

Diagnosing the Issue: Understanding and Combating Medical Brain Drain in Bosnia and Herzegovina

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Abstract

This study investigates emigration patterns among healthcare professionals in Bosnia and Herzegovina, examining the underlying reasons for emigration and proposing actionable solutions to curb this trend. A mixed-methods approach is employed, combining quantitative data from surveys administered to medical and health studies students with qualitative insights from interviews with governmental officials, language educators, and statistical agencies. The findings reveal significant dissatisfaction with socio-economic and political conditions, prompting healthcare professionals to seek opportunities abroad. Major reasons for going abroad include political instability, low wages, and poor working conditions, while better pay and career opportunities are attracting factors. While the study is limited by the lack of comprehensive official statistics on emigration, the implications of this research emphasize the need for policy interventions aiming to improve local working conditions and reform educational systems. The study provides valuable insights for policymakers and stakeholders to effectively address the issue of brain drain.

Introduction

In the global context migration can be defined as the movement of a person either across an international border or within a state for more than one year irrespective of the causes, i.e., if it is voluntary or not and irrespective of the means (IOM, 2019). However, migrations are not a new phenomenon. Throughout history people have always migrated, sometimes in groups or as individuals and it was due to multiple reasons. They were running away from war or from poverty, political instabilities, or religious intolerance, or they were just looking for better workplaces and better opportunities for themselves and their families (ETF, 2022). Today migration of the workforce has become one of the most dominant forms of migration trends as knowledge has become one of the most valuable resources in economies (WFD, 2020).

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Migrations of the people from the former Yugoslavia to Western European countries began in the 1960s, as a result of the agreement with the leaders of Austria, Sweden, Germany, and France. The trend lasted up to 1978 after the gradual decrease was recorded. Nevertheless, war led to an increase in migrants and refugees and this trend lasts until today, and there are no signs that there will be significant changes (WFD, 2020). As the migration trend and related issues deepened, many countries around the globe also faced the phenomenon of the brain drain. Brain drain is generally defined as a massive and permanent outflow of highly qualified individuals (researchers, academics, and scientists) from home to foreign (or so-called 'receiving') countries (Horvat, 2014).

Focusing on the health sector, employment opportunities are recording its strongest growth over the past few decades, and the health sector itself is absorbing about 10% of the workforce (OECD, 2019). Despite the rising employment, shortages are already evident (Mara, 2020). The European health system is facing the issue of the retirement of baby boomers, the rise in life expectancy and the ageing of the population which is further increasing the demand need for health professionals (Jurić, 2021a). These supply and demand imbalances are generating an endless battle among countries to attract health professionals. Developed countries are fighting this issue by immigrating health workers, especially from Western Balkan countries and they are benefiting at the expense of poorer countries (Glinos, 2015; Mara, 2019; 2023). The phenomenon of the medical brain drain is a very complex issue, and it is related to the large scope of economic, institutional but also linguistic, cultural and factors of geographical proximity (Adovor et al., 2019). In addition, due to the lack of available data among Western Balkan countries (Jurić, 2021b) researchers' ability to investigate and better understand this phenomenon is severely limited.

Despite limited official statistics for Bosnia and Herzegovina (BiH), there are available estimates. Nearly half of those born within its borders, or 1.6 million, now live abroad compared to 3.2 million inhabitants in Bosnia and Herzegovina (Bosnia and Herzegovina, Agency for Statistics estimate) (Halilović et al., 2018). In addition, the country has recently experienced an alarming scale of emigrations with almost half a million people that left the country since 2013 according to the research conducted by the Union for Sustainable Return and Integration of BiH (2019). Emigrations are mostly linked to the health and IT sector that are considered as key ones for overall country human capital, development, and

productivity growth (IOM, 2022). Alarming, the country ranks among the highest for population loss, at 1.5% annually (VOA, 2022). BiH is a country with the 'lowest low' fertility in the world (1.25), followed by prominent levels of migration and population ageing, as well as deeply rooted gender inequalities and it is expected that by 2070, such demographic trends and inequalities will lead to a reduction of the total population by over 50% (UNFPA, 2020). Among the identified drivers of emigration, political factors are considered the most influencing ones followed by a lack of employment opportunities, wage differences, an inefficient health system and an education system that does not meet the demand of the labour market (IOM, 2022). If we focus on the emigration costs of skilled and young people, WFD (2020) study results imply that due to the BiH inability to prevent the departure of one citizen through provision of the productive employment, the country GDP loss is approximately 21,000 euros per person.

Considering the adverse impact of emigration on Bosnia and Herzegovina's socio-economic landscape, particularly in the health sector, a thorough analysis of current emigration patterns and their effects is crucial. The main focus of this research is the substantial and persistent emigration of healthcare professionals from Bosnia and Herzegovina. This exodus poses a considerable threat to the integrity of the nation's healthcare infrastructure and its socio-economic stability. Despite heightened awareness of this issue, a comprehensive understanding of the specific push and pull factors that motivate healthcare workers to leave remains elusive. Furthermore, there is a recognized necessity for evidence-based strategies to mitigate this trend. This study addresses these gaps by analysing the reasoning behind the emigration of healthcare professionals, evaluating the influence of socio-economic and political conditions, and proposing actionable solutions to retain essential healthcare talent within Bosnia and Herzegovina. Accordingly, the main aim of this article is to provide an overall analysis of current emigration trends and consequences and to provide solid ground for future strategies, policies and feasible solutions that could prevent this trend.

On migration trends in Bosnia and Herzegovina

The 2013 census listed Bosnia and Herzegovina's population at around 3.5 million, but estimates from some sources indicate it might be under 3 million (ASBIH, 2018). The substantial Bosnian diaspora, with 1.6 million people, plays a crucial socio-economic role, marking it as a key macroeconomic factor.

Accurate data collection on labour migration in the country presents an everlasting challenge, primarily due to the fragmented responsibilities among different ministries at the state level. The Ministry of Security is tasked with aggregating migration data, while other institutions are mandated to furnish pertinent information to this central authority. Annually, the Ministry conducts a comprehensive analysis of the country's migration profile.

According to available data from the Ministry of Security of BiH, in the period from 2016 to 2020, almost 20 thousand people deregistered their residences (Table 1). Data for 2021 and 2022 are still not available, but

according to unofficial data, the COVID-19 pandemic has led to a drop in the number of changes in residence registration. The most common countries for emigration from Bosnia and Herzegovina are European Union countries, primarily Germany and Austria, followed by Slovenia and Croatia.

Bosnia and Herzegovina's recent two decades have seen unprecedented and complex migration flows, with worker mobility being just one aspect of this multifaceted phenomenon. This raises the question: why are people leaving? Research indicates that a mix of push and pull factors reveals the primary reasons behind the emigration of health workers from BiH.

Table 1

Five-year review of residence registration changes in Bosnia and Herzegovina

Year	2016	2017	2018	2019	2020	TOTAL
Number of residence changes	4,034	4,270	4,113	4,044	3,489	19,950

Source: Ministry of Security of BiH

Push Factors: Researchers highlight economic, political, and social factors as the main drivers prompting emigration from BiH. Poor working conditions, corruption, nepotism, low-quality public services, and the aspiration to provide a better future for their children emerge as crucial push factors. Studies by Domazet et al. (2020) and Čičić et al. (2019) underscore the consistent prevalence of these factors, with variations in emphasis across regions.

Pull Factors: Primary pull factors motivating people to leave Bosnia and Herzegovina encompass better opportunities abroad (Mara, 2023), a supportive legal framework, family reunifications, and various forms of network migration. Efendić et al. (2014) assert that pull factors outweigh push factors as drivers of emigration, with better opportunities abroad being the dominant reason cited by respondents (ETF, 2022). Family reunification, marriage, education, and improved job prospects also play pivotal roles, signalling a shift from push to pull factors (Halilović et al., 2018; Kadušić and Suljić, 2018).

Health Workforce Drain: Factors and Implications of Nurse Migration from BiH

The exodus of healthcare professionals from Bosnia and Herzegovina (BiH) significantly challenges its health system, affecting both service accessibility and quality. Skilled practitioners are leaving for better pay, working

conditions, and growth opportunities unavailable locally, creating a persistent supply-demand imbalance in health services.

According to data from the Federal Bureau of Statistics, nurses/technicians are educated at five public and four private colleges that have an organized study program in health care/nursing. In the 2020/2021 school year, 1,651 students were enrolled in the study program at public faculties, while 330 students were enrolled at private faculties in the same period. In 32 secondary schools that have a course for nurses/technicians, in the 2020/2021 school year, 1,616 students were enrolled. The education of an individual in Bosnia and Herzegovina, including primary, secondary, and higher education, costs around EUR 29,000 (IOM, 2021). The departure of over 5,000 nurses in the past seven years alone has had economic repercussions for the country. The loss of healthcare professionals and the investments made in the healthcare system harm Bosnia and Herzegovina's economy and economic development. The burden of high education costs, population ageing, and expensive healthcare systems remains in Bosnia and Herzegovina, while professionals spend their money in other countries.

It is important to mention that a continuously increasing supply of graduates from medical secondary schools in Bosnia and Herzegovina is observed. The average annual increase of 403 graduates is expected to lead to about 6,220 new graduates from 2020 to 2025. Thus, the inflow of nurses to the labour market in Bosnia and Herzegovina

is expected to create a significant surplus and hence an increased offer for these particular labour mobility programs (IOM, 2021).

However, even though the number of educated health personnel is rising, they are not staying in the country. There are unofficial statistics according to which between 150-200 medical personnel leave Bosnia and Herzegovina every year. There is a similar pattern as with general emigration of the population, where the most common immigration destinations are EU countries such as Croatia, Slovenia, Germany and Austria. Germany emerges as the primary destination for health workers, particularly young nurses, as highlighted by a report from the International Organization for Migration (IOM) in 2022. Following this, the emigration of health workers and nurses to neighbouring countries like Serbia and Croatia tends to be temporary. In contrast, the migration to European Union (EU) countries such as Germany, Austria, and Slovenia is predominantly permanent. This trend has raised concerns among health workers and patients, with communities facing the imminent risk of being left without any healthcare professionals. The emigration of healthcare workers is further intensified by the decline in the total population, leading to a reduced demand for healthcare professionals, especially in primary healthcare.

Many hospitals and healthcare facilities are finding it difficult to meet patient demands due to an absence of medical staff, especially qualified nurses with extensive experience. As a result, the healthcare system is currently under strain and patients must wait longer for treatment. This issue has become particularly evident during the COVID-19 pandemic (Jurić, 2021a), when doctors with limited or no experience were tasked with caring for critically ill COVID-19 patients. All respondents from an investigation done by IOM in 2021 unanimously agreed that highly experienced doctors and nurses, who had accumulated years of valuable knowledge and expertise, are leaving the country. While it may be possible to fill the numerical gaps left by their departure, it is impossible to compensate for the extensive knowledge and experience they acquired over the years. (Domazet et al., 2020).

Attempts to mitigate the brain's migration

Health authorities at all levels in Bosnia and Herzegovina have failed to acknowledge emigration as a challenge to the health sector's development, neglecting to address the detrimental effects of health worker emigration. It seems that they do not recognize or underestimate the

potential negative impact of emigration on the health system, and the quality and availability of health care. Policy documents related to the development of the health sector and the provision of health care do not address health workers' emigration issues at all.

Existing research and policy studies on emigration from Bosnia and Herzegovina (Vračić, 2018; Čičić et al., 2019; Domazet et al., 2020; Begović et al., 2020) and the Bosnia and Herzegovina diaspora (Efendić et al., 2014; Halilovich et al., 2018) offer a range of policy recommendations to curb emigration and mitigate its negative effects. These studies offer guidelines for policymakers to try to mitigate the problem of the brain drain of skilled workers.

Čičić et al. (2019), Domazet et al. (2020), and Begović et al. (2020) focus on policy recommendations targeted at Bosnia and Herzegovina authorities. They propose social and economic reforms to improve living standards, create a better business environment, and enhance the retention of highly skilled personnel. These reforms include improving access to housing, education, and healthcare, strengthening the country's positive image, implementing targeted retention policies, and improving working conditions in the public and private sectors. Domazet et al. (2020) also advocate for political reform towards Euro-Atlantic and global integration, social justice reforms, environmentally sustainable economic growth, and macroeconomic reforms to increase wages and productivity.

Begović et al. (2020) prioritize enhancing the quality of public services and combating corruption to reduce emigration, particularly among the youth. Furthermore, both Domazet et al. (2020) and Čičić et al. (2019) recommend an improved diaspora engagement strategy. This involves enhancing institutional cooperation with the diaspora, supporting educational institutions, strengthening cultural and humanitarian cooperation, and regulating the employment status and dual citizenship of emigrants. They also emphasize the importance of systematic data collection on emigration through cooperation with receiving countries and Eurostat. Halilović et al. (2018) suggest establishing a State-level institution for diaspora affairs, mobilizing diaspora investments, facilitating political participation, promoting cultural exchanges, and advancing diaspora tourism to mitigate the negative effects of emigration.

These policy recommendations provide valuable insights and potential strategies for curbing emigration, improving living conditions, and engaging the diaspora to mitigate the brain drain in Bosnia and Herzegovina.

Methodology

Understanding the reasons for the emigration of health personnel from the countries of the Western Balkans, with a special focus on Bosnia and Herzegovina, is crucial to enable the government to adequately respond to this escalating challenge. As part of this research, quantitative and qualitative studies were carried out to determine the primary factors that encourage emigration, as well as investigate the possibility of the return of the emigrated workforce to Bosnia and Herzegovina.

The quantitative analysis included secondary medical school students and students of medical and health studies, with the sample selected using the random sampling method. For this research, a customized questionnaire inspired by existing instruments was developed, which contains 21 questions divided into four basic categories: socio-demographic data (Santrić-Miličević et al., 2014), attitudes towards the current situation in Bosnia and Herzegovina (Šeherčehajić & Ramić, 2022), motives and reasons for emigration (Santrić-Miličević et al., 2014), and steps taken in the emigration process (Suciu et al., 2017). The questionnaire was distributed to 39 secondary schools and 8 higher education institutions, resulting in 102 fully completed responses.

After the quantitative analysis, a qualitative research segment followed with a focus on an in-depth understanding of the experiences and perspectives of key actors related to the emigration of health personnel. To get a comprehensive picture, different groups of participants were interviewed and using the method of semi-structured interviews, the aim was to collect detailed information about the perception and experiences related to emigration, including the challenges faced by health workers, the potential benefits and risks of emigration, as well as the perspectives of a sustainable return. They also discussed the role of educational institutions in the preparation of health workers for work abroad, the influence of government policies on emigration trends, and the strategies that health institutions and employment agencies use to retain talent within the country or facilitate the emigration process.

This approach enabled a holistic view of the phenomenon of medical brain drain, integrating quantitative data with qualitative insights to understand the complex motives and processes behind the decision

to emigrate healthcare workers from Bosnia and Herzegovina.

Attempts to mitigate the brain's migration

Characteristics of the population

Table 2 shows the socio-demographic characteristics of the respondents. Most respondents are male (56%), while slightly less than half (44%) are female. The most numerous age group is that of 19 to 24 years, which makes up 49% of the sample, while young people aged 16 to 18 are represented by 39%. There are fewer of those in the 25-30 age group, who make up 12% of the sample.

In terms of education, the majority of respondents are students at the Faculty of Health Studies (47%), followed by medical students in high school (45%). Medical faculty students make up a smaller part of the sample with 8%.

When it comes to the household, the majority of respondents (37%) come from households with 4 members, while the same percentage belongs to households with more than 4 members. Smaller groups are those who live alone (3%) and those who live in households of 2 members (5%). Those who come from households with 3 members make up 27% of the sample.

As for household income, none of the respondents comes from a household with an income of less than 500 KM. A smaller part of the sample (10%) has an income between 500 and 1,000 KM, while the majority of respondents come from households with incomes between 1,000 and 2,000 KM (36%) and 2,000-3,000 KM (38%). Households with an income of more than 3,000 KM make up 16% of the sample. According to the data of the Agency for Statistics of Bosnia and Herzegovina, the average net salary in 2023 was 1,263 KM, and the consumer basket was 2,768 KM.

In the analysis of respondents' income in relation to the average net salary and expenses for the consumer basket, we notice that 36% of the respondents have incomes above the average salary, but face financial challenges due to expenses close to the consumer basket. An additional 38% of respondents can cover the costs of the consumer basket but with little room for financial flexibility. On the other hand, 10% of respondents with incomes at the lower limit are significantly below average, which could encourage thinking about emigration for better financial opportunities. In contrast,

16% of households with an income of more than 3,000 KM enjoy significant economic stability, exceeding the average salary and cost of living.

Satisfaction with the situation in Bosnia and Herzegovina and desire to emigrate

When the respondents were asked about satisfaction with the situation in Bosnia and Herzegovina (Table 3), 46% of them expressed dissatisfaction, pointing out political instability, corruption, socio-economic situation, inadequate education system, as well as poor working

conditions and limited opportunities for professional development as key reasons. A significant majority of respondents (70.59%) were thinking about leaving Bosnia and Herzegovina, while only about a third planned to stay and build a future within the country. Approximately a quarter of respondents (29.41%) are ready to leave the country if they do not find employment within a year, while a significant part (38.24%) decides to emigrate immediately after completing education or after specialization (20.59%). Also, slightly more than half of the respondents (54.90%) declared that the type of their emigration would be permanent.

Table 2

Sociodemographic characteristics of the respondents

<i>Sociodemographic Characteristics</i>		<i>N</i>	<i>%</i>
<i>Gender</i>	Male	57	55.88%
	Female	45	44.12%
<i>Age Group</i>	16-18	40	39.22%
	19-24	50	49.02%
	25-30	12	11.76%
<i>Education</i>	Medical student at secondary school	46	45.10%
	Student at the Faculty of Medicine	8	7.84%
	Student at the Faculty of Health Studies	48	47.06%
<i>Household members</i>	Living alone	3	2.94%
	2 members	5	4.90%
	3 members	28	27.45%
	4 members	38	37.25%
	more than 4 members	28	27.45%
<i>Household income</i>	Less than 500 KM	0	0.00%
	500 – 1,000 KM	10	9.80%
	1,000 – 2,000 KM	37	36.27%
	2,000 – 3,000 KM	39	38.24%
	More than 3,000 KM	16	15.69%

Source: Authors' calculation

Table 3

Satisfaction with the situation in the country and intention to emigrate

<i>Variables</i>	<i>Responses</i>	<i>N</i>	<i>%</i>
<i>Situation in Bosnia and Herzegovina</i>	I am extremely dissatisfied	15	14.71%
	I am mostly dissatisfied	32	31.37%
	I am neither dissatisfied nor satisfied	33	32.35%
	Mostly satisfied	7	6.86%
	Extremely satisfied	2	1.96%
	I don't know	13	12.75%
<i>Willingness to leave</i>	Yes	72	70.59%
	No	30	29.41%
<i>Emigration timeframe</i>	Immediately after finishing high school/college	39	38.24%
	Immediately after completing the specialization	21	20.59%
	Within a year if I fail to find a job	25	24.51%
	Without response	17	16.67%
<i>Type of emigration</i>	Permanent	56	54.90%
	Temporary	46	45.10%

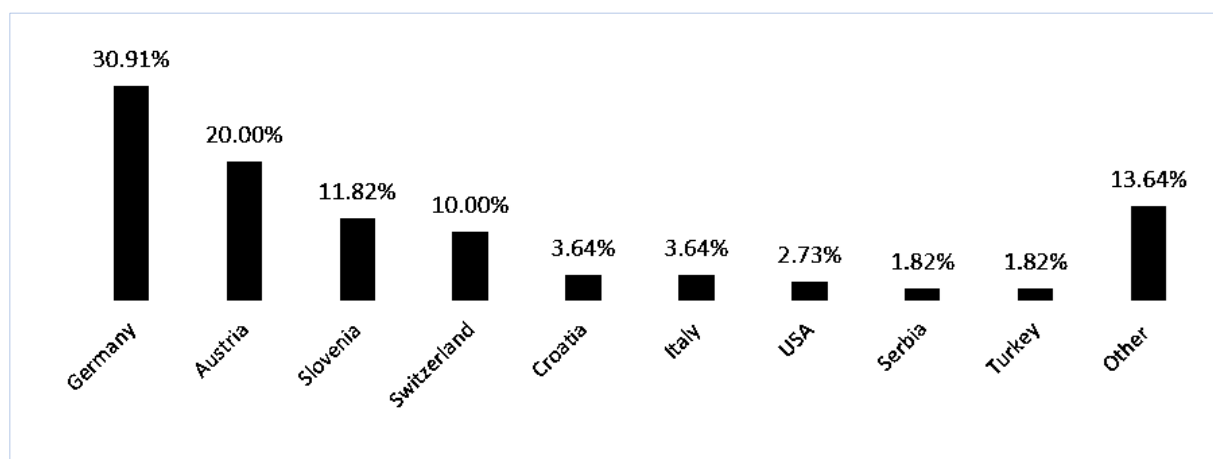
Source: Authors' calculation

Analyses of demographic characteristics on the tendency to emigrate did not show statistical significance, suggesting that willingness to emigrate exceeds differences in gender, education and socioeconomic status. This points to the conclusion that the decision to emigrate is more motivated by the general situation in the country than by the personal circumstances of the respondents. The most popular countries for immigration

(Figure 1) are mainly Central European countries such as Germany (30.91%), Austria (20%), Slovenia, and Switzerland (11.82%). As the main motives for emigrating to the mentioned countries, the interviewees cited better working conditions, greater opportunities for professional development, quality of life, gaining new experiences and the impossibility of finding employment in Bosnia and Herzegovina.

Figure 1

The most popular countries for immigration



Source: Authors

Actual Emigration Strategies

Determination and actual preparation to leave are different; an expressed desire to emigrate does not necessarily imply the realization of that plan. Therefore, we analysed the specific measures taken by the respondents in connection with the planning of emigration from Bosnia and Herzegovina. The results of the Chi-square analysis in Table 4 indicate that certain preparations for emigration have a significant connection with the respondents' intention to leave Bosnia and Herzegovina. In particular, enrolling in a foreign language course ($p = 0.019$), certifying a diploma and collecting the necessary documentation ($p = 0.046$), talking to a doctor from abroad ($p = 0.005$), and leaving the country with a family or friend ($p = 0.006$) and independent departure ($p < 0.001$) showed statistically significant links with migration intention. In contrast, additional professional preparation, searching for a job online, visiting job fairs, accepting a lower-than-qualified position, and working outside the health sector did not show a significant statistical association with emigration intention. These findings highlight which specific actions can be indicators of the respondents' real willingness to emigrate.

Results of qualitative analysis

Following the quantitative analysis, a qualitative research phase aimed at deeply understanding the experiences and viewpoints of key stakeholders regarding health personnel emigration was conducted. To gain a holistic view, interviews were held with diverse participants, including government officials, foreign language centre staff, young health professionals abroad, medical students overseas, health institution managers and employees, and private employment agency representatives.

Medical students and workers in Austria/Germany

We interviewed final-year students studying abroad to understand why they left Bosnia and Herzegovina instead of pursuing medical studies locally. They identified several push factors: low salaries, substandard working conditions, limited career advancement and training opportunities, corruption, nepotism, and political instability. These medical professionals sought better professional development, training opportunities, employment flexibility, and security abroad. They were particularly drawn to countries with stronger healthcare

systems offering permanent positions. The pervasive political issues, corruption, and nepotism back home, coupled with poor pay, were major deterrents driving their decision to seek opportunities overseas.

Table 4

Tabular Comparison of Departure Readiness and Emigration Intentions

<i>Preparations for emigration</i>		<i>Migration intention</i>		χ^2	<i>p</i>
		<i>Yes</i>	<i>No</i>		
<i>Enrolled in a foreign language course</i>	<i>Yes</i>	59	18	5.5115	0.0002
	<i>No</i>	13	12		
<i>Done additional professional preparation</i>	<i>Yes</i>	46	19	0.0028	0.0096
	<i>No</i>	26	11		
<i>Certified diploma and necessary documentation</i>	<i>Yes</i>	57	18	3.9969	0.0005
	<i>No</i>	15	12		
<i>Searched for employment online</i>	<i>Yes</i>	46	15	1.6993	0.0019
	<i>No</i>	26	15		
<i>Visited fairs offering employment in the health sector</i>	<i>Yes</i>	39	16	0.0059	0.0094
	<i>No</i>	33	14		
<i>Talked to a doctor from abroad</i>	<i>Yes</i>	48	11	7.8158	0.0001
	<i>No</i>	24	19		
<i>Left the country with a family or friend</i>	<i>Yes</i>	50	12	7.7021	0.0001
	<i>No</i>	22	18		
<i>Left the country alone</i>	<i>Yes</i>	54	11	13.4615	0.0000
	<i>No</i>	18	19		
<i>Accepted a lower job position than qualified</i>	<i>Yes</i>	25	6	2.1696	0.0141
	<i>No</i>	47	24		
<i>Worked outside the health sector</i>	<i>Yes</i>	27	9	0.5216	0.0047

Source: Authors' calculation

We inquired about the differences in medical education, training, working conditions, and employment opportunities between Bosnia and Herzegovina and Austria/Germany. Respondents noted that despite challenges such as doctor shortages and high workloads in Austria, the situation is more manageable than in the Balkans. In Austria, doctors, especially specialists, enjoy better pay and employment without political strings. The educational environment is more supportive, with a well-structured curriculum focusing on practical skills. Employment opportunities are also more abundant in Austria and Germany, with a seamless blend of practical and theoretical learning, flexible schedules, and a wide range of elective subjects.

In Austria, work hours, leave, and overtime are fairly compensated and legally regulated. Another key difference highlighted was the freedom in choosing specializations in Germany and Austria, contrasted with the restrictions and potential financial penalties in BiH. This has led many to seek better education and work environments, exposure to different cultures, and opportunities to broaden their perspectives.

In our inquiry about initiatives or programs that could encourage healthcare workers to remain and work in

Bosnia and Herzegovina, respondents offered diverse perspectives. One respondent cited a lack of familiarity with the working conditions of medical staff in Bosnia and Herzegovina and found it challenging to provide specific suggestions, as their decision to leave at 18 was solely for educational purposes. However, they recommended increased practical training and clinical exposure, communication exercises with patients and colleagues, and simulations of various clinical scenarios and emergencies. Another respondent expressed scepticism about the feasibility of such programs, noting that many remain only on paper. They emphasized that implementing meaningful change would require a complete overhaul of the healthcare leadership, which, in the case of Bosnia and Herzegovina, would entail a protracted and challenging political process. Other respondents suggested more flexible working conditions, student exchanges during secondary and tertiary education, as well as the adoption of newer technologies to aid in their work.

In exploring if Bosnia and Herzegovina's healthcare can leverage the expertise of expatriate healthcare workers, opinions were mixed. Some advocated for engaging these professionals through seminars and workshops to

exchange experiences and apply their skills and new methods back home if improved and politically neutral work conditions were provided. However, others doubted the feasibility of reintegrating expatriates into the local healthcare system, stressing the importance of curbing the youth and professional exodus instead.

Regarding the potential return to Bosnia and Herzegovina, many expressed reluctance, doubting the country's ability to create a conducive socio-economic environment for professionals to return and thrive. Factors like family and homeland ties were deemed less compelling compared to the advantages of developed healthcare systems abroad. One respondent, adapted to the medical system and life in Austria, preferred to specialize in the EU and contemplated returning to Bosnia only for personal reasons, possibly to start their practice.

Language institutions

Results of interviews conducted with language institutions reveal certain trends. While exact statistics were not provided, institutions reported a decline in enrolment in adult courses. The primary motivation for learning German was identified as migration to Germany, driven by factors such as employment, family reunification, or education. Institutions do not typically collect data on students' professions or educational levels at the time of enrolment, as these are not considered relevant to the registration process.

It was estimated that approximately 80% of adult participants in language courses are learning German intending to migrate to Germany. Among these participants, it is believed that around 60% are seeking to emigrate as qualified labour, while the remaining participants are aiming to reunite with family members in Germany. Additionally, the Goethe-Institut offers specialized courses tailored for specific projects aimed at ensuring a qualified workforce in Germany, particularly focusing on professions in medicine and crafts, such as plumbing, electrical work, and metalworking.

Statistical agencies

We have conducted semi-structured interviews with representatives of statistical agencies in Bosnia and Herzegovina to understand the intricate hierarchy of these agencies. We found that while the main statistical agency is the Statistical Agency of Bosnia and Herzegovina, there are also employment agencies at the entity level, such as the Employment Bureau of Republika

Srpska and the Federal Employment Institute, which contribute to the decentralization of governance and pose challenges for information and statistics coordination.

The Employment Bureau of Bosnia and Herzegovina clarified that labour and employment policy is managed by entities and cantons due to the country's constitutional structure, limiting its role in the domestic labour market. It relies on entity bureaus and the Brčko District for labour data, including unemployment records and analysis. Its main international role involves mediating employment for secondary medical school graduates in Germany, a program active since 2013. Interest in this migration has waned post-COVID-19, reducing applications and placements. The Bureau lacks data on medical personnel emigration to other countries, as it doesn't mediate these moves and departing individuals aren't required to report their exit.

Furthermore, they have data on the number of medical workers registered as unemployed who are eligible for mediation through their program (general and pediatric nursing) from entity employment bureaus. The mediation structure to Germany since 2017 has been: FBiH 84%, RS 15%, and BD BiH 1%. Males account for 35%, while females account for 65%.

Ministries of education and healthcare

We contacted education ministries for information on enrolment policies in medical education. The Ministry of Education and Culture of the Republika Srpska did not reply. The Federation of Bosnia and Herzegovina directed us to cantonal authorities, and the Sarajevo Canton shared that enrolments in secondary medical schools have been stable over the last five years.

When asked about future enrolment plans, the Sarajevo Canton intends to analyse policies with local employer associations to align with market needs. They deny that their educational policies drive healthcare workers abroad, attributing the exodus to better job prospects and conditions in Western Europe. The Sarajevo Canton government acknowledges the issue and sees increasing healthcare salaries and staff employment as key to improving services and retaining workers.

Conclusion and recommendations

For decades, Bosnia and Herzegovina has witnessed a significant pattern of emigration. This initial wave gradually evolved into a consistent flow of economic

migrants heading to wealthier countries, motivated by the prospect of better living standards and quality of life. In recent years, the country has experienced a shift in migration trends, notably with an increasing number of young individuals leaving with no plans to return. This shift poses profound implications for the country's social, economic, and demographic landscape, signalling a critical phase in its migration history.

This study utilized a mixed methods approach to examine emigration patterns in Bosnia and Herzegovina's health sector. It uncovered that a significant number of healthcare workers are contemplating leaving due to dissatisfaction with political instability, corruption, and poor socio-economic conditions. While a minority hopes to stay and make a future in the country, others plan to emigrate soon after completing their education or specialization, often viewing this move as permanent. The desire to leave was consistent across various demographics, highlighting that the decision to emigrate is influenced more by national circumstances than by individual situations. Central European countries are the preferred destinations, selected for superior employment conditions, quality of life, and professional development opportunities.

The qualitative research confirms Bosnia and Herzegovina's surplus of medical personnel, leading to their emigration. Notably, nursing ranks high among professions with high unemployment rates. However, insights from medical professionals abroad suggest a significant potential to improve local healthcare through their Western-acquired knowledge and skills. Implementing incentives such as grants, subsidies, and supportive conditions for opening private practices could encourage their return, enhancing the healthcare sector and benefiting the overall population.

In summary, the theoretical framework presented is linked to the empirical findings of this study. The research highlights a significant gap between the working conditions and the socio-economic environment

in Bosnia and Herzegovina compared to the countries that attract these professionals. This supports the established theories about the push and pull factors, where unfavourable conditions in the home country (push factors) and favourable conditions in the destination countries (pull factors) encourage emigration. The empirical findings are consistent with these theoretical concepts (Efendić, 2014), showing that political instability, low wages, and poor working conditions in Bosnia and Herzegovina are significant push factors, while better compensation, career prospects, and improved working conditions abroad are strong pull factors.

The practical implications of this research provide concrete guidelines for policymakers to develop strategies to curb brain drain. This could involve specific proposals for reforms in the healthcare and education systems, such as improving working conditions, increasing salaries, and ensuring opportunities for professional development. Enhancing the workplace environment and aligning educational policies with labour market demands could significantly reduce the emigration of healthcare workers. The following findings are in line with existing literature, among others: (Efendić et al., 2014; Halilović et al., 2018, Čičić et al., 2019; Domazet et al., 2020; Begović et al., 2020).

The limitations include the lack of comprehensive official emigration statistics, which may affect the accuracy and scope of the findings. Additionally, the sample of respondents might be limited and not necessarily representative of the entire population of healthcare workers. Future research should involve longitudinal studies to monitor the effects of implemented policies on brain drain. Comparative studies between different countries would also be useful to identify best practices in retaining healthcare professionals. Additional research could include a more detailed analysis of the specific factors contributing to the emigration of particular groups of healthcare workers and the effectiveness of various intervention strategies.

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Diagnostika problema: Razumevanje in boj proti begu možganov med zdravstvenimi delavci v Bosni in Hercegovini

Izvleček

Ta študija preučuje vzorce emigracij med zdravstvenimi delavci v Bosni in Hercegovini, analizira temeljne razloge za emigracijo in predlaga izvedljive rešitve za omejitev tega trenda. Uporabljen je kompleksni raziskovalni pristop, ki združuje kvantitativne podatke iz anket, opravljenih med študenti medicine in zdravstvenih ved, ter kvalitativne vpogled v intervjuje z vladnimi uradniki, jezikovnimi pedagogi in statističnimi agencijami. Ugotovitve razkrivajo veliko nezadovoljstvo s socialno-gospodarskimi in političnimi razmerami, kar zdravstvene delavce spodbuja k iskanju priložnosti v tujini. Glavni razlogi za odhod v tujino (dejavniki odbijanja) so politična nestabilnost, nizke plače in slabe delovne razmere, medtem ko boljše plačilo in karijerne priložnosti delujejo kot dejavniki privlačevanja. Čeprav je študija omejena zaradi pomanjkanja celovitih uradnih statističnih podatkov o emigracijah, poudarjajo implikacije tega raziskovanja potrebo po političnih intervencijah, katerih cilj je izboljšanje lokalnih delovnih pogojev in reformo izobraževalnega sistema. Študija ponuja dragocene vpogled za oblikovalce politik in drugih deležnikov za učinkovito reševanje problema bega možganov.

Ključne besede: emigracijski trendi zdravstvenih delavcev, socialno-gospodarski izzivi, beg možganov, Bosna in Hercegovina