandable that more than half of the physicians stated that they were fluent in German (*Figure 41*).

Figure 41. Self assessment of the German language skills, Source: own statistic based on own survey, 2017

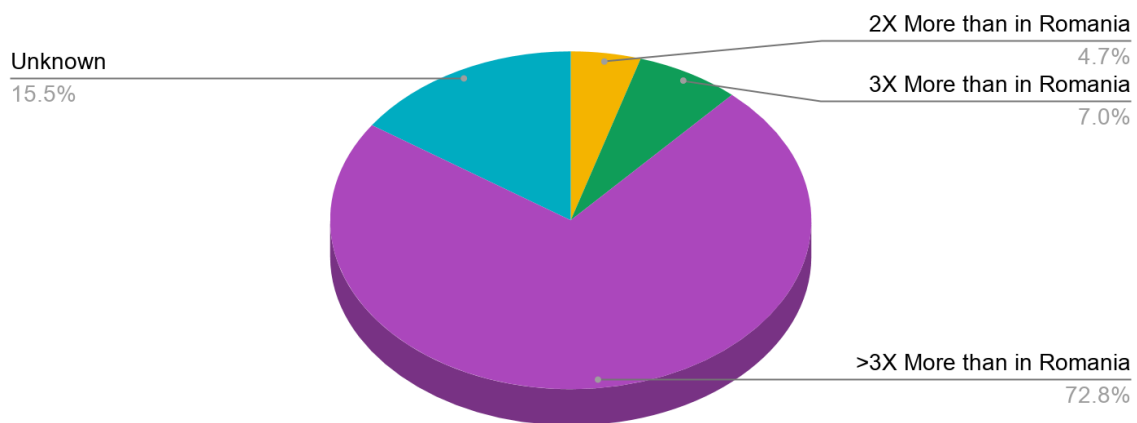


7.2.3 Reasons for migration to Germany

In order to find out why Romanian physicians chose to move to Germany, the survey contained questions regarding their remuneration expectations, their access to specialist training, professional development possibilities, work conditions, recreation possibilities and the amount of free time.

The main reasons of departure stated by the doctors interviewed were the working conditions (85.27%), and 99.2% of the respondents found the German working conditions better than in Romania. On the second place in the list of reasons for migration were the possibilities for professional development, which 79% found to be better in Germany. In third place was the fact that it was easier access to specialist training. Only 68.21% of respondents stated that a better salary was one of the reasons for moving to Germany. Even though this was not their priority, 97.7% wrote that they are able to earn more money per month in Germany, even after deducting the monthly costs. The magnitude of the salary improvement from one country to the other can be seen in *Figure 42*. Opportunities for recreation and free time were not high on the list of rationalizations for their relocation.

Figure 42. Order of magnitude differences between the salaries in Romania and Germany, Source: own research based on own surveys, 2017



An interesting answer was given by 44.96% of the respondents, who stated that having more spare time due to regulated working hours was of little importance for them. Only 24.03% found the recreation possibilities interesting.

7.2.4 Recognition and integration in the workplace

Two very important preconditions for a good working environment and high confidence in one's worth or abilities - which in turn promote better results in the workplace - are the level of professional recognition and the level of work-related integration. Almost all physicians (93%) found integration courses or language lessons helpful in the integration process. The remainder of the questionnaire results are presented in *Figures 43 to 47*.

Figure 43. Patients' recognition level, Source: own research based on own surveys, 2017

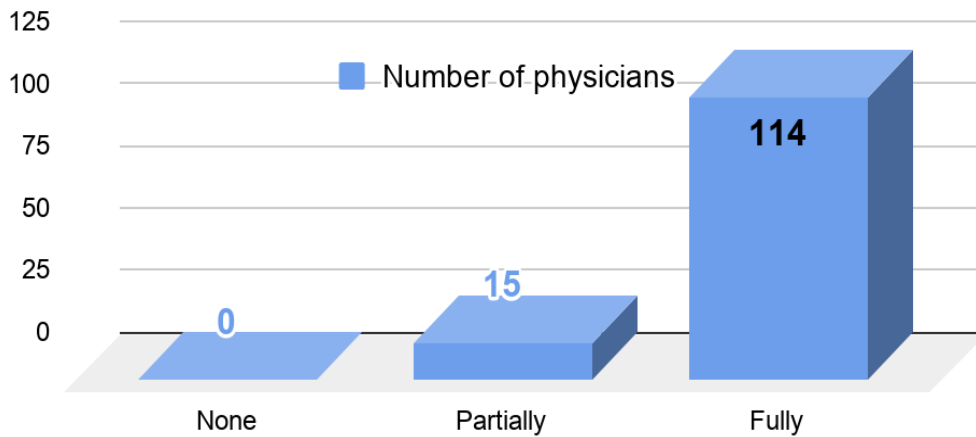


Figure 44. Level of recognition between colleagues, Source: own research based on own surveys, 2017

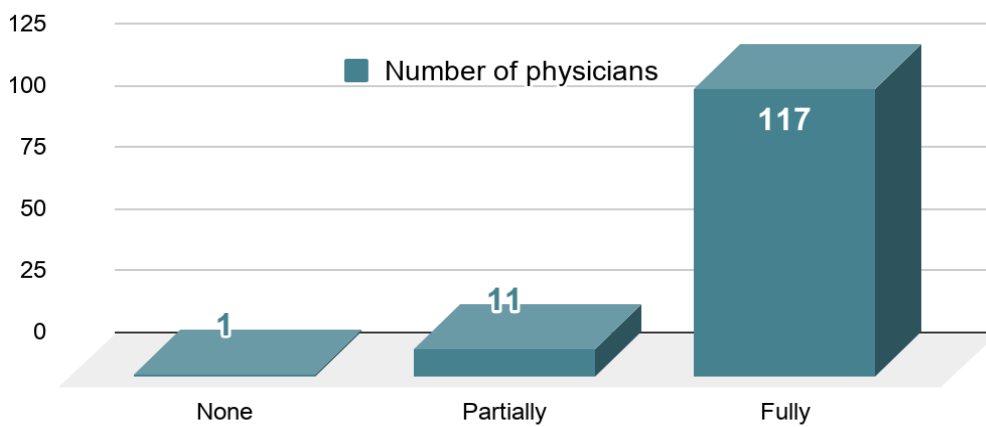


Figure 45. Level of help received from colleagues, Source: own research based on own surveys, 2017

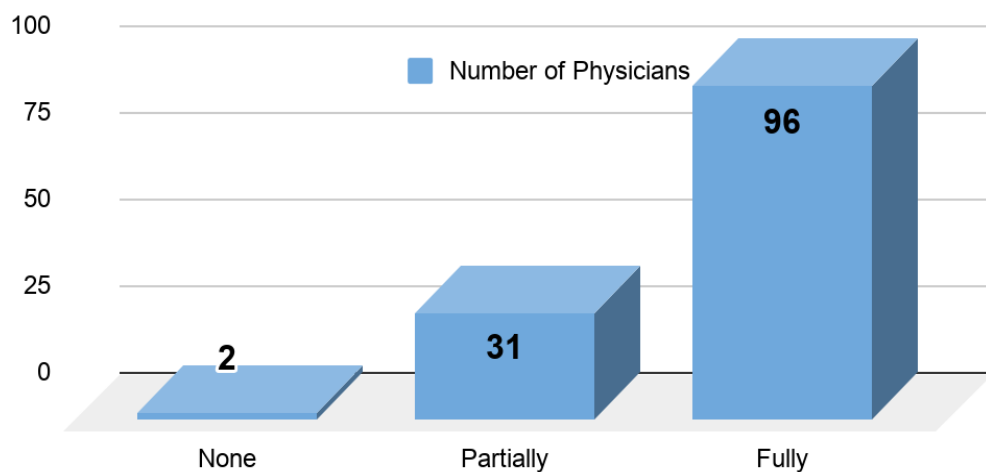


Figure 46. The level of meeting German technical demands, Source: own research based on own surveys, 2017

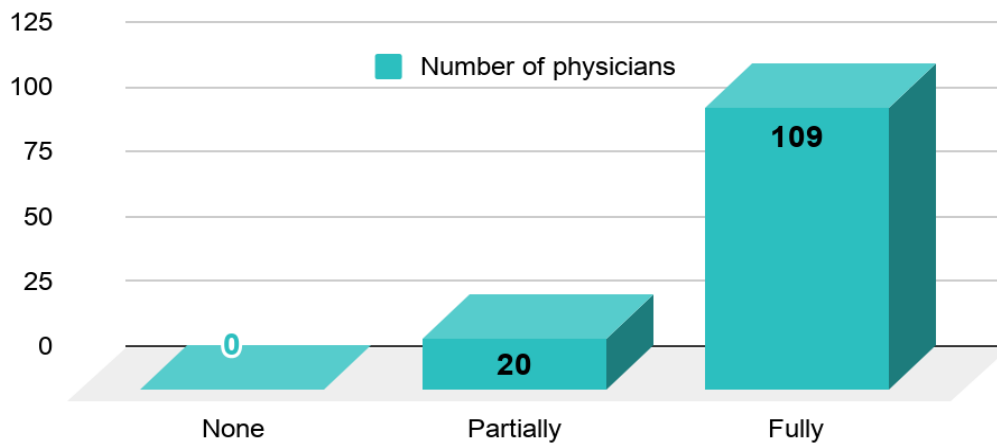
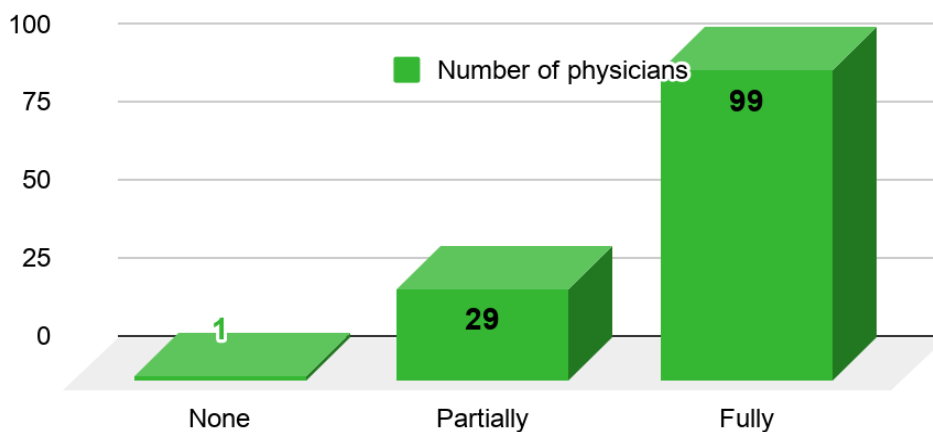


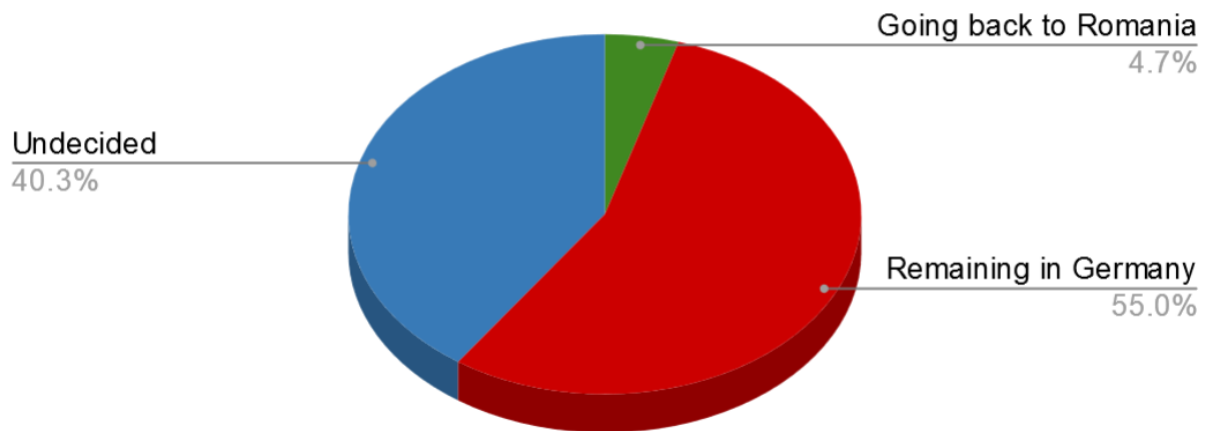
Figure 47. Level of accommodation to the working hours in Germany, Source: own research based on own surveys, 2017



7.2.5 Future plans

Two strong indicators that the Romanian physicians who were interviewed have grown accustomed to the working conditions in Germany are that 93% of them see their future career in Germany and that 97.7% of them recommend Germany as a work destination for their colleagues in Romania. Their future work plans can be observed in *Figure 48*.

Figure 48. Future work plans for Romanian physicians working in Germany, Source: own research based on own surveys, 2017



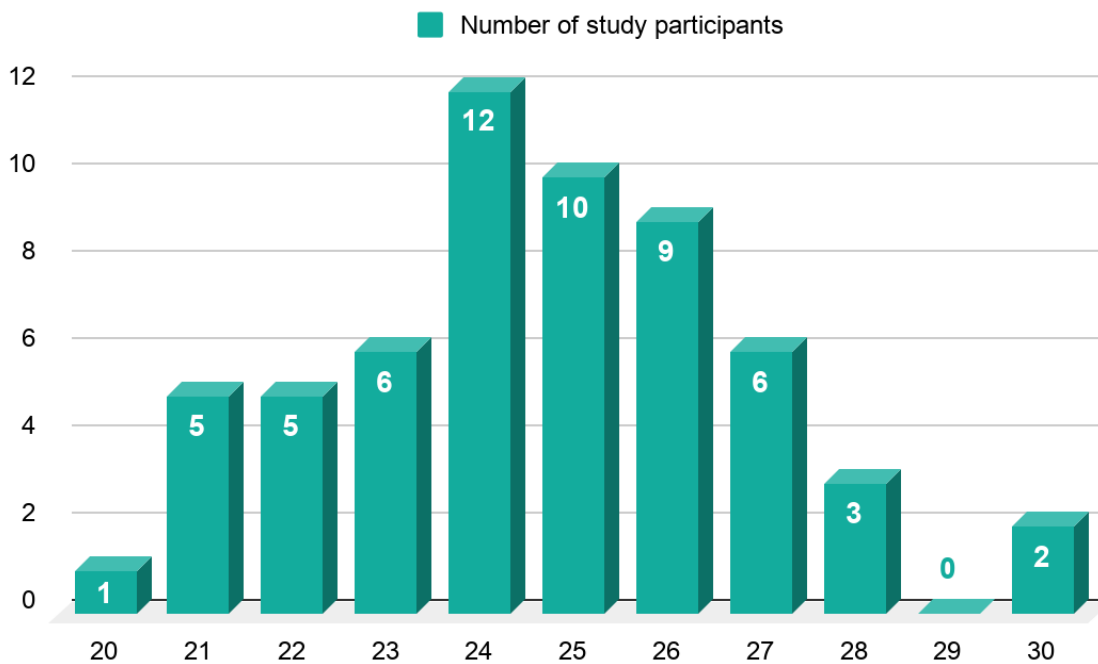
7.3 Survey of Romanian students and doctors aspiring to work in Germany

A concerning aspect of the migration of physicians is that this phenomenon sometimes has its roots even before the doctors start their basic training. In order to confirm the data that is already available in the media and to better understand more of about it, a survey was performed.

7.3.1 Survey participants

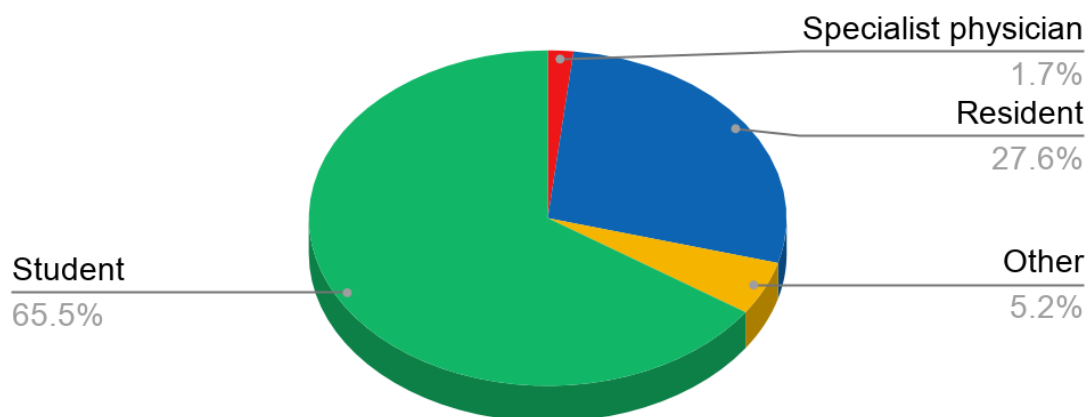
Among the 59 survey participants, 78% were females. The age distribution can be seen in *Figure 49*. It is worth mentioning that the respondents were relatively young, between 20 and 30 years of age (20.3% of them were 24 years old).

Figure 49. Age distribution, Source: own research based on own surveys, 2017



Their professional status can be observed in *Figure 50*.

Figure 50. Professional status, Source: own research based on own surveys, 2017



Out of the 42 students who participated, 40.5% were in the final year of training (*Figure 51*). The distribution of the respondents can be seen in *Figure 52*. The top 3 universities attended by respondents were in Bucharest, Timișoara and Iași.

Figure 51. Distribution of the respondent's study year, Source: own research based on own surveys, 2017

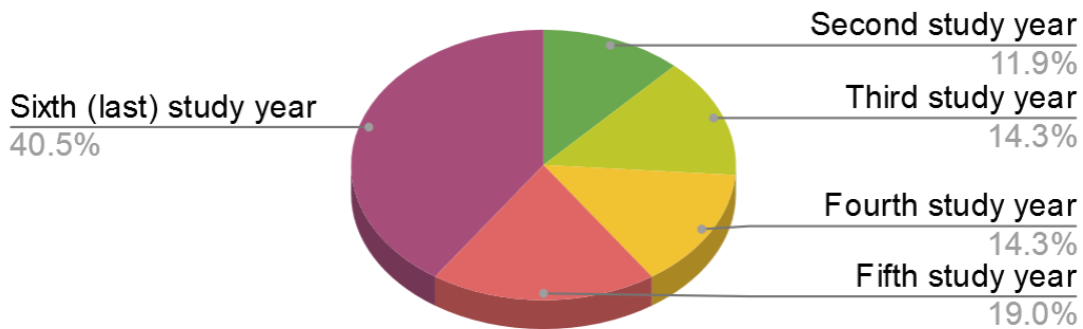
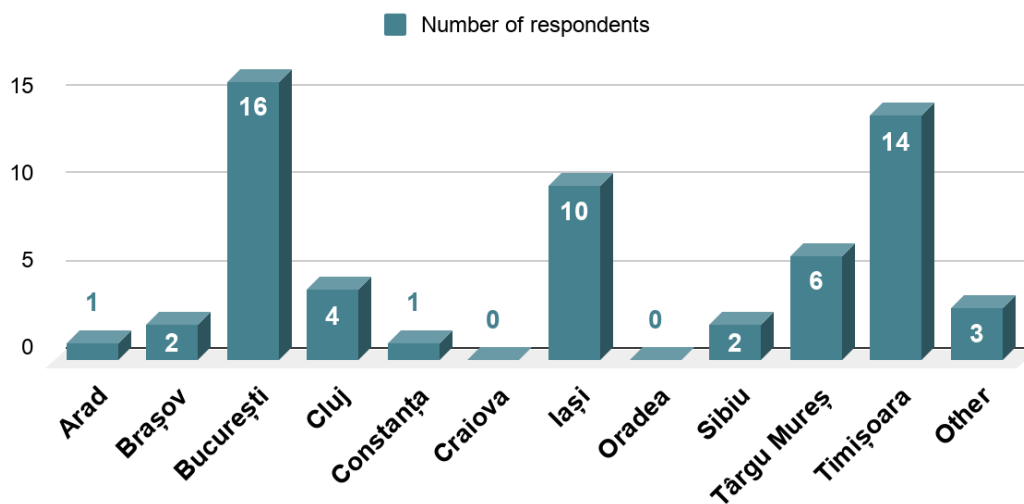
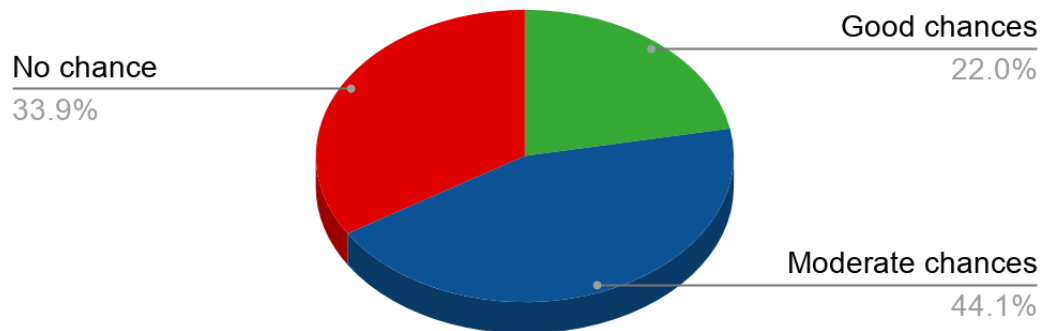


Figure 52. Prevalence of respondents grouped around their home university, Source: own research based on own surveys, 2017



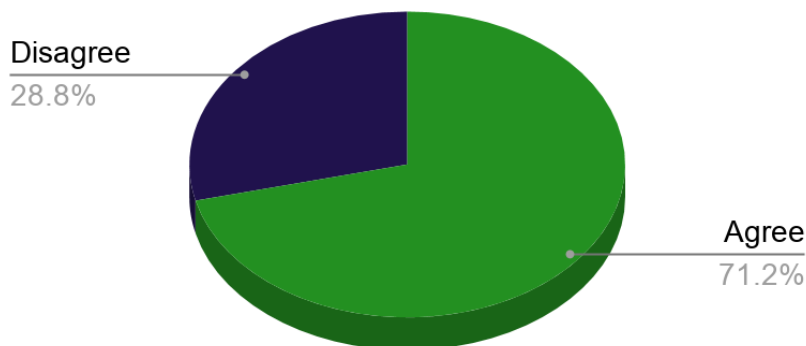
Out of the interviewed students/physicians, only 57.6% saw themselves later successfully being able to work in Romania. The ability to work in the desired field is one of the factors influencing their success. *Figure 53* shows how they appreciated the opportunity to train in their desired residency field in Romania.

Figure 53. Chances of obtaining the desired residency field in Romania, Source: own research based on own surveys, 2017



From *Figure 54*, it can be seen that 71% of respondents found the modular residency system favourable for their development as specialist physicians.

Figure 54. The modular residency system seen as an advantageous system, Source: own research based on own surveys, 2017



Working conditions were of utmost importance for 93.22% of the people interviewed, and 74.57% considered that continuous skills improvement possibilities of high priority. Approximately 60% would take into consideration higher salary when looking for a job, while the rest of consider the salary to be of moderate importance. The considerations taken into account while searching for a job are presented in *Figure 55 a* and *b*.

Figure 55 a. Matters taken into consideration when choosing a new job, Source: own research based on own surveys, 2017

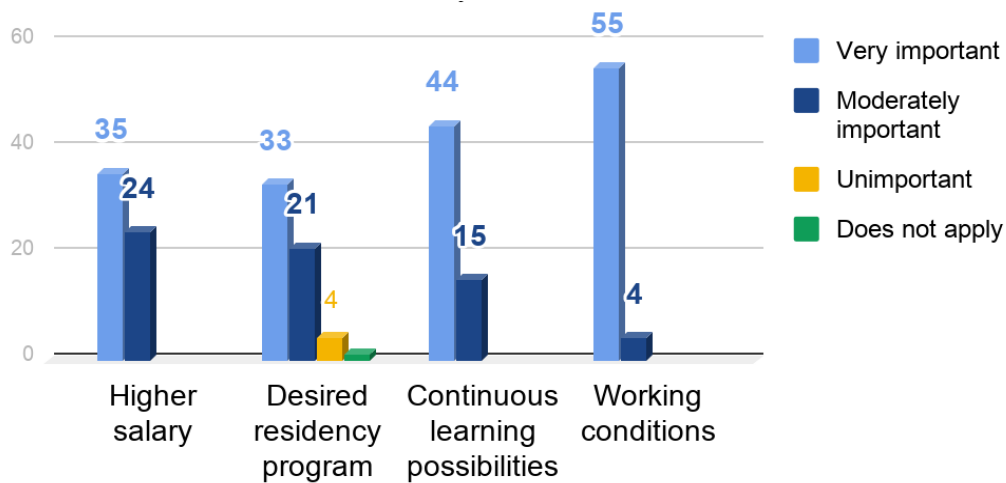
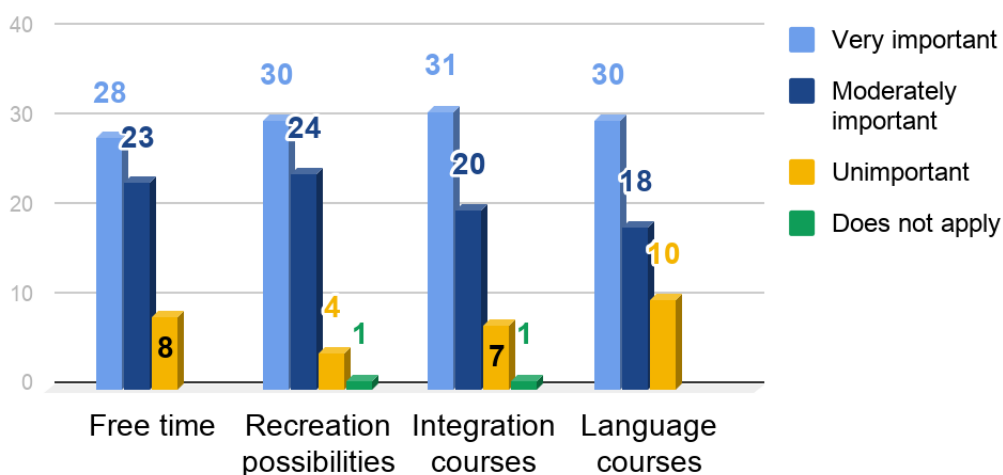


Figure 55 b. Matters taken into consideration when choosing a new job, Source: own research based on own surveys, 2017



7.3.2 Interest in working in Germany

Various channels are used by students and physicians in order to inform themselves about job opportunities in Germany. Through the questionnaire it became evident that information from family and friends played a similar role to self-initiative in informing the respondents of job possibilities in Germany. From *Figure 56*, one can observe the percentage of these practices. The fascination with working abroad meant that 93.2% of respondents were taking considering working in Germany, but only 42.4% had made concrete plans for moving. The type of measures and how often they were taken can be seen in *Figure 57*.

Figure 56. How the participant found out about the job position in Germany, Source: own research based on own surveys, 2017

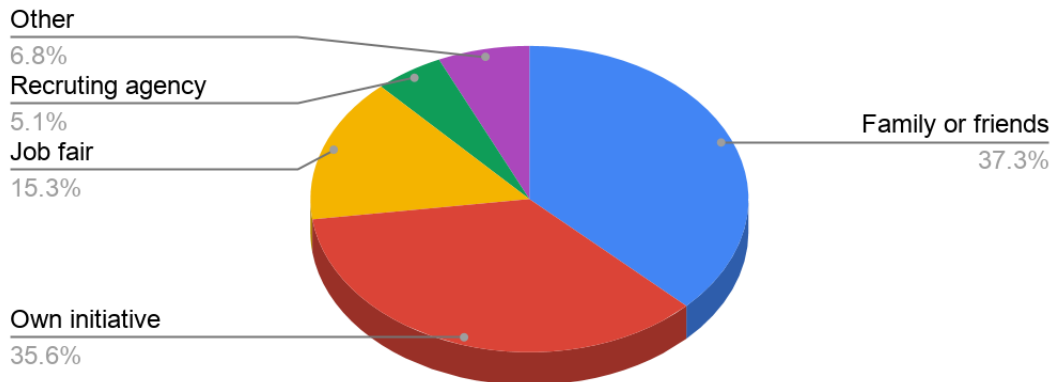
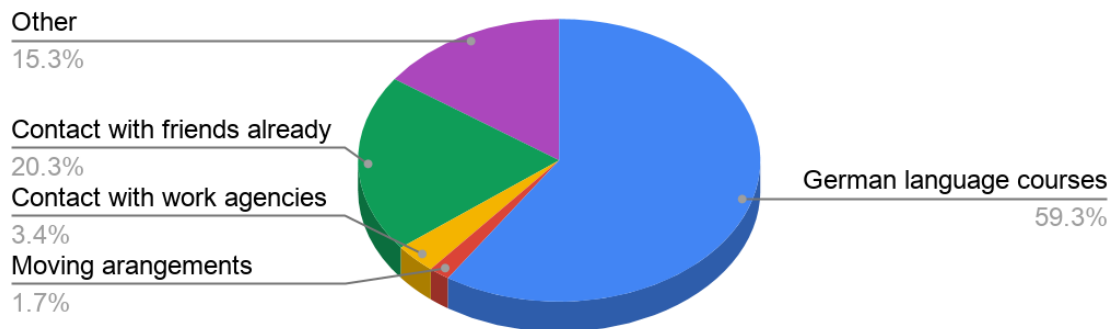


Figure 57. Specific measures taken in order to start working in Germany, Source: own research based on own surveys, 2017



7.3.3 Language qualifications

Apart from completing university studies, learning the German language presents itself as a big challenge. Special attention was paid to this subject throughout the questionnaire (*Figures 58 and 59*).

Figure 58. Self-assessment of the German language knowledge, Source: own research based on own surveys, 2017

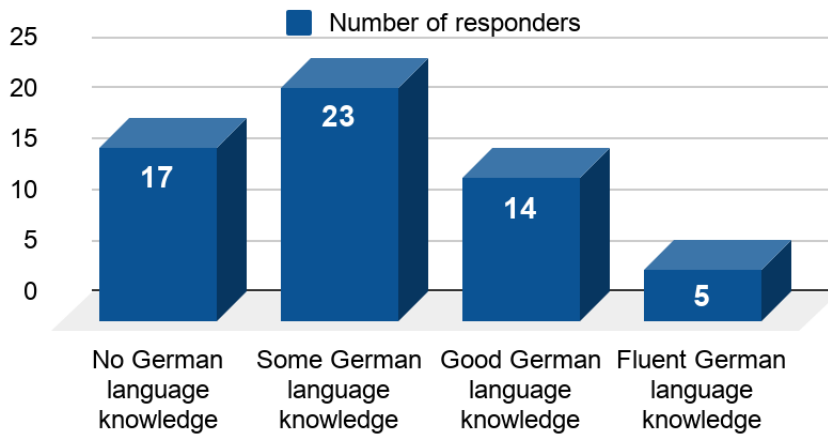
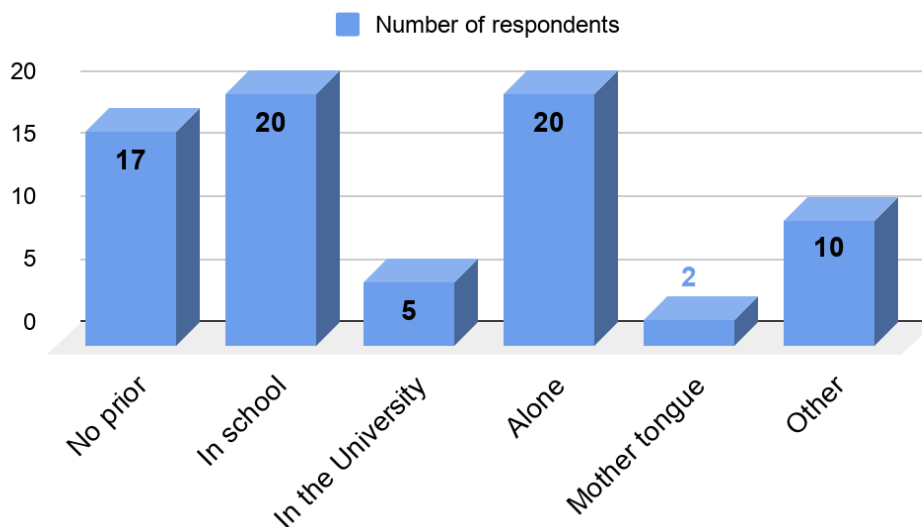


Figure 59. Means of learning the German language, Source: own research based on own surveys, 2017



7.3.4 Future plans

When asked about their future plans, the respondents shared opinions about the time period in which they would like to start working in Germany (*Figure 60*) and about the period they are thinking of doing so (*Figure 61*). *Figure 62* shows their determination to leave even if they were able to find an appropriate workplace in Romania.

Figure 60. Desired moment of migrating from Romania to Germany, Source: own research based on own surveys, 2017

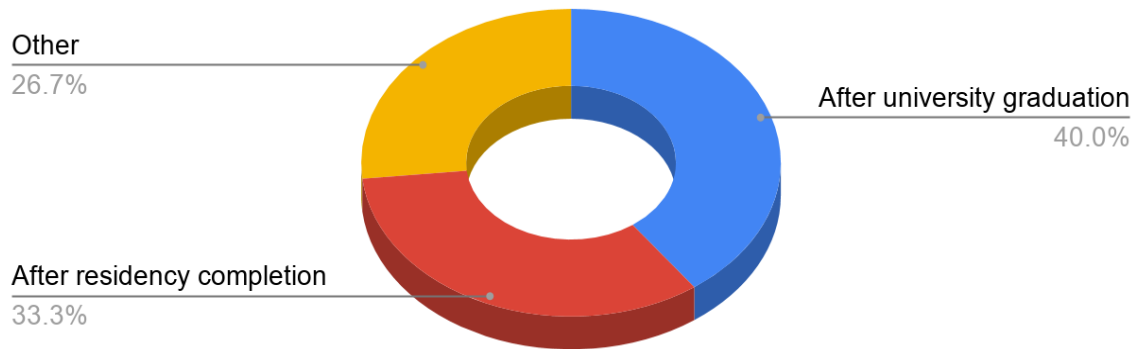


Figure 61. Planned period of migration, Source: own research based on own surveys, 2017

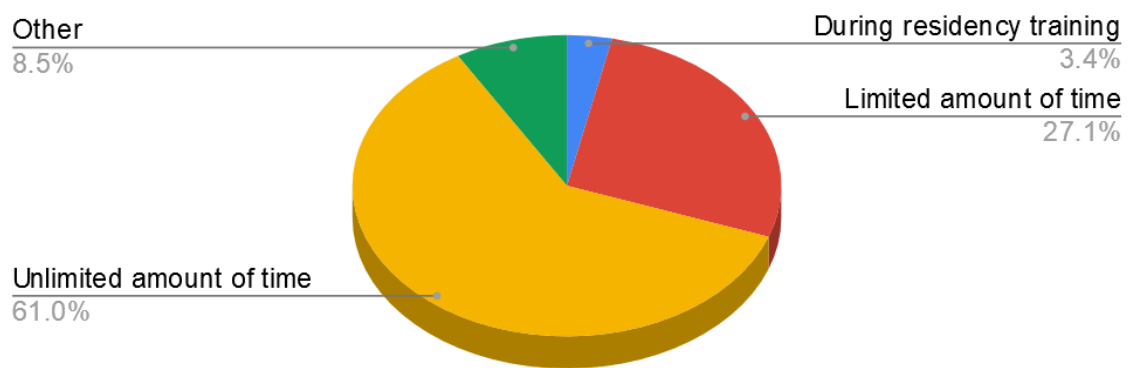
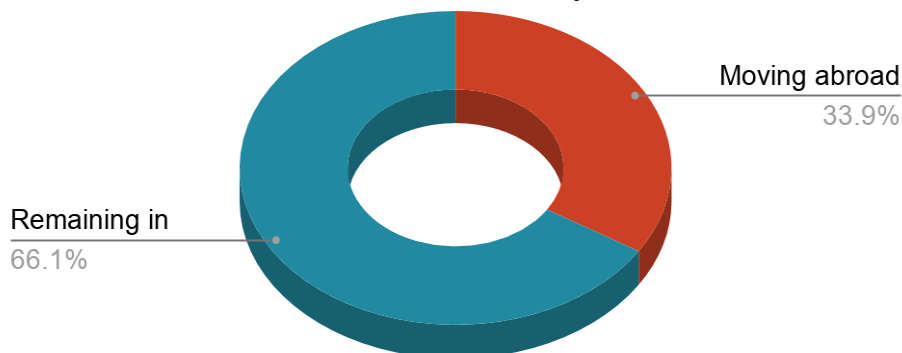


Figure 62. Desire for working abroad despite having a favourable job in Romania, Source: own research based on own surveys, 2017



7.4 Survey discussion

A strength of the current study is the assessment of both the intentions and the actual behaviour of physicians, due to the nature of data recorded through the two

questionnaires. Combining the results of the two surveys offers the possibility to develop a broader overview of the phenomenon, since the first survey was aimed at students and doctors still working in Romania but aspiring to migrate to Germany, while the second was aimed at those who had already migrated.

7.5 Survey conclusions

Based on the data from these surveys, it can be predicted that the majority of Romanian medical students consider leaving their country in order to train or work. These findings suggest a need for structural reforms in Romania in order to retain medical personnel within the country. It is unfortunate that there are a number of factors that drive the decision to leave, which results in the migration of young highly trained personnel at great cost to the Romanian state. Although the most obvious reason for leaving could be seen to be financial, the reality is that the factors that influence the decision of doctors to migrate are actually more complex. Financial security takes second place when compared with personal security and opportunities for professional development, which means that, given the chance, Romanian health specialists would prefer working in their own country, even for a lower salary, if they were respected and did not have to deal with corruption on a daily basis.

8 Comparison of the Romanian study with similar studies about Polish doctors

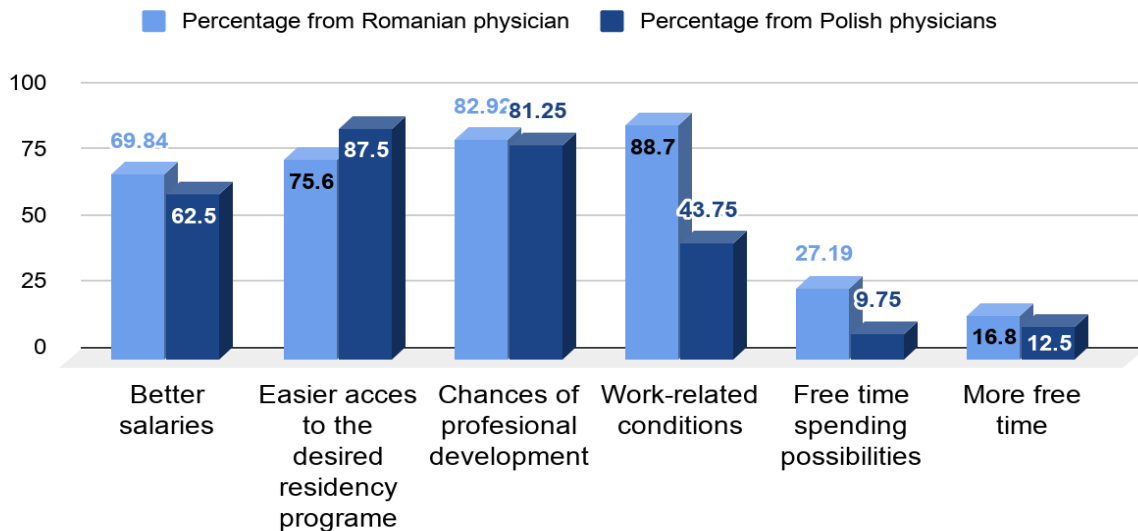
In order to facilitate the comparison of the results obtained in Poland by Kolodziej et al. (2016) regarding the migration of physicians to Germany, the Romanian study used the same design. This offers the possibility to observe the parallels between the situation in the two countries, including the extent of the language challenges and how well the respondents felt that they had integrated themselves in Germany. The studies had 129 responses from Romanian physicians working in Germany and 192 responses from Polish physicians in the same situation. The second questionnaire was addressed to students and doctors in their countries of origin, and involved 59 respondents in Romania and 26 in Poland.

8.1 Similarities and differences

As the number of respondents differed from country to country, comparison will be made using only percentages. According to the surveys, graduates from medical universities in both Poland and Romania could imagine themselves (in percentages higher than 90%) working in Germany. In *Figure 63*, it can be seen that there is a correspondence between the percentages found in both countries, while differences can be observed when looking at perceptions of work-related conditions and the possibilities of free time. In comparison with doctors from Romania, almost half of the Polish medics considered working conditions to be very important in their decision to

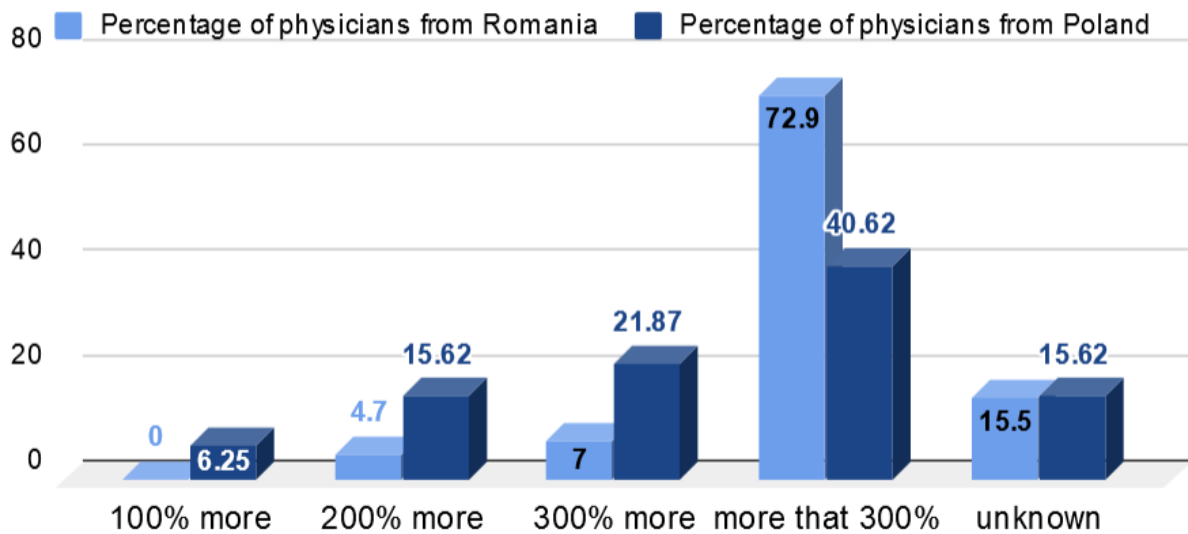
move abroad, and only a third of the Polish physicians were interested in more possibilities for free time.

Figure 63. Comparison of the motivating factors for emigration among Romanian and Polish physicians in 2016-2017, Source: own research based on the compared results from the Kolodziej's questionnaire and own surveys



Even though they stated that a better salary was not one of their priorities, 97.7% of Romanian physicians who had emigrated and 87.5% of those from Poland believed that they were receiving more money than their colleagues in their home countries. When asked about their personal monthly earnings, the great majority from both countries revealed that they were earning more than 3 times the salary that they would have in their country of origin (*Figure 64*).

Figure 64. Compared results on the question regarding their earnings percentage communicated in 2016 and 2017 by physicians that immigrated from Romania and Poland, Source: Results of current survey and that of Kolodziej et al. (2016): Salary levels in Germany compared to home country



A concerning issue for both Romania and Poland is that a large percentage of the medicine students in these countries were considering leaving (Figure 65) and a significant percentage of them were planning a long or undetermined stay in Germany (Figure 66). Both studied groups expressed little interest in only staying in Germany for their period of their residency.

Figure 65. Comparison of the percentages of physicians from Romania and Poland grouped on intended moment of emigration, Source: own research based on the compared results from the Kolodziej's questionnaire and own surveys

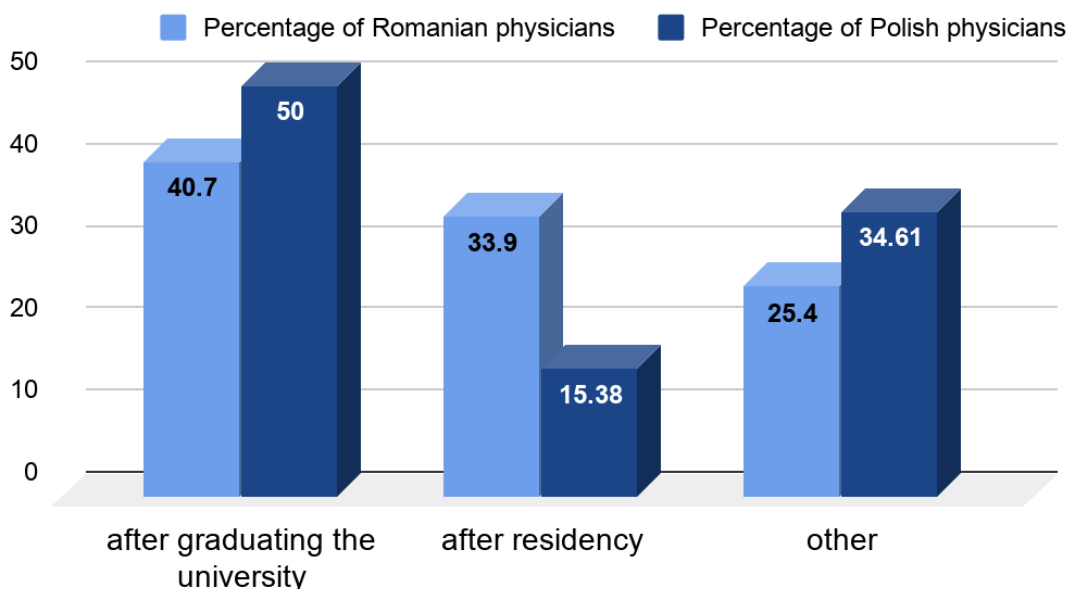
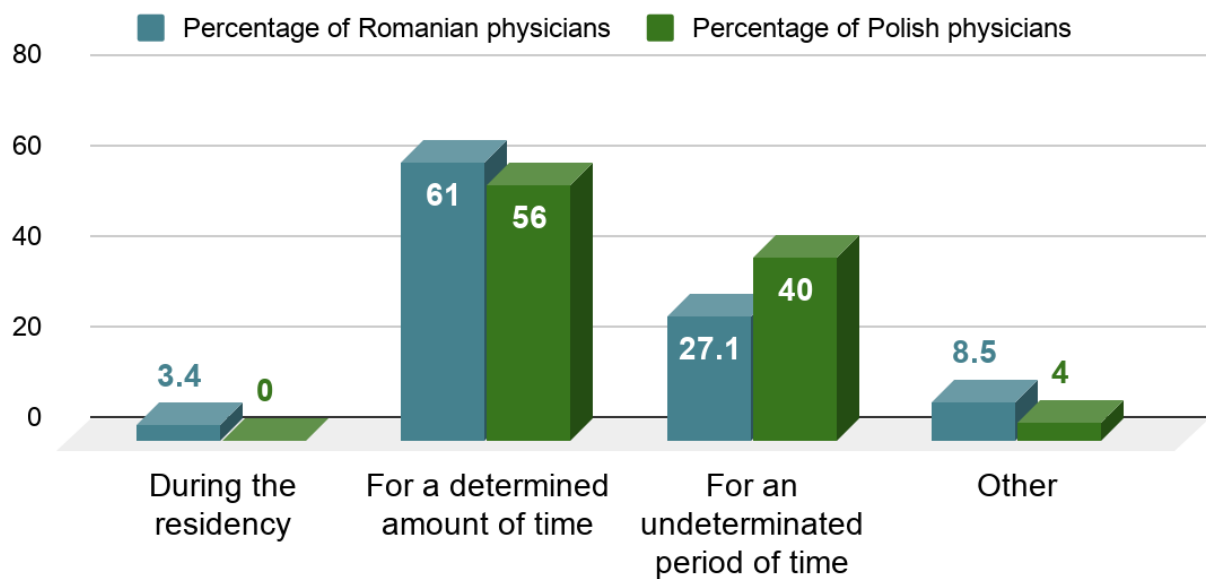
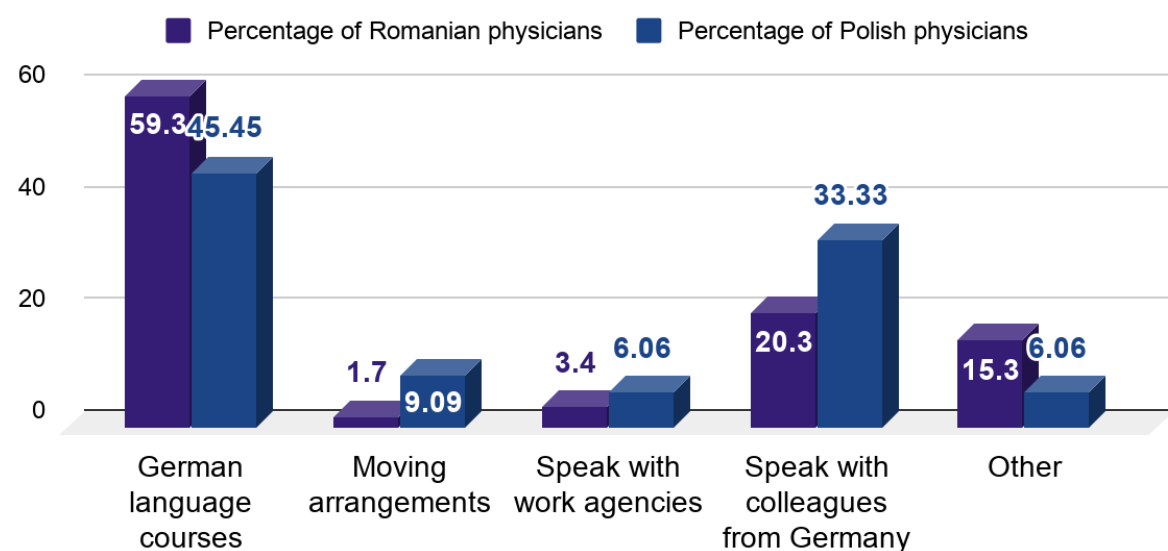


Figure 66. Comparison of the percentages of Romanian and Polish physicians regarding the period of intended migration, Source: own research based on the compared results from the Kolodziej's questionnaire and own surveys



In order to make the transition towards their goal smoother, many of them had taken specific measures. A comparison of the measures taken by students and physicians from Romania and Poland can be seen in *Figure 67*.

Figure 67. Comparison of the measures taken by Romanian and Polish physicians (in percentages) to facilitate their migrating process, Source: own research based on the compared results from the Kolodziej's questionnaire and own surveys



8.2 Language challenges

Recognising that language presents itself as a big challenge for foreign physicians aspiring to work in Germany, special attention was paid to this subject. Very close similarities can be noticed when looking at the results of the question that addresses the German language knowledge of the students and physicians from Romania and Poland (*Figure 68*).

Figure 68. Comparison of the declared level of German language knowledge among students and physicians from Romania and Poland (in percentages), Source: own research based on the compared results from the Kolodziej's questionnaire and own surveys

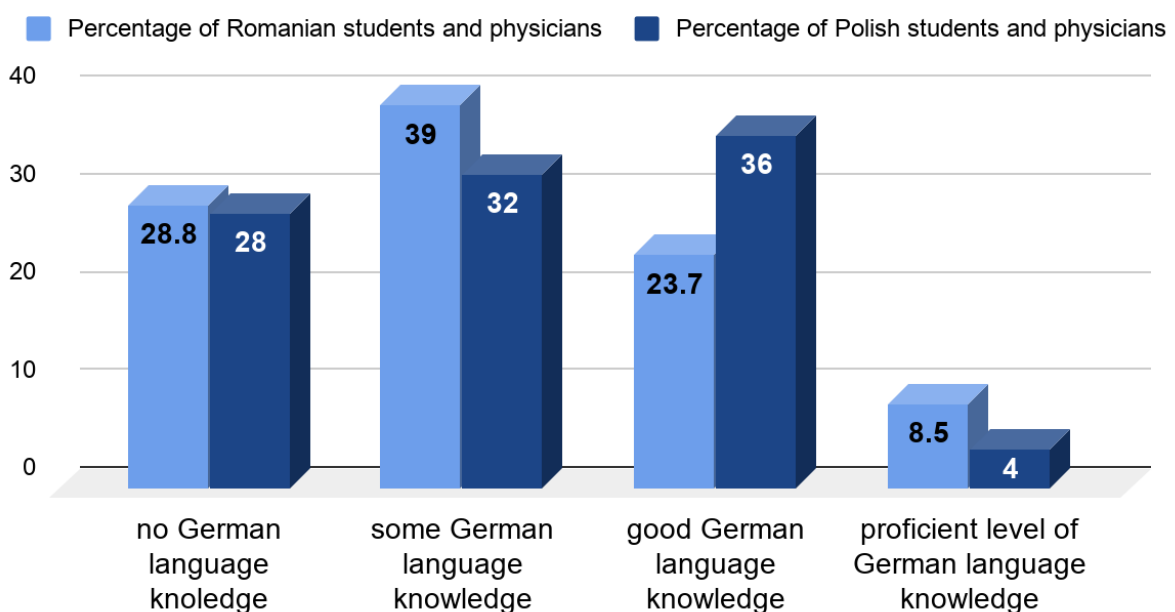
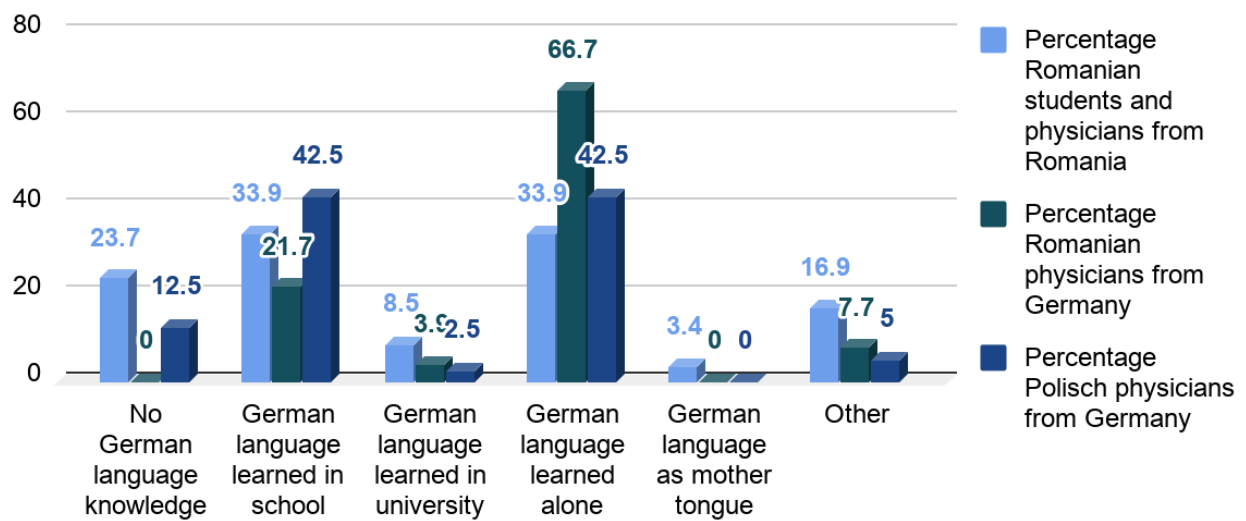


Figure 69 examines the methods employed for learning the German language. The comparison is made between Romanian students and physicians aspiring to work in Germany, the doctors that already do so and the Polish doctors who had moved to Germany.

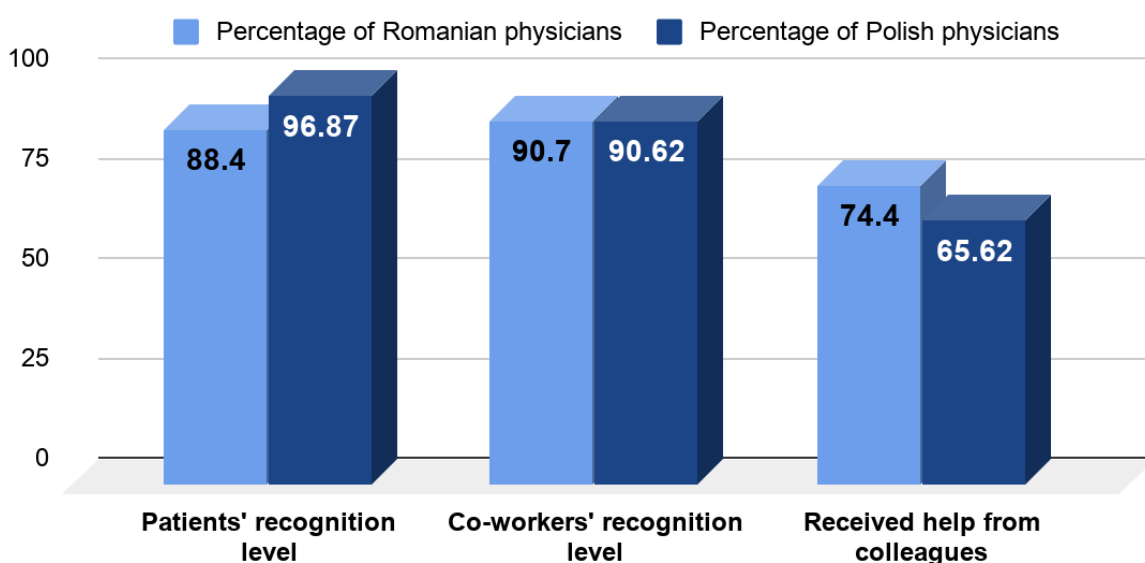
Figure 69. Percentage comparison of German language learning manner for three groups, Source: own research based on the compared results from the Kolodziej's questionnaire and own surveys



8.3 Integration

The degree to which work colleagues offer support and help foreign doctors feel integrated is of great importance for their feeling of belonging to the work environment. *Figure 70* compares how the Romanian and Polish doctors perceived their recognition level among patients and workmates.

Figure 70. Percentage comparison of the perceived recognition level among Romanian and Polish doctors, Source: own research based on the compared results from the Kolodziej's questionnaire and own surveys



Out of the Romanian physicians who participated in the survey, 93% saw their future in Germany, whereas 78.12% of the Polish doctors did so. The explanation for this small discrepancy could be found in the statistical results which show that 99.2% of the Romanian doctors stated that they found a better working environment in Germany, while 87.5% of the Polish doctors agreed.

Another small difference that can be observed when comparing the results obtained by Kolodziej et al. (2016) for Poland and the current survey of Romanians is the stated main reason for remaining in Germany. For the Polish physicians the remuneration was the main reason for staying, with 81.23% declaring that they had not returned to Poland because of the stability that their salary brings. For the Romanians, the main motivation for remaining in Germany (93.8%) was their perceptions of a better working environment there.

Another element that illustrates the high level of integration of foreign physicians is that 84.37% of the Polish and 97.7% of the Romanian doctors recommended working in Germany to young physicians.

8.4 Comparative discussion and conclusions

The phenomenon of the migration of medical staff is widely known, but this has escalated in recent years. It is a well known fact that Europe's population is ageing, which creates new opportunities for Polish and Romanian medical doctors (Krajewski-Siuda et al., 2012).

Even though the conclusion reached by Kolodziej et al. (2016) only involved 58 selected respondents, similar results were obtained by Krajewski-Siuda et al. (2012) with a group of 1214 Polish medical students. The similarities and differences between the Romanian and the Polish results can be seen by comparing the current study with that of by Kolodziej et.al. It is notable that for both countries, the opportunity for better salaries did not rank in first or second positions in the list of reasons for migrating. *Figure 63* shows that in comparison with medics from Romania, almost half of the Polish medics found the working conditions essential for their moving abroad, and only a third of the Polish physicians were interested in more possibilities for free time. Comparing the findings of the two studies suggests that physicians in Romania receive lower salaries than their Polish counterparts: Almost twice as many Romanian physicians declared that they earn more than three times the salary that they would receive in their home country. Similarly, almost four times as many Polish physicians stated that in Germany, they were receiving twice the salary that they would earn at home (*Figure 64*).

As language prerequisites play a crucial role in the ability physicians to work in a foreign country, the trends in these competencies were shown in *Figure 69*. From this chart, some interesting aspects are illustrated when comparing the German language

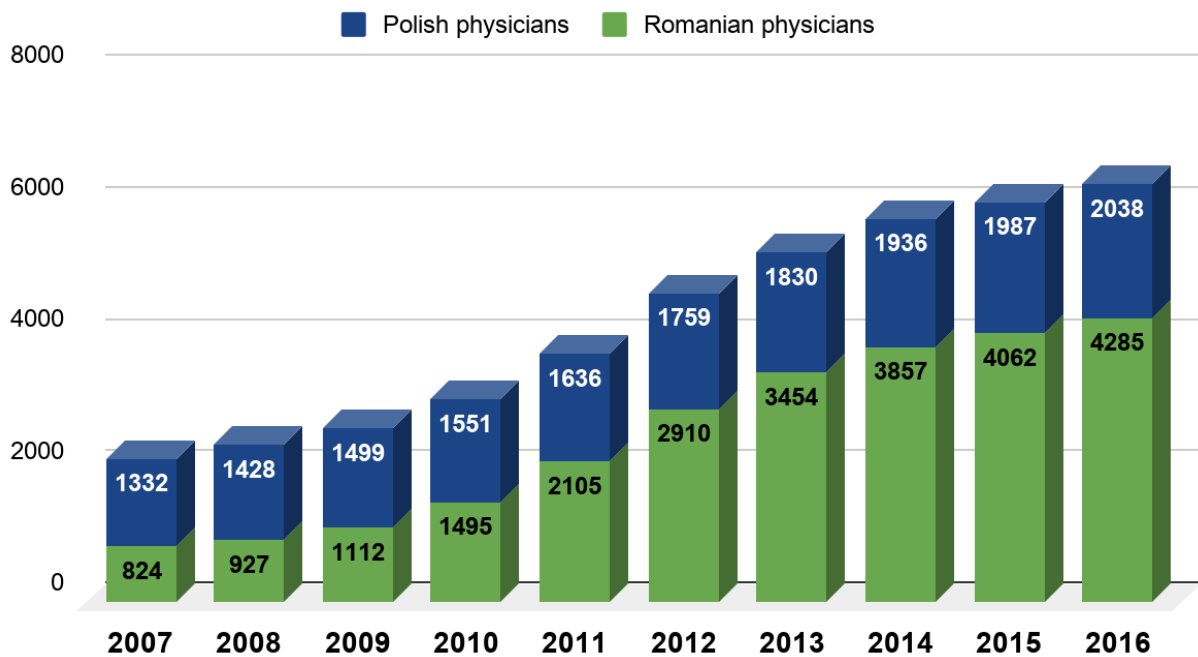
knowledge of the three groups. Romanian students and physicians thinking of migrating to Germany identify as having the greatest deficiency in knowledge of German language, even though they were more inclined to learn it in school and university. Romanian physicians working in Germany stated that they had learned German alone (66.7%), and this value stood out as the highest shown in this comparison. The third group, Polish physicians working in Germany, stated in equal percentages (42.5%) that they learned the German language either in school or alone. This may be due to the fact that Germany and Poland are geographic neighbours.

The physical and psychological sacrifices involved when permanently leaving a country for work may provide an explanation for one interesting aspect of the study results from both Romania and Poland. It was known to the students and physicians who were thinking of working in Germany that there is a deficit of physicians in their own countries. They were asked if they would choose to remain in their home country if they were to find an attractive workplace there. Given the fact that 88.46% of the Polish doctors and 66.1% of those from Romanian stated that they would not move back to their country of origin, it is safe to conclude that this phenomenon is very complex.

9 Discussion

The question that this paper set out to answer - whether Germany's deficit of physicians can be alleviated by physicians trained in Romania - is definitely answered affirmatively. Some of the limitations of this paper are the imperfect overlapping of the study curriculum between the investigated countries and the limited number participants in the personal surveys. From a qualitative point of view, by comparing the duration and content of basic medical studies and examining the three specialist training fields covered in Chapter 6, it was shown that Romanian physicians are suitable candidates for employment in Germany. In parallel, after consideration of the basic and specialist training in Poland, the same conclusion can be reached. From a quantitative point of view, as can be seen from the BÄK statistics shown in Figure 71, a significant number of foreign doctors have migrated to Germany from Romania and Poland in the last couple of years. Although the numbers from both countries rose during specified 10 years period, it can be observed that by 2016 the number of Romanian physicians migrating to Germany increased by a factor of 5.

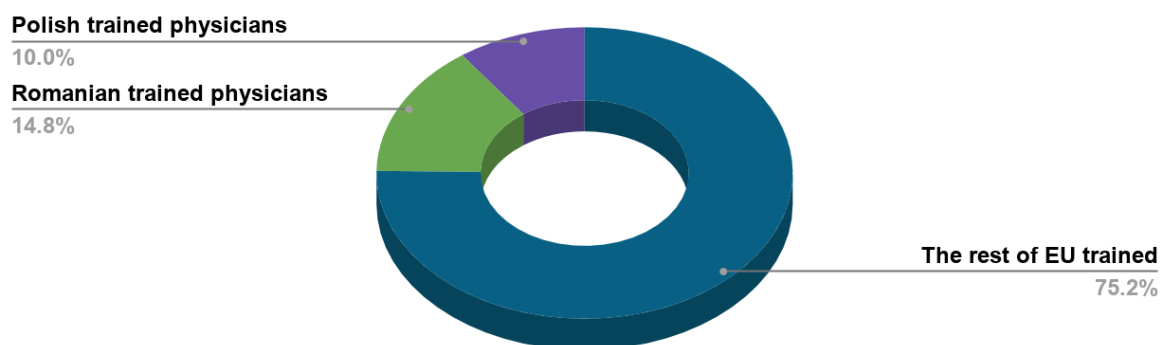
Figure 71. Number of Romanian and Polish physicians registered yearly in Germany from 2007 to 2016, Source: BÄK statistic



The information summarised above provides evidence of the issues that were being conveyed in Romanian mass media even before the EU accession in 2007. However, concerns that Romania would be left without medical personnel after entering the EU is only partially supported by the statistics from BÄK. As shown in *Figure 71*, a rapid increase in the migration of physicians began four years after Romania entered the EU, and the migration rate began to slow four years later, in 2014.

The percentage of Romanian and Polish doctors compared with all other foreign trained physicians who began working in Germany in the same time frame can be seen in *Figure 72*. Both of these countries combined have provided Germany with almost a quarter of the highly trained foreign medical personnel who were working there from 2007 until 2016 (BÄK statistics).

Figure 72. Percentage of Romanian and Polish trained physicians from Germany compared with the percentage of the rest of the outside Germany trained EU doctors working in Germany, Source: BÄK (2010, 2013, 2014b, 2018b)



Data collection systems are essential for producing statistics that help to improve policies that determine the actual state of public health. According to its Ministry of Health, Romania has the lowest number of doctors in the EU (2.7 physicians per 1000 inhabitants - MS, 2014), but centralised official statistics regarding the number of physicians who have left Romania do not exist, and this restricts the ability of policy-makers to effectively address issues in the public health system. The number of physicians in Romania was estimated to drop to 2.4 physicians per 1000 inhabitants in 2016, even though in that year 14596 resident physicians were in training, mainly in Bucharest (29%), Iași (15%) and Cluj (14%) (Hamberger et al., 2017). In 2006 the Polish Minister of Health commissioned a survey designed to obtain information on workforce deficits in medical care centres. The survey identified that on 30 May 2006 there were 4113 unfilled posts. The greatest numbers of vacancies were found in the fields of anesthesiology (398) and internal medicine (312). Data showing the deficit of general medicine personnel were not included in the survey (Leśniowska, 2015). Recognising the importance of being accurately informed in due time and knowing about the 15700 Romanian physicians working abroad, in 2016 the Romanian County Public Health Department (DSP) commissioned a survey to investigate the situation regarding the shortage of medical doctors. Unfortunately, not every county submitted their findings, but the Romanian National Society for Family Medicine reported a general physician shortfall of 600 (Hamberger et al., 2017).

Confronted with this situation, in October 2015 the Romanian Government raised the remuneration of medical personnel by 25% (Government Emergency Ordinance 35/2015). In January 2018, the Minister of Labour announced that the salaries of physicians would be greatly increased to 70% of the average rates paid to doctors in the EU, in order to provide an incentive for doctors to remain in the country. In an interview on public television, she also stated that she was promoting a unified salary law which would give student doctors the opportunity to accurately understand in advance both the starting salary of their career and the salary around their retirement. As Romanians unfortunately are accustomed to hearing empty promises from

politicians and because there is still a need to invest in hospital equipment, physicians' training and the elimination of corruption in the medical system, it remains to be seen whether this countermeasure will be enough to curb the present emigration rate.

10 Limitations

The literature review in this study was conducted using only papers published in English, German and Romanian. The other European languages could possibly offer further information that was not taken into consideration.

BÄK Statistik defines doctors who do not have German citizenship as foreign doctors, even though they may have been trained in Germany which means that the available data could be slightly different from the truth.

A limitation of the data analysed in the chapter 7 (Survey) is the low number of respondents. This means that only an incomplete image of the migration wishes of Romanian medical students and graduates can be formed. However, in order to provide a more complete picture of the situation, data from other similar studies was researched. Suciu et al. (2017) studied the plans and emigration preferences of Romanian medical students using a much larger sample. The 957 respondents were medical students who were studying at the University of Medicine and Pharmacy in Cluj. The authors found that 84.7% of new university graduates planned to search for work abroad, and of these, 34.1% regarded Germany as their top choice of destination countries (Suciu et al., 2017). The values found in the questionnaire used in the current research were slightly higher (93.2% as opposed to 84.7%), which suggests that the percentage of physicians from less prosperous regions of Romania who are considering migration may be higher.

As statistical information about the number of physicians working in Romania is scarce and is not standardized, some of the current research was performed using articles in the mass media. In consequence, the real number of migrating Romanian physicians remains unknown.

11 Conclusion

The phenomenon described 10 years prior by Kopetsch (2010) is still current in 2018: German doctors are still emigrating, adding to the shortage of doctors in the country. This means that in order to properly function, the German health system relies on foreign doctors. Current demographics mean that in the future an increasingly large percentage of German physicians will retire, and many doctors will continue to move abroad (Kopetsch, 2008).

The most concerning characteristic of the “brain drain” phenomenon is its self-reinforcing results on an already weak health care system (Karan, DeUgarte & Barry, 2016). In their search for better employment opportunities and conditions, many doctors from Eastern European countries such as Romania and Poland are relocating to countries such as Germany. Most available literature suggests that non-monetary factors are more important than the salaries received (Janus et al., 2007). The current paper shows that not only does the Bologna Process entitle them to have their qualifications recognised, but that there are also similarities in training. In order to counter possible arguments that this comparison was performed only on paper and that in reality the number and quality of skills acquired during residency may actually vary significantly from country to country, the results of the personal survey were also taken into account.

According to all of the data compiled, Romanian and Polish doctors can successfully contribute to the reduction of Germany's medical deficit. The data available from BÄK covering the period 2007 to 2016 already showed that 24.8% of the EU trained doctors who were working in Germany came from Romania and Poland. By 2018 these figures had risen again to 26.6%, with more than 18% of the physicians working in Germany coming from Romania and 8.3% from Poland (BÄK, 2018b).

The field-oriented survey, where three of the specialist fields with the biggest personnel deficit were chosen (internal medicine, general medicine and anesthesia) permitted a detailed comparison of the eligibility of foreign-trained medical specialists to work in Germany. This allowed for the following conclusions to be made:

1. In all 3 countries, residency in the field of internal medicine takes 5 years, but they all have different requirements regarding the minimum number of procedures required (Germany 2400, Romania 1585 and Poland 270).
2. Even though the training durations for the fields of general medicine and anesthesiology vary between countries, the number of minimum required procedures does not reflect this.

As the medical profession is a free profession and medics have a right to choose where they live and work, employment-related migration will always be present, and the direction in which it takes place is a question of politics.

12 Abbreviations

ANI - Agenția Națională de Integritate - The National Integrity Agency

ÄApprO - Die Approbationsordnung für Ärzte - The Licensing Regulation for Doctors

BAMF - Das Bundesamt für Migration und Flüchtlinge - The Federal Office for Migration and Refugees

BÄK - Der Bundesärztekammer - The German Medical Association

BÄO - Die Bundesärzteordnung - The Federal Medical Code

BC - before Christ

BLÄK - Bayerische Landesärztekammer - The Bavarian Chamber of Physicians

BNBF - Das Bundesministerium für Bildung und Forschung - The Federal Ministry of Education and Research

BQFG - Das Berufsqualifikationsfeststellungsgesetz - The Vocational Qualifications Assessment Law

CFMR - Camera Federativă a Sindicatelor Medicilor din România - The Romanian Federation of Physicians

CMR - Colegiul Medicilor din România - The Romanian College of Physicians

CNAS- Casa Națională de Asigurări de Sănătate - The Romanian National Insurance House

CNPDS - Centrul Național de Perfecționare în Domeniul Sanitar - The Romanian National Center of Perfecting the Skills of the Medical Personnel

DAAD - Deutscher Akademischer Austauschdienst - German Academic Exchange Service

DESTATIS - Statistisches Bundesamt - Federal Statistical Office (Germany)

DGA - Direcția Generală Anticorupție - Anti-Corruption General Directorate (Romania)

DIICOT - Direcția de Investigare a Infraacțiunilor de Criminalitate Organizată și Terorism - Directorate for Investigating Organized Crime and Terrorism (România)

DNA - Direcția Națională Anticorupție - National Anticorruption Directorate (Romania)

DSP - Direcția de Sănătate Publică - The County Public Health Department

EC Directive - Directive of the European Parliament and of the Council

EEA - Economic European Area

EEC - European Economic Community

EPMA - European Association for Predictive, Preventive & Personalised Medicine

EU - European Union

GDP - Gross Domestic Product

GMK - Gesundheitsministerkonferenz - Ministerial Conference for Health

INS - Institutul Național de Statistică - Romanian National Statistics Institute

INSP - Institutul Național de Sănătate Publică - Romanian National Health Institute

ISTAT - Italian National Institute for Statistics

LEK - Lekarski Egzamin Koncowy - Medical Final Examination

LMU - Ludwig Maximilians Universität München - Ludwig Maximilians

MniSW - Ministerstwo Nauki i Szkolnictwa Wyższego - Ministry of Science and Higher Education

MoHProf - Mobility of Health Professionals

MZ - Ministerstwo Zdrowia - Polish Ministry of Health

NHIH - National Health Insurance House (in Romania)

NHS - National Health System

OECD - Organisation for Economic Cooperation and Development

SRI - Serviciul Român de Informații - The Romanian Intelligence Service

UNO - United Nations Organisation

13 Appendices

Survey 1

Situation of doctors working in Germany that have exams in Romania

Dear Participant,

Welcome and thank you for your interest in the investigation.

This questionnaire has been adapted from the Ph.D. work of Dr. Kolodziej to help with the assessment of the situation as a medical doctor in Germany with the exam in Romania.

The lack of doctors in Germany is always a topic of discussion in the media. In this questionnaire, we are interested in your individual answers.

The processing of the questionnaire takes about 5 minutes. The data is recorded anonymously and is only evaluated for scientific purposes.

Sincerely,

Anamaria Cudalb

1. Since when do you work as a doctor in Germany?

Please specify the year.

2. In which part of Germany are you active?

Please select.

- Brandenburg
- Berlin
- Baden-Württemberg
- Bayern
- Bremen

- Hamburg
- Hessen
- Mecklenburg-Vorpommern
- Niedersachsen
- Nordrhein-Westfalen
- Rheinland-Pfalz
- Saarland
- Sachsen
- Sachsen-Anhalt
- Schleswig-Holstein
- Thüringen

3. Where do you work?

Please choose an answer.

- Clinic
- Hospital
- Private practice
- Other

4. How were you recruited?

Please choose an answer.

- Job fair
- Work agency
- Self initiative

5. What reasons have motivated you to work in Germany?

Please choose an answer for each line.

	Not important	Moderate	Important	Does not apply
Higher compensation				
Improved access to specialist training				
Further training possibilities				
Working conditions				
Opportunities for leisure activities				

More leisure time by regular working hours				
Others				

6. Considering the cost of living, do you make more money than your colleagues in Romania?

Please choose an answer.

- Yes
- No

7. How much more do you earn in Germany compared to Romania?

Please choose an answer.

- Less than in Romanian
- 1x
- 2x
- 3x
- >3x
- I don't know

8. In your experience, are the working conditions for doctors in Germany better than those in Romania?

Please choose an answer.

- Yes
- No

9. Do you see your professional future in Germany?

Please choose an answer.

- Yes
- No

10. Do you have plans to work again in Romania?

Please choose an answer.

- Yes
- No

- Maybe
- I work in Romania

11. What needs to change in the Romanian health sector to make working in Romania attractive to you?

Multiple selection possible.

- Higher wages
- Improvement of working hours
- Improvement of working conditions
- Something else

12. Would you recommend a young Romanian doctor to work in Germany?

Please choose an answer.

- Yes
- No

13. How did you learn German?

Please choose an answer.

- Is my mother tongue
- In school
- In university
- Through self-initiative
- In a language course in Germany
- Other answer

14. Have you been offered language courses by your employer?

Please choose an answer.

- Yes and the costs were paid by my employer
- Yes and the costs were partially paid by my employer
- Yes and the costs were paid by myself
- No

15. Were there any language problems when you started work?

Please choose an answer.

- Yes
- No

16. Would language and integration courses help foreign doctors in the integration process?

Please choose an answer.

- Yes
- No

17. Do you believe that the C1 level is sufficient for working?

Please choose an answer.

- Yes
- No

17 How do you rate your German level?

Please choose an answer.

- No knowledges
- Basic knowledges
- Good knowledges
- I am fluent

18. I feel accepted by patients.

Please choose an answer.

don't agree

1	2	3
---	---	---

agree

20. I feel accepted by my German colleagues.

Please choose an answer.

don't agree

1	2	3
---	---	---

agree

21. I have been supported by my German colleagues.

Please choose an answer.

don't agree 1 2 3 agree

22. How do you cope with the technical requirements at work in Germany?

Please choose an answer.

badly 1 2 3 well

23. How do you cope with the working hours in Germany?

Please choose an answer.

badly 1 2 3 well

24. Your place of birth

25. Year of graduation

26. What university did you study at?

Please choose an answer.

- Universitatea de Vest "Vasile Goldiș", Arad
- Universitatea Transilvania, Brașov
- Universitatea de Medicină și Farmacie "Carol Davila", Bucharest
- Universitatea de Medicină și Farmacie "Iuliu Hațieganu", Cluj-Napoca
- Universitatea "Ovidius", Constanța
- Universitatea de Medicină și Farmacie, Craiova
- Universitatea de Medicină și Farmacie "Grigore T. Popa", Iași
- Universitatea din Oradea
- Universitatea "Lucian Blaga", Sibiu
- Universitatea de Medicină și Farmacie Târgu Mureș
- Universitatea de Medicină și Farmacie "Victor Babeș", Timișoara
- Other

27. How old are you?

28. What is your gender?

- Male
- Female

29. What is your current position?

Please choose an answer.

- Junior doctor
- Training specialist
- Specialist physician
- Medical Doctor
- Other

30. If you are a specialist, please indicate your specialty.

31. If you are a specialist, where did you complete your specialist training?

Please choose an answer.

- In Romania
- In Germany
- Another country

32. What else would you like to tell us?

suggestions, wishes, comments or criticism

Survey 2

Doctors and students that studied in Romania and are not working in Germany

Dear Participant,

Welcome and thank you for your interest in the investigation.

This questionnaire has been adapted from the Ph.D. work of Dr. Kolodziej to help with the assessment of the situation as a medical doctor in Germany with the exam in Romania.

The lack of doctors in Germany is always a topic of discussion in the media. In this questionnaire, we are interested in your individual answers.

The processing of the questionnaire takes about 5 minutes. The data is recorded anonymously and is only evaluated for scientific purposes.

Sincerely,

Anamaria Cudalb

1. Can you imagine yourself working as a doctor in Germany?

Please choose an answer.

- Yes
- No

2. Do you have concrete plans to work in Germany?

Please choose an answer. Let us know your plans.

- Yes
- No

3. Have you taken specific measures to find a job in Germany?

Please choose. Multiple selection possible.

- Language lessons
- Move abroad
- Contacted work placement agencies
- Contacting colleagues in Germany
- Other

4. How did you hear about the German labor market?

Multiple selection possible.

- Family or people you know
- Own initiative
- Trade fairs
- Employment agencies
- Other

5. When would you want to work in Germany?

Please choose an answer.

- Directly after the study
- After the specialist training
- Other

6. For how long would you like to work in Germany?

Please choose an answer.

- For the time of specialist training
- For a limited time
- Unlimited
- Other

7. What would be important for you or would be decisive for a job in Germany?

Please choose an answer for each line.

	important	moderat	little	not applicable
Higher compensation				
Better access to specialist training jobs				
Further training possibilities				

Working conditions				
Opportunities for leisure activities				
More leisure time by regular working hours				
Integration courses offered by the employer				
Language courses offered by the employer				
Other				

8. How do you assess your own German language skills?

without
①
②
③
④
 fluent

9. How did you learn German?

Multiple selection possible.

- No German knowledge exists
- In the school
- In the study
- Alone
- It is my mother language
- Other

10. Do you see your professional prospects in Romania as positive?

Please choose an answer.

- Yes
- No

11. How do you assess the chances of getting a place for specialist training in Romania after your studies?

Please choose an answer.

A horizontal scale with three points labeled 1, 2, and 3 inside circles. The scale is contained within a rounded rectangular box.

bad

good

12. Do you think that the current change for specialist training in Romania in the module system will benefit you?

Please choose an answer.

- Yes
- No

13. There is also a great medical deficit in Romania. Would you still work in Germany if you found a suitable job in Romanian?

Please choose an answer.

- Yes
- No

14. How old are you?

15. What gender do you have?

- Female
- Male

16. What is your present status?

Please choose an answer.

- Student
- Doctor in physician training
- Specialist (specialist)
- Other

17. What is your academic year? (For students)

Please select.

- 1
- 2
- 3
- 4
- 5
- 6

18. At what university do you/did you study?

Please choose an answer.

- Universitatea de Vest "Vasile Goldiș", Arad
- Universitatea Transilvania, Brașov
- Universitatea de Medicină și Farmacie "Carol Davila", Bucharest
- Universitatea de Medicină și Farmacie "Iuliu Hațieganu", Cluj-Napoca
- Universitatea "Ovidius", Constanța
- Universitatea de Medicină și Farmacie, Craiova
- Universitatea de Medicină și Farmacie "Grigore T. Popa", Iași
- Universitatea din Oradea
- Universitatea "Lucian Blaga", Sibiu
- Universitatea de Medicină și Farmacie Târgu Mureș
- Universitatea de Medicină și Farmacie "Victor Babeș", Timișoara
- Other

19. What else would you like to tell us?

Here you will find space for suggestions, wishes, comments or criticism.

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Certificate

I, Anamaria Cudalb, hereby certify that I personally carried out the work depicted in the thesis titled “What contribution can doctors trained in Romania bring in order to remedy the medical deficit in Germany? Comparison of medical studies and specialist training between Romania, Germany, and Poland, using as an example the fields of internal medicine, general medicine, and anesthesia”.

Anamaria Cudalb

09.10.2021

Eidesstattliche Versicherung

Cudalb, Anamaria

Ich erkläre hiermit an Eides statt,

dass ich die vorliegende Dissertation mit dem Thema:

“Welchen Beitrag können in Rumänien ausgebildete Ärzte zur Behebung des Ärztemangels in Deutschland leisten? Vergleich von Medizinstudium und Facharztweiterbildung in Rumänien im Vergleich zu Deutschland und Polen am Beispiel von Innerer Medizin, Allgemeinmedizin und Anästhesie.”

selbständig verfasst, mich außer der angegebenen keiner weiteren Hilfsmittel bedient und alle Erkenntnisse, die aus dem Schrifttum ganz oder annähernd übernommen sind, als solche kenntlich gemacht und nach ihrer Herkunft unter Bezeichnung der Fundstelle einzeln nachgewiesen habe.

Ich erkläre des Weiteren, dass die hier vorgelegte Dissertation nicht in gleicher oder in ähnlicher Form bei einer anderen Stelle zur Erlangung eines akademischen Grades eingereicht wurde.

München, 09.10.2021

Anamaria Cudalb
Unterschrift Doktorandin