

Review

Nursing education in the European higher education area – Variations in implementation



Pia Lahtinen ^{a,*}, Helena Leino-Kilpi ^b, Leena Salminen ^c

^a University of Turku, Department of Nursing Science, 20014 University of Turku, Turku, Finland

^b University of Turku, Department of Nursing Science, Hospital District of South-West Finland, Turku, Finland

^c University of Turku, Department of Nursing Science, Turku, Finland

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SUMMARY

Background: The European Higher Education Area (EHEA) aims to ensure comparable, compatible and coherent systems of higher education.

Objectives: The purpose of this study was to statistically analyze nursing education in Europe. Analysis was based on the quantitative determinants essential in describing the implementation of nursing education. First, nursing education in the 45 member countries of the EHEA was analyzed. Second, nursing education in the 29 original member countries was analyzed in more detail. Both analyses focused on the similarities and differences between nations.

Methods: A systematic literary review design was used. Data collection was conducted based on key quantitative determinants used to describe the implementation of nursing education. These determinants were based on the European Union standards and recommendations by the EHEA. Data were collected from three sources: research articles, internet databases and emails. The literature was analyzed using deductive content analysis. The data were quantified, studied and compared and the results were described based on frequencies and percentages and presented in tables.

Results: More similarities than differences in nursing education were noted between the different EHEA member countries. A full academic pathway of studying for a bachelor's degree, a master's degree and a doctorate in nursing was offered in 60% of the countries. Nevertheless, there are still countries offering education only on the diploma level, demonstrating that the differences between countries are at points rather significant.

Conclusions: Based on the analyses, it is evident that there are still rather significant differences between countries and that support for aligning national practices and mobility is needed. A common ground in terminology and evidence-based recommendations published in English would be beneficial for countries currently developing nursing education programs. We also suggest creating an online database containing information on nursing education for all 45 member countries to support the mobility of nursing students, nurses and researchers.

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Introduction

The European Higher Education Area (EHEA) and European Union (EU) influence the implementation of nursing education in Europe and support the mobility of students and professionals (EHEA, 2010; EU, 2005). The EHEA has been a main focus of the Bologna Process. The goal is to ensure comparable, compatible and coherent systems of higher education in its 47 member countries (EHEA, 2010). Currently, nursing education is offered in 45 of the 47 member countries. There is no nursing education in Liechtenstein or the Holy See (all EHEA countries are shown in Table 2). European Union Directive 2005/36/EC on the Recognition of Professional Qualifications aims to facilitate the free movement of EU citizens by making it easier for nurses qualified in

one member state to practice nursing in another. The recognition is based on the harmonized minimum education requirements (EU, 2005). At this point it is not possible to readily access information and compare the nursing education programs for the different member countries.

Background

European collaboration and the Bologna Process have influenced changes in nursing education (Bahçecik and Alpar, 2009; Dornik et al., 2005; Kalauz et al., 2008; Kalnins et al., 2001; Kapborg, 1997; Lindpainter et al., 2009; Maas-Garcia and ter Maten-Speksnijder, 2009; Kyrkjebø et al., 2002; Patelarou et al., 2009; Råholm et al., 2010; Šimunović et al., 2010; Sztembis, 2006; Tóthová and Sedláková, 2007; Zabalegui and Cabrera, 2009; Zabalegui Yarnoz, 2002; Öhlén et al., 2011). Member countries are working towards establishing nursing education in higher education institutions, establishing comparable

* Corresponding author. Tel.: +358 40 7152278.

E-mail addresses: pclaht@utu.fi (P. Lahtinen), helena.leino-kilpi@utu.fi (H. Leino-Kilpi), leesalmi@utu.fi (L. Salminen).

nursing degrees (Maas-Garcia and ter Maten-Speksnijder, 2009; Spitzer and Perrenoud, 2006b) and collaborating in matters of quality assurance (Maas-Garcia and ter Maten-Speksnijder, 2009).

It is important to note that implementing changes in nursing education systems can be challenging for countries (Bahçecik and Alpar, 2009; Davies, 2008; Patelarou et al., 2009; Spitzer and Perrenoud, 2006a; Sztembis, 2006). Also, every member country has its own legislation, culture, healthcare needs, healthcare philosophies and structures and economic situations (Salminen et al., 2010).

There are differences in how nursing research is carried out in the different European countries (Özsoy, 2007). International collaborative research between countries in the field of nursing education raises the profile of nursing as a graduate profession (Davies, 2008; Salminen et al., 2010). In addition to research projects, an agenda for nursing education research in Europe is also needed (Salminen et al., 2010).

The purpose of this study was to analyze nursing education in Europe. Analysis was based on the quantitative determinants that are essential in describing the implementation of nursing education. Focus was put on the similarities and differences in nursing education programs in the different EHEA member countries. First, nursing education in the 45 member countries of the EHEA was analyzed based on *system of education*, the *duration* and the *title of the graduate nursing degrees* as well as the *undergraduate* and *postgraduate degrees awarded*. Second, nursing education in the 29 original member countries was examined based on *entry qualifications*, the *amount of practical training*, *specialization at the undergraduate level*, *tuition fees* and *body awarding Registered Nurse registration*. A common database containing information and comparisons on nursing education in the EHEA is not available at this moment. Examining the quantified determinants used in this study provides information on the implementation of European nursing education.

Methods

A systematic literary review design was used. Data were collected from three sources: research articles, internet databases and e-mails (Table 1). A literature search was conducted using Medline, Cinahl, Eric and Medic for the years 2001 to 2011. A combination of the following search words was used: “nursing program”, “nursing degree”, “nursing education”, “curriculum” and “syllabus”. To find more information that met the inclusion criteria, a second literary search was conducted by combining the name of an EHEA member country with “nursing education” (Fig. 1).

Together, these two literature searches provided 29 articles relevant to the analysis. Of the 29 articles, 23 articles focused on how nursing education is handled in the different countries and 6 articles studied the different aspects of European nursing education in general. In total, the literary search provided information on 18 different countries. Articles that only briefly described a country's nursing education and

that were primarily focused on other research questions were not included in this study (Fig. 1).

Additional information was discovered using the following internet databases: the European Network of Information Centers (ENIC), the European Commission's Regulated Professions Database and Study of Specialist Nurses in Europe, the European Observatory on Health Systems and Policies, the UNESCO International Bureau of Education, World Education Services and the Workgroup of European Nurse Researchers (WENR). Then, current information on the subject was gathered via reliable, international internet databases on nursing, education, government ministries and representatives of nursing schools. A total of 89 internet websites were referenced in this study. After these phases, missing information was gathered by emailing selected representatives of schools providing nursing education in Bosnia and Herzegovina, Estonia, France, Georgia, Greece, Moldova, Montenegro, Russia and Serbia. Out of the 22 emails sent, 13 responses were received (Table 1).

Analysis

The data was analyzed using deductive content analysis. Information was gathered from all 45 member countries by focusing on the *system of education*, the *duration* and the *title of the graduate nursing degrees* as well as the *undergraduate* and *postgraduate degrees awarded* (Table 2). Then, information on *entry qualifications*, the *amount of practical training*, *specialization at the undergraduate level*, *tuition fees* and *body awarding Registered Nurse registration* were collected from the 29 countries that signed the Bologna Declaration in 1999 and that have had the longest amount of time to adjust to the nursing education reform (Table 3). Points of comparison were chosen based on the European Union 2005/36/EC Professional Qualifications Directive (EU, 2005) and recommendations by the EHEA (EHEA, 2010) as well as supported by recent studies in this field (Råholm et al., 2010; Šimunović et al., 2010; Spitzer and Perrenoud, 2006a, 2006b). The data were quantified and then studied and compared in order to analyze the similarities and differences between current European nursing education programs. The results were described based on frequencies and percentages and presented in tables.

Results

In this study, we analyzed 45 EHEA member countries. The first analysis included all 45 member countries, whereas the second analysis only included the 29 original members of the Bologna Process. Article 31 of EU Directive 2005/36/EC (EU, 2005) on the professional qualifications for trained nurses applies to all EU member states and also to Norway, Iceland and Switzerland. It outlines general principles and practices for nursing education, for example admission, theoretical and clinical training, and the extent of the education. The percentages discussed in the results section are calculated based on the total amount of the respective variable, for example the number of countries in the EHEA, the number of different education systems offered, the amount of entry points needed for nursing education and the number of countries offering bachelor-level degrees.

Nursing education system and entry points

The title of nurse can be obtained through a wide variety of educational systems. The majority of all nursing education programs are offered at the higher education level (68%), but diploma-level education is still offered rather widely as well (32%). Comparing the different educational systems is challenging because the terms are not always used in the same way in the different countries. Of the 45 member countries, nursing education at a higher education level is most commonly offered at universities (33%). Nursing education programs at colleges, universities of applied sciences/polytechnics and universities are all

Table 1
Presentation of data search.

	Search	Selected
Articles	3303 articles in total from databases of Medline, Cinahl, Eric and Medic	29 articles
Internet	Databases: ENIC, regulated professional database, Study of Specialist Nurses in Europe, The European Observatory on Health Systems and Policies, UNESCO, WES and WENR.	7
	Websites: Schools for nurses, nurses associations, Ministries of education, Ministries of Health and FINE	67
	Other websites used: EU, Bologna & EHEA, FINE, ICN, TUNING, Green Paper and Finnish national Board of Education	15
E-mails	22 emails sent	13 emails received
Total		131

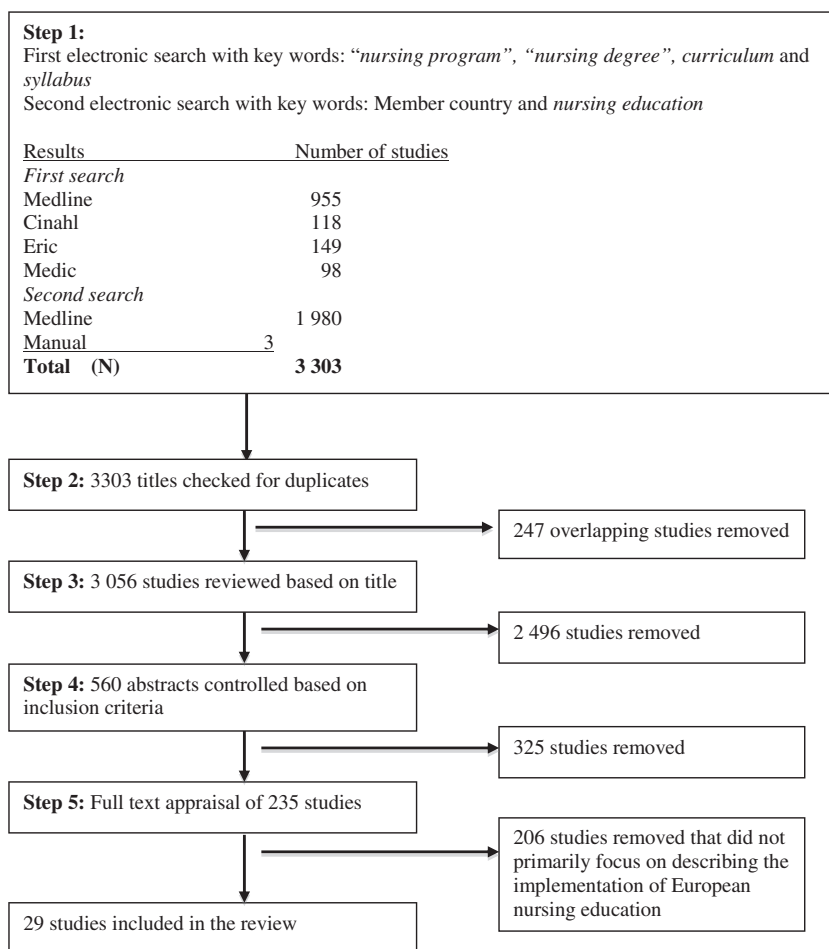


Fig. 1. Presentation of the bibliographic search.

offered rather frequently. Nursing education at the diploma level is most commonly offered at nursing schools (14%) and colleges (11%) (Table 2).

More than half (60%) of the countries offer one entry point to nursing education. Twenty-nine per cent of the countries offer two entry points to nursing education. Armenia, Germany, Latvia, Switzerland and Turkey offer three entry points to nursing education. In all of these countries, nursing education is offered at both higher education and diploma levels. Of the countries that offer only one entry point to nursing education, a clear majority of the schools (74%) offer bachelor-level studies. The countries that offer two entry points to nursing education typically (54%) offer applicants the possibility to study nursing either at a diploma or bachelor level. Thirty-eight per cent of countries offer two entry points into a school of higher education leading to a bachelor's degree (Table 2).

Duration

The duration of all full-time nursing education programs varies from two to four years. The majority of nursing education programs last for three years (58%), whereas 31% of nursing education programs last for four years. As stated in Article 31 of EU Directive 2005/36/EC, nursing training at higher education levels must be at least three years long or include 4600 hours of theoretical and clinical training (EU, 2005). All countries with higher nursing education programs must comply with this requirement. The duration of higher nursing education is mostly three years (51% of schools), but studies lasting four years are also frequently offered (42% of schools). In Denmark, Estonia and Finland, education lasts for three and a half years (Table 2).

Title of nursing graduate

The majority (82%) of countries offer higher education leading to a bachelor's degree or equivalent for nurse students. Of all the education systems offering nursing education programs, a majority (68%) of studies lead to a bachelor's degree or equivalent. In 23% of the countries, graduating nurses are awarded a diploma. A bachelor's degree is mostly awarded by universities (51%). Colleges, university colleges and universities of applied sciences/polytechnics also award bachelor's degrees in many countries (Table 2).

A clear majority of countries offer nursing education programs at a bachelor's degree level in one type of education system (78%), but in 22% of the countries offering bachelor's level studies students can choose between two different paths of nursing education, both of which lead to a bachelor's degree (Table 2).

Postgraduate degrees

In the EHEA, master's and doctoral degrees in nursing are offered in 60% of the countries. In 27% of the countries, it is not yet possible to study for a postgraduate degree in nursing. Only in six countries out of the 45 is a master's degree the highest degree possible in nursing, indicating that most countries that offer the possibility to study for a master's degree also have studies at the doctoral level (Table 2).

Entry qualifications and practical training

The requirements set by EU Directive 2005/36/EC (EU, 2005) for admission to and the amount of practical training included in nursing

Table 2
Nursing education in the 47 member countries^a of the European Higher Education Area.

	Undergraduate program			Postgraduate program	
	Education system	Duration in years ^b	Title	Master's	PhD
Albania	College	3	Bachelor	✓	
Andorra	University	3	Bachelor		
Armenia	College	3	Diploma	✓	
	College	4	Bachelor		
	<i>Training also in nursing schools</i>				
Austria	Nursing school	3	Diploma	✓	✓
	University	3	Bachelor		
Azerbaijan	Nursing school	22–30 months	Vocational Diploma		
Belgium	University	3	Bachelor	✓	✓
Bosnia and Herzegovina	University	3	Bachelor	✓	
Bulgaria	College	4	Bachelor	✓	✓
Croatia	Polytechnic	3	Bachelor		
	<i>Training also in nursing schools</i>				
Cyprus	University	4	Bachelor	✓	✓
Czech Republic	College	3	Bachelor	✓	✓
	University	3	Bachelor		
Denmark	University college	3,5	Bachelor	✓	✓
Estonia	College	3,5	A professional higher education diploma	✓	
Finland	Polytechnic	3,5	Bachelor	✓	✓
France	Nursing school	3	Diploma		
	<i>Diploma should be recognized as a university degree at the bachelor level in 2012</i>				
Georgia	Vocational school	2	General Practice Nurse		
	Higher education program	4	Bachelor		
Germany	Nursing school	3	Certificate	✓	✓
	University of applied sciences	3	Bachelor		
	University	3	Bachelor		
Greece	Higher Technical Education Institute (A.T.E.I)	4	Bachelor	✓	✓
	University	4	Bachelor		
Holy See	<i>No nursing</i>				
Hungary	Nursing school	3	Diploma	✓	✓
	University	4	Bachelor		
Iceland	University	4	Bachelor	✓	✓
Ireland	University	4	Bachelor	✓	✓
Italy	University	3	Bachelor	✓	✓
Kazakhstan	College	3	General practice Nurse		
	<i>Reform aims to upgrade nursing education</i>				
Latvia	Nursing school	3	Diploma	✓	
	College	3	Diploma		
	University	4	Bachelor		
Liechtenstein	<i>Does not have its own nursing education, students study in neighboring countries</i>				
Lithuania	College	3	Bachelor	✓	✓
	University	4	Bachelor		
Luxembourg	Nursing school	3	Diploma		
	<i>There is no full university. Graduate nurses requiring more than three years' training will require training abroad</i>				
Malta	University	3	Bachelor	✓	✓
Moldova	College	2–3	Diploma		
	<i>College programs typically last between 2 to 3 years, more specific information not found</i>				
Montenegro	Nursing school	4	Diploma		
	College	3	Diploma		
The Netherlands	University of applied sciences	4	Bachelor	✓	✓
	University	4	Bachelor		
Norway	University college	3	Bachelor	✓	✓
Poland	University college	3	Bachelor	✓	✓
Portugal	Polytechnic	4	Bachelor	✓	✓
Romania	University college	3	Bachelor	✓	✓
Russia	Nursing school	3	Diploma		
	<i>Bachelor studies available after graduating nursing school</i>				
Serbia	Medical school (Vocational)	3	Diploma	✓	
	University	4	Bachelor		
Slovakia	College	3	Diploma	✓	✓
	University	3	Bachelor		
Slovenia	College	3	Bachelor	✓	✓
Spain	University	4	Bachelor	✓	✓
Sweden	University college	3	Bachelor	✓	✓
	University	3	Bachelor		
Switzerland	College	3	Diploma	✓	✓
	University of applied sciences	3	Bachelor		
	University	3	Bachelor		

(continued on next page)

Table 2 (continued)

	Undergraduate program			Postgraduate program	
	Education system	Duration in years ^b	Title	Master's	PhD
The former Yugoslav Republic of Macedonia	High medical school (under university)	3	Bachelor		
Turkey	Health high school (secondary education)	4	Bachelor	✓	✓
	Health school (higher education, under university administration)	4	Bachelor		
Ukraine	University	4	Bachelor		
	Vocational school	2	Junior Specialist (General Medical Nurse)		
United Kingdom	<i>Bachelor studies available after graduating vocational school</i>				
	University	3	Diploma	✓	✓
	University	3	Bachelor		
	<i>All new nurses will be educated to degree level from 2013</i>				

Notes.

^a There are 47 countries in the European Higher Education Area, out of which 45 countries were analyzed in this study. There is no nursing education in The Holy See and Liechtenstein and therefore they were not included.

^b Duration of education stated as it has been by the member country.

education programs are currently being met by all 29 of the member countries. The minimum entry qualifications involve completing ten years of general education. Each member country can more specifically state the prior education requirements and practically all of the countries also have other entry qualifications, such as a minimum age, an entrance examination, good health or prior professional experience (Table 3). In terms of practical training, Article 31 of Directive 2005/36/EC (EU, 2005) states that the duration of the clinical training for nurses should consist of at least 2300 h of training. While all countries currently meet the amount of practical training required, they alternately list the amount of practical training in terms of percentages, hours or ECTS (Table 3).

Registration, specialization and tuition

Member countries decide for themselves what authority or institution is responsible for the registration of nurses and also for offering specialization in nursing at an undergraduate level and charging tuition fees. The title of registered nurse is awarded most often by the government (52%), but also frequently by a regulatory body (38%) (Table 3).

Only Austria, Germany, Ireland, Malta and the United Kingdom offer specializations in nursing at an undergraduate level, with it being quite uncommon among the 29 original member countries (Table 3). It is common to charge tuition fees. Forty-eight percent of countries have tuition fees for state-operated schools. In the United Kingdom, tuition fees are charged in England and Wales, but not in Scotland. All countries charging tuition offered nursing education leading to a bachelor's degree except for France. At the moment, studies in France are offered only at the diploma level, but starting in 2012 nursing studies should be recognized at the degree level as well (Table 3).

Discussion

When examining the 45 EHEA member countries, we noticed several similarities in the nursing education programs. According to past studies (Šimunović et al., 2010; Spitzer and Perrenoud, 2006b), only a minority of higher education institutions in nursing awarded bachelor degrees, but this study demonstrated that higher nursing education leading to a bachelor's degree or equivalent is offered in the majority of member countries. All higher education nursing studies are three years or more in length. A full academic pathway to a bachelor's degree, a master's degree and a doctorate in nursing has been viewed as an important goal in nursing education (Maas-Garcia and ter Maten-Speksnijder, 2009; Råholm et al., 2010; Tóthová and Sedláková, 2007; Zabalegui and Cabrera, 2009), and this study shows that the possibilities for continuing nursing education at a master's degree and doctorate level are widely available.

The comparison of the 29 original members of the Bologna Process proved to be even more coherent. This outcome was expected, considering the amount of time that these countries have had to implement changes in their education systems. All of the countries fulfilled the minimum entry qualifications and the amount of practical training required by the EU Directive 2005/36/EC (EU, 2005). While Spitzer and Perrenoud (2006b) came to the same conclusion, in this study we compared ten more countries. A clear majority of the countries do not have specializations at the undergraduate level even though all countries register their nurses. High coherency can also be noted when examining the *system of education*, the *duration*, the *title* and the *postgraduate prospects* of the 29 member countries. Equivalency in the duration, entry qualifications and amount of practical training contribute to mobility and the training of a highly qualified nursing workforce.

Differences were noted when we compared the education systems and titles awarded by the different nursing education programs in the EHEA. While a bachelor's degree is not a requirement for nursing degree registration in the EU directives, a majority of the countries offer nursing studies both at the degree and diploma levels. Countries that did not have nursing studies at the bachelor's degree level or that did not require a minimum of three years for completing the nursing education programme also did not offer postgraduate education for nurses. Offering higher education would raise the professional autonomy of nursing. Member countries offering more than one entry point to nursing education programs might benefit from evaluating the educational paths in different countries. In this current system, the mobility of nursing students and nurses is complex and nurses may not be equal to one another in their level of training.

Even though we noted more similarities than differences between the member countries, inconsistencies still exist. To support the common goal of quality higher education nursing programs and aligned national practices, we outlined several topics that need to be addressed. The lack of accessible and reliable information on nursing education programs clearly needs to be addressed. An internet database providing information on nursing education programs in all 45 member countries is needed. This data would support the mobility of nursing students, nurses and researchers. It would also aid institutions, such as schools and hospitals, in evaluating exchange students and the European workforce.

Other important issues that need to be addressed include working towards a common ground in terminology and encouraging member countries to publish in at least in English and later if possible in all official languages of EU. Countries still transforming their nursing education programs need evidence-based recommendations on curriculum, clinical training, education systems and other qualifications. Since implementing changes in nursing education programs is costly, more needs to be published in this area to help support newer members of

Table 3
Nursing education in the 29 original member countries of the Bologna Process.

	Entry qualifications One or more qualifications per country mentioned	Amount of practical training ^a	Specialization at undergraduate level	Tuition fees ^b	Body awarding RN registration
Austria	10 years of secondary education	2480 out of 4600 hours	General, Children's and Psychiatric Nursing	✓	School of nursing university
Belgium	Secondary education <i>and</i> 18 years of age	EU min. 50% ^d		✓	Government
Bulgaria	Secondary education <i>and</i> 18 years of age	EU min. 50% ^d		✓	Government
Czech Republic	Secondary education	50%			Government
Denmark	12–13 years of secondary education	90 ECTS out of 210 ECTS			Other
Estonia	Secondary education <i>or</i> vocational school	50%		✓	Government
Finland	Secondary education <i>or</i> vocational school	90 ECTS out of 210 ECTS			Government
France	Secondary education <i>or</i> professional experience	50%		✓	Government
Germany	At least 10 years of primary education <i>and</i> 17 years of age	2500 out of 4600 hours	General, Pediatric and Elderly care Nursing		Government
Greece	Secondary education	A.T.E.I: EU min. 50% ^d University: 50%			Government
Hungary	Secondary education	EU min. 50% ^d		✓	Other
Iceland	Secondary education	50%			Government
Ireland	Secondary education with minimum grades <i>and</i> 17 years of age	50%	General, Children's, Psychiatric and Intellectual Disability Nursing		Regulatory body
Italy	Secondary education	EU min. 50% ^d		✓	Regulatory body
Latvia	Secondary education	50%		✓	Regulatory body
Lithuania	EU min 10 years ^c	EU min. 50% ^d		✓	Regulatory body
Luxembourg	EU min 10 years ^c	EU min. 50% ^d			Government
Malta	General university requirements (including secondary education)	EU min. 50% ^d	General and Psychiatric Nursing		Regulatory body
Netherlands	Secondary education	EU min. 50% ^d		✓	Government
The Norway	Secondary education <i>or</i> over age 25 without study competence, but with extended work experience	50%			Government
Poland	Secondary education	50%			Regulatory body
Portugal	At least 12 years of education	50%		✓	Regulatory body
Romania	Secondary education	50%			Government
Slovakia	Equal to university requirements (including EU min 10 years ^a)	EU min. 50% ^d			Regulatory body
Slovenia	EU min 10 years ^c	50%			Regulatory body
Spain	University requirements (including 12 years of education)	50%		✓	Regulatory body
Sweden	Secondary education	EU min. 50% ^d			Government
Switzerland	10 to 12 years of education	50%		✓	Government
United Kingdom	University requirements (including EU min 10 years ^b)	50%	Pre-registration Diploma: Pediatric, Mental health and Intellectual disabilities Nursing BSc degree: Adult, Children's, Mental health and Learning disability Nursing	England Wales ✓ Scotland no	Regulatory body

Notes.

^a Amount of practical training stated as it has been by the member country.

^b Excluding private schools.

^c Article 31 of Directive 2005/36/EC states that training for nursing requires completion of general education of ten years. (EU, 2005.) The length of education can be longer than ten years.

^d Article 31 of Directive 2005/36/EC states that the duration of the clinical training of nurses responsible for general care shall be at least one half of the minimum duration of the training (EU, 2005).

the EHEA effectively reform their nursing education programs. Common European nursing education programs will form the foundation for high quality and equal nursing treatment for all European citizens.

There are some limitations in this review. First, the literature search can be considered rather narrow. Primarily articles were used as data, but considering the limited sample, reliable websites were also used and emails were sent to representatives in nine countries. Current and

reliable information was also found using various databases, preferably more than one source. Though using the internet to gather information may also have affected the reliability of the data (Table 4).

Second, it is possible that terms used for the schools or the titles being awarded were incorrect due to translation errors by the researcher or a lack of consistency in terminology within the country when publishing in English. To increase reliability, all the terms and variables

Table 4
Summary of articles.

Author, year, country	Study	Method	Results
Adami & Kiger, 2005 Malta	A study of continuing nurse education in Malta: the importance of national context	Exploratory descriptive study	Nurses widely support specialized and continuing education of their profession
Bahçecik and Alpar, 2009 Turkey	Nursing education Turkey: From past to present	Describing country's nursing education	Obstacles in nursing education were overcome and changes were made
Bakalis et al., 2004 UK & USA	A comparison of education in Greek and English nurses	Pictographs from nursing students of Greece and the United Kingdom	English students had better knowledge in cardiac anatomy and physiology than Greek students
Bohinc & Cibic, 2005 Slovenia	Country Profile: Slovenia	Describing country's nursing education	Bachelor and master's level nursing education are being developed
Davies, 2008 UK	The Bologna Process: The quiet revolution in nursing higher education	Describing nursing education in Europe	European higher nursing education would greatly benefit all member countries
Dornik et al., 2005 Slovenia	Nursing education in Slovenia and its impact on nurses publishing in their professional journal	Bibliometric analyses	Positive impact on quantity and quality of publications was confirmed
Gulbeyaz, 2010 Turkey	Nursing Education in Turkey	Describing country's nursing education	Despite changes in nursing there are still barriers to qualitative nursing care
Kalauz et al., 2008 Croatia	Nursing in Croatia: Past, Present and Future	Describing country's nursing education	Reforming secondary school system and harmonizing the health care system is necessary
Kalnins et al., 2001 USA & Lithuania	Baccalaureate nursing education development in 2 Baltic countries: Outcomes 10 years after initiation	Survey	Baccalaureate programs have increased opportunities for nurses
Kapborg, 1997 Sweden	Nursing education in Sweden: development from vocational training to higher level education	Describing country's nursing education	All nursing education is not yet at the higher education level
Kyrkjebø et al., 2002 Norway	Nursing education in Norway	Describing country's nursing education	Possibilities to improve nursing education are outlined
Lindpaintner et al., 2009 Switzerland	Defining clinical assessment standards for bachelor's-prepared nurses in Switzerland	Describing country's nursing education	First phases of defining and implementing first curricular harmonization in Swiss nursing
Maas-Garcia and Ter Maten-Speksnijder, 2009 The Netherlands	The Bologna Agreement and its impact on the Master in Advanced Nursing Practice Program at Rotterdam University of Applied Sciences: incorporating mandatory internationalization in the curriculum	Discussion on the impact Bologna Process has had on country's nursing education	There is a need for internationalization within nursing curriculum
Marrow, 2006 UK	Developing nurse education and practice across the European Union	Editorial	Thematic European Nursing Network helps to deliver aims of the Bologna Process
Öhlén et al., 2011 Sweden	Impact of the Bologna Process in Bachelor nursing programs: The Swedish case	Descriptive content analysis to analyze nursing curricula and syllabi	Variation in terms and concepts are used for the major subjects as well as its scientific foundation
Patelarou et al., 2009 Greece	Nursing education and practice in a changing environment: the case of Greece	Study describing country's nursing education	Development of single nursing degree is complex and requires cooperation between the authorities
Råholm et al., 2010 Norway & Denmark & Sweden	Nursing education in Denmark, Finland, Norway and Sweden — from Bachelor's Degree to PhD	Review	Scandinavian countries should compare and coordinate nursing education programs
Salminen et al., 2010 Finland	Future challenges for nursing — A European perspective	Literary review on European policy papers in nursing education	Future challenges such as the need for cross-cultural research, clinical learning environment and the role of patients and teachers are identified and described
Šimunović et al., 2010 Croatia	In search of a Croatian model of nursing education	Literary review	Croatian model for education in nursing in Croatia was developed
Spitzer & Perrenoud, 2006a Israel & Switzerland	Reforms in nursing education across western Europe: From agenda to practice	Literary review	Similarity in the difficulties and concerns appearing in the countries implementing nursing education reforms
Spitzer & Perrenoud, 2006b Israel & Switzerland	Reforms in nursing education across western Europe: Implementation processes and current status	Literary review	Two major phases of reform were initiated in nursing education over the last three decades
Sztembis, 2006 Poland	The past, present and future of nursing education in Poland: stages, conditions and activities	Describing country's nursing education	Changes in nursing education resulted in uniformity of education and bachelor level nursing education
Tóthová and Sedláková, 2007 Czech Republic	Nursing education in the Czech Republic	Describing country's nursing education	Pre-graduate nursing education was established successfully, but doctoral studies are still missing
Ujvarine & Betlehem, 2008 Hungary	Letter to the Editor: Hungarian nurse education	Letter to the Editor	Nursing competences should be described according to qualifications
Yigit et al., 2004 Turkey	Profile of Nurses With Baccalaureate Degrees in Turkey	Survey	Nurses with bachelor degrees are young, middle-class and one-third are able to read professional journals in foreign language
Zabalagui Yarnoz, 2002 Spain	Nursing education in Spain — past, present and future.	Describing country's nursing education	Nursing education must be upgraded to international standards
Zabalegui & Cabrera, 2009 Spain	New nursing education in Spain	Describing country's nursing education	Nursing education is being upgraded to international standards
Zabalegui et al., 2006 Spain	Changes in nursing education in the European Union	Describing nursing education in the EU	Reform in nursing education should enhance nursing in various ways
Özsoy, 2007 Turkey	The struggle to develop nursing research in Turkey	Describing country's nursing education	Turkish nursing research is following global developments

used in this study were the same as those used by the member country. It is also important to note that in some countries, higher education nursing programs are still in an early stage of development. The data

for this study were collected between August 2011 and April 2012. Because the changes in nursing education are ongoing, it is possible that some information in this study is already outdated. During the

study, all phases of the analysis and the research results were reviewed by the research team.

More detailed comparisons, for example of curriculums, between member countries would be valuable for providing a deeper understanding of European nursing education programs. Understanding European nursing education programs supports collaborative learning and mobility, and research on the topic provides important information not only for Europe but also globally.

As a summary we recommend according to the results of our study

- 1) A common database providing information on nursing education programs in all 45 EHEA member countries.
- 2) Discussion on terminology when developing nursing education in order to add cohesiveness in the field.
- 3) Publishing in at least in English (later in all official languages of EU) in order to provide information on the changes happening in nursing education thru out Europe.

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