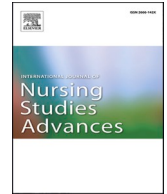


Contents lists available at [ScienceDirect](https://www.sciencedirect.com)

# International Journal of Nursing Studies Advances

journal homepage: [www.sciencedirect.com/journal/international-journal-of-nursing-studies-advances](http://www.sciencedirect.com/journal/international-journal-of-nursing-studies-advances)

## Job titles and education requirements of registered nurses in primary care: An international document analysis

Crystal Barrett<sup>a</sup>, Maria Mathews<sup>b</sup>, Marie-Eve Poitras<sup>c</sup>, Allison A. Norful<sup>d</sup>, Ruth Martin-Misener<sup>e</sup>, Joan Tranmer<sup>f</sup>, Dana Ryan<sup>a</sup>, Julia Lukewich<sup>a,\*</sup>

<sup>a</sup> Faculty of Nursing, Memorial University, 300 Prince Phillip Drive, St. John's, NL A1B 3V6, Canada

<sup>b</sup> Department of Family Medicine, Western University, 1465 Richmond Street, London, ON N6G 2M1, Canada

<sup>c</sup> Department of Family Medicine and Emergency Medicine/School of Nursing, Sherbrooke University, 2500 Boulevard de l'Université, Sherbrooke, QC J1K 2R1, Canada

<sup>d</sup> School of Nursing, Columbia University, 560 West 168th Street, New York, NY 10032, USA

<sup>e</sup> School of Nursing, Dalhousie University, 5869 University Ave, Halifax, NS B3H 4R2, Canada

<sup>f</sup> School of Nursing, Queen's University, 92 Barrie St, Kingston, ON K7L 3N6, Canada

### ARTICLE INFO

#### Keywords:

Document analysis  
Family practice  
General nurse  
Job title  
Nursing education  
Primary care  
Primary care nursing  
Primary health care  
Practice nurse  
Registered nurse

### ABSTRACT

**Background:** Registered nurses have increasingly taken on new, integrated roles across a variety of health care settings, thus leading to a lack of clarity among titles used to identify registered nurses. Protected titles, such as “registered nurse,” identify regulated professionals, whereas informal job titles identify nurses by their education or practice area. The variation in education requirements of registered nurses and the inconsistency in titles used to identify registered nurses in primary care internationally limits the ability to compare research findings and policies across countries. There is also minimal documentation on the education requirements specific to registered nurses in primary care.

**Objectives:** This study aims to (a) outline protected titles and education requirements for registered nurses; and (b) identify job titles and education requirements specific to registered nurses in primary care internationally.

**Methods:** A modified document analysis with key informant consultations was employed. Organization for Economic Co-operation and Development and key partner countries were considered for inclusion ( $n=42$ ). Online searches were performed using keywords (e.g. nurse, title, nursing education) to identify data focused on protected titles and education requirements of registered nurses, and job titles and education requirements of registered nurses in primary care. Data were extracted from online sources and verified for accuracy and completeness by key informants, identified for each country through online searches or professional networks.

**Results:** Out of the 42 eligible countries, 24 countries were included in the final analysis. Five countries were excluded for their lack of available documents in English or French and 13 countries were excluded due to an inability to verify data with key informants. The findings show that “registered nurse” is the most common protected title internationally. Other protected titles include “general nurse” and “nurse.” Many unofficial job titles for registered nurses in primary care were identified, including “primary care nurse,” “general practice nurse,” and “community

\* Corresponding author.

E-mail addresses: [cvb464@mun.ca](mailto:cvb464@mun.ca) (C. Barrett), [maria.mathews@schulich.uwo.ca](mailto:maria.mathews@schulich.uwo.ca) (M. Mathews), [marie-eve.poitras@usherbrooke.ca](mailto:marie-eve.poitras@usherbrooke.ca) (M.-E. Poitras), [aan2139@cumc.columbia.edu](mailto:aan2139@cumc.columbia.edu) (A.A. Norful), [Ruth.Martin-Misener@dal.ca](mailto:Ruth.Martin-Misener@dal.ca) (R. Martin-Misener), [tranmerj@queensu.ca](mailto:tranmerj@queensu.ca) (J. Tranmer), [danar@mun.ca](mailto:danar@mun.ca) (D. Ryan), [jlukewich@mun.ca](mailto:jlukewich@mun.ca) (J. Lukewich).

<https://doi.org/10.1016/j.ijnsa.2021.100044>

Received 19 September 2021; Accepted 25 September 2021

Available online 27 September 2021

2666-142X/© 2021 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license

(<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

nurse.” Twelve countries had no specific job title for registered nurses in primary care. Consistently, there was no mandatory education required for registered nurses to practice in primary care. However, many countries had primary care-specific programs available for nurses to gain knowledge in this area.

*Conclusions:* This study confirms that job titles used to identify registered nurses in primary care vary considerably across countries. A unified understanding of international nomenclature for this role can support and facilitate future research, education, and policy development to recognize and optimize primary care nursing by improving access and quality of care for individuals, families, and communities.

*Tweetable abstract:* Globally, job titles of RNs in primary care vary considerably and there are no formal primary care education requirements to practice.

---

## Introduction

Primary care focuses on the promotion of health and wellness, the prevention of injury and illness, the advancement of health and social equity, and the delivery of accessible, holistic care (Canadian Nurses Association [CNA], 2016). In primary care, registered nurses (RNs) partner with other health care professionals to care for individuals, families, groups, and communities along the health continuum. For most people, primary care is the first point of contact with the health care system and where the majority of their health concerns are addressed over time (Starfield et al., 2005). Primary care is delivered in a variety of settings, including clinics/offices, community health centres, and schools (Canadian Family Practice Nurses Association [CFPNA], 2019; Clancy et al., 2013). Terms used to identify these settings may differ across countries; for example, general practice surgeries in the United Kingdom are equivalent to primary care clinics in Canada, both referring to a form of family practice (CFPNA, 2019; General Practice Nurse Education Network [GPNEN], 2021b). Internationally, nurses are becoming increasingly embedded in primary care delivery and have been recognized as the most prominent non-physician contributor to primary care teams (Freund et al., 2015; Organization for Economic Co-operation and Development [OECD], 2016). Primary care nurses are generalists who provide services such as chronic disease management, health screening and education, assessment and treatment of minor illnesses, and therapeutic interventions (Lukewich et al., 2020; Norful et al., 2017; Poitras et al., 2018). The roles carried out by primary care nurses are dependent upon the competency (i.e. knowledge, skills, expertise) of the individual RN, the specific practice setting, funding model (e.g. fee-for-service, alternative payment plan), team composition of practice in which they work, and the needs of the individual or population receiving care (CNA, 2014; Halcomb et al., 2008; Mathews et al., 2020; Walker et al., 2015). However, the roles and responsibilities of primary care nurses differ widely (Lukewich et al., 2018; Norful et al., 2017) and the scope of practice and competencies of primary care nurses are poorly defined across many countries (Halcomb et al., 2016; Rashid, 2010). A few countries, such as Australia, Canada, New Zealand, and the United Kingdom, have developed national competencies and/or standards to clarify the role and articulate the value of RNs in primary care practice (Australian Nursing and Midwifery Federation, 2014; CFPNA, 2019; Lukewich et al., 2020; Mid-Central District Health Board et al., 2019; The Queen’s Nursing Institute [QNI], 2020; QNI & The Queen’s Nursing Institute Scotland, 2017).

The confusion surrounding competencies and roles for primary care nurses has contributed to the ambiguity of job titles for RNs in primary care. “Registered Nurse” is a protected title, relied upon as a means to protect the public and maintain public trust by providing ethical, safe, and competent care (CNA, 2015; Nursing and Midwifery Board of Australia, 2013). These titles are protected by the legislature (e.g. provincial, national) and should only be used when an individual has obtained the required credentials and is in good standing with the regulatory body (Nursing and Midwifery Board of Australia, 2019). Alternatively, job titles are oftentimes informal terms used to identify nurses within specific disciplines or practice areas, and they may or may not be protected (Kelly et al., 2019). Researchers have recognized international differences in job titles in primary care, such as “primary care nurse,” “practice nurse,” and “community nurse” (Norful et al., 2017). For the purpose of this paper, the term “primary care nurse” will be used to refer to RNs working in primary care settings. Registered nurses working in other community health settings such as home care and public health are not the focus of this paper. To the best of our knowledge, there is no published literature outlining the variability in RN job titles in primary care. The identification of varying titles and educational competencies specific to primary care nursing may allow researchers and policymakers to better investigate and implement nursing contributions in primary care internationally.

There is also limited documented knowledge on mandatory and optional education for primary care nurses (Lukewich et al., 2018). Trends in nursing education across certain OECD countries (i.e. Australia, Canada, France, Germany, Italy, United States) demonstrate variability in specific education requirements for RNs (OECD, 2016). Education requirements for nursing specialties, such as primary care, were not addressed in this OECD report. Furthermore, the lack of formal or standardized education specific to primary care nursing, both within undergraduate and postgraduate programs, has been recognized as a contributing factor to the uncertainty around role expectations and scope of practice of primary care nurses (Calma et al., 2019; Vanhook et al., 2018; Wojnar and Whelan, 2017).

Many countries have established national associations to represent specific areas of nursing practice, such as primary care (e.g. Australian Primary Health Care Nurses Association, CFPNA, Danish Family Nursing Association, A Fellowship of Family Nurses in Estonia, GPNEN, New Zealand College of Primary Health Care Nurses) (Australian Primary Health Care Nurses Association, 2021a; CFPNA, 2021; Danish Society for Family Nursing, 2021; GPNEN, 2021a; Kringos et al., 2015b; New Zealand College of Primary Health Care Nurses, 2014). Other countries, such as Iceland, have professional departments within their national association specific to primary care nurses (Icelandic Nurses’ Association, n.d.). The United States’ equivalent to these associations is the American Academy

of Ambulatory Care Nurses, which represents and supports nurses working in areas outside of hospital settings ([American Academy of Ambulatory Care Nurses, 2021](#)). These associations provide a national voice to collaborate and advance the primary care nurse role within research, education, and policy. Countries with a primary care-specific association have recognized primary care nursing as a distinct nursing specialty.

Given the growth in primary care nursing globally, unified understanding of the nomenclature and education of this role within primary care settings is needed to facilitate cross-country comparisons. Therefore, the purpose of this study is to provide clarity to primary care nursing by documenting international equivalents of protected titles, job titles, and education requirements among RNs in primary care. The objectives are to: (a) identify the protected titles of RNs; (b) outline the entry-level education requirements of RNs; (c) identify the job titles used to refer to RNs in primary care; (d) identify and outline the presence of mandatory education requirements of RNs in primary care; and (e) describe the availability of optional nursing education specific to primary care across OECD and key partner countries.

## Methods

### Study design

Document analysis, informed by [Bowen \(2009\)](#), was the chosen design for this study. This systematic procedure was used in combination with key informant consultations to triangulate the method and enhance credibility of results ([Bowen, 2009](#); [Kumar, 1989](#)).

### Search Strategy

All OECD and key partner countries were considered for inclusion. International, national, and regional webpages (e.g. nursing associations - Canadian Nurses Association, National Council of State Boards of Nursing, nursing regulatory bodies - Nursing and Midwifery Board of Australia, The World Health Organization, OECD.org, Intercultural Education of Nurses in Europe [IENE], The Queen's Nursing Institute) were searched for publicly available documents, including reports, policy documents, regulatory guidelines, practice standards, and journal articles. Additional searches were performed through the Google search engine using various keywords, including but not limited to: "registered nurse," "title," "primary care nurse," "nursing education," and "regulation," in addition to the country identifier ([Table 1](#)). For select countries noted in [Table 1](#), the official language was used as the country identifier in these searches. The search term "registered nurse" repeatedly provided information specific to nursing employment opportunities and was eventually removed from the initial searches. Keywords evolved throughout searches as information was retrieved. For example, if "community nursing" was found to be the equivalent term to primary care nursing in a particular country, subsequent searches would include "community nurse" to identify information surrounding primary care nurse titles and education requirements. A different combination of country identifiers and keywords were used for each country until all required data was obtained. Abstracts/summaries of documents or webpages were reviewed to determine relevancy to study objectives. If abstracts/summaries were not available, documents or webpages were reviewed in their entirety to decide appropriateness for inclusion in content analysis. Only documents published by established and known reputable agencies that represent RNs and/or primary care nurses were included. Newspaper articles, commentary/opinion pieces, or similar documents were excluded. Documents were excluded if unavailable in the English or French language.

### Data collection and extraction

Data collection and key informant consultations were conducted synchronously between November 2020 and March 2021. Data extracted from relevant documents included: protected/regulated title, RN education requirements, presence of licensure examination, primary care job title(s), primary care education requirements, level of regulation for RNs in primary care, and key informant contact information. With respect to primary care education requirements, information was sought on the availability of both mandatory and optional primary care-specific training programs or courses. Information on training programs for specific nursing services within primary care or other settings, such as well-women care, nurse prescriber training, motivational interviewing, and educational programs that advance qualifications to an Advanced Practice Nurse or Nurse Practitioner, were not explored in this study.

**Table 1**

Search strategy.

Country Identifier	Name of country (e.g. Finland) Official language of country <sup>a</sup> (e.g. Finnish)
Examples of Keywords	nurse, registered nurse, general nurse, title, protected title, nursing, nursing education, nursing program, nursing research, primary care nursing, primary care nurse, general practice nurse, community nurse, community health nurse, district nurse, health visitor, nursing regulation

<sup>a</sup> The official languages used as key terms in this search strategy included: Danish (Denmark), Dutch (The Netherlands), Estonian (Estonia), Finnish (Finland), Swedish (Sweden), Greek (Greece), Hungarian (Hungary), Icelandic (Iceland), Irish (Ireland), Italian (Italy), Japanese (Japan), Korean (South Korea), Spanish (Spain), Turkish (Turkey).

Data collection and extraction for France was conducted by a bilingual team member. For each country, a second researcher independently reviewed the documents and information sources of extracted data to ensure accuracy and quality of data being presented to key informants.

### Key informant consultations

Key informant consultations from respective countries were conducted to verify interpretation of extracted data about nursing titles, roles, responsibilities, and education. Key informants for each included country and their contact information were identified from national nursing organizations, academic institutions, relevant nursing research articles, and through professional networks of team members. After all required data were retrieved, smaller data extraction tables for each country were developed, and country-specific data and relevant references were shared with identified key informants via email. Key informants were asked to verify the quality of data for their country of expertise by reviewing it for correctness and completeness. In several instances, the initial key informant identified and provided contact details for a more appropriate informant. At least two key informants were contacted for each country. Key informants were given the option to complete verification via email, telephone, or video conference. Two key informants (Portugal, United Kingdom) preferred a video conference interaction with the primary researcher to discuss and clarify extracted data. The remaining key informants noted changes within the extraction table and communicated by email. If responses were not received via email within one week, follow-up reminders were sent. Consent was obtained from each key informant to acknowledge their contributions to the study. The key informant consultation in France was carried out by a bilingual team member. Once all data were verified by key informants, further analysis was conducted to identify commonalities and differences within each category. Although we conducted content analysis, thematic analysis was not performed as this study did not require the coding of data into themes or categories. Countries were excluded if key informants provided no response leaving data unverified.

### Ethical considerations

The Newfoundland and Labrador's Health Research Ethics Board (Ref # 2020.283) determined that ethics approval was not required for the completion of this project.

## Results

Twenty-four of the 42 OECD and key partner countries were included in this study. Five countries (Chile, Columbia, Germany, Greece, Mexico) were excluded for their lack of available sources in the English or French language and 13 countries (Brazil, China, Denmark, Hungary, India, Ireland, Italy, Lithuania, Luxembourg, Poland, South Africa, South Korea, Sweden) were excluded because data could not be verified by a key informant. Key informants were valuable in ensuring the accuracy and completeness of data. [Table 2](#) provides a summary of included/excluded countries.

### Regulation

The nursing profession was most often regulated at a national-level (n=20 countries), although provincial/territorial/state regulation exists within four countries (Belgium, Canada, Spain, United States) ([Almost, 2021](#); [IENE, n.d.-b](#); [National Council of State Boards of Nursing \[NCSBN\], 2020](#); [Robinson and Griffiths, 2007](#)). Consistently, either independent nursing bodies or government agencies possess regulatory duties, all outlining the laws, rules, and expectations of RNs (or equivalent) to ensure a safe and professional practice in the public's interest ([NCSBN, 2020](#)).

### Protected titles

[Table 3](#) provides a summary of the data collected for each country, including protected titles, job titles for RNs in primary care, and education requirements both generally and specifically in primary care. Titles used to identify nurses were shown to be relatively uniform across countries, although not always protected. "Registered Nurse" was the most commonly used protected title (n=14; Australia, Austria, Canada, Finland, Iceland, Israel, Japan, Netherlands, New Zealand, Portugal, Slovenia, Switzerland, United Kingdom, United States). Other titles included "Nurse" (n=5; Belgium, France, Latvia, Slovakia, Turkey), "General Nurse" (n=2; Czech Republic, Estonia), "General Care Nurse" (Spain), "Authorised General Nurse" (Norway), and "Professional Nurse" (Indonesia)

**Table 2**

List of included/excluded OECD and key partner countries (N=42).

Included (N=24)	Australia, Austria, Belgium, Canada, Czech Republic, Estonia, Finland, France, Iceland, Indonesia, Israel, Japan, Latvia, Netherlands, New Zealand, Norway, Portugal, Slovakia, Slovenia, Spain, Switzerland, Turkey, United Kingdom, United States
Excluded due to Language and/or Unverified Data (N=18)	Brazil, Chile, China, Columbia, Denmark, Germany, Greece, Hungary, India, Ireland, Italy, Lithuania, Luxembourg, Mexico, Poland, South Africa, South Korea, Sweden

**Table 3**  
Data by country.

Country	RN Title	Education Requirements	Length of Program	Licensure Exam	Primary Care Job Title	Mandatory Primary Care Education	Specialty Training <sup>a</sup> Available	References <sup>b</sup>
Australia	Registered Nurse	Bachelor degree Master degree	3 years 2 years	No	Primary care nurse General practice nurse	None	Yes	(Government of New South Wales, 2020; NCSBN, 2020; Nursing and Midwifery Board of Australia, 2019; OECD, 2016)
Austria	Registered Nurse	Bachelor degree Diploma	3 years	Yes	No specific title <sup>c</sup>	None	No	(Euroguidance Austria, 2021; Glarcher and Lex, 2020; Hoffmann et al., 2015; Kringos et al., 2015b)
Belgium	Nurse	Bachelor degree Diploma	4 years 3 years	No	No specific title <sup>c</sup>	None	Yes	(IENE, n.d.-a; IENE, n.d.-b; Sermeus et al., 2010; Storms and Claes, 2017)
Canada	Registered Nurse	Bachelor degree Diploma <sup>d</sup>	2-4 years 3 years	Yes	Primary care nurse Family practice nurse	None	Yes	(Almost, 2021; CFPNA, 2021; College of Nurses of Ontario, 2014; NCSBN, 2020; OECD, 2016)
Czech Republic	General Nurse	Bachelor degree Diploma	3 years	Yes	No specific title <sup>c</sup>	None	Yes	(Kringos et al., 2015b; NCSBN, 2020; Tóthová and Sedláková, 2008; University of South Bohemia in České Budějovice, 2017)
Estonia	General Nurse	Diploma	3.5 years	No	Family nurse Community nurse	None	Yes	(De Maeseneer, 2016; NCSBN, 2020; Tallinn Health Care College, 2017; Tallinn Health Care College, 2019)
Finland	Registered Nurse	Bachelor degree	3.5-4.5 years	Yes	No specific title <sup>c</sup>	None	No	(Maijala et al., 2016; NCSBN, 2020; Råholm et al., 2010; Robinson and Griffiths, 2007; Suutarla and the Finnish Nurses Association's APN Expert Group, n.d.)
France	Nurse	Diploma	3 years	Yes	Liberal nurse	None	No	(Debout et al., 2012; Institut de Formation Interhospitalier Théodore Simon, 2021; NCSBN, 2020; OECD, 2016)
Iceland	Registered Nurse	Bachelor degree	4 years	No	Primary health care nurse	None	Yes	(Minister of Welfare, Iceland 2012; NCSBN, 2020; Svavardottir, 2008; University of Iceland, n.d.)
Indonesia	Professional Nurse	Bachelor degree Master degree	4 years 2 years	No	No specific title <sup>c</sup>	None	Yes	(Shields and Hartati, 2003; Suba and Scruth, 2015)
Israel	Registered Nurse	Bachelor degree Diploma	4 years 2.5 years	Yes	Community nurse	None	Yes	(Ministry of Health, State of Israel, n.d.; NCSBN, 2020; Nirel et al., 2012; Oren and Ben Natan, 2011; Sela-Vilensky et al., 2020)
Japan	Registered Nurse	Bachelor degree Associate degree Diploma	4 years 2-3 years 3 years	Yes	No specific title <sup>c</sup>	None	Yes	(Japanese Nursing Association, n.d.; Japanese Nursing Association 2016; Japan Primary Care Association, n.d.; Robinson and Griffiths, 2007)
Latvia	Nurse	Bachelor degree Diploma	4 years 3 years	Yes	No specific title <sup>c</sup>	None	Yes	(European Observatory on Health Care Systems, 2001; NCSBN, 2020; Riga Medical College of the University of Latvia, 2021)

(continued on next page)

Table 3 (continued)

Country	RN Title	Education Requirements	Length of Program	Licensure Exam	Primary Care Job Title	Mandatory Primary Care Education	Specialty Training <sup>a</sup> Available	References <sup>b</sup>
Netherlands	Registered Nurse	Bachelor degree Diploma	4 years	Yes	Primary care nurse General practice nurse	None	Yes	(Kringos et al., 2015a; NCSBN, 2020; Rafferty et al., 2019; Robinson and Griffiths, 2007)
New Zealand	Registered Nurse	Bachelor degree Master degree	3 years 2 years	Yes	Primary health care nurse	None	Yes	(Mid-Central District Health Board et al., 2019; New Zealand College of Primary Health Care Nurses, 2014; Nursing Council of New Zealand, n.d.)
Norway	Authorised General Nurse	Bachelor degree	3 years	No	District nurse	None	No	(Clancy et al., 2013; NCSBN, 2020; Råholm et al., 2010; Robinson and Griffiths, 2007)
Portugal	Registered Nurse	Bachelor degree	4 years	No	Family nurse	None	Yes	(Barbieri-Figueiredo et al., 2017; Fronteira et al., 2020; NCSBN, 2020)
Slovakia	Nurse	Bachelor degree	3 years	Yes	No specific title <sup>c</sup>	None	Yes	(Dimunová, n.d.; Kringos et al., 2015b; NCSBN, 2020)
Slovenia	Registered Nurse	Diploma	3 years	No	No specific title <sup>c</sup>	None <sup>e</sup>	Yes	(Ljubic et al., 2016; NCSBN, 2020; Rafferty et al., 2019)
Spain	General Care Nurse	Bachelor degree	4 years	No	No specific title <sup>c</sup>	None	Yes	(González Jurado, 2015; Hämel et al., 2020; NCSBN, 2020; Rafferty et al., 2019)
Switzerland	Registered Nurse	Bachelor degree Diploma	3 years	Yes	No specific title <sup>c</sup>	None	No	(Josi and Bianchi, 2019; Rafferty et al., 2019; Robinson and Griffiths, 2007)
Turkey	Nurse	Bachelor degree	4 years	No	Family health employee	None	No	(Ankara University, n.d.; Bahçecik and Alpar, 2009; NCSBN, 2020; Republic of Turkey, 2013)
United Kingdom	Registered Nurse	Bachelor degree	3 years	No	General practice nurse	None	Yes	(GPEN, 2021a; NCSBN, 2020; QNI, 2015; Robinson and Griffiths, 2007)
United States	Registered Nurse	Bachelor degree Associate degree Diploma	3-4 years 2 years 2-3 years	Yes	No specific title <sup>c</sup>	None	No	(NCSBN, 2020; Norful et al., 2017; OECD, 2016; Smolowitz et al., 2015)

RN = Registered nurse.

<sup>a</sup> This specialty training is specific to programs or courses focused on primary care nursing (or equivalent). This does not include programs or training for specialty nursing skills within primary care, such as well-women care or nurse prescriber. As well, this does not consider educational programs that progress qualifications to an Advanced Practice Nurse or Nurse Practitioner. Key informants were not asked to verify or provide this information.

<sup>b</sup> References are in addition to personal communication with respective key informant(s).

<sup>c</sup> This indicates that the data was verified by key informants and it was confirmed that no specific job titles are used to identify RNs in primary care. Rather, protected titles, such as RN or General Nurse, are used in primary care just as they are in other settings.

<sup>d</sup> College diploma option available in province of Quebec only.

<sup>e</sup> There is one exception in Slovenia. Education modules are required to practice in one area of primary care (model of family practice).



(Table 3). Titles, such as “registered nurse” and “nurse,” used in Finland and France are not recognized as protected titles (A. Suutarla, personal communication, January 28, 2021; C. Fourneau & C. Renaux, personal communication, February 19, 2021).

### *Education requirements and licensure exams*

The education requirements for licensure varied in qualification, length of program, and licensure examination requirement. Eleven of the 24 countries (Estonia, Finland, France, Iceland, Norway, Portugal, Slovakia, Slovenia, Spain, Turkey, United Kingdom) identified a single educational pathway for obtaining qualification for licensure (i.e. bachelor degree or diploma). In contrast, 13 countries (Australia, Austria, Belgium, Canada, Czech Republic, Indonesia, Israel, Japan, Latvia, Netherlands, New Zealand, Switzerland, United States) had two or three educational pathways available, including a bachelor degree, master degree, associate degree, or diploma (Table 3). In Canada, these options varied by province, as Quebec was the only province to offer diploma training for RNs. In Latvia, as of 2022, only a bachelor degree option will be available for nursing qualification/licensure (E. Cela, personal communication, February 16, 2021). Although all education programs provided requirements for licensure, a higher-level nursing title was often indicative of the education obtained. For example, in the Netherlands, bachelor-prepared RNs were classified as Level 6 in the Dutch Qualifications Framework, while vocationally trained RNs were classified as Level 4 in the framework (J. Veldhuizen, personal communication, January 29, 2021; [National Coordination Point, n.d.](#)). Similarly, in Israel, RNs with a bachelor degree were recognized as “RN with an academic degree” while diploma trained nurses were referred to as “RN” (NCSBN, 2020). The length of time to complete these nursing education programs varied, ranging from two to four and a half years (Table 3). In countries with the option to obtain a master degree for entry-level nursing qualification (n=3; Australia, Indonesia, New Zealand), previous education at a baccalaureate-level was required for entry (C. Kerr, personal communication, January 31, 2021; [Government of New South Wales, 2020](#); [Suba and Scruth, 2015](#)). Furthermore, 13 out of 24 countries required individuals to pass a licensure exam to practice, including Austria, Canada, the Czech Republic, Finland, France, Israel, Japan, Latvia, the Netherlands, New Zealand, Slovakia, Switzerland, and the United States (Table 3). These licensure exams differ across countries. For example, the National Council Licensure Examination for Registered Nurses (NCLEX-RN) is used in a few countries, including Canada (excluding Quebec); whereas in Japan the Registered Nurse National Board Examination is administered (NCSBN, 2020; [Robinson and Griffiths, 2007](#)).

### *Primary care job titles*

Job titles used to refer to RNs working in primary care varied considerably across countries, identifying either a single title (n=8; France, Iceland, Israel, New Zealand, Norway, Portugal, Turkey, United Kingdom), multiple recognized titles (n=4, Australia, Canada, Estonia, Netherlands), or no specific title for this role (n=12; Austria, Belgium, Czech Republic, Finland, Indonesia, Japan, Latvia, Slovakia, Slovenia, Spain, Switzerland, United States) (Table 3). The most common job titles were “primary care nurse” (n=3; Australia, Canada, Netherlands) or “general practice nurse” (n=3; Australia, Netherlands, United Kingdom). Other titles such as “primary health care nurse” (n=2; Iceland, New Zealand), “community nurse” (n=2; Estonia, Israel), “district nurse” (Norway), and “liberal nurse” (infirmière libérale) (France) were identified. As well, many countries identified titles surrounding the family health descriptor of primary care nursing, including “family nurse” (n=2; Estonia, Portugal), “family practice nurse” (Canada), and “family health employee” (Turkey). The only country with a protected title and regulated primary care nursing profession was Turkey. Notably, the “family health employee” role in Turkey was regulated but it also encompassed various other professionals (i.e. midwife, health officer, and emergency medical technician) and was not specific to nursing ([Republic of Turkey, 2013](#)). Professional associations specific to primary care nurses (or equivalent) were identified in many countries, however, they did not provide any formal regulation or protection of this distinct role.

### *Mandatory and optional primary care education*

All countries included in this study allow RNs to practice in primary care after completing their entry-to-practice nursing program. Only Slovenia and France have certain requirements to practice in primary care. In Slovenia, a specific area of primary care practice, known as the model of family practice, requires the completion of educational modules for RNs to practice (K. Čuček Trifković & B. Kegl, personal communication, January 29, 2021). As well, in France, clinical experience, equivalent to two years at full-time status, is necessary to practice in primary care as a liberal nurse (C. Fourneau & C. Renaux, personal communication, February 19, 2021). Aside from these exceptions, no mandatory education requirements were identified across countries; however, optional specialized education programs were available in many countries (n=17). Table 4 outlines the primary care-specific education available internationally to RNs. These optional education opportunities differed in their level of education (e.g. certificate, master degree). Postgraduate courses/programs were available for professional development in 14 countries (Australia, Belgium, Canada, Czech Republic, Iceland, Israel, Japan, Latvia, Netherlands, New Zealand, Slovakia, Slovenia, Spain, United Kingdom); and master degrees in primary care specifically were available to advance one’s academic credentials in Australia, Czech Republic, Estonia, Iceland, Indonesia, Portugal, and United Kingdom (n=7) (Table 4). In many countries primary care is an emerging area in nursing education, gaining more attention in recent years. For example, in Japan, a certificate program specific to primary care was only recently implemented in 2019 ([Japan Primary Care Association, n.d.](#)).

**Table 4**  
Speciality primary care training available by country.

Country	Primary Care Specialty Training Description	References <sup>a</sup>
Australia	Masters degree in primary health care nursing (1.5 years) (e.g. Flinders University); Transition to practice programs, or specialty programs (e.g. Nursing in Primary Health Care Practice) are offered by various academic institutions and associations (e.g. Australian Primary Health Care Nurses Association); Graduate certificates/diplomas available in primary health care nursing (e.g. Australian College of Nursing, Flinders University)	(Australian College of Nursing, 2020; Australian Primary Health Care Nurses Association, 2021b; Flinders University, 2021)
Belgium	Postgraduate program of nursing in General Practice (e.g. University of Antwerp)	(University of Antwerp, n.d.)
Canada	Specialized programs specific to primary care nursing (e.g. Family Practice Nursing Education Program, the Registered Nurses Professional Development Centre; Rural Nursing Certificate Program, University of Northern British Columbia); Certification program with the Canadian Nurses Association in community health nursing	(CNA, 2015; Community Health Nurses of Canada, 2019; Registered Nurses Professional Development Centre, 2016; University of Northern British Columbia, 2021)
Czech Republic	Masters level training or non-university education programs available in community care nursing (closely resembling primary care)	[*]
Estonia	Master degree (Health Sciences Masters) with specialty in Health Nursing	(Tallinn Health Care College, 2019)
Iceland	Postgraduate diploma or Masters level program available in Primary Health Care	[*]
Indonesia	Master degree (2 years); followed by specialist program in community nursing with clinical residency (2 semesters) (e.g. University of Indonesia)	(Suba and Scruth, 2015)
Israel	In-service training program available in Primary Medicine (overseen by Nursing Administration)	(Ministry of Health, State of Israel, n.d.)
Japan	Primary care nurse certification course offered by the Japan Primary Care Association	(Japan Primary Care Association, n.d.)
Latvia	Formal and informal educational opportunities (seminars, courses) aimed at primary care	[*]
Netherlands	Specialty training program for Primary care nurse (1-2 years depending on prior education)	(Kringos et al., 2015b)
New Zealand	Postgraduate diploma/certificate programs in Nursing (Primary Health Care) (e.g. University of Otago)	(University of Otago, 2021)
Portugal	Master degree (primarily) available in Community nursing in the focus area of Family health nursing (2 years of clinical experience is required for entry)	(Fronteira et al., 2020; NCSBN, 2020)
Slovakia	Specialized training programs/courses in Community care (includes primary care)	[*]
Slovenia	Educational modules specific to the model of family practice (required to practice in this area of primary care) <sup>b</sup>	[*]
Spain	Specialty program in Primary/family and community nursing (includes competency exam and 2-year residency)	(Hämel et al., 2020)
United Kingdom	General practice nurse programs available at multiple universities with varying education levels, including Masters level training (e.g. University of London)	(GPNN, 2021a; University of London, 2021)

\*Information was provided by key informants only and did not include any additional references.

<sup>a</sup> References are in addition to personal communication with respective key informant(s).

<sup>b</sup> The model of family practice in Slovenia is a primary health care model implemented in 2011 to transition many elements of care to primary service delivery within general practitioner practices. This model places significant importance and responsibility on the role of a registered nurse, contributing to preventative screening and chronic disease management, among other duties (Rafferty et al., 2019).

## Discussion

This study sought to provide clarity to primary care nursing by presenting an international synthesis of primary care job titles and education requirements/opportunities. Overall, job titles of primary care nurses varied internationally, and many countries had no standardized title to refer to this emerging role. As well, there were international differences in education requirements for nursing licensure and education opportunities specific to primary care nursing. Generally, there were no mandatory education requirements to practice in primary care internationally, aside from a specific area of primary care in Slovenia, known as model of family practice (K. Čuček Trifković & B. Kegl, personal communication, January 29, 2021). The results of this study lead to some reflections.

There is limited evidence on the extent to which primary care is covered within nursing curriculums internationally. As mandatory education for RNs entering primary care has not been prioritized, RNs rely on the knowledge obtained through their entry-level program to guide their clinical practice in primary care. Registered nurses entering primary care have reported feeling unprepared for their role, implying the need for improvements in primary care-specific nursing education (Calma et al., 2019; Martin-Misener et al., 2008). This feeling of unpreparedness can lead nurses to practice suboptimally by not using their full scope of practice, and can



even affect job satisfaction and ultimately quality of care. There is a need to incorporate primary care-specific content into undergraduate curriculums and offer professional development opportunities in primary care, to better equip students and/or RNs with the fundamental knowledge and skills to practice within primary care (Calma et al., 2019; Vanhook et al., 2018). Moreover, the findings from this study and previous reviews (Maier and Aiken, 2016; Norful et al., 2017) indicate the need for global advancement in primary care nursing to meet the growing demands in primary care, highlighting the importance of developing nursing education.

The presence of professional associations within certain countries has likely contributed to advancing primary care nursing by recognizing and advocating for this distinct nursing specialty in practice, research, education, and policy. There is the potential for specialized associations to advocate for uniform job titles nationally and internationally. In Norway, the title "district nurse" is the recognized job title for RNs in primary care (A. Clancy, personal communication, January 21, 2021; Clancy et al., 2013; Rafferty et al., 2019). Alternatively, in the Netherlands and United Kingdom, "district nurse" refers to home and community care nurses (J. Veldhuizen, personal communication, January 29, 2021; QNI & The Queen's Nursing Institute Scotland, 2015). Evidently, the title of "district nurse" represents nursing groups inconsistently across countries. The specialized associations in the Netherlands and United Kingdom may have generated clarity for this role/title, whereas in Norway there is no primary care-specific nurses association to promote international uniformity for the "district nurse" title (Kringos et al., 2015b). Similarly, the absence of a specialized association advocating for primary care nurses in Turkey may be the reason for the use of a generalized title to refer to RNs in primary care (i.e. family health employee) that does not distinguish between nursing and other providers within the setting (A. K. Harmanci Seren, personal communication, February 8, 2021; Republic of Turkey, 2013). As well, in France where a professional association is lacking, nursing practice both generally and specifically in primary care is not regulated, requiring no registration or license to practice (C. Fournau & C. Renaux, personal communication, February 19, 2021). This can significantly impact the consistency, safety, and quality of care provided. Notably, the presence of established associations and recognized national job titles does not eliminate all challenges. Job titles are oftentimes not protected, allowing for other titles to be used interchangeably. In Canada, primary care nurse and family practice nurse are commonly used job titles in primary care (CFPNA, 2021); however, without regulation of these titles or unified agreement on a single job title, there is variation in the use of these titles across provinces/territories (Lukewich et al., 2021). This concern of title ambiguity has been recognized for midwives as well, encouraging the development of initiatives to clarify midwife job titles and strengthen their role expectations (Grundy-Bowers, 2018).

The findings of this study may improve literature searches with an international scope on RNs and/or RNs in primary care by enhancing search syntax through the use of distinguished search terms and nomenclature. The choice to focus on OECD and key partner countries was an appropriate initial step to bring awareness to the international ambiguity within primary care nursing titles. The findings from this study align with other international reports focusing on nursing education requirements and regulation (Robinson and Griffiths, 2007) and nursing shortages (Simoens et al., 2005) among OECD countries; and confirm international variation in primary care nursing identified by previous researchers (Halcomb et al., 2016; Maier and Aiken, 2016; Norful et al., 2017). Future research should focus on broader international comparisons that include countries where documents were not available in English or French (those excluded in this study) and those not identified as an OECD or key partner country.

## Limitations

Although efforts were made to include as many countries as possible, this study only included countries with documents available in English and/or French. Multiple attempts were made to contact a key informant in each country; however, we were unsuccessful at connecting with an informant to verify data in certain countries (many emails were unanswered). As well, this study did not seek specifics for each specialized course/program/degree identified, therefore the level of detail for optional primary care education varied by country based on the information available online and provided by key informants. Key informants may have had greater knowledge of their local programs and training opportunities and lacked knowledge of the overall availability of programs from other institutions/associations within their country of expertise. Additionally, despite the verification of data by key informants with nursing expertise, there is potential that language barriers may have resulted in miscommunication or imprecise exchange of information.

## Conclusion

This paper is the first to report and compare titles and education requirements for RNs in primary care internationally. Findings from this document analysis confirm that there is considerable variation in job titles as well as the availability of primary care-specific educational programs across countries. These findings offer a synthesis of information that can act as a foundation to facilitate improvements in primary care nursing research and patient care through evidence-based decision making. Given the rapidly expanding role of primary care nursing globally, primary care-specific educational opportunities could benefit the primary care nursing workforce. Further research outlining the global progression of this role, including job titles and education, will continue to support this distinct field of nursing and contribute to the evolution of primary health care systems internationally.

## Contribution of the Paper

What is already known about the topic?

- Internationally, differences exist in the roles, competencies, and job titles of registered nurses in primary care settings.
- The professional identity of primary care nursing as a specialized field is limited by the ambiguity among primary care nursing job titles.

What this paper adds

- Titles used to identify registered nurses in primary care vary considerably across countries, with many countries lacking a specific title for this role.
- In the 24 countries included in this study, mandatory education for registered nurses in primary care is uncommon, although specialized education specific to primary care is available in many countries.
- The findings from this study support a unified understanding of international nomenclature for registered nurses in primary care and help facilitate international comparisons to promote research, education and policy development related to this role.

## Declaration of Competing Interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

## Acknowledgments

We would like to thank the following key informants from countries included in this study. These individuals reviewed and verified data for each of their respective countries, and we greatly appreciate their time and expertise: Dr. Merav Ben Natan (Israel), Eva Cela (Latvia), Dr. Anne Clancy (Norway), Dr. Klavdija Čuček Trifkovič (Slovenia), Dr. Lucia Dimunová (Slovakia), Christelle Fourneau (France), Dr. Manela Glarcher (Austria), Dr. Thora Jenny Gunnarsdóttir (Iceland), Dr. Elizabeth Halcomb (Australia), Dr. Arzu Kader Harmancı Seren (Turkey), Dr. Kateřina Horácková (Czech Republic), Dr. Anna Hudáková (Slovakia), Dr. Dolores Juvinyà-Canal (Spain), Kenneth T. Kaneko (Japan), Barbara Kegl (Slovenia), Chris Kerr (New Zealand), Kasper Kurve (Estonia), Dr. Henny Mediani (Indonesia), Dr. Lucília Nunes (Portugal), Dr. Crystal Oldman (United Kingdom), Dr. Brynja Örylgisdóttir (Iceland), Louis Paquay (Belgium), Kristi Puusepp (Estonia), Carine Renaux (France), Yuliya Senft (Switzerland), Dr. Åshild Slettebø (Norway), Anna Suutarla (Finland), Jessica Veldhuizen (Netherlands), Torunn Wibe (Norway).

## Funding

This research was supported by the College of Registered Nurses of Newfoundland & Labrador and Memorial University Faculty of Nursing. The funding sources were not involved in the study design, collection, analysis, and interpretation of data, the writing of the report, or in decisions to submit the article for publication.

## Data Statement

All data presented in this study are included in this article and are publicly available through the references or provided by the key informants of this study.

## References

- Almost, J., 2021. Regulated nursing in Canada: the landscape in 2021. Canadian Nurses Association. <https://cna-aic.ca/en/nursing-practice/the-practice-of-nursing/regulated-nursing-in-canada>.
- American Academy of Ambulatory Care Nurses, 2021. What is ambulatory care nursing? <https://www.aaacn.org/practice-resources/what-ambulatory-care-nursing>.
- Ankara University, n.d. Examinations, assessment and grading. <http://bbs.ankara.edu.tr/bolumbilgi.aspx?icerik=SinavDegerlendirmeNotlandirma&bno=1515&bot=112>.
- Australian College of Nursing, 2020. Graduate certificate in community and primary health care nursing. <https://www.acn.edu.au/education/postgraduate-course/community-and-primary-health-care-nursing#overview>.
- Australian Nursing and Midwifery Federation, 2014. National practice standards for nurses in general practice. [http://www.anmf.org.au/documents/National\\_Practice\\_Standards\\_for\\_Nurses\\_in\\_General\\_Practice.pdf](http://www.anmf.org.au/documents/National_Practice_Standards_for_Nurses_in_General_Practice.pdf).
- Australian Primary Health Care Nurses Association, 2021a. About APNA. <https://www.apna.asn.au/about>.
- Australian Primary Health Care Nurses Association, 2021b. Transition to practice program. <https://www.apna.asn.au/education/transitiontopractice>.
- Bahçecik, N., Alpar, S.E., 2009. Nursing education in Turkey: from past to present. *Nurse Educat. Today* 29, 698–703. <https://doi.org/10.1016/j.nedt.2009.05.008>.
- Barbieri-Figueiredo, M., Vilar, A.I., Andrade, L., Araújo, C., Silva, M.J., 2017. Family health nursing - Development and implementation in primary health care in Portugal. *Pflege & Gesellschaft* 22, 51–66.
- Bowen, G.A., 2009. Document analysis as a qualitative research method. *Qualit. Res. J.* 9 (2), 27–40. <https://doi.org/10.3316/QRJ0902027>.
- Calma, K.R.B., Halcomb, E., Stephens, M., 2019. The impact of curriculum on nursing students' attitudes, perceptions and preparedness to work in primary health care: An integrative review. *Nurse Educat. Pract.* 39, 1–10. <https://doi.org/10.1016/j.nepr.2019.07.006>.
- Canadian Family Practice Nurses Association, 2019. National competencies for registered nurses in primary care. <https://www.cfpna.ca/copy-of-resources-1>.

- Canadian Family Practice Nurses Association, 2021. Family practice nursing: we are registered nurses in primary care. <https://www.cfpna.ca/about>.
- Canadian Nurses Association, 2014. Optimizing the role of nurses in primary care in Canada: Final report. <https://www.cna-aic.ca/en/policy-advocacy/community-health-care/framework-on-the-rn-role-in-primary-care>.
- Canadian Nurses Association, 2015. Framework for the practice of registered nurses in Canada (2nd ed.). <https://www.cna-aic.ca/en/nursing-practice>.
- Canadian Nurses Association, 2016. Dementia in Canada: Recommendations to support care for Canada's aging population. <https://cna-aic.ca/en/policy-advocacy/aging-and-seniors-care>.
- Clancy, A., Leahy-Warren, P., Day, M.R., Mulcahy, H., 2013. Primary health care: comparing public health nursing models in Ireland and Norway. *Nurs. Res. Pract.* Article e426107. <https://doi.org/10.1155/2013/426107>.
- College of Nurses of Ontario, 2014. Legislation and regulation: an introduction to the Nursing Act, 1991. [https://www.cno.org/globalassets/docs/prac/41064\\_fsnursingact.pdf](https://www.cno.org/globalassets/docs/prac/41064_fsnursingact.pdf).
- Community Health Nurses of Canada, 2019. Canadian community health nursing professional practice model & standards of practice. <https://www.chnc.ca/standards-of-practice>.
- Danish Society for Family Nursing, 2021. Danish society for family nursing. <http://familieygepleje.dk/>.
- De Maeseneer, J. 2016. Strengthening the model of primary health care in Estonia: assessment report. World Health Organization Regional Office for Europe. [https://www.euro.who.int/data/assets/pdf\\_file/0007/321946/Strengthening-model-primary-health-care-Estonia.PDF?ua=1](https://www.euro.who.int/data/assets/pdf_file/0007/321946/Strengthening-model-primary-health-care-Estonia.PDF?ua=1).
- Debout, C., Chevallier-Darchen, F., Petit dit Dariel, O., Rothan-Tondeur, M., 2012. Undergraduate nursing education reform in France: from vocational to academic programmes. *Int. Nurs. Rev.* 59, 519–524. <https://doi.org/10.1111/j.1466-7657.2012.01016.x>.
- Dimunová, L., n.d. Nursing care: training for medical education via innovative e-technology. [https://www.upjs.sk/public/media/19336/A3\\_MediTec\\_Dimunova.pdf](https://www.upjs.sk/public/media/19336/A3_MediTec_Dimunova.pdf).
- Euroguidance Austria, 2021. The Austrian education system. <https://www.bildungssystem.at/en/health-professions/school-of-nursing>.
- European Observatory on Health Care Systems, 2001. Health care systems in transition: Latvia. [https://www.euro.who.int/\\_data/assets/pdf\\_file/0004/95125/E72467.pdf](https://www.euro.who.int/_data/assets/pdf_file/0004/95125/E72467.pdf).
- Flinders University, 2021. Primary health care nursing. <https://www.flinders.edu.au/study/courses/postgraduate-primary-health-care-nursing>.
- Freund, T., Everett, C., Griffiths, P., Hudon, C., Naccarella, L., Laurant, M., 2015. Skill mix, roles and remuneration in the primary care workforce: who are the healthcare professionals in the primary care teams across the world? *Int. J. Nurs. Stud.* 52, 727–743. <https://doi.org/10.1016/j.ijnurstu.2014.11.014>.
- Fronteira, I., Jesus, É.H., Dussault, G., 2020. Nursing in Portugal in the National Health Service at 40. *Ciência & Saúde Coletiva* 25 (1), 273–282. <https://doi.org/10.1590/1413-81232020251.28482019>.
- General Practice Nurse Education Network, 2021a. Early career: general practice nurse programmes available in the United Kingdom. <https://gpnen.org.uk/early-career/general-practice-nurse-programmes-available-in-the-united-kingdom/>.
- General Practice Nurse Education Network, 2021b. Early career: what is a general practice nurse (GPN)? <https://gpnen.org.uk/early-career/general-practice-nurse-programmes-available-in-the-united-kingdom/>.
- Glarcher, M., Lex, K.M., 2020. Advanced nursing practice in Austria under consideration of outcome measurement. *J. Evid. Qual. Health Care* 155, 11–16. <https://doi.org/10.1016/j.zefq.2020.06.012>.
- González Jurado, M.A. 2015. Advanced practice nurse in Spain. <https://globalhealth.mcmaster.ca/sites/default/files/documents/advancedpracticenurseinspain.pdf>.
- Government of New South Wales. 2020. Becoming a registered nurse. <https://www.health.nsw.gov.au/nursing/careers/Pages/registered-nurse.aspx#:~:text=The%20most%20common%20entry%20point,the%20equivalent%20part%2Dtime>.
- Grundy-Bowers, M., O'Brien, S., Harmer, V., 2018. Harmonising nursing and midwifery titles in an acute hospital. *Nurs. Times* 114 (1), 36–39.
- Halcomb, E.J., Davidson, P.M., Salamonsen, Y., Ollerton, R., Griffiths, R., 2008. Nurses in Australian general practice: implications for chronic disease management. *J. Nurs. Healthc. Chronic Illness Assoc. J. Clin. Nurs.* 17 (5a), 6–15. <https://doi.org/10.1111/j.1365-2702.2007.02141.x>.
- Halcomb, E., Stephens, M., Bryce, J., Foley, E., Ashley, C., 2016. Nursing competency standards in primary health care: an integrative review. *J. Clin. Nurs.* 25, 1193–1205. <https://doi.org/10.1111/jocn.13224>.
- Hämel, K., Rosana, B., Casanova, A., Giovannella, L., 2020. Advanced practice nursing in primary health care in the Spanish National Health System. *Ciência & Saúde Coletiva* 25 (1), 303–314. <https://doi.org/10.1590/1413-81232020251.28332019>.
- Hoffmann, K., George, A., Dörner, T.E., Süb, K., Schäfer, W.L.A., Maier, M., 2015. Primary health care teams put to the test a cross-sectional study from Austria within the QUALICOOP project. *BMC Family Pract.* 16. Article e168. <https://doi.org/10.1186/s12875-015-0384-9>.
- Icelandic Nurses' Association, n.d. Professional department of health care nurses. <https://www.hjukrun.is/fagid/fagdeildir/heilsugaesluhjukrun/>.
- Institut de Formation Interhospitalier Théodore Simon, 2021. Profession: nurse. <https://www.ifits.fr/en/training/nurse>.
- Intercultural Education of Nurses in Europe, n.d.-a. Levels of nurses' qualification in Belgium. <http://ieneproject.eu/information-1-be.php>.
- Intercultural Education of Nurses in Europe, n.d.-b. Recognition of the nurses' qualification in Belgium. <http://ieneproject.eu/information-6-be.php>.
- Japanese Nursing Association, n.d. Overview of Japanese Nursing System. <https://www.nurse.or.jp/jna/english/nursing/system.html>.
- Japanese Nursing Association, 2016. Nursing in Japan. <https://www.nurse.or.jp/jna/english/nursing/>.
- Japan Primary Care Association, n.d. Society-certified primary care nurse. [http://primary-care.or.jp/nintei\\_nu/index.html](http://primary-care.or.jp/nintei_nu/index.html).
- Josi, R., Bianchi, M., 2019. Advanced practice nurses, registered nurses and medical practice assistants in new care models in Swiss primary care: a focused ethnography of their professional roles. *BMJ Open* 9, e033929. <https://doi.org/10.1136/bmjopen-2019-033929>.
- Kelly, C., Preston, W., Harper, N., 2019. What's in a name: should nursing job titles be regulated? *Nurs. Times* 115 (5), 52–53.
- Kringos, D.S., Boerma, W.G.W., Hutchinson, A., Saltman, R.B., 2015a. Building primary care in a changing Europe. *European observatory on health systems and policies. Observatory Study Series*, No. 38. <https://www.ncbi.nlm.nih.gov/books/NBK458728/>.
- Kringos, D.S., Boerma, W.G.W., Hutchinson, A., Saltman, R.B., 2015b. Building primary care in a changing Europe: case studies. *European observatory on health systems and policies. Observatory Study Series*, No. 40. <https://www.ncbi.nlm.nih.gov/books/NBK459010/>.
- Kumar, K. 1989. Conducting key informant interviews in developing countries. A.I.D. Program Design and Evaluation Methodology Report No. 13. [https://www.participatorymethods.org/sites/participatorymethods.org/files/conducting%20key%20informant%20interviews\\_kumar.pdf](https://www.participatorymethods.org/sites/participatorymethods.org/files/conducting%20key%20informant%20interviews_kumar.pdf).
- Ljubic, A., Clark, D.J., Stemberger Kolnik, T., 2016. Comparison of family nursing in Slovenia and Scotland: integrative review. *Int. Nurs. Rev.* 64 (2), 276–285. <https://doi.org/10.1111/inr.12324>.
- Lukewich, J., Allard, M., Ashley, L., Aubrey-Bassler, K., Bryant-Lukosius, D., Klassen, T., Magee, T., Martin-Misener, R., Mathews, M., Poitras, M.E., Roussel, J., Ryan, D., Schofield, R., Tranmer, J., Valaitis, R., Wong, S., 2020. National competencies for registered nurses in primary care: a Delphi study. *West. J. Nurs. Res.* 42 (12), 1078–1087. <https://doi.org/10.1177/0193945920935590>.
- Lukewich, J., Poitras, M.-E., Mathews, M., 2021. Unseen, unheard, undervalued: Advancing research on registered nurses in primary care. *Practice Nursing* 34 (4), 158–162. <https://doi.org/10.12968/pnur.2021.32.4.158>.
- Lukewich, J., Taylor, S., Poitras, M.-E., Martin-Misener, R., 2018. Advancing family practice nursing in Canada: an environmental scan of international literature and national efforts towards competency development. *Nurs. Leadersh.* 31 (2), 66–78. <https://doi.org/10.12927/cjnl.2018.25602>.
- Maier, C.B., Aiken, L.H., 2016. Task shifting from physicians to nurses in primary care in 39 countries: a cross-country comparative study. *Eur. J. Public Health* 26 (6), 927–934. <https://doi.org/10.1093/eurpub/ckw098>.
- Maijala, V., Tossavainen, K., Turunen, H., 2016. Health promotion practices delivered by primary health care nurses: elements for success in Finland. *Appl. Nurs. Res.* 30, 45–51. <https://doi.org/10.1016/j.apnr.2015.11.002>.
- Martin-Misener, R., MacLeod, M.L., Banks, K., Morton, A.M., Vogt, C., Bentham, D., 2008. "There's rural, and then there's rural": advice from nurses providing primary healthcare in northern remote communities. *Nurs. Leadersh.* 21 (3), 54–63. <https://doi.org/10.12927/cjnl.2008.20062>.
- Mathews, M., Ryan, D., Buote, R., Parsons, S., Lukewich, J., 2020. A qualitative study exploring the influence of clinic funding on the integration of family practice nurses in Newfoundland and Labrador. *Nurs. Open* 7 (4), 1067–1073. <https://doi.org/10.1002/nop2.477>.

- Mid-Central District Health Board, New Zealand Nurses Organisation, & the New Zealand College of Primary Health Care Nurses, 2019. Aotearoa New Zealand Primary Health Care Nursing Standards of Practice. <https://www.nzno.org.nz/Portals/0/publications/Primary%20Health%20Care%20Nursing%20Standards%20of%20Practice%202019.pdf?ver=XYUZ12v-cpVH28Oy1rhfdw%3d%3d>.
- Minister of Welfare, Iceland. 2012. Healthcare Practitioners Act No. 34/2012. [https://www.ilo.org/dyn/natlex/natlex4.detail?p\\_isn=91321&p\\_lang=en](https://www.ilo.org/dyn/natlex/natlex4.detail?p_isn=91321&p_lang=en).
- Ministry of Health, State of Israel, n.d. Recognized in-service training courses in nursing. [https://www.health.gov.il/English/Services/MedicalAndHealthProfessions/nursing/tests/Pages/Nursing\\_Continuing\\_Education.aspx](https://www.health.gov.il/English/Services/MedicalAndHealthProfessions/nursing/tests/Pages/Nursing_Continuing_Education.aspx).
- National Coordination Point, n.d. Dutch Qualification Framework (NLQF). [https://nlqf.nl/images/downloads/Artikelen/NLQF\\_Brochure\\_Engels\\_2018\\_site.pdf](https://nlqf.nl/images/downloads/Artikelen/NLQF_Brochure_Engels_2018_site.pdf).
- National Council of State Boards of Nursing, 2020. A global profile of nursing regulation, education, and practice. *J. Nurs. Regulat.* 10 (4), 1–116. [https://doi.org/10.1016/S2155-8256\(20\)30039-9](https://doi.org/10.1016/S2155-8256(20)30039-9).
- New Zealand College of Primary Health Care Nurses, 2014. NZ College of Primary Health Care Nurses. [https://www.nzno.org.nz/groups/colleges\\_sections/colleges/college\\_of\\_primary\\_health\\_care\\_nurses](https://www.nzno.org.nz/groups/colleges_sections/colleges/college_of_primary_health_care_nurses).
- Nirel, N., Riba, S., Reicher, S., Toren, O., 2012. Registered nurses in Israel – workforce employment characteristics and projected supply. *Israel J. Health Policy Res.* 1, 11. <https://doi.org/10.1186/2045-4015-1-11>.
- Norful, A., Martsolf, G., de Jacq, K., Poghosyan, L., 2017. Utilization of registered nurses in primary care teams: a systematic review. *Int. J. Nurs. Stud.* 74, 15–23. <https://doi.org/10.1016/j.ijnurstu.2017.05.013>.
- Nursing and Midwifery Board of Australia, 2013. Explanatory note and FAQ on title protection. Australian Health Practitioner Regulation Agency. <http://www.medicalboard.gov.au/documents/default.aspx?record=WD10%2F3206%5Bv2%5D&dbid=AP&checksum=nAo0jgvyizHmz80Y%2FYL%2BXw%3D%3D>.
- Nursing and Midwifery Board of Australia. 2019. Fact sheet: the use of health practitioner protected titles. <https://www.nursingmidwiferyboard.gov.au/Codes-Guidelines-Statements/FAQ/The-use-of-health-practitioner-protected-titles.aspx>.
- Nursing Council of New Zealand, n.d. Nursing: scopes of practice. [https://www.nursingcouncil.org.nz/Public/Nursing/Scopes\\_of\\_practice/NCNZ/nursing-section/Scopes\\_of\\_practice.aspx?hkey=61f53c32-ca6c-4529-aefc-484a0f42f875](https://www.nursingcouncil.org.nz/Public/Nursing/Scopes_of_practice/NCNZ/nursing-section/Scopes_of_practice.aspx?hkey=61f53c32-ca6c-4529-aefc-484a0f42f875).
- Oren, M., Ben Natan, M., 2011. The essence of nursing in the shifting reality of Israel today. *Online J. Issues Nurs.* 16 (2), 7.
- Organization for Economic Co-operation and Development, 2016. Health workforce policies in OECD countries: right jobs, right skills, right places. OECD Health Policy Studies. OECD Publishing. <https://doi.org/10.1787/9789264239517-en>.
- Poitras, M.E., Chouinard, M.C., Gallagher, F., Fortin, M., 2018. Nursing activities for patients with chronic disease in primary care settings: a practice analysis. *Nurs. Res.* 67 (1), 35–42. <https://doi.org/10.1097/NNR.0000000000000253>.
- The Queen's Nursing Institute, 2015. General practice nursing in the 21st Century: a time of opportunity. [https://www.qni.org.uk/wp-content/uploads/2016/09/gpn\\_c21\\_report.pdf](https://www.qni.org.uk/wp-content/uploads/2016/09/gpn_c21_report.pdf).
- The Queen's Nursing Institute, 2020. The QNI standards of education and practice for nurses new to general practice nursing. <https://www.qni.org.uk/wp-content/uploads/2020/05/Standards-of-Education-and-Practice-for-Nurses-New-to-General-Practice-Nursing-1.pdf>.
- The Queen's Nursing Institute, & The Queen's Nursing Institute Scotland, 2017. The QNI/QNIS voluntary standards for general practice nursing education and practice. <https://www.qni.org.uk/wp-content/uploads/2016/09/GPN-Voluntary-Standards-for-Web.pdf>.
- The Queen's Nursing Institute, & The Queen's Nursing Institute Scotland, 2015. The QNI/QNIS voluntary standards for district nurse education and practice. [https://www.qni.org.uk/wp-content/uploads/2017/02/District\\_Nurse\\_Standards\\_WEB.pdf](https://www.qni.org.uk/wp-content/uploads/2017/02/District_Nurse_Standards_WEB.pdf).
- Råholm, M.-B., Hedegaard, B.L., Löfmark, A., Slettebø, A., 2010. Nursing education in Denmark, Finland, Norway and Sweden – from Bachelor's degree to PhD. *J. Adv. Nurs.* 66 (9), 2126–2137. <https://doi.org/10.1111/j.1365-2648.2010.05331.x>.
- Rashid, C., 2010. Benefits and limitations of nurses taking on aspects of the clinical role of doctors in primary care: integrative literature review. *J. Adv. Nurs.* 66 (8), 1658–1670. <https://doi.org/10.1111/j.1365-2648.2010.05327.x>.
- Rafferty, A.M., Busse, R., Zander-Jentsch, B., Sermeus, W., Bruyneel, L., 2019. Strengthening health systems through nursing: evidence from 14 European countries. *European Observatory on Health Systems and Policies. Health Policy Series, No. 52.* <https://www.ncbi.nlm.nih.gov/books/NBK545728/>.
- Registered Nurses Professional Development Centre, 2016. Family practice nursing education program. <https://www.rnpdc.nshhealth.ca/FamilyPracticeNursing/FPNPETextbooks/default.asp?mn=1.50>.
- Republic of Turkey, 2013. Family medicine practice regulation. <https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=17051&MevzuatTur=7&MevzuatTertip=5>.
- Rīga Medical College of the University of Latvia, 2021. Nursing. <https://tmkoledza.lu.lv/en/study-programs/nursing/>.
- Robinson, S., Griffiths, P., 2007. Nursing education and regulation: international profiles and perspectives. *National Nursing Research Unit.* <https://eprints.soton.ac.uk/348772/1/NurseEduProfiles.pdf>.
- Sela-Vilensky, Y., Grinberg, K., Nissanholtz-Gannot, R., 2020. Attracting Israeli nursing students to community nursing. *Israel J. Health Policy Res.* 9, 44. <https://doi.org/10.1186/s13584-020-00400-6>.
- Sermeus, W., Pirson, M., Paquay, L., Paolet, J., Falez, F., Stordeur, S., Leys, M., 2010. Financing of home nursing in Belgium. *Belgian Health Care Knowledge Centre. KCE Reports 122C, D/2010/10.273/07* <https://kce.fgov.be/sites/default/files/atoms/files/d20101027307.pdf>.
- Shields, L., Hartati, L.E., 2003. Nursing and health care in Indonesia. *J. Adv. Nurs.* 44 (2), 209–216. <https://doi.org/10.1046/j.1365-2648.2003.02785.x>.
- Simoens, S., Villeneuve, M., Hurst, J., 2005. Tackling nurse shortages in OECD countries. (OECD Health Working Papers No. 19). *Organization for Economic Co-operation and Development.* <https://doi.org/10.1787/172102620474>.
- Smolowitz, J., Speakman, E., Wojnar, D., Whelan, E.-M., Ulrich, S., Hayes, C., Wood, L., 2015. Role of the registered nurse in primary health care: meeting health care needs in the 21st century. *Nurs. Outlook* 63 (2), 130–136. <https://doi.org/10.1016/j.outlook.2014.08.004>.
- Starfield, B., Shi, L., Macinko, J., 2005. Contribution of primary care to health systems and health. *Milbank Q.* 83 (3), 457–502. <https://doi.org/10.1111/j.14680009.2005.00409.x>.
- Storms, H., Claes, N., 2017. Primary care nurses in a local Belgian setting: responding to healthcare needs of people with disabilities. *J. Nurs. Educat. Pract.* 7 (7), 44–53. <https://doi.org/10.5430/jnep.v7n7p44>.
- Suba, S., Scruth, E.A., 2015. A new era of nursing in Indonesia and a vision for developing the role of the clinical nurse specialist. *Clin. Nurse Special.* 29 (5), 255–257. <https://doi.org/10.1097/NUR.0000000000000146>.
- Suutarla and the Finnish Nurses Association's APN Expert Group, n.d. Country report: Advanced Practice Nursing (APN) in Finland. [https://international.aanp.org/Content/docs/ICN\\_APN\\_country\\_profile\\_Finland.pdf](https://international.aanp.org/Content/docs/ICN_APN_country_profile_Finland.pdf).
- Svavardottir, E.K., 2008. Excellence in nursing: a model for implementing family systems nursing in nursing practice at an institutional level in Iceland. *J. Fam. Nurs.* 14 (4), 456–468. <https://doi.org/10.1177/1074840708328123>.
- Tallinn Health Care College, 2017. General nurse. [https://tk.ee/sites/tk.ee/files/Ode\\_23.05.2017\\_ENG\\_0.pdf](https://tk.ee/sites/tk.ee/files/Ode_23.05.2017_ENG_0.pdf).
- Tallinn Health Care College, 2019. Curriculum of Master's studies: Health Sciences. [https://www.tk.ee/sites/tk.ee/files/194200\\_curriculum\\_of\\_health\\_sciences\\_23.04.2019\\_2.pdf](https://www.tk.ee/sites/tk.ee/files/194200_curriculum_of_health_sciences_23.04.2019_2.pdf).
- Tóthová, V., Sedláková, G., 2008. Nursing education in the Czech Republic. *Nurse Educat. Today* 28 (1), 33–38. <https://doi.org/10.1016/j.nedt.2007.02.003>.
- University of Antwerp, n.d. Postgraduate of nursing in general practice. <https://www.uantwerpen.be/en/study/programmes/all-programmes/nursing-general-practice/>.
- University of Iceland, n.d. Nursing. [https://english.hi.is/school\\_of\\_health\\_sciences/faculty\\_of\\_nursing/about\\_faculty](https://english.hi.is/school_of_health_sciences/faculty_of_nursing/about_faculty).
- University of London, 2021. Primary care (practice nursing). <https://www.city.ac.uk/prospective-students/courses/postgraduate/primary-care-practice-nursing>.
- University of Northern British Columbia, 2021. School of Nursing: remote nursing certified practice. <https://www.unbc.ca/nursing/remote-nursing-certified-practice>.
- University of Otago, 2021. Study nursing (primary health care) at Otago. <https://www.otago.ac.nz/courses/studies/nphc1.html>.
- University of South Bohemia in České Budějovice, 2017. Study programme: nursing. <https://www.zsf.jcu.cz/en/study-education/study-programmes/study-programmes-offered-in-english/nursing/study-programme-nursing-more-info>.

- Vanhook, P., Flinter, M., Poghosyan, L., Barksdale, D., 2018. The American academy of nursing on policy: emerging role of baccalaureate registered nurses in primary care. *Nurs. Outlook* 66 (5), 512–517. <https://doi.org/10.1016/j.outlook.2018.09.003>.
- Walker, L., Clendon, J., Nelson, K., 2015. Nursing roles and responsibilities in general practice: three case studies. *J. Prim. Health Care* 7 (3), 236–243. <https://doi.org/10.1071/HC15236>.
- Wojnar, D.M., Whelan, E.M., 2017. Preparing nursing students for enhanced roles in primary care: the current state of prelicensure and RN-to-BSN education. *Nurs. Outlook* 65 (2), 222–232. <https://doi.org/10.1016/j.outlook.2016.10.006>.