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Current Characteristics of the Hungarian Nurses' Workforce

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Abstract

Recently WHO called attention to the growing labour shortage of healthcare staff, which can reach 12.9 million by 2035. Almost all European countries struggle with a shortage of nurses. The educational structure of nurses has also changed significantly. The aim of this overview is to review the relevant scientific literature and analyse records of the Hungarian nursing registry in order to predict the nursing workforce tendencies. Relevant English and Hungarian international and national scientific literature (PubMed, Science Direct, Hungarian Medical Bibliography) were identified and illustrated with reliable data (2009–2015) from the national healthcare human resource registry and from Central Statistical Office. A qualitative appraisal was undertaken to select the proper articles by our research team. For processing data, descriptive statistics was used. Although migration of healthcare personnel in Hungary is present, however the official statistics does not mirror a dramatic exodus. The level of nursing education is based on vocational training and on higher education in Hungary. The number of novice nurses is diminishing year-by-year and those nurses who are not working in the Hungarian healthcare sector are eminent. Providing new roles for nurses, e.g., Advanced Practice Registered Nurse, can be one of the solutions for the shortage.

Keywords: nurses workforce, turnover, attrition, Hungary

1. Introduction

In numerous countries of the world, including European countries, the negative tendency of human resources in the healthcare sector gives reasons to be concerned about. The WHO

(2006, 2009, 2013) drew attention to the growing labour shortage of healthcare staff which can reach 12.9 million by 2035 and the unbalanced workforce coverage having a negative impact on the functioning of healthcare systems [1, 2]. The Third Global Forum on Human Resources for Health points out that more and more countries meet the minimum criteria of 23 skilled health professionals per 10,000 people globally, but there are still many countries (83) under this threshold. The report of the Forum also highlights that 40% of nurses in developed countries will leave their profession in the next decade due to demanding work, low salaries and few incentives [3].

In addition, the Commission of the European Union drew attention to the needs of nurses in all European Union (EU) countries [4]. In spite of the fact that the number of nurses has grown by 2.5 million between 2000 and 2013 in Organisation for Economic Co-operation and Development (OECD) countries, many countries are realizing nursing shortage [5]. Almost all European countries struggle with a shortage of healthcare professionals, in which nurses are mentioned primarily with increasing numbers in accordance with the report of the Third Global Forum. Across Europe by 2020, a shortage of 600,000 nurses is predicted by the European Commission [6]. The educational structure of healthcare personnel has also changed significantly, both at the level of secondary vocational education and higher education. The conversation between hospital-affiliated nurse training programmes and university level education has taken place in many European countries [7]. Due to the latest higher education reforms, the so-called Bologna Process, nursing education went through changes which can be seen in many European countries. In the European Higher Education Area (EHEA), a full pathway of nursing education including bachelor's degree, master's degree and doctorate title can be evidenced in approximately 60% of the countries, whereas 82% of EHEA countries provide bachelor's degree or equivalent level of education already. However, there are still such countries in Europe who offer diploma level training for nurses only [8].

Based on the OECD database on healthcare workforce capacities in European countries, it seems that Middle European countries have to deal with nursing shortage per thousand population. Only the Czech Republic and Austria report nurses over the EU 28 average. The number of medical doctors per thousand population is over the EU 28 average in Slovenia, among the neighbouring countries. However, these numbers do not mirror the qualitative aspects of the nursing workforce (**Table 1**). The skill mix of the professions, the level of the nursing education, the nursing roles and the staffing are strong determinants of the quality of care. Aiken et al. highlight *'that patients in hospitals in which 60% of nurses had bachelor's degrees and nurses cared for an average of six patients would have almost 30% lower mortality than patients in hospitals in which only 30% of nurses had bachelor's degrees and nurses cared for an average of eight patients'* [9].

The healthcare workforce is a key element of the healthcare delivery system all over the world. To maintain a stable workforce requires more efforts, actions and measures in developed countries. In each developed country, the management of the health sector, the suppliers and the society continuously pay great attention to the development of healthcare human

Countries	Healthcare workforce	
	Practising doctors	Practicing nurses
Austria	6.1	8
Czech Republic	3.7	7.9
Croatia	2.3	5.8
Hungary	3.3	6.4
Romania	2.7	6.2
Serbia	3.1	5.9
Slovak Republic	3.4	5.8
Slovenia	2.8	8.6
EU 28 average	3.5	8.4

Table 1. Practising nurses and doctors per 1000 population in 2014 (or nearest year) (source Ref. [5]).

resources, primarily in nursing. The aim of this overview is to review and analyse the records of the Hungarian nursing registry and the relevant literature in order to present a realistic picture of nursing workforce for the professional experts.

2. Methods: research methods

During the review, relevant English and Hungarian international and national scientific literature (PubMed, Science Direct, Hungarian Medical Bibliography) were identified and illustrated with reliable data (2009–2015) from the national healthcare human resource registry and from the relevant Yearbooks of the Central Statistical Office in Hungary. All articles were identified, screened and a qualitative critical appraisal was undertaken by our research team. Excluded were those papers which dealt with other healthcare professions such as medical doctors, dentist and pharmacists. For processing data, descriptive statistics was used with the assistance of MS Office Software Package.

3. Results

3.1. Demographic structure of Hungarian healthcare workers

In the Hungarian healthcare workforce, less than 100,000 professionals are employed in different posts not including medical doctors, dentists and pharmacists. The majority of this population consist of nursing groups with basic education in nursing and with specialization in nursing. Due to the different terminology used to group healthcare

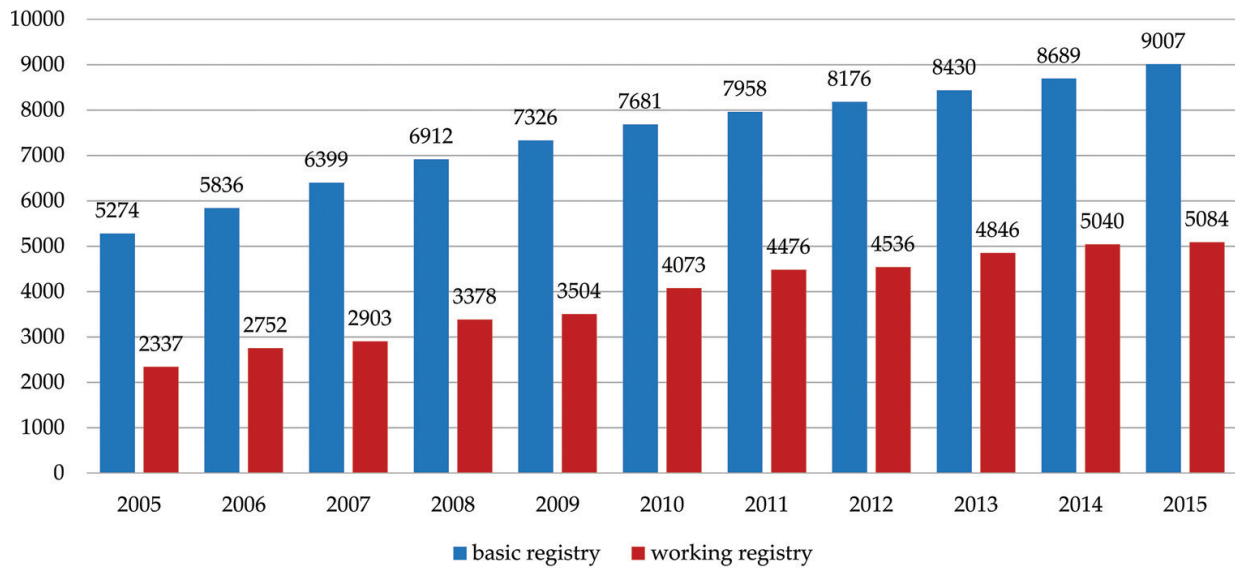
workers, it is very complicated to get an exact number related to nurses employed in the system. Based on the Hungarian Statistical Yearbook in the last available year (2014), 4444 degree nurses (BSc), 14,049 qualified diploma nurses (post-secondary education), 15,205 other specialized nurses, 10,501 general nurses and assistants (now nursing aids) and 1926 nursing aids were recorded in the Hungarian healthcare system. These numbers are controversial to those recorded in the Registry of Hungarian Chamber of Health Care Workers and in the records of the Health Registration and Training Center (an authority affiliated to the Ministry of Human Capacities). The differences of data registered in the different database lay in the method how and what data they collect. In Hungary, all qualified healthcare personnel who obtain a degree or certificate in a healthcare institution are registered in a central system automatically. Those staff who work in the healthcare system have to be registered at the chamber and at the Health Registration and Training Center. At a glance, taking all levels of nursing posts into account, 9.6% of the nursing workforce has BSc degree in nursing in 2014, whereas MSc degree nurses are unfortunately not even mentioned by the Hungarian Statistical Office. If we take out the number of auxiliary nurses from the calculation, the ratio of degree nurses and non-degree nurses is even lower. Sometimes, these figures show a big discrepancy between educated healthcare personnel and those working in the system. After the graduation, the missing persons from the healthcare system have either chosen another profession or left the country mainly, and in some cases, there might be other personal reasons, too (**Figure 1(a)** and **(b)**).

Ageing means a greater demand for the healthcare delivery services. Consequently, the rise in chronic and long-term diseases requires new treatment and organizational forms of caring [10]. Nowadays, the ageing nursing workforce is also a significant phenomenon all over the developed countries of the world. According to the WHO report, around 57 countries struggle with this problem on the developed world. Examining the age distribution of healthcare workers independently from their source in Hungary, all numbers show the same tendency. The changing age profile of the nursing workforce between 2010 and 2013 can be seen in **Figure 2**. The ageing of the healthcare workforce over the age 45 years in the past couple of years is obvious. The healthcare system has to face a salient human resource shortage in the coming 10 years. There is a clear decline in supply of healthcare workers under the age 35 years in recent years. This tendency in healthcare sector endangers the proper function of the healthcare delivery system in Hungary. It seems that the number of people retiring in 5–10 years will outnumber entrants into the healthcare human resource workforce. This figure is even worse among nurses. There are many nurses who work already after retirement; some of them over 80 are still working in health care.

The healthcare workforce is in transition. Clear evidence shows that healthcare workers from Eastern countries tend to seek a job in the labour market of Western countries. Besides medical doctors, more and more nurses think of leaving the country and get a better paid job in abroad in Hungary as well [11]. Those health care workers who would like to apply for a job abroad may need an authentication of medical certificates from the Health Registration and Training Center. The number of applications mirror the intention of health care workers, including nurses as well, who plan to leave the country. Beyond the official number of healthcare professionals applying

(a) The number of bachelor's degree nurses qualified and working in Hungary between 2005-2015

Source: Health Registration and Training Center



(b) The number of master's degree nurses qualified and working in Hungary between 2005-2015

Source: Health Registration and Training Center

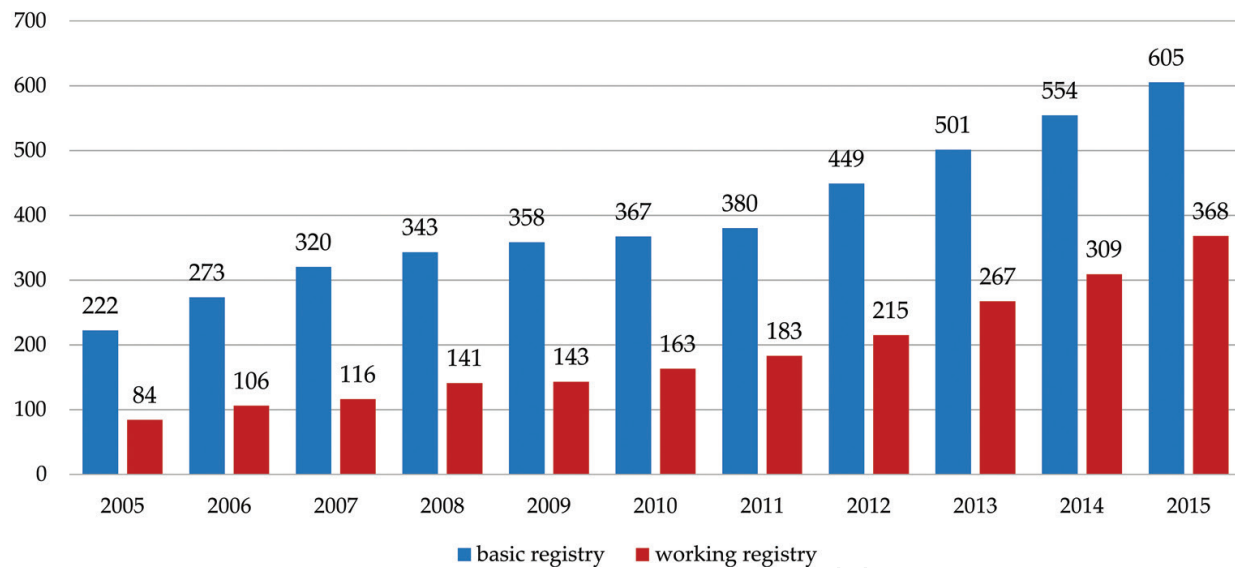


Figure 1. (a) The number of bachelor's degree nurses qualified and working in Hungary between 2005 and 2015. (b) The number of master's degree nurses qualified and working in Hungary between 2005 and 2015.

for a job in abroad at least double as many who are really migrating to west. It seems that we can calculate with a stable number who would leave the country in each year. Nurses' intention to leave the country compared to medical doctors is less, around 500 applicants in each year. In the examined period, the most application among nurses was 526 in 2013 and the less was 301 in 2010 (**Figure 3**). The threats of the human resources shortage and the consequential quality problems

Age distribution of Hungarian Health Care Workers
 Source: Hungarian Chamber of Health Care Workers

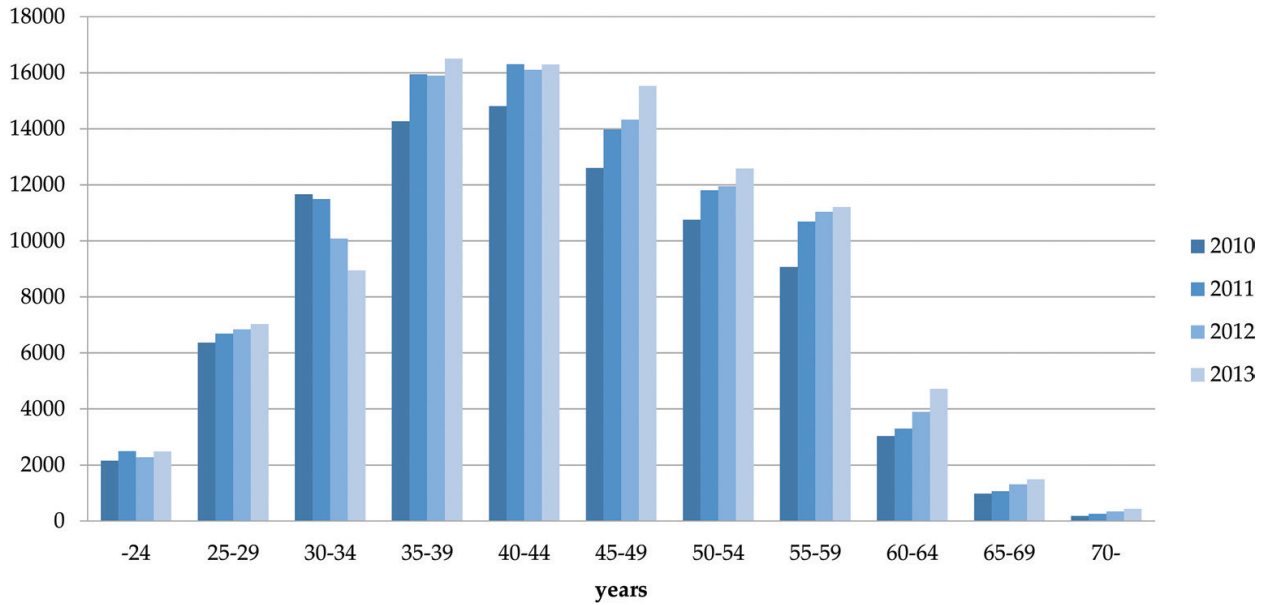


Figure 2. Age distribution of the Hungarian healthcare workforce between 2010 and 2013.

in the delivery of healthcare services are reported related to the Hungarian healthcare system in the past decade [12, 13]. In some other sub-specialities, the problem of healthcare professional shortage is also existing, e.g., in occupational nursing and radiotherapy [14, 15]. In a recent publication, from the Chamber of the Hungarian Health Care Workers, it is estimated that about

Medical doctors and nurses applying for certificate to work on abroad between 2009-2015

Source: Centre for Health Care Workers Registry and Education

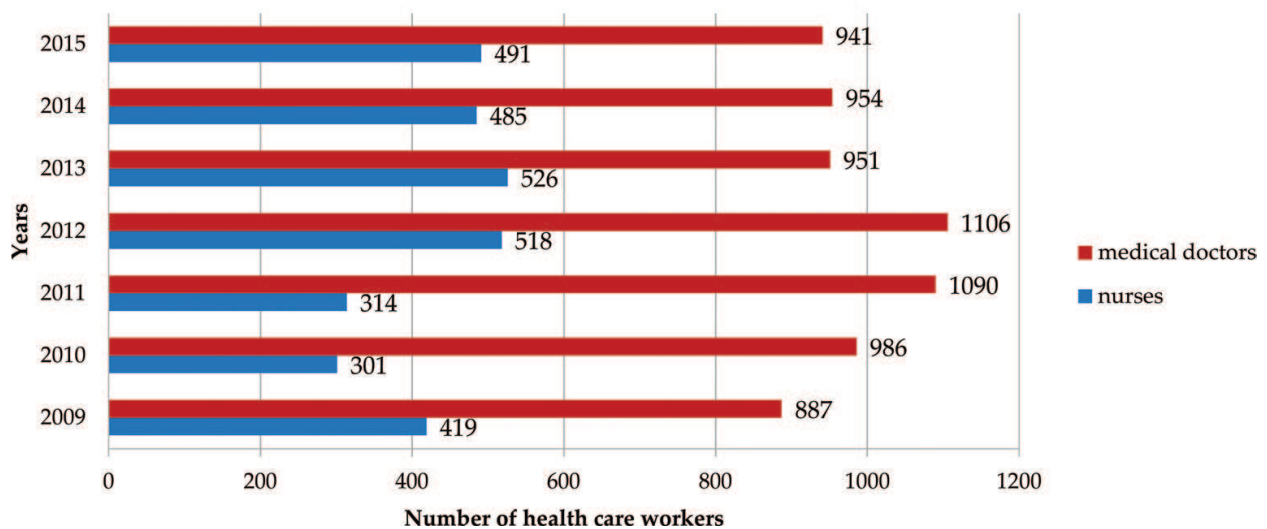


Figure 3. The number of medical doctors and nurses applying for the certificate to work in abroad.

26,000 nurses are missing from the system [16]. Referring to a study conducted a couple of years ago by Ujvarine et al., the Hungarian nurses would need more appreciation from superiors and from society; a better salary and a clear competency would help remain them in the profession. Already novice degree nurses with good foreign language skills would leave the country [17].

3.2. Changes in the system of nursing education

Although other professions in Hungary like dietician, health visiting, public health inspecting and ambulance officer education reached the status of college-level education in the mid 1970s, the elevation of nursing training has been delayed for almost two decades. The transformation of former state socialist countries into capitalism has influenced the educational system, too. The former type of nursing schools initiated by the soviet state still was in function, but new form of education emerged. After the political change in 1989, new level of nursing education in Hungary was established with the help of nursing advisors from United States of America. One of these experts was Professor Doris Modly, the former head of the Frances Payne Bolton School of Nursing at the Case Western Reserve University, Cleveland. With her experience, not just the level of nursing education was elevated to the bachelor degree but also the content was appraised critically and teaching staff further educated. The impact of the North-American nursing education structure showed a 4-year-length characteristics which was implemented during the restructuring of the nursing education in Hungary.

The first pilot programme was started in Budapest at Semmelweis University as a part time education and lasted for 3 years. The later 4-year-length nursing bachelor programmes were launched at the healthcare colleges affiliated to medical universities (University of Debrecen, University of Pecs and University of Szeged) in 1993 [18]. The first master's degree in nursing science was established in Hungary (University of Pecs) in 2000 and followed in Budapest Semmelweis University and later in Nyiregyhaza affiliated to University of Debrecen. This programme lasted three semesters and built on the eight semester bachelor's degree nursing programme. Doctorate programmes (PhD) for nurses have been available from 2006 at those universities where master's programme in nursing is available. When introducing the concept and agreement on Bologna Declaration in Hungary, the Hungarian healthcare higher education was established according to the western structure of education. The conversion from the former educational system has taken place in 2005 as a pilot, and 1 year later, all majors were converted into the Bologna system in Hungary [19] (**Figure 4**). As a later higher education reform, the European Qualification Framework (EQF) was adopted and introduced in Hungary between 2008 and 2015. After the development process, the new learning outcomes were defined and issued by the Ministry of Human Capacities in 2016. The new decree defined nurses' competencies in a more detailed manner according to descriptors of knowledge, skills, attitude and autonomy.

Nowadays in Hungary, more universities are providing nursing higher education beyond those who were starting this type of education two-and-a-half decade ago. The movement from the high-school-based nurse training to university education has also been an essential development of the nursing profession in Hungary, although the newly developed secondary education system takes it at risk.

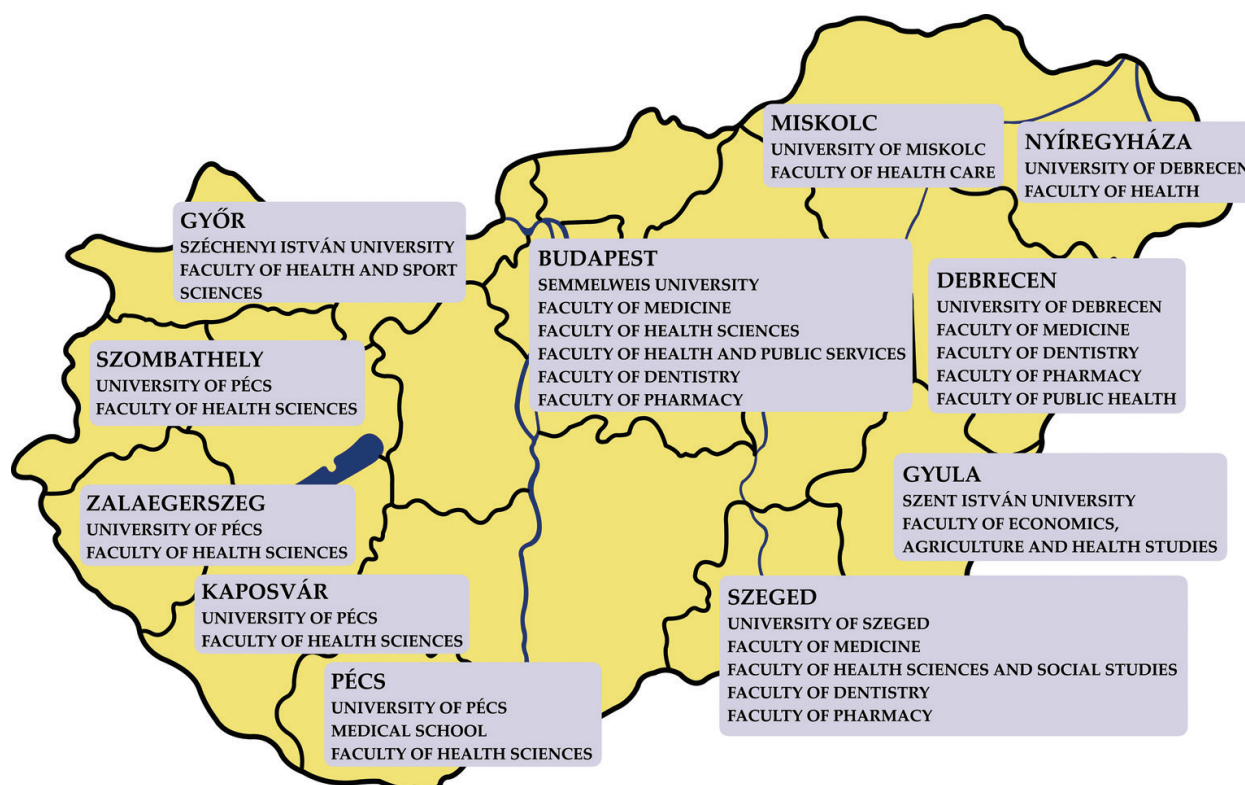


Figure 4. The seats of medical and healthcare higher education in Hungary.

Parallel with the new system, the soviet type healthcare vocational programmes were stopped. This type of education was widespread in almost all of the socialistic countries during the socialistic years. A full nursing qualification was issued either at the age of 17 or 18 leading to general nurse assistant certification. The nursing in the healthcare institutions was based on their work for many decades before the political change in 1989 mainly. After introducing the diploma-level post-secondary nursing education, they were provided with 'birding training courses' to upgrade their qualification. The secondary school nursing education programme introduced in 1997 lasting for 3 years was lifted up to post-secondary (diploma) education requiring a general certificate of secondary education (mature, school leaving examination) [20]. Interestingly, the new Hungarian vocational education reform in 2016 calls back this type of nursing education particularly giving the pupils not just the secondary certificate but a general nursing and assistant aid title. The length of the former post-secondary type of nursing education was diminished from 3 to 2 years.

3.3. The number of nursing students in higher education

Currently, in Hungary, six universities are providing bachelor's degree in nursing (The Tessedik College was merged into the Szent Istvan University in 2008; therefore, they issue the same degree.) (Figure 5). In the middle of 90s, three universities (University of Pécs, University of Debrecen and Semmelweis University) graduated a rather high number of new degree nurses, but after 2010, the number of drop out is less than 100 nurses in each year in each institution. If this tendency stays continuously, it will endanger the highly qualified human capacity in the healthcare system.

The number of graduated nurses (BSc) by universities between 2006-2015

Source: Health Registration and Training Center

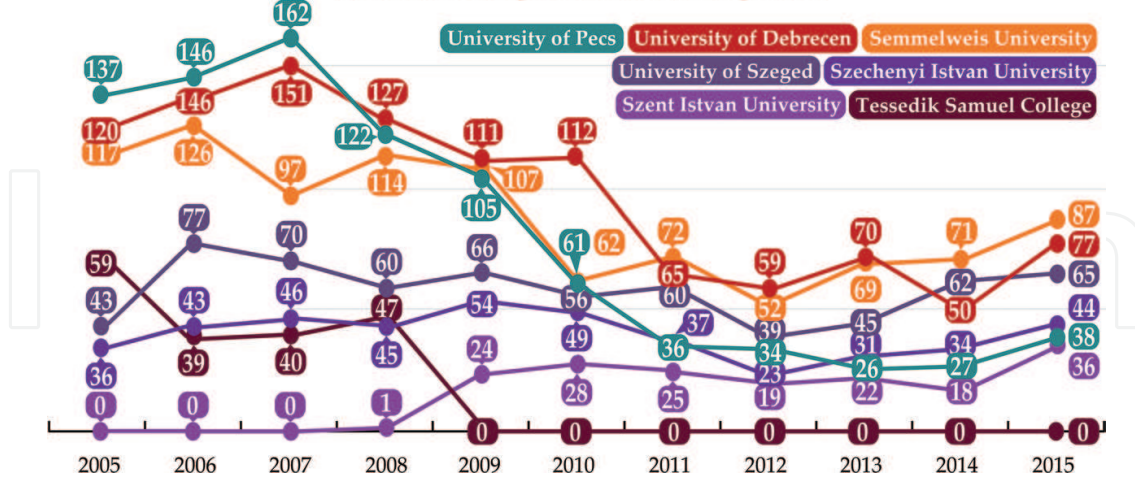


Figure 5. The number of graduated nurses with bachelor's degree by universities between 2005 and 2015.

In Hungary, only three universities provide master's degree in nursing. The number of issuing master's degree nurses is very limited in each year, less than 30 persons in each year. Currently, the proportion of master's degree nurses does not exceed the 10% of nursing workforce internationally, but this number is still very low in Hungary (Figure 6).

For young generations who would like to become a nurse, two ways would be available. From 2016, the secondary level of nursing education was renewed. The entry level is at age 14 years. This school ends with a general certificate of secondary education (mature) and a qualification of nursing assistant. A full nursing programme can be completed after further 2 years of post-secondary training. With the age of 20, they can enter into the healthcare workforce. After maturing (obtained in general grammar schools or professional schools), all applicants

The number of graduated nurses (MSc) by universities between 2005-2015

Source: Centre for Health Care Workers Registry and Education

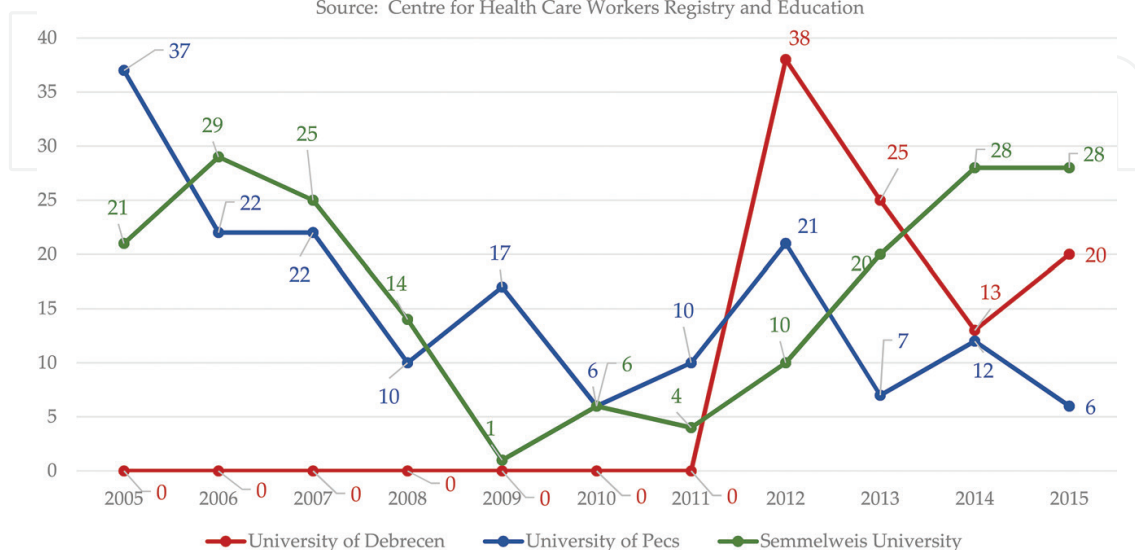


Figure 6. The number of graduated nurses with master's degree by universities between 2005 and 2015.

can also choose a BSc degree programme in the field of nursing. The nursing carrier can be followed with an MSc programme as well. However, these outcomes might be not enough to maintain a stable workforce. From the relevant databases, it turned out that the application for nursing studies is not motivating enough for young people.

In the nursing profession, new role has been introduced in the 1970s. The right skill-mix is a basis for better quality care. The evolution in the healthcare system established an extended role for MSc nurses in many OECD countries. This is a unique role for those who would like to work more independently. This new advanced practice nursing (APN) position is one promising development to help the access to the healthcare system and to a better quality of care [21].

4. Conclusion

In the past decades, the healthcare work force in Hungary faced many challenges. Almost a half of the healthcare workforce includes nurses with different level of qualification. Comparing the standardized number of Hungarian nurses per thousand citizens to other neighbouring countries, it turns out that the standardized number of Hungarian nurses is in the middle range, although it is still under the EU 28 average. In the past 5 years, a diminishing number of posts staffed with qualified nurses/specialized nurses and assistants/special assistants were detectable. Hungary is still among the supplying countries of the European healthcare market. The number of novice nurses is diminishing year-by-year and those nurses who are not working in the Hungarian healthcare sector (i.e., not registered in the working registry and not allowed to work officially) are eminent. Beyond the global tendencies related to the unsatisfied and overloaded healthcare workers, Hungary is also belonging to ageing healthcare work force in Europe. Replacing retiring nurses will not be easy given the global shortage of nurses. Although migration of healthcare personnel in Hungary is present, however, the official statistics does not mirror an exodus. In the past 5 years, around 500 nurses applied for a certificate in order to work abroad. It is still less than for medical doctors taking absolute numbers into account. On the other hand, this out-migration should not be underestimated because other Western-European countries also report about large increase in nurse from Central and Eastern European countries, including Hungary. The main pushing factors are better payment and working conditions. It is also important to retain older nurses due to their experience, knowledge and skills. Sometimes, older nurses have the ability to teach and mentor younger nurses and to withstand and endure change.

Numerous factors have influenced the changes in the roles of nurses and the consequences in the education as well as the impact on healthcare workforce. Since the introduction of nursing education to the tertiary sector, undergraduate and postgraduate nursing education has continued to advance despite changes in the tertiary and secondary education level. In order to impart the levels of knowledge and skills needed to meet the requirements of new qualifications (specializations), new roles and classification for nurses have developed [21]. In Hungary, nursing education remained the 'classical' way of nursing training as a post-secondary type of education lasting for 2 years while big efforts have been made to establish and maintain undergraduate and graduate nursing education. The intake for all type of education is less than the need for new nurses in the healthcare system. In the past decade, a

very diverse nursing education system has been introduced especially at the secondary and post-secondary level not even waiting for the 'first results' of the schools. In 3 years, two curriculums have been introduced in 2013 and 2015. Such an intensive change might threaten the quality of training. To make nursing more attractive, pupils should already be informed about healthcare profession at a very early stage of youngsters and a picture about nursing profession should be strengthened in the society as well. Strengthening nursing profession would also mean to show up clear competencies for them and new roles caring for the ageing population.

The new role should imply responsibilities, skills, attitudes and knowledge which should lead to advanced practice nursing (APN). APNs are a quickly growing workforce internationally, growing more rapidly than the medical profession in six countries studied in a research (USA, Canada, Netherlands, Australia, New Zealand and Ireland). Many data on the role of APNs were available in all six countries, however, with variations in quality and role content mainly. Many countries use this role as a potential physician replacement; however, data are still limited in this regard. Growing ANP workforce improves data availability and monitoring as part of the overall health workforce. This information can serve to shape educational capacity, uptake in practice and workforce planning [22]. Evidence shows the APN role does not influence the quality of care, patient safety negatively and patient acceptance, satisfaction proved to be higher. The example of many countries shows that advanced practice roles for nurses increase the attractiveness of nursing as a career, thus providing a solution for nursing shortage rather than worsening the situation. Establishing policy environments and removing barriers will gain in relevance in the future as the demand for high-quality, patient-centred care is increasing [23].

In Hungary, there are many preconditions ready to introduce an adaptation of advanced practice nursing programme and system [24]. The OECD reports that nurse practitioners (a role of APN) programme can improve the quality and accessibility to health care. For an effective implementation of APN in Hungary, there is a need for open-minded health care governing and healthcare professionals. Workforce planning for the future plays an important role for a sustainable healthcare workforce in Hungary.

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