



# First- and fifth-year medical students' intention for emigration and practice abroad: A case study of Serbia



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## ABSTRACT

Health worker migration is causing profound health, safety, social, economic and political challenges to countries without special policies for health professional' mobility. This study describes the prevalence of migration intentions among medical undergraduates, identifies underlying factors related to migration intention and describes subsequent actions in Serbia. Data were captured by survey of 938 medical students from Belgrade University (94% response rate), representing two thirds of matching students in Serbia stated their intentions, reasons and obstacles regarding work abroad. Statistical analyses included descriptive statistics and a sequential multivariate logistic regression. Based on descriptive and inferential statistics we were able to predict the profile of first and fifth year medical students who intend or have plans to work abroad. This study contributes to our understanding of the causes and correlates of intent to migrate and could serve to raise awareness and point to the valuable policy options to manage migration.

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## 1. Introduction

Health worker emigration due to professional, social, economic, political, individual and other reasons is causing profound health system challenges to some countries, in particular to those lacking the special policies for health professional' mobility [1]. Out-migration of physicians contributes to workforce shortages or maldistribution, which may, in turn, create inequity in healthcare access between

regions and restrict the improvement of health system performance [1,2]. The appearance of physician shortages [3] and rapidly growing demand for health care, induced waves of health worker migration after 2000; this movement was mostly from low to high income countries and from rural to urban areas [4,5]. China and some countries in Africa, Central and Eastern Europe and Oceania are becoming important sources of health workers for other countries [6]. In the recipient countries, foreign-trained physician ranged from below 1% of the total in Poland, to 20–30% in USA, UK, Canada and Australia and up to 39% in New Zealand [7,8].

Key migration motivators are professional development opportunities, better salaries, and higher safety and quality standards of living and working conditions, which are usually included in the incentives offered by those who recruit

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of health professionals [4–13]. To solve problems related to health workforce migration requires balancing the country of origin and the recipient country's needs against the individual's rights. This involves a complex relationship between individual rights, social justice and international justice [14,15]. It is expected that potential source countries should take greater responsibility for the losses of their health professionals by implementing policies that promote retention especially in areas with shortages of health workers [4,15], and to ameliorate negative impacts due to underdeveloped infrastructure and service sector that impinge on the health worker's quality of life [16].

Monitoring migration intentions, patterns and underlying influences has become important to guide long-range human resources for health (HRH) plans, and to control HRH development. Serbia does not have single, comprehensive registry on health professionals' migration that would enable analysis of the size, patterns and determinants of actual migration. However, according to unpublished national census data, about 10,000 Serbian health professionals are practicing or residing abroad [17]. So far, the majority of Serbian physicians who went abroad did so without encouragement or constraint by the state and were often contracted to move as a result of several bilateral agreements in the field of construction and health [18]. Although state employed health workers expressed low levels of intention to leave their permanently contracted post, they did express low levels of satisfaction with their job conditions [19].

The mismatch between supply and demand of health workers is common thing worldwide. In 1974, Serbia recognized that mismatch and developed a strategy to balance the almost constant annual production of approximately 550 physician graduates during 1965–1970 with the number of vacancies in the public sector that varied from 216 to 562 each year [20]. However, the gap remained [21], and is reflected in the rising unemployment of medical doctors in Serbia from 1282 in 2000 to 2447 in 2013. Using the 2013 official statistics of the National Employment Office database, the unemployed medical doctors represent 7.2% of all trained physicians in Serbia. In this paper we explore medical students consideration of working abroad, bearing in mind that Serbia has recently become an EU-candidate country, and a belief that countries entering the EU may suffer from significant emigration particularly from the most economically deprived regions of entering countries [13,22,23].

Many young and educated people are emigrating from Serbia [16]. The main reasons for emigration have been military conflicts, country decomposition, economic deterioration, and low investments in science and technology. There is no extant study that has examined the relationships between “push” and “pull” factors, and the willingness of medical students in Serbia to emigrate. This study tests the premise that the majority of medical students who wish to emigrate would do so due to limited employment opportunities in Serbia. The main objectives of our study were to determine the prevalence of migration intentions in medical undergraduates, to identify the correlates of intention to emigrate among medical students.

## 2. Materials and methods

This was a cross-sectional, observational, questionnaire-based study, conducted in the Medical Faculty of the University of Belgrade during two weeks in February 2011. Anonymous questionnaires were distributed during classes to all present students at the first and fifth year of medical studies. The questionnaire design was based on a similar survey carried out at the initiative of the Ministry of Labour and Solidarity of France in Hungary, Poland, the Czech Republic [9] and Estonia [10]. It was translated, pre-tested, and revised accordingly in order to ensure the best possible response. The questionnaire consisted of 26 questions collecting socio-demographic data, details about students' migration intentions, and reasons for and obstacles to working abroad. Statistical analyses included descriptive statistics of the sample and two sequential logistic regression analyses of medical undergraduates' intention to work abroad; and those with firm plan to go. When analyzing data for policy questions where there is a population effect, it is very usual and almost required to control for demographics as they are important descriptors of the characteristics of the people and the conditions that are being studied and which cannot be changed or modified. Sequential logistic regression procedure allows control of students' socio-demographics factors in the sample [24]. The dependent variable in the first regression model was “I am considering working abroad”, while in the second model it was the decision type to work abroad, for which we had to recode answers into two categories (the first: “I have a firm plan to work abroad”, and the second, “I have a vague decision or I am contemplating”). Having a firm plan to work abroad indicates that a student has given serious consideration to work abroad and has likely taken some steps to arrange the work abroad. There were seven independent variables, with respondents' age, gender and household financial situation were primarily entered as socio-demographic control variables. The interaction between age and gender, as well as age and financial situation was also tested in this phase. In the next step of modeling we included following independent variables: motivation level for receiving high grades in medical studies (a proxy measure of student's intelligence and work ethic, both correlated with success as a medical doctor), having a relative or friend outside of Serbia, having been abroad before for study-related purposes, and foreign language knowledge.

Based on descriptive statistics and odds ratios (OR) of significant independent variables of the regression model we were able to predict the profile of a student intended to work abroad and student with firm plan to go, and to analyze the differences between models of students at the first and at the fifth year of medical studies. The IBM SPSS Statistics 21 package was used.

## 3. Results

A total of 938 medical students voluntarily completed questionnaires (the overall response rate was 93.8%) with 494 (52.7%) first-year medical students and 444 (47.3%) fifth-year students responding. The proportion of

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