



Rapidly Increasing Brain Drainage in Türkiye: Causes, Effects, and Solutions

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ABSTRACT

Recently, increasing economic, social, and political imbalances in the country have caused important health problems. In addition, due to the COVID-19 pandemic, it is seen that the human power deficit in health and the problems of health inequality have increased. Health workers cannot obtain economic and social motivation resources despite difficulties they experience. These losses of qualified manpower. Migration depends on many factors, such as the conditions and policies of the source and destination countries and the characteristics of the migrating individuals. Brain drain is the migration of well-educated, expert, and qualified people to developed countries to improve living conditions. It is usually carried out by people seeking better opportunities, living standards and working conditions. Nurses, who are essential to healthcare delivery, are particularly affected by this phenomenon. The movement of nurses from developing countries to more developed countries creates challenges for both the source and destination countries. In Türkiye, it is seen that the rate has increased with a serious acceleration in the last period. Addressing this problem requires a comprehensive approach that includes improving economic conditions, work environments, professional development opportunities, and social recognition. By implementing these strategies, countries can better protect their health workforce and provide more stable and effective health systems for their populations. This review aims to highlight the rapidly increasing brain drain among healthcare workers in Türkiye and the causes thereof.

Keywords: Health workers, nurse, international migration, brain drain, reasons for migration

INTRODUCTION

Globalisation, defined as the transfer of economic, social, political, and cultural values across borders, has both drawbacks and benefits (1). Due to the acceleration of globalisation, technological developments, and increasing living standards, many developed countries, especially the United States of America (USA), offer opportunities and provide qualified employment in many fields, such as science, art, education, and sports. It accepts qualified workers from developing or underdeveloped countries to work in its own countries. (2). The negative attitudes experienced in our country recently have caused human resources to migrate internationally at an ever-increasing pace. It can also cause serious losses in the health sector, which provides services with qualified labour (1-3). The international migration of healthcare workers has recently

been considered an important issue on the international health policy agenda. Regarding health manpower, international migration refers to the mobility of qualified healthcare workers across borders (4).

The greatest capital of the 21st century is brainpower equipped with education and also brain power is the most serious investment for countries' production and development. Loss of brain power is roughly expressed as brain drain and constitutes the migration category, the share of which has increased the most in international migration movements in recent years (5). Today, the fact that knowledge and knowledge-based production technologies have become the engine power of globalisation reveals a clear selectivity based on quality in the migration policies of developed countries, which are the main immigration recipients. In this sense, receiving countries are seen to compete to attract brain drain through migration policies (6).

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Concept of International Migration

Migration has existed since the beginning of humankind. It has played a crucial role in societies' growth and development. Additionally, migration is closely linked to the characteristics of the geographies in which people live (5).

Migration may occur for economic, social, political, or environmental reasons and require people to adapt to the geographical features of new settlement areas. The phenomenon of migration has strong effects on both migrating individuals and migrated regions, and it has also been a catalyst for cultural exchange and social change (2,6).

International migration refers to population movements from one country to another to stay, work, or settle (7). International migration generally follows a hierarchy from developing countries to more developed countries and from developed countries to countries with better conditions (4). In this context, the reasons for migration, which are frequently encountered in the international migration literature, are evaluated under four headings. This topic is discussed under various names, such as different demographic characteristics between countries, cyclical crises of capitalism, income differences between regions, and economies forced to restructure globally (8). Labour shortages in developed countries constitute one of the biggest reasons for international migration. Meeting these labour shortages with relatively cheap labour, obtained without spending any effort or training, provides a great advantage to developed countries (9). International migration is a complex phenomenon that occurs for different reasons and in different ways. The types of international migration can be classified in terms of quality, content, and scope. Here, distinctions can be made as forced migration, voluntary migration, refugee migration, labour migration, temporary migration, permanent migration, brain drain, regular migration, and irregular migration (10). Each type of migration creates opportunities and challenges for immigrants and host countries. In addition to positive effects such as economic growth, cultural diversity, and social dynamism, negative effects such as integration problems, resource sharing, and political tensions may also arise. Managing international migration requires developing effective policies to balance these impacts and improve the well-being of both migrants and host societies (6,11-13).

Our country's recent economic and social problems have led to the loss of qualified workforce. In this context, the international brain drain has increased significantly and continued rapidly.

Concept of the brain drain

The concept of brain drain refers to the international transfer of resources in the form of human capital and refers to the migration of highly educated and qualified individuals from developing to developed countries (2). The greatest capital of the 21st century, the "information age," is brainpower equipped with education (5). Today, the fact that knowledge and knowledge-based production technologies have become the engine power of globalisation reveals a clear selectivity

based on quality in the migration policies of developed countries, which are the main immigration recipients (6). We will examine the positive and negative aspects of brain drain

1. **Negative Effects on the Source Country:** Brain drain can cause talent loss in source countries. This can have a huge impact, especially in industries that require expertise in specific areas, such as healthcare. Insufficient healthcare personnel can reduce the quality of healthcare in source countries.
2. **Positive Effects on the Target Country:** Brain drain can positively affect the labour market in the target countries. Highly qualified and educated individuals can contribute to the economy and stimulate innovation.
3. **Brain Drain Cycle:** In some cases, a brain drain cycle occurs. Some migrants may return to their source countries over time from countries where they find better opportunities. In this case, experience and knowledge transfer can occur.
4. **Cultural Interaction:** Brain drain can increase the interaction between different cultures. People from other countries can bring different perspectives and experiences, thus increasing their cultural diversity (11).

Organisation for Economic Co-Operation and Development (OECD) countries have a mechanism that facilitates the entry of highly-skilled workforces, and they are almost competing in this regard. Exchange of professional employees is a critical issue for high-income countries, and brain drain from developing countries to developed countries is increasing (12). It is pointed out that the increase in migration will continue in the future with an increasing mismatch between supply and demand. It is emphasised that there is an escape route for those migrating throughout the country to be well-educated and important human resources for their development (11).

The brain drain concept is divided into several classes. Examples include brain export and virtual and hidden brain drain (2).

Brain export; It means exporting qualified brains to another country. Today, brain export enables individuals to gain financial gains from migration and contributes to the development of the sending countries.

In addition to the knowledge, skills, and experiences that migrating individuals acquire abroad, the remittances they send can significantly contribute to their development when they return to their home countries. Foreign exchange inflows, technology transfers, and innovative ideas can support economic growth. Therefore, sending countries can strengthen their development strategies by tapping into the potential of their diasporas (14-20).

Virtual brain drain; It is the use of qualified individuals living in an underdeveloped/developing country to serve a developed country without moving geographically. These companies achieve maximum efficiency/profit by making minimum investments in the internet and computers; thus, they do not spend social security on their employees.

Table 1. (IOM) 2022, Key migration data at a glance

Females^(a)	135 million international female migrants worldwide in 2020, representing 3.5% of the world's female population	Up from 130 million (or 3.4%) in 2019
Males^(a)	146 million international male migrants worldwide in 2020, representing 3.7% of the world's male population	Up from 141 million (or 3.6%) in 2019
Labour migrants^(b)	169 million migrant workers in 2019	Up from 164 million globally in 2017
Missing migrants^(c)	Around 3900 died and missing globally in 2020	Down from approximately 5,400 in 2019

Sources: (a) UN DESA, 2021; (b) ILO, 2021; (c) IOM, n.d.a

Hidden brain drain; It is used to describe a situation where qualified human resources work for the benefit of a foreign company without physically migrating to a developed country, that is, within the borders of their country (2).

The main difference between hidden and virtual brain drain is that virtual brain drain does not require physical mobility, whereas hidden brain drain generally refers to permanent overseas settlements that are not fully reflected in statistics (9).

International migration offers some benefits. One of the important benefits expected from international migration is that skilled workers who migrate return to their home country with the experience they have gained and accelerate the development process. Another benefit is its contribution to education. It helps develop international academic and scientific collaborations (12). When the literature is examined, in the research conducted by Yılmaz in 2014 and the World Bank report in 2013, It is stated that the remittances of overseas workers sent to “developing” countries in 2012 increased by 5.3% compared with the previous year, reaching a total of 401 billion US dollars, and this figure is estimated to reach 515 billion US dollars in 2015 (9).

When the effects of international migration on the receiving country's economy are considered, economic growth undoubtedly comes first. There are strong findings that innovation positively affects economic growth in terms of capital accumulation, human capital, foreign trade, and domestic demand. Migrant countries demonstrate that immigrants contribute to economic growth in the long term as long as they make good use of their talents, skills, and capital (10).

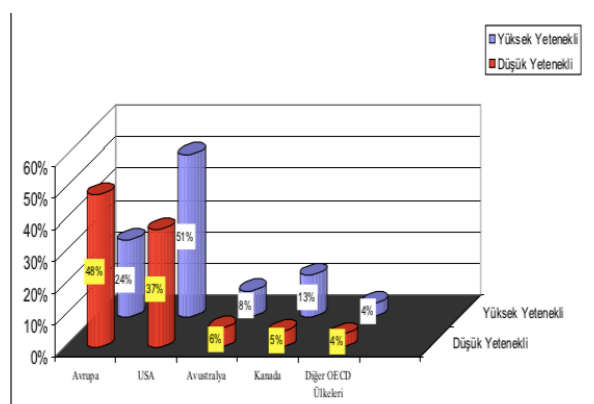


Figure 1: Share of immigrants received by OECD Countries according to skill level among the total number of immigrants coming to OECD Countries (%) 2000 (12)

Brain drain causes a country's scarce resources, such as human capital, to leave. The migration of human capital, which is the source of economic growth, negatively affects the country's adaptation to innovation and modern technology, as well as its economic performance and growth (10,22). The flight of human capital from developing countries to developed countries, on the one hand, increases international inequalities and, on the other hand, makes it more costly for developed countries and developing countries to become richer (12). When the literature is examined, Docquier and Marfouk (2006), in their study of qualified workforces between 1990 and 2000, found that the migration movement according to education level was concentrated in a few countries among the OECD countries. As a result of this analysis, 51% of qualified immigrants reside in the United States. If Canada and Australia are added to this rate, it increases to 70%, and if the other three largest

Table 2. Key facts and figures from World Migration Reports 2000 and 2022

	2000	2022
Estimated number of international migrants	173 million	281 million
Estimated number of world migrants	2.8%	3.6%
Estimated number of female international migrants	49.4%	48.0%
Estimated number of children international migrants	16.0%	14.6%
The region with the highest proportion of international migrants	Oceania	Oceania
The country with the highest proportion of international migrants	United Arab Emirates	United Arab Emirates
Number of migrant workers	-	169 million
Global international remittances (USD)	128 billion	702 billion
Number of refugees	14 million	26.4 million
Number of internally displaced persons	21 million	55 million

countries—Europe, England, Germany, and France—are added, it rises to 85% (21-23).

Turkey According to the United Nations Organisation for Migration (IOM), the 2022 World Migration Report builds on the previous two reports (2018 and 2020) by providing updated migration statistics at global and regional levels and a descriptive analysis of complex migration issues (13,21).

According to the World Migration Report, 272 million people, corresponding to approximately 3.5% of the world population, migrated in 2019, whereas this rate reached 281 million, with a migration rate of 3.6% in 2020.

When the World Migration Report 2022 is examined, it can be seen that the contribution of the Report 2000 to migration policy and migration studies has been successful. Since 2000, 11 world migration reports have been published by the IOM. These reports present for researchers and society in an evidence-based manner the direction in which the understanding of migration has evolved from the past to the present. The table below lists important results from the 2000 and 2022 World Migration Reports (13,21).

This updated report summarises the key statistics of the obtained data. While some data remain fairly constant, the proportion of female international migrants and the overall proportion of the world population that is migrants have changed dramatically. For example, international remittances increased from an estimated US\$128 billion to US\$702 billion, highlighting the importance of international migration as a driver of development (13-14).

Brain Drainage in Healthcare Workers: An Urgent Global Challenge

Brain drain, the migration of skilled and educated professionals to other countries, poses a significant global challenge for the healthcare sector (10). This is a complex issue with far-reaching implications for developing countries. Addressing root causes requires a multifaceted approach that includes improving economic conditions, work environments, political stability, and professional opportunities (6).

In Turkey, especially in recent years, there has been a significant increase in the number of healthcare professionals migrating abroad. For example, according to data from the Turkish Medical Association, 2685 doctors requested a "Certificate of Good Conduct" to work overseas in 2022. This number has increased by 91% from 2021, and the trend continues into the first three months of 2023. Factors such as economic uncertainties and inadequacies, burnout syndrome, and difficult working conditions are the main reasons for migration (2,17,22)

Causes of Brain Drain in Healthcare

By taking comprehensive measures to retain healthcare professionals, countries can ensure better healthcare outcomes and sustainable development for their populations (4-7).

The effects of brain drain on healthcare are complex and depend on many factors. These factors include the state of the health systems of the source and target countries, economic conditions, motivations, and skills of migrating individuals. (4-8)

1. Economic Factors: One of the primary drivers of brain drain in the healthcare sector is the disparity in wages and benefits between developing and developed countries. Healthcare professionals often seek better compensation packages abroad because their skills are highly valued and well-rewarded (15).

2. Work conditions: Working conditions in many developing countries are often challenging, with healthcare workers having long hours, high patient loads, and inadequate resources. These stressful conditions contribute to job dissatisfaction and prompt many to seek better working environments.

3. Political Instability: Political turmoil and instability can create an uncertain and unsafe environment for healthcare professionals. In countries where healthcare policies are inconsistent or lack of support for the health sector, professionals may feel compelled to leave.

4. Professional Development Opportunities: Developed countries often offer more advanced opportunities for professional growth, including access to cutting-edge technology, research facilities, and continuing education. The desire for professional development can drive healthcare workers to migrate.

5. Quality of Life: Beyond professional factors, overall quality of life, including education, safety, and general living conditions, plays a significant role in migrating. Healthcare professionals often move to countries that offer better living standards for themselves and their families (4-8).

Effective Factors in the Brain Drain of Healthcare Professionals

The brain drain of healthcare workers, especially nurses, is a critical problem that affects healthcare systems globally. Nurses are the backbone of medical care, providing essential services and support at all levels of healthcare. However, several factors push nurses to migrate from developing countries to more developed countries in search of better opportunities and conditions (5). Although such migration benefits the receiving countries, it can have serious consequences for countries left behind. The following reasons come to the fore when examining how nurses are affected by brain drain. (1).

1. Economic Disparities

Wage Differences: Nurses often earn significantly higher salaries in developed countries than in home countries. This financial incentive is a strong motivator for migration.

Benefits: Developed countries typically offer comprehensive benefits packages, including health insurance, retirement plans, and other financial incentives, which are often lacking in developing countries.

2. Working Conditions

Infrastructure and Resources: Nurses in developing countries often work in under-resourced facilities with inadequate medical supplies and outdated equipment, making their work more challenging and stressful.

Workload and Hours: High patient-to-nurse ratios, long working hours, and insufficient support staff lead to burnout and job dissatisfaction among nurses.

Safety: In some regions, nurses face risks due to political instability, violence, and poor working conditions, which make their jobs unsafe and undesirable (1-5).

3. Professional Development

Education and Training: Opportunities for advanced training, continuing education, and specialisation are more readily available in developed countries, thereby attracting nurses seeking to further their careers.

Research and Innovation: Access to cutting-edge research and participation in innovative healthcare practises are significant pull factors for nurses (3).

4. Quality of Life

Living Conditions: Better overall living conditions, including safer environments, quality housing, and better education systems for children, are compelling reasons for nurses to migrate.

Work-Life Balance: Developed countries often provide better work-life balance, including more reasonable working hours and adequate vacation time (4).

5. Career Advancement

Promotion Prospects: Career advancement and professional growth opportunities are more abundant in developed countries, where healthcare systems are larger and more diverse.

Recognition and Respect: In many developed countries, nurses receive higher social recognition and respect, which can be a significant motivating factor.

Effects of Brain Drain on Healthcare Workers

1. Healthcare Service Delivery

Quality of Care: The loss of experienced and skilled nurses leads to a decline in the quality of care. The remaining nurses face increased workloads, which can compromise patient care and safety.

Access to Care: In regions already struggling with healthcare access, the emigration of nurses intensifies healthcare shortage, leaving vulnerable populations without adequate care (11).

2. Economic Impact

Training Costs: Developing countries invest substantial resources to train nurses. When these professionals migrate, this investment is lost, and the country must bear the cost of training new nurses.

Increased Burden: The financial burden on healthcare systems increases as they struggle to fill the gaps left by migrating nurses, often requiring the hiring of temporary or less experienced staff (8)

3. Educational Impact

Mentorship and Training: The departure of experienced nurses affects the education and training of new nurses. Fewer mentors and educators mean that the quality of nursing education may decline.

4. Healthcare Inequities

Rural and Underserved Areas: Brain drain disproportionately affects rural and underserved areas where healthcare professionals are already in short supply. These areas often suffer the most from the emigration of nurses.

Potential Solutions to the Brain Drain Problem in Healthcare Workers

Enhancing Work Conditions

Investing in healthcare infrastructure, providing adequate supplies and equipment, and ensuring safe and supportive working environments.

1. Professional Development

Create opportunities for continuing education, specialisation, and career advancement within the home country.

2. Political and Economics Stability

Ensuring stable governance and robust healthcare policies that support and protect healthcare workers.

3. International Collaboration

Form partnerships with developed countries for exchange programmes, joint training initiatives, and research collaborations that provide professional growth without permanent migration.

4. Recognition and Respect

Elevating nurses' social status and recognition through public acknowledgement, awards, and professional respect can make the profession more attractive (16).

Conclusion and Recommendations

Health migration creates various challenges and opportunities for migrating individuals and targeted societies. Brain drain

results may vary depending on many factors, such as the reasons for migration, the conditions of the source and target countries, and the profile of migrating individuals. Ensuring that healthcare professionals have the resources, support, and opportunities they need to thrive in their home countries is crucial for building robust and resilient healthcare systems.

The brain drain of healthcare professionals is an important problem that deepens inequalities in global healthcare and negatively affects the healthcare systems of source countries. The migration of qualified healthcare personnel to developed countries may reduce the accessibility and quality of healthcare services in the source countries. To solve this situation, international cooperation and improved working conditions of healthcare workers in the source countries are required.

The brain drain of nurses is a multifaceted issue with far-reaching implications for healthcare systems in developing countries. Addressing this problem requires a comprehensive approach that includes improving economic conditions, work environments, and opportunities for professional growth. By implementing these strategies, countries can better retain their nursing workforce, thereby ensuring more stable and effective healthcare systems for their populations. These steps can contribute to a more balanced and sustainable distribution of healthcare services globally.

Although brain drain poses significant challenges for developing countries, it is not an inevitable outcome of skilled migration. By implementing effective policies and fostering international collaboration, the negative impacts of immigration can be mitigated, and the potential benefits of brain gain can be realised, leading to a more balanced and beneficial migration landscape.

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