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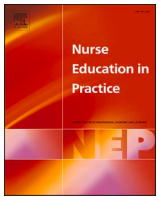

Examining family and community nurses' core competencies in continuing education programs offered in primary health care settings: An integrative literature review

Mina Azimirad [a,*], Riina Paloniitty [a], Ioanna V. Papathanasiou [b], Giuseppe Aleo [c], Gianluca Catania [c], Francesca Pozzi [d], Annamaria Bagnasco [c], Hannele Turunen [a,e]

[a] University of Eastern Finland (UEF), Department of Nursing Science, 70211 Kuopio, Finland
[b] Nursing Department, Community Nursing Lab, University of Thessaly, Gaiopolis Campus, Larissa – Trikala Ring Road, 41500 Larissa, Greece
[c] University of Genoa, Department of Health Sciences, Via A. Pastore 1, 16132 Genoa, Italy
[d] Istituto Tecnologie Didattiche (ITD) - Consiglio Nazionale delle Ricerche (CNR), 16149 Genoa, Italy
[e] University of Eastern Finland (UEF), Department of Nursing Science, Kuopio, Finland, Kuopio University Hospital, Kuopio, Finland

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ABSTRACT

Aim: To identify gaps in existing family and community nurse (FCN) continuing education programs and to investigate whether FCN core competencies are covered in continuing education programs offered in primary health care settings.
Background: In global pandemics such as COVID-19, there is an urgent need for staff development using transformative learning and help registered nurses build up their competencies and form a new professional identity as family and community nurses (FCNs). Therefore, FCN education programs become of high importance to enhance nurses' core competencies through continuing education.
Methods: An integrative review of the literature was conducted applying the Whittemore and Knafl methodological strategy for studies published between 2015– June 2021.
Results: FCN core competencies, including the "decision-making process, navigation as care coordinator and patient advocate and promoting individual and family health to support the quality of nursing care," were poorly covered in the FCN programs. Specifically, e-health played a very limited role in FCN continuing education, while ethics, managing change, managing disparity and diversity and leadership skills, did not emerge at all.
Conclusion: The identified gaps can be incorporated into future FCN continuing education programs and may help improve nurses' competence and health care delivery and support new integrated models of care, namely, person-centered and community-based models.

1. Introduction

The European population is aging, as evidenced by a significant increase in the number of older people and low birth rates (WHO: Healthy Aging Data and Statistics, 2022). This change in population demographics leads to a high old-age dependency ratio, which demands a tailored health care policy. Therefore, in new models of care, the focus of health care is shifting from acute care in hospital settings to integrated people-centered care in the community (OECD/European Union, 2018).

Primary health care (PHC) addresses most health needs in a population throughout a person's lifetime by meeting the health needs of individuals and families (WHO: Primary Health Care, 2022). Effective PHC is the most effective way to achieve health for everyone, regardless of their background (WHO & UNICEF, 2018). Thus, the leading health policy actors are committed to building sustainable PHC through education (WHO & UNICEF, 2018).

In a global pandemic such as that of coronavirus disease 2019 (COVID-19), a need for competent, goal-oriented and family- and community-skilled personnel is highlighted. To meet the demand of future public health emergencies and pandemics, staff development

* Corresponding author.
E-mail addresses: minaa@uef.fi (M. Azimirad), riina.paloniitty@gmail.com (R. Paloniitty), iopapathanasiou@uth.gr (I.V. Papathanasiou), giuseppe.aleo@edu.unige.it (G. Aleo), gianluca.catania@edu.unige.it (G. Catania), pozzi@itd.cnr.it (F. Pozzi), annamaria.bagnasco@unige.it (A. Bagnasco), hannele.turunen@uef.fi (H. Turunen).

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using transformative learning is required to help registered nurses build up their competencies and form a new professional identity as family and community nurses (FCNs) (Owens, 2020). This integrative literature review aimed to identify the existing gap in continuing education for family and community nursing in PHC.

2. Background

Nurses' competence is an integration of their knowledge, skills, attitudes, thinking ability and values (Benner, 1984). This study is focusing on nurses' knowledge to promote nurses' competence.

There are several studies that have investigated the concept of family nursing (Friedemann, 1989; Hakulinen and Paunonen, 1994; Hutchfield, 1999; Wright and Leahey, 1990). Importantly, complex family relationships are comprehensively understood in nursing (Friedemann, 1989). In central to the family nursing concept, the individual being cared for is seen either as an individual in a family context or as a family in a context of individuals (Wright and Leahey, 1990). The concept of family nursing includes the caregiver's partnership with the family and the involvement of the whole family in the care of the family member. Family nursing is seen as successful when the caregiver is able to establish an open, respectful and honest relationship with the whole family (Hutchfield, 1999). Similarly, the family systems concept in nursing focuses on health issues in the psychosocial context by taking into account the links between health problems, beliefs, family dynamics and relationships with health professionals. It is a process where the caregiver engages with the family in therapeutic discussions to determine the family's experiences of the illness and to conceptualize problems and devise solutions to promote family health, manage health problems and alleviate suffering (Duhamel et al., 2015). On the other hand, community health nursing is a community-oriented and population-focused approach that aims to promote health and prevent diseases, disability and premature health in an entire population (WHO: Regional Office for South-East Asia, 2012).

Continuing education is characterized as all education offered in practice settings and is critically important in developing nurses' competencies (Jackson et al., 2019; Jones-Schenk, 2019). In 2018, a project funded by Erasmus+ Programme, was established to develop a standard European-level FCN professional profile and to identify the core competencies required for family and community nurses (ENhANCE, 2021). As a result, 28 FCN professional profile core competencies were defined and categorized into seven main categories: needs assessment, decision-making process, health promotion and education, communication, navigation as care coordinator and patient advocate, evidence-based approach and enhancing and promoting individual and family health, including e-health, to support the quality of nursing care (Pozzi et al., 2021). FCN education programs use different teaching courses to enhance nurses' core competencies, focusing on developing their knowledge. Therefore, it is important to support continuing professional development to improve FCN competencies (Fowler et al., 2015). However, to our best knowledge, there are very few studies exploring the gap in the existing FCN continuing education programs and whether the FCN core competencies are covered in the continuing education programs offered in PHC settings.

3. Aim

The aim of this integrated review was to identify the gap in the existing FCN continuing education programs and investigate whether the FCN core competencies are covered in the continuing education programs offered in PHC settings.

4. Methods

4.1. Design

This study is an integrative literature review based on the Whittemore and Knafl (2005) methodological strategy. The Whittemore and Knafl (2005) methodology offers a framework with a systematic approach for integrative reviews and data analysis, where various methodologies and empirical and theoretical sources are combined to cover greater primary research methods.

4.2. Problem identification

This integrated review sought to answer the following research question:

To what extent are family and community nursing core competencies covered in the continuing education programs offered in PHC?

The FCN core competencies that were used in this study were adopted from a standard European-level FCN professional profile developed by the ENhANCE (European Curriculum for Family and Community Nurse) project (ENhANCE, 2022).

The PICO framework (population, intervention, comparison, outcome) was used to develop a precise and clear research question. The PICO elements were defined as the following:

Population: Family and community nurse; Intervention: Continuing education programs; Comparison: Impact of continuing education programs on nurses' knowledge; Outcome: Family and community nurses' competencies.

4.3. Literature search

An electronic database search was conducted in 2021 using the PubMed, CINAHL and Scopus databases. The search terms were identified with an information specialist and included: family nurse, community nurse, community health nurse, public health nurse, continuing education, professional development and in-service training. Search was limited to English language, studies published between 2015-June 2021 and original scientific articles (quantitative, qualitative and mixed-method studies). The search strategy is presented in Supplementary File 1. The inclusion criteria were studies related to family and community nursing and continuing education and availability of the full article. Data were managed manually with the help of RefWorks which is a web-based reference management software package.

4.4. Data extraction and quality appraisal

The data extraction method was guided based on the PICO elements defined for this study (Farhat et al., 2022). The evaluation of the selected articles was instructed using Hawker's quality appraisal methodology (Hawker et al., 2002). The appraisal tool included nine evaluation sections including abstract and title; introduction and aims; method and data; sampling; data analysis; ethics and bias; results; transferability or generalizability; implications and usefulness (each Sections 1–4 points: 1 = very poor, 2 = poor, 3 = fair, 4 = good). Two researchers independently appraised 38 articles and assigned quality scores to each article. The evaluation criteria that articles were missing scores varied for each article, however, common reasons for missing scores included the followings: Using old references in the background section, not outlining the objectives and research questions, inadequate description of methods, inadequate information about sampling and participants, minimal details about the analysis, limited transferability or generalizability and no suggestions for future research. According to the researchers' decision, the overall score of 30 and above was considered acceptable. The researchers compared the scores together. Disagreements were resolved by discussion until a consensus was reached (Farhat et al., 2022). Consequently, data were extracted as a sample of 21

appraised articles (Fig. 1).

4.5. Data analysis

The content of the 21 appraised articles was analyzed thematically based on the 28 core competencies of the FCN professional profile by one researcher and then was discussed with other researchers within the research group (Pozzi et al., 2021); and was then categorized into seven categories based on the FCN European curriculum (Pozzi et al., 2021; Table 1).

5. Results

The initial search revealed 479 studies. Six additional studies were added following an analysis of the reference lists. Of a total of 485 studies, 111 studies were duplicates. Finally, a total of 38 studies were extracted for the quality appraisal (Fig. 1), of which a sample of 21 appraised articles was extracted for this study.

5.1. General overview of included papers

FCN continuing education programs extensively covered the following core competencies of the FCN professional profile: needs assessment; health promotion; communication; and evidence-based approaches. However, the remaining core competencies, including the "decision-making process, navigation as care coordinator and patient advocate and enhancing and promoting individual and family health, including e-health, to support the quality of nursing care," were poorly covered in these programs. The results of the integrated literature review are presented in detail in Table 2.

5.2. Needs assessment

The identification and assessment of the health status and health needs of families were covered in several FCN continuing education programs. Nurses were trained to conduct therapeutic conversations with families (Broekema et al., 2018; Duhamel et al., 2015; Svavarsdottir et al., 2018; Yamazaki et al., 2017), with the aim of educating the caregiver regarding learning how to draw forward illness stories among family members and how to identify the strengths, resilience and resources of a family (Svavarsdottir et al., 2018). All of the continuing education programs of family nursing included conducting family trees and mapping relationships among family members based on conversations with families (Broekema et al., 2018; Duhamel et al., 2015; Svavarsdottir et al., 2018; Yamazaki et al., 2017).

In two articles (Burton and Carlyle, 2015; Jayatilleke et al., 2015), primary care workers were trained to screen and intervene in regard to intimate partner violence. The emphasis of continuing education was on cultural factors because intimate partner violence is a very sensitive issue in many cultures (Jayatilleke et al., 2015) and cultural competence

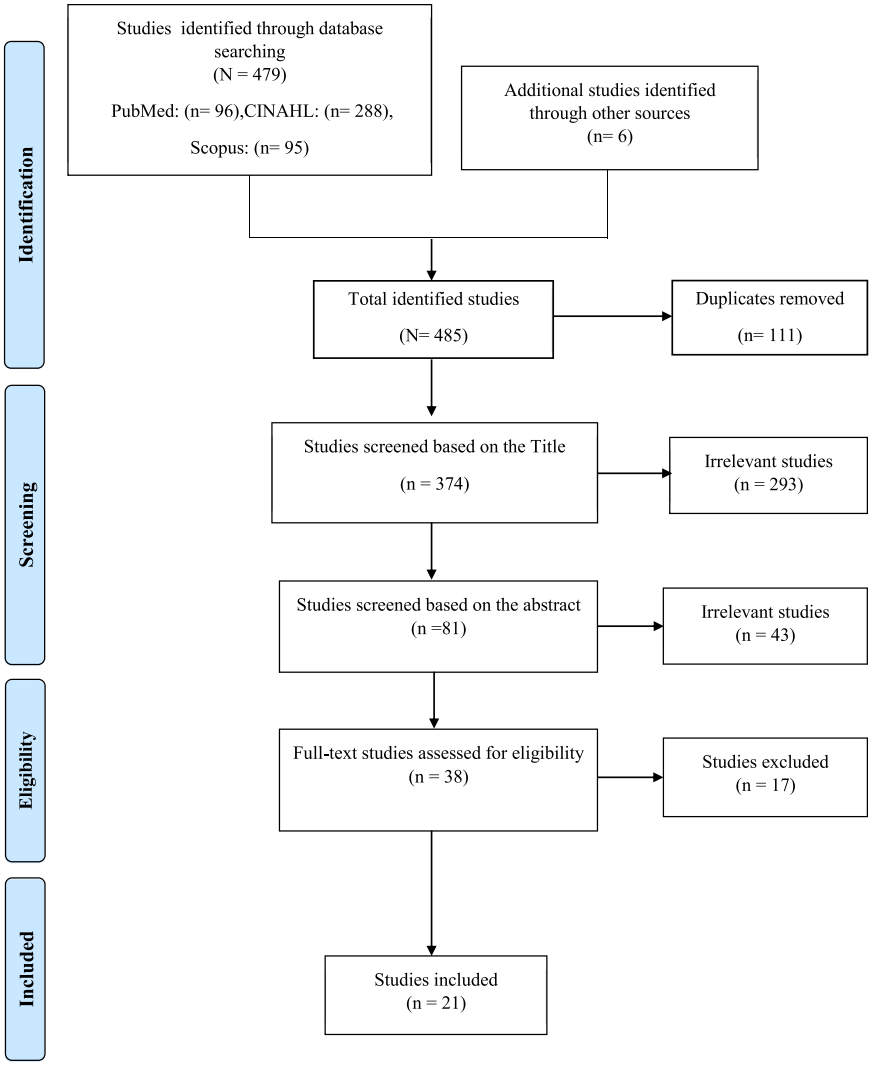

Fig. 1. PRISMA flowchart of literature search.

Table 1
Core competencies of FCN professional profile and FCN EU-curriculum categories.

EU curriculum	28 Core competencies of FCN professional profile*
Needs Assessment	Identify and assess the health status and health needs of individuals and families within the context of their cultures and communities. Plan, implement and assess nursing care to meet the needs of individuals, families, and the community within their scope of competence. Multidimensional community health needs assessment to implement appropriate clinical interventions and care management. Assess the social, cultural, and economical context of patients and their families
Decision-Making Process	Make decisions based on professional ethical standards. Involve individuals and families in decision-making concerning health promotion, and disease and injuries prevention, and wellbeing Development of nurse leadership and decision-making skills to ensure clinical and healthcare effectiveness and appropriateness. Ability to negotiate healthcare with patients and their families, with the multidisciplinary team and healthcare centres.
Health Promotion and Education	Enhance and Promote health, and prevent disease and injuries in individuals, families and communities even focusing on inequities and unique needs of subpopulations Apply education strategies to promote health and safety of individuals and families. Manage change and act as agents for change to improve family and community nursing practice. Provide patient education and build a therapeutic relationship with patients and their families. Analytic assessment, cultural competence, program planning, and community dimensions of practice to pursue community health promotion goals together with the community multidisciplinary team. Leadership and development, implementation and evaluation of policies for the family and the community for purposes of health promotion. Mentoring students to promote the health, and prevent disease and injuries, and wellbeing of individuals and their families and communities
Communication	Communication competencies based on evidence in relation to a specific context. Maintain intraprofessional and interprofessional relationships and a supportive role with colleagues to ensure that professional standards are met.
Navigation as care coordinator and patient advocate	Coordinate and be accountable for attributing community healthcare activities to support workers. Manage change and act as agents for change to improve family and community nursing practice. Managing disparity and diversity and fostering inclusiveness Participate in the prioritization of activities of the multidisciplinary team to address problems related to health and illness. Work together with the multidisciplinary team to prevent disease, and promote and maintain health.
Evidence-based approach	Accountability for the outcomes of nursing care in individuals, families and the community. Systematically document and evaluate their own practice. Set standards and evaluate the outcomes related to nursing activities in people's homes and in the community. Use the best scientific evidence available.
Enhance and Promote Individual and Family Health including E-Health to Support the Quality of Nursing Care	Monitoring people affected by chronic and rare illnesses on one community in collaboration with other members of the multidisciplinary team. Alleviate patient suffering even during end of life. Provide patient education and build a therapeutic relationship with patients and their families. Health promotion, education, treatment and monitoring supported by of ICTs (e-Health)

*Authors: Loredana Sasso (UNIGE), Annamaria Bagnasco (UNIGE), Giuseppe Aleo (UNIGE), Milko Zanini (UNIGE), Francesca Pozzi (CNR-ITD), Clara Rodrigues (Future Balloons), Serena Alvino (Si4Life), Daniele Musian (Si4Life), Isabella Roba (A.Li.Sa), Hannele Turunen (UEF), Adriana Popa (EASPD), Mariana Vicente (Eurocarers), Ioanna V. Papathanasiou (UTH), Evangelos C. Fradelos (UTH), Sofia Kastanidou (UTH), Christos Kleisiaris (TEI-Crete), Eftychia S. Evangelidou (ENE), Aristides Daglas (ENE), Konstantinos Stavropoulos (ENE).

is crucial in the identification and remediation of trauma in different communities (Burton and Carlyle, 2015).

The identification and management of specific health needs of individuals were covered in three articles (Harpin, 2020; Policicchio and Dontje, 2018; Wang et al., 2017). Of these, one study (Policicchio and Dontje, 2018) aimed to improve the knowledge and skills of community health workers who were working on the management of diabetes in the community. Another study (Wang et al., 2017) dealt with improving nurses' dementia knowledge, early detection, identifying risk factors, person-centered dementia care and supporting caregivers using the WeChat application. In addition, training for a rapid COVID-19 crisis response in public health practice was developed and implemented. The content of the training was not only the implementation of nursing care for COVID-19 patients but also planning and assessing nursing care to meet the needs of individuals and communities in crisis (Harpin, 2020).

Two articles (Richard et al., 2015; Torres et al., 2017) focused on identifying and addressing the health needs of a community. Both continuing education programs dealt with the health promotion laboratory (HPL). The most important pedagogical method was to guide participants to develop pilot interventions in accordance with the HPL health promotion concept. The core approaches of the intervention were analysis and planning, implementation, evaluation, sustainability and empowerment (Torres et al., 2017).

5.3. Decision-making process

Involving individuals and families in decision-making concerning health care emerged in articles focusing on training therapeutic conversations with families (Broekema et al., 2018; Duhamel et al., 2015; Svavarsdottir et al., 2018; Yamazaki et al., 2017). One article (Humphries and Nolan, 2015) dealt with continuing education where health visitors and community practitioners working with children were trained to engage with fathers to improve fathers' involvement with

Table 2
Integrative Literature Review.

Year of publication, authors, country	Title/Main aim	Data/ Sample	Method	Training program	Main results	Main conclusion
BHarpin (2020). (USA)	To describe development of an alternate care site training for delivery of care to COVID-19 patients in the community	Alternate care site workers and nursing students. Additionally, there were non-patient facing clinical staff training program (n = 25), patient-facing clinical staff training (n = 47), Master trainers (n = 21).	The education included just-in-time training (lectures and handouts) for all workers, half-day of non-patient facing clinical staff in-person training, and a full-day of patient-facing clinical staff in-person training, Deploying RN master trainers who had completed care of the COVID positive patients, and conducting skills check off.	The topics were extracted from Colorado's Crisis Standards of Care (2020), along with consultations with a public health nurse educator. Training program was made available at the American Association of College of Nursing website, as well as the university website.	An experience regarding developing and adopting an alternate care site training for COVID-19 was shared.	Continuing education training tailored for alternate care sites of covid-19 patients has been developed and is available for public. Moreover, it can be incorporated into universities' curricula.
Berggren et al. (2016). (Sweden)	To evaluate professionals' perceptions of the design, pedagogy and adaptation to primary health care of the ConPrim continuing educational model as applied in a subject-specific intervention.	67 professionals (nurses and physicians) from 10 of 189 primary care health centers in Stockholm County.	Computer-based questionnaire were analyzed with using descriptive statistics.	Week 1: Web-based program (theoretical education on web) 1 h, weeks 2 and 3: practical exercise 1,5 h, week 4:. case seminar 1,5 h.	Over 90% found the design of the web-based program and case seminar attractive; 86% found the design of the practical exercise attractive. The professionals agreed that the time spent on two of the three parts was acceptable. The exception was the practical exercise: 32% did not fully agree. Approximately 90% agreed that the contents of all parts were relevant to their work and promoted interactive and interprofessional learning. In response to the statements about the intervention as whole, approximately 90% agreed that the intervention was suitable to primary health care, that it had increased their competence in the subject area, and that they would be able to use what they had learned in their work.	ConPrim is a promising model for continuing educational interventions in primary health care. However, the time spent on the practical exercise should be adjusted and the instructions for the exercise clarified. ConPrim should be tested in other subject-specific interventions and its influence on clinical practice should be evaluated.
Broekema et al. (2018). (Netherlands)	To describe nurses' perspectives about their experience of being involved in a 6-day educational intervention which focused on the development of competency in family nursing practice with a particular emphasis on family nursing conversations.	Before and after the family nursing educational intervention, nurse participants (n = 18) completed the Families' Importance in Nursing Care–Nurses' Attitudes (FINC-NA) instrument Quantitative data were collected, first, using a survey instrument pre- and post-educational intervention. Following the educational intervention, qualitative data were collected from the nurse participants using semi-structured interviews.	The data from the FINC-NA were analyzed in SPSS version 23. The analysis of the interviews was based on the qualitative research cycle of Hennink, Hutter, and Bailey (2011).	6-Day educational intervention. Day 1: Introduction, Day 2: Assessment, Day 3: Family nursing conversations, Day 4: Intervention, Day 5: Conclusion, Day 6: Follow-up.	Participants reported increased awareness of the importance of families in nursing care. In addition to an increase in positive attitudes about families, participants perceived that their knowledge and skills regarding family nursing conversations were more comprehensive	A 6-day educational intervention with a focus on reflection appears useful in helping nurses to "think family" and encouraging perceptions of increased competence in family nursing conversations.

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Table 2 (*continued*)

Year of publication, authors, country	Title/Main aim	Data/ Sample	Method	Training program	Main results	Main conclusion
Burton and Carlyle (2015). (USA)	To assess the effectiveness of trainings, provider facility with Project Connect tools, and areas for improvement in a pilot state.	The study sample included 47 providers from diverse settings around the state.	Data were collected via focus groups and individual interviews. Both focus groups and interviews followed an original, semi-structured guide consisting of open-ended questions with follow-up prompts. Thematic analysis was made by using ATLAS. tisoftware.	Not a clear description about educational intervention. The intervention incorporates principles of trauma-informed care supporting empowerment through partnership between provider and patient.	Results indicated that providers found training useful, and those in supervisory roles particularly appreciated the universal tools and skill set given to participants.	Offering specific training to providers who serve at-risk populations of women is likely to increase screening for and intervention in cases of IPV and reproductive coercion and to decrease the overall burden of these problems on the health care system.
Duhamel et al. (2015). (Canada)	To promote the integration of Family Systems Nursing (FSN) in clinical practice, we need to better understand how nurses overcome the challenges of FSN knowledge utilization	A qualitative exploratory study was conducted with 32 practicing female nurses from hospital and community settings who had received FSN intervention training and skill development based on the Illness Beliefs Model and the Calgary Family Assessment and Intervention Models.	The participants were interviewed about how they utilized FSN knowledge in their nursing practice.	The first type of FSN intervention training entailed a 1 week of intensive professional development training course for a total of 35 hr. The second type comprised a 15-week theory course of 3 hr per week in a master of nursing program. The third type involved the same theory course as in the second type with an additional 15-week practicum in FSN.	From the data analysis, a FSN Knowledge Utilization Model emerged that involves three major components: (a) nurses' beliefs in FSN and in their FSN skills, (b) nurses' knowledge utilization strategies to address the challenges of FSN practice, and (c) FSN positive outcomes. The FSN Knowledge Utilization Model describes a circular, incremental, and iterative process used by nurses to integrate FSN in daily nursing practice.	Findings point to a need for re-evaluation of educational and management strategies in clinical settings for advancing the practice of FSN.
Grundy et al. (2017). (UK)	To investigate the acceptability of a co-delivered, two-day training intervention on service user- and carer-involved care planning.	310 community mental health professionals	The Training Acceptability Rating Scale were used. Quantitative items were summarized using descriptive statistic. Qualitative responses were coded using content analysis.	Two days' trainings topics: -understanding care planning in terms of the policy rhetoric and the reality of care planning on the ground -understanding what good care planning looks like from the service user, carer, and professional perspectives -engagement and communication skills -explaining care planning terms and processes -user-centered assessment, exploring issues around 'risk' and 'safety' -coproducing summary and formulation statements. -developing aspirational goals -exploring what shared decision-making looks like - thinking about user-involved implementation -reviewing of care planning	The training was rated favourable (median overall TARS scores 56/63, median acceptability scores 34/36, median perceived impact score 22/27). The qualitative themes were: the value of the co-production model, time to reflect on practice, delivery preferences, comprehensiveness of content, need to consider organizational context, and emotional response.	Mental health nurses should use co-production models of continuing professional development training that involve service users and carers as co-facilitators.

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Table 2 (*continued*)

Year of publication, authors, country	Title/Main aim	Data/ Sample	Method	Training program	Main results	Main conclusion
Humphries and Nolan (2015). (UK.)	To improve engagement of Health Visitors and Community Practitioners delivering the Healthy Child Programme with fathers. To evaluate a one-day, father-focused workshop with a supporting handbook for Practitioners. To identify institutional and organizational barriers to engagement with fathers.	In total, 191 people attended the 12 workshops, and 134 (70%) took part in the evaluation.	A 'before and after' evaluation study, comprising a survey followed by telephone interviews. Data were analyzed by using SPSS version 21.	A one-day workshop for practitioners designed to help participants develop and implement a whole-team approach to engaging with fathers.	Analysis of the questionnaire data showed that the workshop and handbook improved participants' knowledge, attitudes and behaviors in practice. This was sustained over a three-month period. In telephone interviews, most participants said that the workshop had raised their awareness of engaging fathers and offered them helpful strategies. However, they also spoke of barriers to engagement with fathers.	NHS Trusts need to review the training and education of Health Visitors and Community Practitioners and take a more strategic approach towards father-inclusive practice and extend services to meet the needs of fathers.
Jayatilleke et al. (2015). (Japan)	To evaluate the efficacy of the IPV training program to improve PHMs' identification and management of IPV sufferers in the Kandy district of Sri Lanka.	408 public health nurses.	Pre- and post-intervention study. Data were analyzed using statistical analyses.	Four day IPV training program had the following contents: gender roles, the types, acts and health effects of IPV, the fomestic violence prevention law in Sri Lanka, the available supportive services for IPV sufferers in the country and how to identify and assist IPV sufferer.	The IPV training program improved PHMs' IPV practices significantly. Six months after the intervention, 98.5% (n = 402) of the 408 PHMs identified at least one IPV sufferer in the previous three months, compared to 73.3% (n = 299) in the pre-intervention ($p < 0.001$). At post-intervention, 96.5% (n = 387) of the PHMs discussed IPV with identified sufferers and suggested solutions; only 67.3% (n = 201) did so at the pre-intervention ($p < 0.001$).	An IPV training program for PHMs improved identification and assistance of IPV sufferers in Kandy, Sri Lanka. This training program has the potential to improve PHMs' skills in preventing IPV and supporting sufferers in other regions of Sri Lanka. Other developing countries might learn lessons from Sri Lanka's IPV training.
Malan et al. (2016). (South Africa)	To evaluate the effect on clinical practice of training primary care providers (PCPs) in an approach to brief behavior change counselling (BBCC), integrating the 5As (ask, alert, assess, assist, arrange) with a guiding style derived from motivational interviewing in the South African context.	123 recordings were collected from 41 PCPs. It was a before-and-after design, recording BBCC skills at baseline, directly after training and 6-weeks later	We evaluated each recording for adherence to the guiding style and delivery of the 5As using the Motivational Interviewing Treatment Integrity 3.1.1. tool, and a tool based on the 5As training design.	The training was designed as an 8 h workshop with four 2 h sessions. Each session was developed using three key principles: to provide evidence of the current deficiencies and the need for a new approach, to model the approach and allow participants to practice new skills.	Results showed a significant improvement in adoption of the guiding style (e.g. global score at baseline 2.0 (2.0–2.6) and in clinical practice 3.0 (2.7–3.3) $p < 0.001$) and completion of the 5 A steps (e.g. assist score at baseline 1.26 (1.12–1.4) and in clinical practice 1.75 (1.61–1.89) $p < 0.001$).	Training PCPs in this approach to BBCC is effective at changing their clinical practice in the short term. Practice implications: The training program should be integrated into the curricula of PCPs, and used in continuing professional development.
Mitchell et al. (2018). (Australia)	To evaluate the effectiveness of a 4-hour face-to-face tailored preceptor education program.	59 nurses.	Quantitative data were analyzed using descriptive statistics and related samples sign test. Qualitative responses were coded using content analysis.	The education session was a 4-hour face-to-face workshop and had four parts. These were: - An outline of the university curriculum and the desired graduate attributes -An overview of teaching and learning theory. -An introduction to the new VicCAT. -A discussion of managing clinical issues that may arise while preceptoring an MCH student.	Participants had improved understanding of the role of preceptor after the education program. They had increased confidence in their ability to give feedback, assess clinical skills, and use the clinical assessment tool. They were also surer of the standard of performance expected of students.	A strategically designed preceptor program was effective in improving some preceptorship skills of community-based nurses who supervise postgraduate nursing students.

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Table 2 (*continued*)

Year of publication, authors, country	Title/Main aim	Data/ Sample	Method	Training program	Main results	Main conclusion
Policicchio and Dontje (2018). (USA)	To determine if diabetes training could improve community health worker knowledge of diabetes and management of diabetes.	10 community health workers.	Pre-post evaluation design. Data were analyzed using frequencies, descriptive statistics and paired T-tests.	Training occurred in 4-hour sessions over a 6 week period, 24 total hours of training. The topics of the classes were: 1. week: introduction and diabetes, 2. week: heart disease and stroke overview, stroke and heart attack, 3. week: high blood cholesterol, high blood pressure, 4. week: healthy eating and weight control, physical activity and smoking cessation, 5. week: talking to your doctor, taking medicine, 6. week: depression and stress.	Knowledge increased overall with largest changes in diabetes, depression and cholesterol. Diabetes attitudes were high and consistent with those found in caregivers who support patient-centered care. Participants reported learning, liking the class, and finding the materials helpful.	This QI program provided by a public health nurse improved CHW's knowledge of diabetes and the management of diabetes.
Reeves et al. (2015). (UK.)	To offer insight into the emotional responses of small group of social workers, health visitors and controls to a simulation depicting multiple forms of neglect and complex relationships in a family.	A total of 24 participants (11 control participants, 5 health visitors and 8 social workers).	Videos of each participant were analyzed frame by frame using Noldus FaceReader 5 Software, which automatically classifies faces according to to six basic emotional expressions.	Rosie 2 is the event of a home visit by social worker and long-term health visitor. It is a case about a challenging family situation.	The results indicate that the prevailing emotion exhibited by the professional group showed a 'neutral' response. There were significant differences between the groups, with health visitors displaying more sadness, and social workers demonstrating greater surprise and disgust.	Simulations can provide immersive, realistic environments for child protection training and 'Rosie 2′ has been developed for this purpose., Eye tracker technology coupled with simulations can provide insight into the unconscious emotional impact on practitioners of child protection work
Richard et al. (2015). (Canada)	To present a professional development pilot program, the Health Promotion Laboratory (HPL), and analyze how it was adapted to three different settings while preserving its core components and to identify team and contextual factors that might have been at play in the emergence of implementation profiles in each site.	Two sources of data were used: Implementation data were primarily collected using documentary analysis. Informal interviews with mentors were conducted to complete the information. Data related to the characteristics of teams and their contexts were collected through the analysis of the documents mentioned above as well as through semi-structured interviews with key informants (total N = 28).	The analytical process involved performing directed content analysis of the material in relation to the steps of the operational approach. Using this sequential content analysis, we modeled each team's progression through the operational approach.	Health Promotion Laboratory (HPL) has four objectives: build new ways to address public health issues in the community by means of health promotion interventions in multidisciplinary teams, develop a reflective practice, broaden professional competencies and initiate organizational changes. The program consists of one or two half-day monthly team sessions during a 2–3-year period.	While each team developed a unique pattern of implementing the activities, all the program's core components were implemented. Differences of implementation were observed in terms of numbers and percentages of activities related to different components of the program as well as in the patterns of activities across time. It is plausible that organizational characteristics influencing, for example, work schedule flexibility or learning culture might have played a role in the HPL implementation process.	This paper shows how a professional development program model can be adapted to different contexts while preserving its core components. Capturing the heterogeneity of the intervention's exposure, as was done here, will make possible in-depth impact analyses involving, for example, the testing of program-context interactions to identify program outcomes predictors. Such work is essential to advance knowledge on the action mechanisms of professional development programs.
Sabey et al. (2019). (UK.)	To report on the development of an innovative capacity building programme in CLAHRC West over an 18-month period (May 2015 to December 2016) and to disseminate the learning from the initiative and share our experience with other CLAHRCs.	Completed forms were received from 86% of participants.	Data were analyzed by using descriptive statistics.	The CLARCHs (Collaboration for Leadership in Applied Health Research and Care) program covered topics from finding relevant evidence to improving research and evaluation skills and to critiquing research for practice. The courses were free, one-day courses at an introductory level.	During the first 18 months of the training program, 31 courses were delivered and 350 participants were trained. The largest professional group was public health, followed by medical, nursing and allied health professionals in approximately equal proportions. Courses were evaluated on a scale of 1 (poor) to 4 (excellent) with the mean being 3.6 (range 3.3–4.0).	The training program has been highly successful with many courses oversubscribed, and all courses being well evaluated by participants. CLAHRCs are uniquely placed to drive a culture change in the use, understanding and application of research across the healthcare community.

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Table 2 (*continued*)

Year of publication, authors, country	Title/Main aim	Data/ Sample	Method	Training program	Main results	Main conclusion
Sandvik et al. (2018). (Norway)	To investigate public health nurses' experiences with using the skills they gained from their training in the parental guidance program known as the International Child Development Program (ICDP) during their continuing education in nursing.	The study is qualitative and based on seven semi-structured, individual interviews with public health nurses who have been trained in the program, but who only apply parts of the program in their work at the child health centers.	Content analysis inspired by hermeneutic interpretation and text condensation.	The article does not have a clear description about continuing education program. In the program, the public health nurses were educated to use ICDP in their work.	The ICDP has provided the public health nurses with a useful conceptual framework. The public health nurses put emphasis on enhancing the parents' perception of their own competence. The public health nurses focus on the parents' ability to see and understand their child.	When the public health nurses do not implement the ICDP in the form of structured group meetings over an eight-week period, they still apply the knowledge and way of thinking from the program in their communication and guidance when observing children and parents.
Shimazu (2020). (Japan)	To evaluate the correlation among public health nurse precepting experiential learning and the outcomes.	Public health nurses (n = 101) who had a precepting learning experience in 2012–2015 answered a survey from a sample frame of 163 public health centers in Japan.	A public health nurses' precepting experiential learning scale (PHN-PELS) was used.	National government of Japan applies preceptorship for novice public health nurses' training as part of their continuing education program. Some perceptors are volunteers but some of them are obligated by the public health agencies to do the task.	Preceptors influence public health nurses in different ways such as Role Performance of Fostering Novice PHN," "Self-development as a PHN," "Sharing to Foster Novice PHN" and "Improving Career Development Environment", which these result in "Professional Development for PHN" and "Awareness of Responsibility for Organization."	Including the identified matters in the preceptors' educational programs may improve the quality of the public health nurses' continuing education.
Steven et al. (2018). (UK)	To explore the impact and perceived value of multi-disciplinary Continuing Professional Development workshops for Health Visitors who support families with children with complex health needs.	Workshop attendees were invited to participate (n.21), 81% (n.17) agreed.	Data collection included a questionnaire and semi-structured interviews. Data analysis included descriptive statistics and qualitative thematic analysis.	A half-day workshop ran twice and aimed to provide information about children with complex health and developmental needs, supporting such needs in multi-disciplinary teams, new ways of working and a mechanism to facilitate peer and team support.	Before the workshop expectations included, uncertainty regarding content and ambiguity regarding attendance. During workshops comments focused on networking opportunities, the detail, content and facilitation of the learning experience. 'Emotional safety' enabled interaction, sharing and absorption of information, and potentially increased trust, confidence and social capital. Participants viewed the workshop as informative, enhancing insight regarding roles, services and processes. Post-workshop participants reported examples of practice enhancements attributed to workshop attendance including: confidence building; improved team working; facilitation of early referral and accessing additional support for families.	Findings suggest initiative developers aiming CPD at new or existing teams need to consider nurturing social capital and to pay attention to the context and mechanisms, which can prompt attendance, engagement and subsequent practice application.
Svavasdottir et al. 2018. (Iceland)	To evaluate the level of nursing education, having taken a continuing hospital educational course in family system nursing (FN-ETI program), and the impact of job characteristics on nurses' perceptions of their family nursing practice skills.	436 nurses with either a BSc degree or graduate degree in nursing.	Descriptive analysis, chi-square statistics, Fisher's exact tests and Mann–Whitney tests.	FN-ETI consist of lectures and clinical training to apply FSN in practice. It includes a seminar in the Calgary family nursing conceptual models. Workshops focus on short-term family nursing interventions, as conducting family trees, mapping relationships among family members and training in therapeutic questioning and	Nurses with a graduate education who had taken the FN-ETI program scored significantly higher on the Family Nursing Practice Scale than nurses with an under-graduate education	Graduate education plus continuing education FSN can offer nurses increased job opportunities more control over one's work as well as increased skills working with families in clinical settings.

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Table 2 (*continued*)

Year of publication, authors, country	Title/Main aim	Data/ Sample	Method	Training program	Main results	Main conclusion
				drawing forward family strengths.		
Torres et al. (2017). (Canada)	To analyze the health promotion approach used in a pilot intervention addressing children's vulnerability that was developed and carried out by participants enrolled in a public health professional development program.	Data were collected from three sources: documents, in-depth interviews, focus group with team members.	The HPLAG items were used as deductive, predetermined codes to analyze the intervention.	Health Promotion Laboratory (HPL) has four objectives: build new ways to address public health issues in the community by means of health promotion interventions in multidisciplinary teams, develop a reflective practice, broaden professional competencies and initiate organizational changes. The program consists of one or two half-day monthly team sessions during a 2–3-year period.	The results are mixed: our findings reveal evidence of the application of several dimensions of health promotion (equity, holism, an ecological approach, intersectorality and sustainability), but also a lack of integration of two key dimensions; that is, empowerment and participation, during various phases of the pilot intervention.	These results show that the professional development program is associated with the adoption of a pilot intervention integrating multiple but not all dimensions of health promotion. We make recommendations to facilitate a more complete integration. This research also shows that the Guichard and Ridde grid proves to be a thorough instrument to document the practices of participants.
Wang et al. (2017). (China)	To determine whether a dementia-specific education program that incorporated WeChat-based learning interactions could improve nurses' dementia knowledge, attitudes, and their intentions to make changes to achieve early detection and a timely diagnosis of dementia.	115 registered nurses.	A two-arm cluster randomized controlled trial. Data were analyzes using statistical tests.	The program included both lectures and WeChat learning interactions with educators and peers and self-directed learning activities. The lectures consisted of two modules focused on overall dementia understanding, early detection, and quality care strategies. The WeChat-based interaction provides an in-depth knowledge covered at lectures, which is enforced by online peer discussion.	The intervention group demonstrated significant improvement in dementia knowledge and attitudes from baseline immediately after training and at the 3-month follow-up. The intervention group also showed more intentions to make changes to achieve early detection of dementia. Feedback suggested the program was well-received.	Overall, the program showed acceptability and feasibility in improving nurses' dementia knowledge, attitudes, and intentions to achieve early detection of dementia.
Yamazaki et al. (2017). (Japan)	To evaluate the feasibility and short-term impact of case study training in family nursing care targeting midlevel nursing professionals.	Intervention group: 21 nurses, control group 20 nurses.	Study was quasi-experimental. Demographic data were analyzed using descriptive statistics and the open-ended answers were examined by content analysis.	Four sessions of case study training for 6 months with 5–10 participants in each session. 1. Session: Introduction of model cases and comprehending the characteristics and techniques for understanding the subjects of family nursing. 2. Session: comprehending the characteristics and techniques for understanding the family profiles. 3. Session: Understanding the theory of the family nursing process and implementation. 4. Session: Case study presentation.	No significant difference was observed in the interaction between measurement time and training differences. Of the 4 subitems, significant interactions because of measurement time and training differences were observed only in Fam-B (the case study training course affected the reduction of the burden felt by nurses with respect to families.). Feedback data showed all participants felt that their understanding of the importance of family nursing care was strengthened, and participants in the intervention group specifically described how they were utilizing what they had learned from training in practice.	The Case Study In-House Group Training Program for Family Nursing had a better impact of scores for attitudes toward family nursing than a family nursing training course by visiting lecturer. A greater effect on day-to-day practice can be expected from building an education system that takes advantage of in-hospital CNSs and CNs and from introducing training programs that use the cases of participants themselves, despite the ease of requesting lectures from visiting lectures.

their children's health care. In addition, one article (Grundy et al., 2017) covered continuing education improving user and career involvement in care planning by community mental health professionals.

The importance of multidisciplinary teamwork emerged in several articles in different contexts, including decision-making processes (Berggren et al., 2016; Reeves et al., 2015; Richard et al., 2015; Sabey, Bray and Gray, 2019; Steven et al., 2018; Torres et al., 2017). One article (Reeves et al., 2015) was directly related to carrying out family nursing in a multidisciplinary team; the Rosie 2 simulation trained health visitors and social workers to deal with challenging family situations working together in homes of families. In addition, practicing negotiation with PHC nurses and patients and their families using role-play has been described in many articles (Broekema et al., 2018; Duhamel et al., 2015; Svavarsdottir et al., 2018).

5.4. Health promotion and education

The health promotion laboratory (HPL) offers skills in health promotion and education in addition to needs assessment (Richard et al., 2015; Torres et al., 2017). The HPL guides participants to develop a pilot intervention that addresses health needs in the community in multidisciplinary public health teams (Torres et al., 2017). Interventions that fall under the concept of the HPL are designed to help entrepreneurs who are planning to set up or relocate a business, to guide parents in school health care, to provide social support to migrant women and to address family issues with children in the community (Richard et al., 2015).

Applying educational strategies to promote the health and safety of individuals and families was covered in four articles (Harpin, 2020; Malan, Mash and Everett-Murphy, 2016; Mitchell, Ridgway and Sheeran, 2018; Yamazaki et al., 2017). Primary care providers were trained to offer brief behavior change counseling that integrated the 5As (ask, alert, assess, assist, arrange), along with motivational interviewing to prevent and take care of chronic diseases in PHC (Malan, Mash and Everett-Murphy, 2016). Training targeted to respond to the COVID-19 crisis and methods to educate self-care during the crisis was also offered (Harpin, 2020).

The International Child Development Program is a continuing education program for public health nurses to train educating a positive interaction between children and their caregivers (Mitchell, Ridgway and Sheeran, 2018). Furthermore, one part of an English workshop training was to learn patient education methods to engage with fathers to improve their involvement in their children's health care (Burton and Carlyle, 2015).

Building a therapeutic relationship with individuals and families was focused on in several continuing education programs for family nursing (Broekema et al., 2018; Duhamel et al., 2015; Svavarsdottir et al., 2018). These continuing educations were based on Calgary Family Assessment and Intervention models, which provide health care professionals with a theoretical knowledge base and practical models regarding how to evaluate family nursing and how to carry out interventions in family nursing. Central to the models are therapeutic conversations with families (Broekema et al., 2018). In the models, it is essential that beliefs about families, illness and health care professionals have an impact on health care workers' attitudes toward involving families in health care (Svavarsdottir et al., 2018).

One article (Sandvik, Dybdahl and Hauge, 2018) focusing on continuing education in primary care dealt with preceptor education for specialty community-based nurses. The educational intervention included the development of effective communication skills that help guide students to plan, implement and evaluate practice in maternal and child health and to be a member of a multidisciplinary team.

5.5. Communication

Issues concerning communication in family and community nursing emerged in many articles relating to relationships between professionals (or health care workers/employees) (Berggren et al., 2016; Reeves et al., 2015; Richard et al., 2015; Sabey, Bray and Gray, 2019; Steven et al., 2018; Torres et al., 2017) and relationships between health care professionals and patients (Broekema et al., 2018; Burton and Carlyle, 2015; Duhamel et al., 2015; Grundy et al., 2017; Jayatilleke et al., 2015; Malan, Mash and Everett-Murphy, 2016; Sandvik, Dybdahl and Hauge, 2018; Svavarsdottir et al., 2018). Communication between preceptors and students (Mitchell, Ridgway and Sheeran, 2018) and preceptor and novice public health nurses (Shimazu, 2020) also emerged.

Continuing education that targets learning working in multidisciplinary teams increases interprofessional teamwork and improves outcomes of care (Berggren et al., 2016; Reeves et al., 2015; Richard et al., 2015; Sabey, Bray and Gray, 2019; Steven et al., 2018; Torres et al., 2017). In a continuing education program, the Collaboration for Leadership in Applied Health Research and Care (CLARCH), which aims to increase research capacity for public health services, emphasized the importance of learning multidisciplinary skills because health professionals receive their education generally in cohorts of their own profession, even though these professionals usually need to work in multidisciplinary teams. Carrying out good care requires effective communication between professionals (Sabey, Bray and Gray, 2019).

A continuing education program for PHC professionals called ConPrim, which was positively evaluated in terms of pedagogy, design and adaptation to PHC, included a component of interprofessional work in every section offered (web-based program, practical exercise, case seminar). This approach was considered to help develop interpersonal skills and learning from other professional groups (Berggren et al., 2016). Multidisciplinary workshops were considered a teaching method in continuing education for health visitors targeting developing support for families with children with complex needs. In addition to the development of multidisciplinary teamwork, participants experienced improved interprofessional confidence, early intervention and support for families (Steven et al., 2018).

5.6. Navigation as care coordinator and patient advocate

One article (Grundy et al., 2017) covered the topic of navigation as a care coordinator in PHC. Its purpose was to train community mental health professionals to involve service users and caregivers in care planning. The health care professionals were asked to acknowledge the fact that the staff is often concerned with the outcome of care planning, while the service users are more interested in the care planning process and the user-professional relationship.

Additionally, this competence includes multidisciplinary skills, which emerged in most articles in this review (Berggren et al., 2016; Reeves et al., 2015; Richard et al., 2015; Sabey, Bray and Gray, 2019; Steven et al., 2018; Torres et al., 2017). In particular, the HPL presented by Richard and colleagues (2015) and Torres and colleagues (2017) aimed to train public health care workers to respond to and develop various interventions for community health problems. One focus of the training pertaining to the COVID-19 crisis response was to train participants to act as a care coordinator to guide them to the right place to receive care in the access and functional needs framework (Harpin, 2020).

5.7. Evidence-based approach

Four articles (Humphries and Nolan, 2015; Johnson et al., 2017; Sabey, Bray and Gray, 2019; Svavarsdottir et al., 2018) covered a continuing education aiming to improve skills regarding using the best scientific evidence in PHC. Two of them were directly related to improving evidence-based practice in PHC (Johnson et al., 2017; Sabey, Bray and Gray, 2019). CLARCHS training programs aimed at building the capacity to use and undertake applied health research. The program provided teaching regarding finding relevant evidence, improving research and evaluation skills and critiquing research for practice

(Sabey, Bray and Gray, 2019). Additionally, a continuing education program titled "Nursing Experts: Translating the Evidence" (NexT) focused on searching scientific evidence and implementing it in practice. The program trained health care workers, for example, to perform literature searches and form PICO (patient/population, intervention, comparison and outcomes) questions (Johnson et al., 2017).

The continuing education program that focused on engaging with fathers as part of children's health care included part of a presentation of studies on the impact of fathers on children's health (Humphries and Nolan, 2015). Furthermore, one of the main priorities of the family nursing continuing education program (FN-ETI) is to provide evidence-based knowledge and recommendations related to family nursing (Svavarsdottir et al., 2018).

Preceptor education that aimed to foster novice public health nurses also aimed to decrease the burden of the preceptors' role, make preceptorship a learning opportunity and improve the career development environment. According to the study results, such education enhanced professional development for public health nurses (Shimazu, 2020). This relates to the FCN competence of "accountability for the outcomes of nursing care in individuals, families and the community" in the situation, where preceptor is assigned by rotation or by a decision of the public health agencies, thereby leading to a lack of motivation lacking and weakened preceptor experience (Shimazu, 2020).

5.8. Enhancing and promoting individual and family health, including e-health, to support the quality of nursing care

Teaching regarding health information and communication technology in FCN emerged in two articles (Broekema et al., 2018; Johnson et al., 2017). The Broekema and colleagues' study (2018) described a six-day continuing education program in family nursing, which also taught technology use as a part of support for family nursing. Johnson and colleagues (2017) created an electronic guide, website and social media platform for health care professionals, which was called the NExT continuing education program.

6. Discussion

This integrated review revealed the contribution of the FCN professional profile and core competencies in the existing continuing education programs offered in PHC. The results indicate that there is a wide variety of FCN continuing education programs, which partially cover the core competencies of the FCN professional profile.

Some of the core competencies of the FCN professional profile were covered extensively in continuing education programs, including needs assessment (Broekema et al., 2018; Duhamel et al., 2015; Harpin, 2020; Policicchio and Dontje, 2018; Svavarsdottir et al., 2018; Wang et al., 2017; Yamazaki et al., 2017), health promotion (Burton and Carlyle, 2015; Harpin, 2020; Malan, Mash and Everett-Murphy, 2016; Richard et al., 2015; Sandvik, Dybdahl and Hauge, 2018; Torres et al., 2017), communication (Berggren et al., 2016; Broekema et al., 2018; Burton and Carlyle, 2015; Duhamel et al., 2015; Jayatilleke et al., 2015; Malan, Mash and Everett-Murphy, 2016; Mitchell, Ridgway and Sheeran, 2018; Reeves et al., 2015; Richard et al., 2015; Sabey, Bray and Gray, 2019; Sandvik, Dybdahl and Hauge, 2018; Shimazu, 2020; Steven et al., 2018; Svavarsdottir et al., 2018; Torres et al., 2017) and an evidence-based approach (Humphries and Nolan, 2015; Johnson et al., 2017; Sabey, Bray and Gray, 2019; Svavarsdottir et al., 2018). Although these findings are satisfying, they indicate gaps regarding FCN core competencies that have either not been covered or have been poorly covered in the existing continuing education programs.

Although the need assessment competency has been considered in the existing FCN continuing education programs, public health nurses still do not have sufficient knowledge of assessment rating scales in mental health (Putkuri et al., 2021). Additionally, according to a recent study (Sibbald et al., 2020), some aspects of need assessment competence, such as assessment and analysis, knowledge synthesis and program planning, are missing from the existing FCN continuing education programs. Importantly, needs assessment is the first step of FCN-required core competencies because this competency allows the FCN to assess, evaluate and make plans for the health needs of individuals and families taking into consideration their social and cultural circumstances. However, some crucial aspects of need assessment, such as cultural competencies, have been poorly included in the existing FCN continuing education programs (Burton and Carlyle, 2015; Jayatilleke et al., 2015).

Furthermore, the existing FCN continuing education programs have somewhat covered some aspects of the decision-making core competence (Berggren et al., 2016; Broekema et al., 2018; Duhamel et al., 2015; Grundy et al., 2017; Humphries and Nolan, 2015; Reeves et al., 2015; Richard et al., 2015; Sabey, Bray and Gray, 2019; Steven et al., 2018; Svavarsdottir et al., 2018; Torres et al., 2017; Yamazaki et al., 2017), while other aspects of the decision-making core competence, such as ethical issues and leadership skills, did not emerge at all. FCNs must be able to educate, promote and persuade community health promotion goals (core health promotion competence), involve individuals and families in the decision-making process and develop a nurse leadership role (core decision-making competence). Generally, nurses tend to use different decision-making models, including analytical, intuitive and a mix of analytical and intuitive models (Parker, 2014). However, the intuitive decision-making model is more common as nurses become more competent and transfer from the novice stage to the expert stage (Benner, 1984; Parker, 2014). Involving individuals and families in health promotion decision-making, ethics, negotiations and leadership roles is an essential component of the decision-making core competence and requires an expert FCN to use different decision-making models based on the circumstances. Therefore, the educators and managers of PHC settings need to pay special attention to this core competence while planning FCN continuing education programs.

Moreover, our findings indicate that some of the FCN core competencies were covered insufficiently by the existing FCN continuing education programs, including "navigation as care coordinator and patient advocate." Some aspects of navigation as a coordinator core competence overlap with the communication core competence and consequently are therefore somewhat covered in continuing education programs. However, some important aspects of this core competence, such as managing change and managing disparity and diversity, have been neglected in the existing continuing education programs. One of the requirements of an FCN is to act as an agent regarding changes to improve family and community nursing practice and to be competent to foster inclusiveness. Thus, future FCN continuing education programs need to invest in this core competence and prepare FCNs for such responsibilities.

Another FCN core competence that is covered insufficiently by the existing FCN continuing education programs is "enhancing and promoting individual and family health, including e-health, to support the quality of nursing care." The importance of e-health is highlighted by commonly used mobile health applications (mHealth apps) for promoting patient-centered health within communities, thereby requiring a competent FCN to evaluate and incorporate them into patient care (Mueller, 2020). Despite today's increasing need for e-health, health technology education plays a very limited role in existing continuing education in FCNs. Our result aligns with the result of a study (Valaitis et al., 2014) that identified information technology (IT) as a weak skill in PHC settings. E-health and monitoring play a crucial role in managing public health and affect the FCN health promotion core competence, especially in pandemic crises such as COVID-19 (Krausz et al., 2020). For instance, community nurses are recommended to use call handlers for referrals, which requires their competence in using clinical algorithms conditional on the patient's electronic record system (King, 2020). Moreover, e-health promotes evidenced-based decision-making by centralizing the data (Krausz et al., 2020) and consequently improves FCN decision-making and evidence-based approach core competencies.

In fact, training an evidence-informed workforce is identified as one of the gaps in the existing FCN continuing education programs (Sibbald et al., 2020). Considering that e-health has a close impact on the effectiveness of other FCN core competencies (including health promotion, decision-making processes and evidence-based approaches), we highly recommend that PHC educators invest in this core competence while planning FCN continuing education programs.

6.1. Limitations and future research

A limitation of this study was the small number of studies assessing the development of educational courses for health care professionals focusing on improving health care delivery to COVID-19 patients that were found. Future research could focus on assessing the competencies of FCNs using validated FCN competence measures such as evidence-informed decision-making (Belita et al., 2021) and identifying competence gaps that are essential for FCN professional development. The findings may guide FCN continuing education program development by adopting a tailored educational approach, especially for COVID-19 patients.

7. Conclusions

This integrated review uncovered the contribution of the FCN professional profile and core competencies in the existing continuing education programs offered in PHC. Some core competencies of the FCN professional profile, such as cultural competencies and health information and communication technology (e-health), play a very limited role in the existing FCN continuing education, while others, including ethics, managing change, managing disparity and diversity and leadership skills, do not emerge at all. The identified gaps can be incorporated into future FCN continuing education programs and may help to improve nurses' competence and health care delivery and support new integrated models of care, i.e., person-centered and community-based models.

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Ethics

The study was conducted according to the Helsinki Declaration and General Data Protection Regulations (EU 2016/679).

Compliance with Ethical Standards

Ethical considerations.

Author Contributions

Made substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data;: MA, RP, IVP, GA, GC, AB, HT, Involved in drafting the manuscript or revising it critically for important intellectual content: MA, RP, IVP, GA, GC, AB, HT, Given final approval of the version to be published. Each author participated sufficiently in the work for taking public responsibility for appropriate portions of the content: MA, RP, IVP, GA, GC, FP, AB, HT, Agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved: MA, RP, IVP, GA, GC, FP, AB, HT.

Declaration of Competing Interest

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.

Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at doi:10.1016/j.nepr.2023.103561.

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