



# Nursing Education in Some European Higher Education Area (EHEA) Member Countries: A Comparative Analysis

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## Abstract

**Background:** The European Higher Education Area (EHEA) has aimed at unifying, harmonizing, and ensuring consistency of higher education systems in Europe for over two decades. The objective of this study was to investigate the similarities and differences in the training programs of nurses in selected EHEA member countries.

**Methods:** Comparative analysis was used. Based on three sources: research articles, internet databases, and emails sent to nursing education institutions. Three databases, namely Science Direct, PubMed, and ERIC, were utilized.

**Results:** Regarding educational institutions, the majority of countries' nurses graduated with a Bachelor's degree, except for Estonia, Russia, and North Macedonia. Russia had the shortest education duration (2 years and 10 months), while other member countries had programs lasting between 3-4 years. In countries where colleges were still active, diploma or certificate programs were offered, such as in Estonia and Russia. Only North Macedonia did not offer any continuing education for nurses, and Estonia, Latvia, and France did not have PhD programs in nursing.

**Conclusion:** Nurses constitute the largest occupational group in healthcare, and the quality of medical care relies on their theoretical and practical training. Despite efforts to unify nursing curricula through the Bologna Process, significant differences still exist.

**Keywords:** Nursing education; European higher education area; Comparative analysis

## Introduction

For over two decades, the European Higher Education Area (EHEA) has strived to unify, harmonize, and ensure consistency in higher education systems throughout Europe (1). This has been accomplished through the adoption of a structure based on three key foundations: the European Credit Transfer and Accumulation System

(ECTS) or "credits," a two-tier structure of higher education encompassing graduate and post-graduate education, and the establishment of an accreditation system for internal and external evaluation of higher education institutions (2). Nursing education is not exempt from the directives of the Bologna Process, which primarily



focuses on standardizing nursing education and facilitating easy comparison of educational degrees. The EHEA and the European Union (EU) exert influence on nursing education processes and support the mobility of students and teachers. Currently, nursing education is offered in 45 out of 47 EHEA member countries, with Liechtenstein and the Vatican being the exceptions (3). The EU Directive 2005/36/EC on the recognition of professional qualifications aims to facilitate the mobility of EU citizens by enabling qualified nurses from one-member country to practice their profession in another. However, achieving this goal in its entirety has proven challenging, as comparing training programs across countries can be a complex task due to variations in legislation, culture, health needs, philosophies, and economic situations (4,5,6).

This comparative analysis aimed to investigate and compare the similarities and differences in the training programs of nurses in selected EHEA member countries.

## Methods

Comparative analysis was used. Based on three three sources: research articles, internet databases, and emails sent to nursing education institutions. The literature was analyzed using deductive content analysis. Three databases, namely Science Direct, PubMed, and ERIC, were searched. The following criteria (descriptors) were employed: publication type - review article, publication period - 2005-2022, and keywords (limited to English) - "nursing education" AND "nursing degree" AND "European countries". Although the search terms did not precisely match the MeSH terms, they were similar to "Education, nursing" and "Europe". The initial search yielded 531 articles from Science Direct, of which 7 were selected; 27 articles from PubMed, of which 2 were included; and 772 articles from ERIC, of which 4 were chosen. Additionally, emails were sent to various European universities and students participating in Erasmus, and 23 were received. Information available on the web pages of higher education institutions offering nursing education was also used (Fig.1, 2).

<b>Step one</b>	E-search with keywords: nursing education and nursing degree and European countries Results: <a href="#">ScienceDirect</a> - 14423 <a href="#">Pubmed</a> - 28 Eric- 9328 Total (N) 23779
<b>Step two</b>	Including only review articles
<b>Step three</b>	Publication period 2005-2022
<b>Step four</b>	Full text, Those that do not match the research area are removed 820 browsed based on the title , 83 were reviewed for duplicates 13 articles are included in the literature review

**Fig. 1:** Presentation of data search

Data analysis: The data were analyzed based on information collected from 19 EHEA member countries, most of which were also members of the European Union. The points of comparison

were selected according to the guidelines and recommendations provided by ENEA and Directive 2005/36/EC on professional qualifications.

<b>Articles</b>	23779 articles end total from databases of Science Direct, PubMed and Eric	Selected 13
<b>Internet</b>	Websites: School of nurses, Europeans universities, WHO, nurses association, European parliament, EHEA, ICN, Ministries of education, ERASMUS	Selected 56
<b>E-Mails</b>	28 e-mail sent	23 e-mail received
<b>Total</b>		92

Fig. 2: Presentation of data search

## Results

European countries have been making efforts to overcome barriers in education, training, and exchange programs for medical professionals, particularly in the field of nursing. These barriers are often related to the diverse types and nature of certificates and diplomas in nursing education. The requirements for the nursing profession align with those of other specialties, aiming to address labor market challenges and increasing globalization (7). Nursing education requires constant updating to keep up with advancements in medical science. Directive 2005/36/EC of the European Union (8) aims to standardize the minimum educational requirements, facilitating the mobility of specialists across Europe (2). The Bologna Process has played a significant role in the development of nursing, bringing it into the higher education system and providing it with recognition (9).

### *Comparative analysis according to the criteria:*

Total number of institutions offering nursing education: Collecting data on the number of institutions providing nursing education is challenging. However, there is a clear trend of

increasing institutions due to the World Health Organization's recommendations regarding the nursing profession. The shortage of healthcare professionals, including nurses and midwives, is a pressing issue, with a projected shortage of 18 million professionals by 2030 (10). The number of institutions is directly proportional to the population size. For example, Germany, with a population of around 80 million people (11), has approximately 1,500 institutions offering nursing education (Table 1). This multiplicity is due to the presence of not only universities but also academies and schools attached to major university hospitals. However, the number of institutions does not determine the number of graduating nurses, which is a separate matter for further research.

A smaller population, such as that of the Czech Republic (around 10 million people) (12), serves its need for nurses with only 15 institutions (Table 1). If the case of Germany is an indicator of a correct ratio, then the Czech Republic should have 150 institutions. The number of nurses graduating is a completely separate matter and another topic for research, and the number of institutions does not determine this figure

Type of training institution: Following the implementation of the Bologna Process, nursing

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education has transitioned into higher education, with the introduction of the "Bachelor" educational qualification in most countries. This shift has occurred in several EHEA member countries, but some countries, such as Estonia, Russia, and North Macedonia, have not yet made this transition. In other countries, both types of institutions coexist, including Germany, Denmark, Latvia, Slovenia, the Czech Republic, Sweden, and Switzerland (13,14). (Table 1).

Previous education and entry qualifications: There is a unifying element in the requirement of secondary education as a prerequisite for entering higher education. Most member countries require 12 years of secondary education. However, there are exceptions such as Germany (at least 10 years of primary education and 17 years of age), Ireland (17 years of age), and France (allowing previous professional experience) (Table 1).

Education duration: Differences in education duration still exist, but it is generally established within 3-4 years (as stipulated by Directive 2005/36/EC, which sets a minimum of 3 years). The duration often depends on the type of training institution. For example, in Germany and Latvia, the duration is either 3 or 4 years (Table 2). Russia has the shortest education duration of 2 years and 10 months, while northern countries have set the duration at 3.5 years (Denmark, Finland, Estonia). Mediterranean countries such as Spain (15), Portugal, Greece (16), Cyprus, Bulgaria, and Ireland have adopted the 4-year bachelor's degree. Other member countries, including Italy, North Macedonia, France, the Czech Republic (17), Sweden, and Switzerland, have a 3-year education program (Table 2).

Practical training duration is a criterion that shows significant uniformity among countries, despite differences in the number of ECTS (European Credit Transfer and Accumulation System) required. Regardless of the specific credit and hour requirements, there is a consistent rule that 50% of the training must involve practical activities. This reflects the nature of the nursing profession, which is primarily practical and requires hands-on experience. Directive

2005/36/EC sets a requirement of 4600 hours of theoretical and practical training, which is adhered to by all EHEA member countries.

Obtained qualification degree varies among countries and is an important step toward harmonizing European higher education systems. Most countries that offer nursing education through universities award a Bachelor's degree. However, in countries where colleges are still active, diplomas or certificates are awarded. For example, Estonia and Russia offer diplomas or certificates, while Germany, Latvia, Sweden, and Switzerland may grant either a bachelor's degree or a diploma depending on the duration of study or the institution.

Bachelor's degree specialization is not widely offered at the bachelor's level in most countries. Nurses typically graduate with a general profile. Only Germany, Ireland, and France offer specialization options at the bachelor's level (Table 3). In other countries, specialization occurs through postgraduate education.

Postgraduate programs play a crucial role in achieving unity in European criteria. Almost all countries offer postgraduate programs for nurses, except for North Macedonia. Estonia, Latvia, and France do not offer PhD programs specifically for nurses (Table 3). The introduction of the bachelor's degree as a base level allows for further education and upgrading (18).

The availability of a national register for nurses is the responsibility of different regulatory bodies in each country. Among the countries discussed, nine have a register, while four do not. (Germany, Ireland, Spain, and Switzerland) do not have national nurse registers (Table 4).

Representation of the nursing profession at the government level varies among countries. Some countries, such as Germany, Denmark, Spain, Cyprus, Portugal, Slovenia, Finland, and Sweden, have representation of nurses at the government level. However, in countries like Bulgaria, Ireland, Italy, France, and Switzerland, nurses do not have government representatives (Table 4).

Nevertheless, independent professional organizations for nurses exist in all countries,

even if they do not have government representation.

In terms of core subjects in the first year of nursing education, there is similarity in the inclusion of basic or fundamental sciences across almost all cases. Subjects such as anatomy, physiology, philosophy, introduction to nursing

care, and nursing theory are commonly included. However, specific training programs and modules can vary based on the policies and traditions of each institution (Table 5). Directive 2005/36/EC provides guidance on compulsory sciences, allowing for some flexibility and overlap in the curriculum (19).

**Table 1:** Teaching institutions and entry requirements to nursing education

<i>EHEA member country</i>	<i>Total number of institutions offering nursing education</i>	<i>Education system</i>	<i>Prior education and entry qualifications</i>
Bulgaria	10 (excluding branch campus)	University	Secondary education and 18 years of age
Germany	1500	Nursing academy/university	At least 10 years of primary education and 17 years of age
Greece	10 (8 of them are technical)	University	Secondary education
Denmark	*	University/college	12–13 years of secondary education
Estonia	*	College	Secondary education or vocational school
Ireland	13	University	Secondary education and 17 years of age
Spain	58	University	12 years of secondary education
Italy	42	University	Secondary education
Cyprus	*	University	12 years of secondary education
Latvia	*	Nursing school/university	Secondary education
Portugal	39	University	12 years of secondary education
Russia	*	Nursing school	Secondary education
North Macedonia	*	Nursing school	Secondary education
Slovenia	*	University/college	10 to 12 years of secondary education
Finland	21	University	12 years of secondary education
France	*	College	12 years of secondary education or professional experience
Czechia (Czech Republic)	15	University/college	Secondary education
Switzerland	*	University/college	10 to 12 years of education
Sweden	*	University/college	Secondary education

**Table 2:** Duration of training and acquired qualification

<i>EHEA member country</i>	<i>Education duration (years)</i>	<i>Practical training duration</i>	<i>Obtained Degree and qualification</i>
Bulgaria	4	50% of the total (240 ECTS)	Bachelor
Germany	3-4	2500 out of 4600 school hours/240 ECTS	Certificate/bachelor
Greece	4	50% of 200 ECTS (min.)	Bachelor
Denmark	3.5 (7 semesters)	90 of 210 ECTS	Bachelor
Estonia	3.5	50 of 210 ECTS	A professional higher education diploma
Ireland	4	50%	Bachelor
Spain	4	50% of 240 ECTS	Bachelor
Italy	3	50% (1800 school hours of 180 ECTS)	Bachelor
Cyprus	4	50% of 240 ECTS	Bachelor
Latvia	3-4	50% ECTS of 180/240	A professional education diploma/bachelor higher
Portugal	4	50%	Bachelor
Russia	2 years and 10 months		
North Macedonia	3	50% of 180 ECTS	Bachelor
Finland	3.5	50% of 210 ECTS	Bachelor
France	3	2100 school hours of 180 ECTS	*
Czechia (Republic Czech)	3	50% (30 weeks)	*
Switzerland	3	50%	Bachelor/diploma
Sweden	3	50%	Bachelor/diploma

**Table 3:** Nursing specializations and postgraduate programs

<i>EHEA member country</i>	<i>Bachelor's degree specialization</i>	<i>Postgraduate program</i>	
		Master's	PhD
Bulgaria	No	Yes	Yes
Germany	General, Pediatric and Elderly care Nursing	Yes	Yes
Greece	*	Yes	Yes
Denmark	No	Yes	Yes
Estonia	No	Yes	No
Ireland	General, Pediatric, Psychiatric, and Intellectual disability Nursing	Yes	Yes
Spain	No	Yes	Yes
Italy	No	Yes	Yes
Cyprus	No	Yes	Yes
Latvia	No	Yes	No
Portugal	No	Yes	Yes
Russia	*	*	*
North Macedonia	*	No	No
Finland	No	Yes	Yes
France	Mental health nursing, long-term and rehabilitative nursing, short-term nursing, individual or collective care in residential area	Yes	No
Czechia (Czech Republic)	No	Yes	Yes
Switzerland	No	Yes	Yes
Sweden	No	Yes	Yes

**Table 4:** National directives

<i>EHEA member country</i>	<i>National nursing registry</i>	<i>Representation of the nursing profession at government level</i>
Bulgaria	Yes	No
Germany	No	Yes
Denmark	Yes	Yes
Greece	*	*
Estonia	*	*
Ireland	No	No
Spain	No	Yes
Italy	Yes	No
Cyprus	Yes	Yes
Latvia	*	*
Portugal	Yes	Yes
Russia	*	*
North Macedonia	*	*
Slovenia	Yes	Yes
Finland	Yes	Yes
France	Yes	No
Czech (Czech Republic)	*	*
Switzerland	No	No



Sweden	Yes	Yes
<b>Table 5:</b> Core disciplines of nursing education in the first year		
<i>EHEA member country</i>	<i>Core subjects in the first year</i>	
Bulgaria	Philosophy and Introduction to Nursing Care; anatomy; physiology	
Germany	Nursing care; anatomy; physiology	
Denmark	Nursing Care	
Greece	Biology; anatomy; histology	
Estonia	Clinical nursing	
Ireland	Biological Sciences; health promotion	
Spain	Anatomy; biological sciences	
Italy	Anatomy; physiology; health promotion	
Cyprus	Anatomy; nursing fundamentals	
Latvia	Anatomy; physiology; deontology	
Portugal	Anatomophysiology; nursing fundamentals	
Russia	Anatomy; physiology; nursing care	
North Macedonia	Anatomy; health care	
Slovenia	Nursing Care	
Finland	Fundamentals of clinical nursing; nursing care	
France	Psychology; sociology; anthropology	
Czech (Czech Republic)	Anatomy; nursing theory	
Switzerland	Anatomy; physiology; nursing science	
Sweden	Anatomy; physiology; pharmacology	

## Discussion

The comparative analysis carried out with representative EHEA countries shows that 23 years after the Bologna Process was voted, there are still significant differences in nursing education (2). Significant criteria adopted by most countries are the inclusion of nursing education to the university one and fixing its duration between 3 and 4 years. In order to achieve the equalization of qualification degrees between different countries, it is necessary for all to introduce the educational degree "Bachelor". The existence of diplomas and certificates hinders or makes postgraduate training of nurses impossible (1).

Contemporary nursing is absolutely primed for ongoing programs that can only enrich and contribute to the development of the professional dimensions of nursing science. We should note

that only North Macedonia has no postgraduate programs, while most European countries have lifelong learning. This contributes to the sisters owning knowledge, skills, have higher self-esteem, assertiveness, and better communication strategies; therefore, they provide more comprehensive care and make complex decisions (20).

Another point of comparison - the number of educational institutions only proves the differences between countries. Today's conditions of an acute shortage of health care professionals should guide a trend towards increasing the number of institutions, increasing the number of assigned places and stimulating interest in the career, the latter impossible without government intervention. Some guidelines may be related to the reduction of university fees for this specialty and/or an increase in the material remuneration of working nurses (6).



Absolute unification is noticeable in the comparative point regarding the duration of practical training - medical traditions and nursing theory prove that it should not be less than 50% of the total curriculum. This is related to the nature of the nursing profession, and corresponds to Directive 2005/36 EC is for 4600 hours of theoretical and practical training (19). The criterion is respected in all EHEA member countries that submitted data.

As for specializations at the bachelor's level, they are not widely represented, with most countries offering the option to specialize through master's programs, which once again emphasizes the importance of the bachelor's degree as a prelude to postgraduate studies (15, 17, 18).

For criteria regarding the representation of the nursing profession at government level and the availability of national registries, there is considerable discrepancies between countries.

The disciplines that nurses are introduced to at the first stage of their education are similar in different institutions, which is logical, considering the nature of the nursing profession.

Despite the convergence points and similarities in the individual education systems achieved over the years, there are still differences that must be overcome in order to fulfill the directives of the Bologna Process and the European Higher Education Area (EHEA) (19).

## Conclusion

Nurses play a crucial role in healthcare, and the quality of medical care depends on their training. It is essential to unify nursing education within the European Higher Education Area to enable nurses to practice their profession across the European Union. Higher education institutions and healthcare stakeholders need to address the shortage of nurses and plan for the aging population and retirement of the nursing workforce in order to ensure adequate nursing workforce levels in all healthcare settings.

## Journalism Ethics consideration

Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc. have been completely observed by the authors).

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## Conflict of interest

The authors declare that there is no conflict of interest.

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