



## Education on childrens complex care needs in general nursing curricula in Europe: An inductive content analysis

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### ABSTRACT

Nursing programmes must prepare children's nurses to respond effectively to the health needs of children and young people. The aim of this study was to examine general nursing curricula for child-related content. A non-experimental descriptive study design was used. Curricular plans from 18 countries where general nursing education was the only requirement to care for children with complex care needs in the community were analysed. Curricula were obtained from institutions who educated the largest number of student nurses in each country. An inductive analysis of the curricula was carried out. Almost three-quarters of the curricula (n = 13) offered one or more compulsory core modules on children. The content varied from one to sixteen ECTS credits showing a wide variation in the focus on children in these curricula. In 12 of the 18 countries most of the child-related content was in other modules. The sample curricula from five countries had no compulsory modules on children. Child-related curricular content varied considerably across countries, with little content focused on children with complex care needs. This can illustrate that nurses are not always adequately prepared to meet the needs of sick children.

### Introduction

The purpose of the article is to critically examine general nursing curricula in Europe for child-related content and to determine mandatory training requirements to provide nursing care for children with complex care needs in the community. The research was carried out as part of a larger European study, Models of Child Health Appraised (MOCHA), funded by the European Commission Horizon 2020 programme. This large project involved scientific partners from 11 European countries, Australia and the United States from the fields of medicine, nursing, economics, informatics, sociology and policy management. This paper presents the results of a study, in this wider project, by the nursing team, focusing on the content analysis of a sample of general nursing curricula from 18 countries in Europe to identify child-orientated content.

Nursing curriculum documents detail the units in a programme of

study that lead to accreditation as a nurse (Smith and Morgan, 2010). It was postulated that an analysis of curricula documents with a focus on children would give information on how nursing care of children is described in the programme.

### Background

Nurses are the largest professional group in the global health work force and children comprise a significant part of primary care populations (Wolfe and McKee, 2013).

Nurses provide health promotion and preventive care programmes. They also provide curative care and care for an increasing number of children with complex care needs and their families, in the community. The health needs of children in Europe have changed with a rise in children with complex care needs living at home, (Nygård and Clancy, 2018; Wolfe and McKee 2013). Children's complex care needs refer to

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multidimensional health and social care needs in the presence of a recognized medical condition or where there is no unifying diagnosis. They are individual and contextualized, are continuing and dynamic and are present across a range of settings, on which the healthcare structure has an impact (Brenner et al., 2018). Evidence of this growing population is supported by data internationally (Wallis et al., 2013).

As an example, it is reported that the number of children requiring long-term ventilation has consistently increased over the last 25 years, with some areas of the United Kingdom showing a 30-fold increase in prevalence between 1994 and 2010, from 0.2 to 6.7 per 100,000 (Wallis et al., 2011). This is consistent with other data available across the EU. Data from Italy present a prevalence of 4.2 per 100,000 (Racca et al., 2011) and a report from Austria shows a prevalence of 7.4 per 100,000 (Weiss et al., 2016). This is supported by trends reported internationally. For example, the number of children receiving long-term ventilation at home in Canada increased from 2 in 1991 to 156 in December 2011. This study found a twofold increase in the number of invasive ventilation initiations in the second 10 years,  $n = 45$  (2001–2011) compared with the first 10 years,  $n = 21$  (1991–2000) (Amin et al., 2014). Data on specific numbers of children with complex care needs are difficult to attain, since there are very few systems in place to capture the numbers of children who are attending multiple healthcare challenges and the overall absence of registers to capture the delivery of integrated care to children internationally (Brenner et al., 2018b).

Changes in population health mandate a focus on nurses' preparedness to meet the needs of children and families in the community. The WHO has stressed the role of nurses in public health and sees the need to renew and upgrade education and training related to population needs (WHO, 2013). The move to Primary Care necessitates that nurses must be adequately prepared to promote health and provide specialised curative- and supportive nursing services for children with complex care needs.

Knowledge and training acquired by nurses working with children, young people and their families has to be targeted to deliver optimal, high-level care (WHO, 2008; Brenner et al., 2015). Education has a key role in developing nursing competencies and nurses who have a higher level of education can deliver care that leads to better patient outcomes (Praxmarer-Fernandes et al., 2017). However, the preparation for nurses to meet the needs of children varies across European countries. To provide optimal care, it is vital that nurses receive timely and optimal training. Children's rights to specialised care is acknowledged by the Paediatric Nursing Associations of Europe (PNAE): "*Children and their families/guardians have a right to know that the nurse who cares for their child is specifically educated and competent to do so [...] (Paediatric Nursing Association of Europe, 2015, p. 2).*" It is important to dedicate learning modules to the care of the child and to focus on the provision of both psychological and physical support services for children, young people and families. Benner et al. (2010) calls for a radical transformation of nurse education at national levels to meet today's complex care needs (Benner et al., 2010; Benner, 2012). However, according to Smith and Morgan (2010), there is a paucity of research on university curricula so it is difficult to ascertain what education is currently provided. To understand this and to foster change, it is important to map existing educational requirements and study the content of nursing curricula, being aware that professional competencies are always more than the sum of these parts. The increase in the number of children with complex care needs receiving care in the community necessitates strategic investigation into training requirements for provision of care to this population group. A better understanding of child-related content in nursing curricula can contribute to the further development of nurse education, which can in turn improve health care delivery to children and their families. An analysis of curricula documents with a focus on children provides information on how the nursing care of children is described in the programme.

As part of the MOCHA project, this specific study was designed to gain knowledge on training requirements relating to the nursing care of

children with complex care needs and explore general nursing curricula for child-related content. We acknowledge that some countries require specialised training to provide nursing care for sick children. Therefore, we limited the curricular analysis to countries where specialised training is not mandatory.

### Aims and objectives

The main aim of the study was to map training requirements and identify and analyse content with regard to paediatrics and specialised care for children. The objective was to give a clearer picture of child-related content in general nursing curricula and to identify possible breaches in general nursing education for the delivery of optimal care to children with complex care needs in a European context.

### Methods

The researchers engaged with expert contacts (country agents) in each country. The country agents were sourced by an external advisory group and were national experts who acted as key informants for obtaining data requested by the principal scientists in the project. They collected data from reliable sources including health and social care experts, policy makers, health care governing bodies and expert stakeholders (MOCHA, 2018).

The task of these country agents (CAs) was to access English or original language versions of general nursing curricula and answer queries from the researchers. Information about the research project with a request for nursing curriculum documents providing details of the nursing programme and descriptions of competences required to become a general nurse was distributed to country agents in 30 countries. The CAs were requested to provide data from the largest nursing schools that would adequately represent nurse training in each country. The Country Agent selected the appropriate University. The rationale was also to limit data collection and provide a convenience sample that was feasible to collect. A link to an example curriculum with the type of detail requested was sent to promote an understanding of the level of detail required and to achieve consistency in the sample of documents requested for analysis.

### Design

A non-experimental descriptive study design describing child-related content and quantification of child-related search terms in a specified sample of documents was adopted. The study design entailed a manifest overarching content analysis. A manifest content analysis describes the visible content of the text (Hsieh and Shannon, 2005).

### Validation

The Models of child health appraised (MOCHA) Horizon Europe project had validation procedures in place to ensure scientific rigor in data collection. A protocol for accessing information from the CAs was developed in the project. Two different review procedures were established. All the documents had to be ratified by the Principal Investigator (PI), Deputy PI and Research Coordinator before being distributed. Then, an External Advisory Board discussed the request and provided feedback to the research team. To validate the answers presented in the questionnaires and the content of the curricula documents, further clarifying questions were sent to the CAs. This gave the research team the possibility to achieve a more accurate interpretation of the information provided.

### Data collection and distribution

Following established protocol, once the information letter and request for data was reviewed, it was sent by the Research Coordinator

to the CAs in July 2016. The agents had the responsibility to contact the appropriate experts in their respective countries or of accessing the required data from other sources (ex. national documents, experts, databases). When the CA had completed the task, the data were sent back to the Research Coordinator, who returned it to the research team between August 2016 and March 2017. The researchers then studied the data and if further clarification was needed, sent queries back to the CAs. Final verifications were received between November 2017 and June 2018.

### Sample

Due to changes in population health and the rise in children living at home with complex care needs, the questionnaire had a section that was designed to gain knowledge of training requirements in Europe and ascertain if nurses with a general nursing qualification could look after children with complex care needs in the community. The following question was asked: *In your country, can nurses with a general nursing qualification look after children with complex health care needs in the community?* A dichotomous answer was requested (Yes/No). If the answer was *No*, agents had to specify which qualification was required. If the answer was *Yes* they were asked to provide the original or an English translation of the curriculum document. The questionnaire was sent to a CA in each of the 30 countries to get information on mandatory training requirements and to access and analyse curricular plans for child-related content in countries where a general nursing qualification was the only requirement. Six countries (Belgium, Bulgaria, Luxembourg, Slovakia, Slovenia and United Kingdom) did not provide any documents within the specified time frame. Curricular plans from 18 countries where general nursing education was the only requirement to provide nursing care for children with (CCN) were analysed for child-related content. It was noted that some of the countries included had specific children's nursing programs although specialised training was not mandatory to look after children with CCN in the community. Ireland was one example. Their nursing register recognises an undergraduate course in children's nursing. Ireland was included in the study as specialisation is not a mandatory qualification.

### Data analysis

A manifest content analysis was the chosen method. This inductive method is used where there is a need for exploration and where there is a lack of studies on the phenomenon in question (Elo and Kyngäs, 2008). The analysis procedure comprised several steps. Firstly, the curriculum content received from each country was transferred to a Word document and, if necessary translated to English using an online tool (<https://www.onlinedoctranslator.com/>). The team of researchers were proficient in several languages, enabling quality control of translated documents from the Scandinavian countries, as well as Germany, France, Italy and Spain. University colleagues and other international experts were contacted if the researchers were in doubt as to the meaning of words, phrases and sections.

Secondly, an overarching analysis of the curricula documents was performed to get an overview of the distribution and number of all modules that focused on the nursing care of the child. To achieve this, core modules related to children (e.g. Paediatrics) and other modules on other subjects where children were mentioned (e.g. pharmacology, mental health care) were examined. The core modules related to children were identified by examining the titles of all modules in the curricula. The identification of child-related topics mentioned in other modules was conducted by searching for child-related search terms previously agreed on by the research team. Child-related search terms such as: *child, infant, neonate, baby, age, years, young, old, youth, adolescent etc.* were used. This overarching analysis also provided an overview of countries who have compulsory core modules on children and paediatrics and those who do not. Information was retrieved on whether the

modules on children were compulsory or elective, the year of study the modules were taught and the number of ECTS devoted specifically to children. ECTS is the abbreviated form for European Credit Transfer and Accumulation System. The ECTS framework by the European Commission is a grading scale that provides a common measure for use in European higher education institutions.

The researchers reviewed and reconfirmed the findings to ensure that they provided adequate representations of the data. Fig. 1 describes the distribution and number of modules with child related content. Fig. 2 provides an overview of countries who have compulsory core modules on children and those who do not. Table 1 describes the characteristics of the compulsory core modules by country and Fig. 3 provides an overview of the total number of ECTS from countries that had compulsory core modules on children. Fig. 4 shows the percentage of child related search terms in the whole curricula by country. The use of these keywords in their context and a detailed description of child-related curricular content is the focus of another article.

### Results

General nursing education was the only requirement to provide nursing care for children with (CCN) in 18 countries: Croatia, Denmark, Estonia, Finland, France, Greece, Iceland, Ireland, Italy, Latvia, Lithuania, Malta, Netherlands, Norway, Poland, Portugal, Romania and Spain. The analysis of these curricular documents gave an overview of the modules that had a focus on children and on the total child-related content in the 18 curricula plans. Fig. 1 illustrates the distribution across countries of the modules that had child-related content in their curricula.

In twelve of the eighteen countries (66.7%), most of the child-related content was in other compulsory modules (ex. children mentioned as part of a pharmacology module). In five countries, (27.8%) the content was mainly in other elective modules. Only Estonia (5.6%) had the main child-related content as compulsory core modules.

#### Compulsory core modules

Almost three-quarters of the curricula (72.2%,  $n = 13$ ) offered one or more compulsory modules on children (Fig. 2). Fig. 2 provides an overview of countries that have compulsory core modules and Fig. 3 provides the number of ECTS in compulsory core modules.

In six countries, content related to paediatrics and the nursing care of the child was only found in the context of other disciplines (Finland, France, Ireland, Malta and Norway). Document with required content was not available for The Netherlands. The other five countries (Austria, Czech Republic, Germany, Hungary and Sweden) that complete the sample ( $n = 24$ ) require specialised training for caring for children with CCN in the community.

Estonia, Poland, Iceland and Croatia had curriculum documents with the highest number of ECTS in child and paediatric compulsory core modules, followed by Lithuania, Cyprus, Portugal and Spain, with core modules that had more than six ECTS. Romania, Italy, Greece and Latvia had less than six ECTS in their compulsory core modules related to children. ECTS for Denmark were not available. More than two-thirds of the modules analysed across countries (70%,  $n = 14$ ) differentiated between hours expended on theoretical and practical training (Table 1). Practical hours were not specified in four of the twenty modules (20%). For those where theoretical and practical training were stated, six modules (60%) showed a greater number of hours dedicated to practical training and four (40%) had a greater number of hours for theoretical training. In ten of the countries (76.9%), the modules on the care of the child were concentrated in one specific year. In three countries, (23.1%) they were spread across the duration of the training (Table 1).

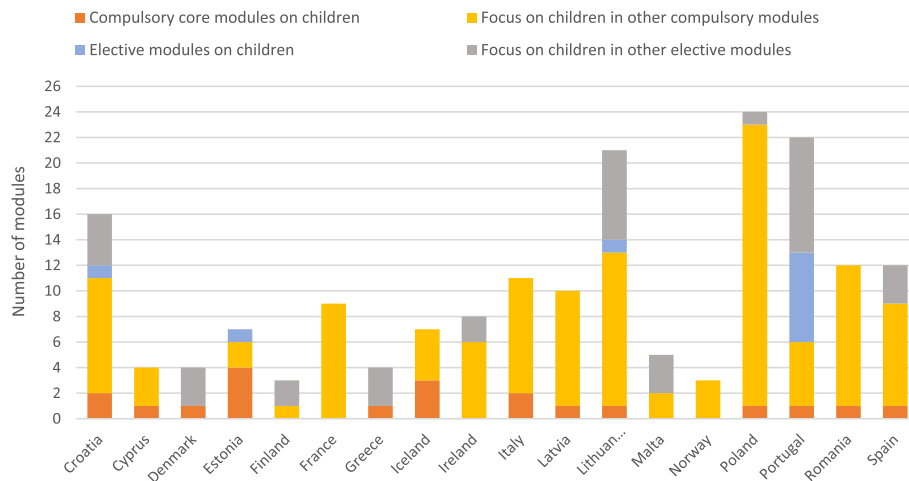


Fig. 1. Distribution of child related content across the different modules in the curriculum.

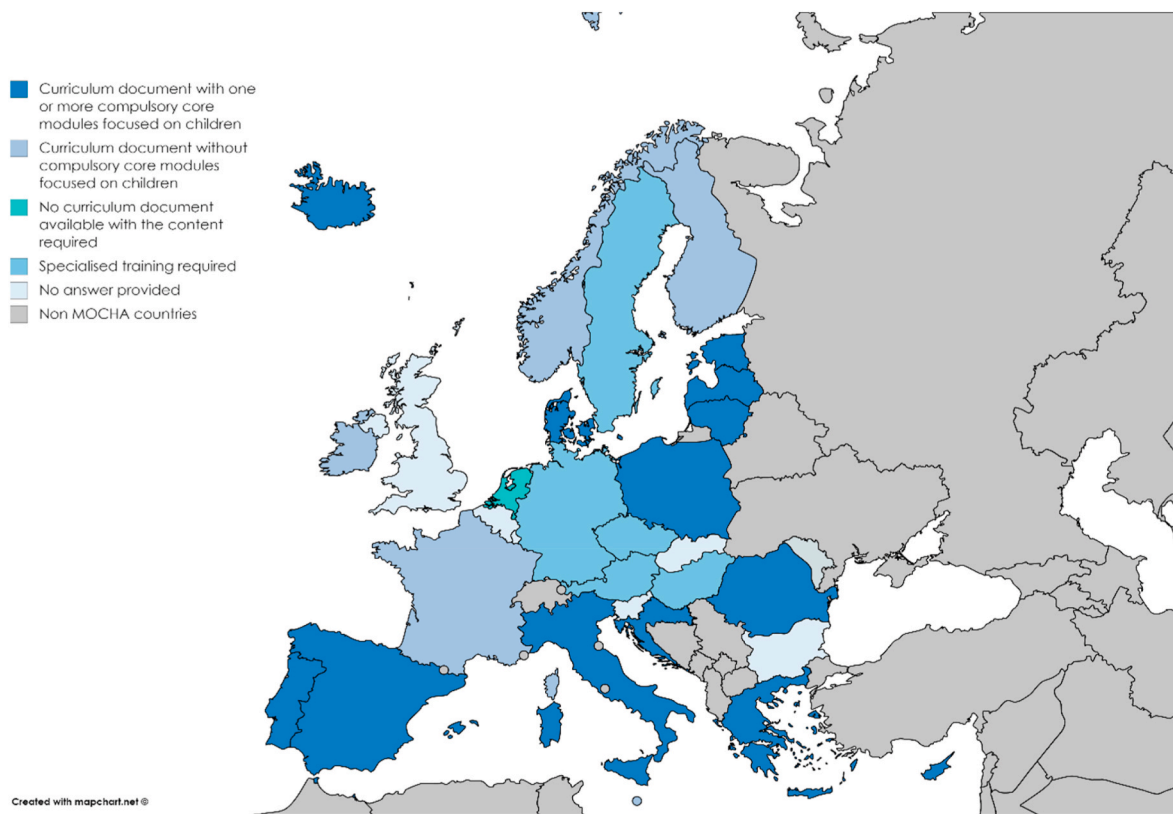


Fig. 2. Overview of the participating countries that have compulsory core modules on children.

Quantification of child-related search terms in the curricula documents

To provide an overview of child-related content in each curriculum, a quantification of child-related search terms and comparison with the total number of words in the curriculum documents was conducted. Fig. 4 shows the results in percentages.

No curriculum document from the respondent countries presented more than one percent of child-related search terms in the whole curricula. The Croatian curriculum had most search terms. In the documents from Greece and Iceland, the percentages dropped to 0.55%. The percentage in the remaining countries was below 0.50%, lowest in Ireland and France. Overall, child related content varied, and child related search terms were lacking across European Curricula.

Discussion

This study has identified a wide variation in child-related content in nursing curricula. Article 31 of The Professional Qualifications EU Directive 2005/36/EC amended by the Directive 2013/55/EU, regulates the undergraduate training of nurses responsible for general care (European Parliament and Council Directive, 2005, 2013). The directive is very general and does not give guidance on the specific content and skills that are necessary to qualify as a nurse, including the nursing care of children. The implications of this broad directive are visible in the variations in curricular content across countries. The directive allows countries to adopt and implement the directive based on their interpretations of what the standard should be. This has significant

**Table 1**  
Characteristics of the compulsory core modules by country.

Country	Title of the module	ECTS	Theoretical hours	Practical hours	Year
Croatia	-Paediatrics	2	30	n/a	2nd
	-Nursing a child	9	45	90	2nd
Cyprus	-Child care nursing	6	–	–	3rd
Denmark	-Health services for selected populations: Children and families	n/a	–	–	2nd
Estonia	-Healthy child nursing	5	36	8	1st
		3	6	56	1st
	-Internship - A healthy baby	5	40	20	3rd
		6	6	150	3rd
	-Nursing sick children				
	-Internship - Children's nursing				
Finland	Nursing care of the child only taught in the context of other modules				
France	Nursing care of the child only taught in the context of other modules				
Greece	-Paediatrics	2	50–60 <sup>a</sup>	n/a	2nd
Iceland	-Nursing care of children and their families	8	24	50 n/a	4th
		4	17.3	n/a	4th
		3	11.9		2nd
	-Paediatrics				
	-Growth and development of children and teenagers				
Ireland	Nursing care of the child only taught in the context of other modules				
Italy	-Paediatric nursing	2	–	–	2nd
	-Paediatrics	1	–	–	2nd
Latvia	-Paediatrics and patient care	1.5	–	–	3rd
Lithuania	-Children's health, illness and nursing	4	30	15	2nd
Malta	Nursing care of the child only taught in the context of other modules				
Netherlands	No curriculum document available with the content required				
Norway	Nursing care of the child only taught in the context of other modules				
Poland	- Paediatric nursing	16	95	320	1st, 2nd, 3rd
					3rd
Portugal	-Nursing of children's health and paediatrics	6	63	18	3rd
Romania	-Childcare and paediatric nursing	4–5 <sup>b</sup>	48	72	3rd
Spain	-Nursing of children and adolescents	6	–	–	3rd

Note: n/a is stated when ECTS or practical hours are not available in the module. The symbol (–) is stated when differentiation between theoretical and practical was not available either in the whole curriculum or in the specific module.

<sup>a</sup> Theoretical training was only stated in ECTS. The researcher calculated the number of theoretical hours for 2 ECTS taking into account that 1 ECTS is between 25 and 30 h.

<sup>b</sup> Workload used in the module was only expressed in hours. The researcher calculated the number of ECTS for 120 h taking into account that 1 ECTS is between 25 and 30 h.

implications when trying to assure quality and standardization in the provision of child-focused curricula.

The results show that the nursing care of children and paediatrics as a topic, are mostly addressed in the context of other non-childcare focused modules. Thirteen of the eighteen countries had compulsory core modules on children in the analysed curricula. It is interesting to note that elective modules focused on children were only available in countries with compulsory core modules on children.

The results of this study highlight the descriptive content of nursing curricula across 18 European countries. The sample curricula from five countries had no compulsory core modules on children. It can be inferred that there is a lack of emphasis on children in nursing education

in these curricula.

The results of this study illustrate the significant variation across countries in child-related curricular content. This indicates that general nurses are not adequately prepared to meet the needs of children and families in general or specifically for the highly specialised care of very sick children. These results also support findings from [Paediatric Nursing Associations of Europe \(2015\)](#) that in many instances child-related content in general nursing curricula is minimal in terms of both theory and practical experiences. The move towards primary care entails that children with complex care needs now receive highly specialised care in their own homes. Children with complex care needs are quite a new phenomenon in primary care, more often dominated by a focus on nursing older adults making it challenging for community nurses to accrue sufficient experience ([Samuelsen et al., 2015](#)). Community nurses do not have the support of a hospital team and current general nurse training with little focus on children does not prepare them adequately to meet the needs of children with complex care needs living at home. As an example, [Samuelsen et al. \(2015\)](#) state that despite the fact that a specialisation (either as a district nurse or paediatric nurse) is necessary to nurse sick children in the community in Sweden, most community nurses have no paediatric training. Interviews with community nurses demonstrated that they lacked child specific knowledge and training and described feelings of insecurity when caring for sick children ([Samuelsen et al., 2015](#)). Education and training can increase nurses' confidence which can again increase families' confidence in community nurses. There is a pressing need to ensure that general nurses receive optimal and focused training in nursing children and are in a position to care for the increasing number of children with complex care needs. This was highlighted in the first principles and standards of care published for children with complex care needs in the European Union ([Brenner et al., 2018b](#)), which specifically highlights the need for specific training on the care of children with complex care needs for all primary care providers caring for these children and their families. It is acknowledged that the organisation of care for these children in the community is in a significant development phase. However, it is imperative that there is a movement towards a consensus regarding the specific education requirements to care for these children.

### Limitations

The study is descriptive in nature and only the manifest content of terms related to the nursing care of the child is presented. Results must be interpreted with this in mind. Description of content can however illustrate what is mentioned and where in the document it is referred to. [Fairclough \(2010\)](#) maintains that the articulation of knowledge by the use of certain terms and the absence of others can be indicative of specific discursive strategies ([Fairclough, 2010](#)). Describing something in a certain way can ensure the relevance of certain topics and render other topics irrelevant or unimportant ([Jørgensen and Phillips, 2006](#)). The results of the study show great variation in child-related content and the sample data from the respondent countries presented no more than one percent of child-related search terms in the whole curricula. This can indicate that focus on the child is not a major discourse in the curricula that were studied.

The findings must also be evaluated in relation to the validation procedures ([Graneheim and Lundman, 2004](#)). The validity of the responses was dependent on the CAs' interpretation of the questions, adequate translation of the content and the researchers' interpretations of the answers. The findings are descriptive and detailed figures and tables are provided to ensure transparency and increase trustworthiness. The rigorous process of validation is described in the methods section. The analysed curricula were from institutions who educated the largest number of student nurses in the respondent countries which means that some exemplars of curricula were not sourced. Nursing education in Europe is regulated by a very broad EU directive ([European Parliament and Council Directive, 2005, 2013](#)). The training differs in length across

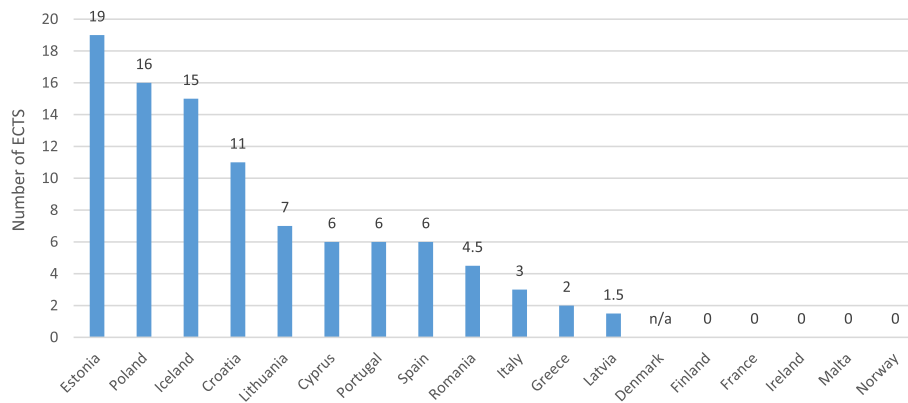


Fig. 3. Total number of ECTS in compulsory core modules in general nursing curricula that focused on the nursing care of the child and paediatrics.

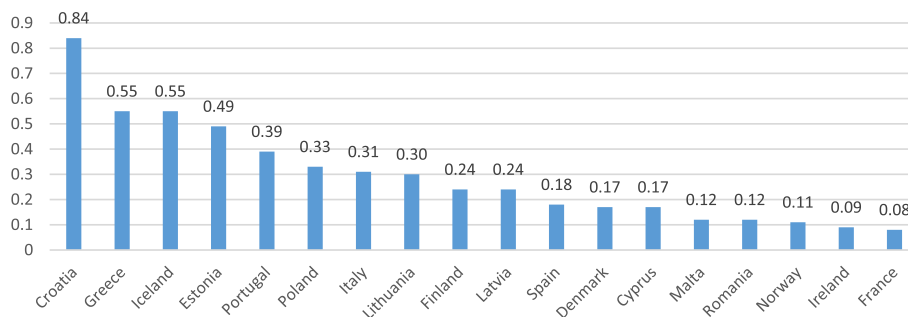


Fig. 4. Percentage of child related search terms within the whole curricula by country.

countries and there are also variations within countries. Steps were taken to ensure that the curricula were comparable. The sample represents the largest schools in each of the countries where no specialised training in children's nursing is required for practice. This information was provided by expert country agents who were chosen by an external advisory group and the authors' interpretation of the information was validated by these agents.

It can be argued that the chosen curricular documents are not a fair representation of the state of child-related curricula activity in European countries as several countries do provide children's nursing programs. Paediatric nursing programs are available at certificate, degree, diploma and masters level (Paediatric Nursing Associations of Europe, 2015). However, the purpose of the study was to analyse curricula for child-related content in countries where a child-related specialisation is not mandatory. Consequently, general nursing curricula from those 18 countries were included. The results of the study support findings from Paediatric Nursing Associations of Europe (2015) that in many instances child-related content in general nursing curricula is minimal in terms of both theory and practical experiences.

Content analysis reveals the content of the documents analysed. It does not provide information on how the content is interpreted and used in practice. A text can have numerous meanings and there are always elements of interpretation (Graneheim and Lundman, 2004). The intention is to explore usage, not to assume meaning. It is essential to take this into account when considering the trustworthiness of the findings. All authors were involved in the process of identifying the keywords and categorising the content. This adds credibility to the analysis process.

## Conclusion

Child-related curricular content varies considerably across countries. A possible explanation for the wide variation is that there is no European standard that relates to the specific content, only a very general

directive. The lack of focus on children and young people can be due to the fact that the content is hidden and left up to educators/nursing schools to decide how much detail, if any, the subject should be given. A more alarming interpretation is that there is very little focus on children, young people and adolescents in general nursing curricula. The lack of standardization of curricular content can lead to an unacceptable variation in the number and content of modules on children in curricular plans across Europe. The result is that nurses with insufficient preparation may look after children with complex care needs. The lack of standardization and its consequences should be researched further to develop an understanding of how to bring about change and ensure that nurses working with children are adequately prepared. Further research should be carried out on the number of nurses with child-related specialisation who work in the community. Research should also focus on optimal requirements and on the development of child focused learning modules. The findings in this study should stimulate debate on how these issues need to be broached at both national and international levels. We conclude that there is a need to enhance the skills of nurses who deliver care to children.

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Followed research ethical guidelines ethical approval not applicable for curricular analysis.

## CRedit authorship contribution statement

**Anne Clancy:** Conceptualization, Methodology, Writing, Writing – original draft, Writing – review & editing. **Elena Montañana Oloso:** Investigation, Writing – original draft, Writing. **Philip Larkin:** Writing – review & editing. **Maria Brenner:** Supervision, Writing – review & editing.

## Declaration of competing interest

All authors declare that there are no conflicts of interest that could have biased the work.

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## Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.nepr.2021.103034>.

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