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Interventions to improve patient health education competence among nursing personnel: a scoping review protocol

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ABSTRACT

Introduction Patient health education has gradually become an indispensable and important part of nursing work. However, nursing personnel's performance in this domain remains below satisfactory levels. The absence of patient health education competence (PHEC) constitutes a significant impediment to the effective implementation of such education by nursing personnel. Effective training in PHEC can enable nursing personnel to recognise the importance of patient health education, improve their attitudes towards patient health education and gain comprehensive knowledge and skills, thus improving patients' health outcomes and quality of life, while also enhancing the overall quality of nursing. However, the related research is fragmented and there is a lack of systematic review of related literature. The scoping review aims to provide a comprehensive overview of the existing interventions related to cultivating the PHEC of nursing personnel.

Methods and analysis We will use the Joanna Briggs Institute methodology to guide the scoping review proposed by this protocol. Between 1 April 2024 and 15 April 2024, a systematic search of electronic bibliographic databases, including Cochrane Library, PubMed, EMBASE, CINAHL, MEDLINE and ERIC, will be conducted. In addition, the grey literature source Google search engine will also be searched. Two reviewers will independently screen and conduct data extraction. Any discrepancies that arise will be resolved through consultation with a third reviewer. The data will be analysed and presented in tables, flow diagrams and text.

Ethics and dissemination Ethical approval is not applicable for this study. We will share the findings from the study at national and/or international conferences and in a peer-reviewed journal in the fields of nursing education and/or patient education.

Registration number This scoping review had been registered on Open Science Framework (http://osf.io/dapq7).

STRENGTHS AND LIMITATIONS OF THIS STUDY

⇒ The Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews checklist will be used to guide the reporting of the scoping review.
⇒ The review proposed by this protocol will follow the Joanna Briggs Institute methodology for scoping reviews.
⇒ The scoping review will incorporate the grey literature source, the Google search engine, to ensure a comprehensive and systematic literature search.

INTRODUCTION

With the transformation of the disease-centred care model to the patient-centred holistic care model, patient health education has gradually become an indispensable and important part of nursing work.[1 2] Patient health education is a planned educational process designed to impact patient behaviour and result in changes in knowledge, attitudes and skills that are necessary for maintaining or improving health.[3] A series of studies have demonstrated that effective patient health education can enhance patients' comprehension of their own health status and measures for disease management. It has been shown to improve their health literacy, alleviate anxiety and foster increased compliance and satisfaction with nursing personnel. Thus, it improves patients' health outcomes and quality of life while also enhancing the overall quality of nursing.[2 4–8] Moreover, patient health education emerges as a cost-effective measure, offering potential savings in healthcare costs and alleviating the overall economic burden on society.[9] A specific study demonstrated noteworthy cost effectiveness, indicating that, for each US$ 1 invested in patient health education services, there was a remarkable saving of US$ 6 in healthcare costs.[2]

While nursing personnel acknowledge the pivotal role of patient health education in their clinical practice, their performance in this domain remains below satisfactory levels.[9–11] Numerous studies consistently indicate that the absence of patient health education competence (PHEC) constitutes a significant impediment to the effective implementation of such education by nursing

personnel.[2 9–11] Effective training in PHEC can enable nursing personnel to recognise the importance of patient health education, improve their attitudes towards patient health education and gain comprehensive knowledge and skills, thus promoting the development of PHEC.[12–14] Hence, it is imperative to enhance the PHEC of nurses and nursing students through training, as this is crucial for improving their skills and fostering the development of patient health education.

Although studies have documented interventions aimed at enhancing the PHEC of nursing personnel, a comprehensive review of these interventions has not been conducted at present.[13–18] It is unknown what types of interventions exist, what content and pedagogical methods are covered and how interventions may improve nursing personnel's PHEC. Through systematic combing and analysis of the existing literature, we can develop a comprehensive framework that provides insights into the characteristics, strategies and suitability of various interventions. This aids in identifying gaps and informing the development of future interventions to develop high-quality and effective evidence-based-related training. Consequently, there is a pressing need for systematic analysis and integration of existing interventions to maximise their effectiveness, thereby providing a basis for constructing more effective interventions in the future. Furthermore, the existing literature is fragmented. Therefore, we propose the adoption of a scoping review to address this knowledge gap and gather dispersed information. The scoping review aims to provide a comprehensive overview of the existing interventions related to cultivating the PHEC of nursing personnel. It intends to provide up-to-date, evidence-based recommendations related to the training of nursing personnel's PHEC for future researchers, intervention designers and educational policy makers.

Main review question

What intervention strategies (eg, teaching modalities, teaching objectives, teaching content, teaching methods, teaching duration and frequency, teaching media and teaching faculty) are being used for the interventions aimed at improving the PHEC of nursing personnel?

Secondary review question

1. What are the characteristics (eg, year, country and study design) of the studies on interventions aimed at improving the PHEC of nursing personnel?
2. What are the outcomes measured and what assessment methods (eg, quizzes and interviews) are used to measure outcomes?

METHODS

We will use the Joanna Briggs Institute methodology to guide the scoping review proposed by this protocol.[19] The scoping review will be reported following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) extension for Scoping Reviews checklist.[20] This scoping review had been registered on Open Science Framework (http://osf.io/dapq7).

Table 1 Eligibility criteria

	Inclusion criteria	Exclusion criteria
Population	Any nursing personnel (eg, clinical nurses, nursing supervisors, nurse managers and nursing students) in any clinical setting (eg, hospital and community) are eligible.	Other health professionals (eg, doctors and therapists) will be excluded.
Concept	Any intervention designed to improve nursing personnel's PHEC will be eligible.	–
Context	Interventions provided in any setting (eg, hospitals, communities, universities and colleges) will be eligible.	–

PHEC, patient health education competence.

Inclusion and exclusion criteria

The population, concept and context model will guide the development of inclusion and exclusion criteria. The eligibility criteria are listed in table 1.

This review will consider different research methods (eg, quantitative, qualitative and mixed methods study designs) for inclusion. Protocols, conference abstracts and reviews will be excluded. If full-text versions of the studies are not available online, we will contact the authors of these articles, and if we are unable to obtain valid information after contacting the authors, we will exclude these articles. No limitation is on publication time and language.

Search strategy

Between 1 April 2024 and 15 April 2024, a systematic search of electronic bibliographic databases, including Cochrane Library, PubMed, EMBASE, CINAHL, MEDLINE and ERIC, will be conducted. The search time limit will span from the creation date of the respective libraries to the search date. Furthermore, references of included studies will be thoroughly searched to identify any additional eligible studies. In addition, the grey literature source Google search engine will also be searched. The literature search will employ a combination of subject terms and free words to ensure comprehensive coverage. The search terms related to nursing, patient education, competence and training will be used. The search strategy tailored for PubMed is presented in table 2, while the corresponding search strategies for other databases can be found in online supplemental file 1. A three-step search strategy will be employed. (1) Initially, the researchers will conduct a limited search in PubMed and Embase to analyse the MeSH terms and keywords found in the titles and abstracts. (2) Subsequently, a comprehensive search will be carried out across all target databases, using the search terms identified in the first step.

Table 2 Search strategy for PubMed

1	#1	(Nurses[MeSH Terms] OR Students, Nursing[MeSH Terms]) OR (nurs*[tiab] OR nursing student*[tiab])
2	#2	(((Health Education[MeSH Terms] OR Patient Education as Topic[MeSH Terms]) OR (health education[tiab] OR education, health[tiab] OR patient education[tiab] OR education, patient*[tiab] OR education of patient*[tiab] OR patient teaching[tiab] OR patient training[tiab])) OR (hospital education[tiab] OR clinical education[tiab])) OR (((((("educate individual"[tiab:~2]) OR ("inform individual"[tiab:~2])) OR ("teach individual"[tiab:~2])) OR ("train individual"[tiab:~2])) OR ("learn individual"[tiab:~2])) OR (((("educate consumer"[tiab:~2]) OR ("inform consumer"[tiab:~2])) OR ("teach consumer"[tiab:~2])) OR ("train consumer"[tiab:~2])) OR ("learn consumer"[tiab:~2]))) OR ((("educate patient"[tiab:~2]) OR ("inform patient"[tiab:~2])) OR (("teach patient"[tiab:~2]) OR ("train patient"[tiab:~2])) OR ("learn patient"[tiab:~2]))))
3	#3	((professional competence[MeSH Terms]) OR (competenc*[tiab] OR capabilit*[tiab] OR capacit*[tiab] OR abilit*[tiab])) OR ((knowledge[tiab]) AND (skill*[tiab]))
4	#4	(education, nursing[MeSH Terms] OR nursing education research[MeSH Terms] OR Education, Nursing, Baccalaureate[MeSH Terms] OR Education, Nursing, Continuing[MeSH Terms] OR curriculum[MeSH Terms]) OR (educat*[tiab] OR teach*[tiab] OR learn*[tiab] OR course*[tiab] OR class*[tiab] OR train*[tiab] OR lecture*[tiab] OR intervene*[tiab] OR workshop[tiab])
5	#5	#1 AND #2 AND #3 AND #4

(3) Finally, the researchers will explore the reference lists of all identified articles to identify additional relevant studies.

Study selection

We will manage study selection through Covidence. The selection will consist of two steps, conducted by two independent reviewers who will adhere to prespecified eligibility criteria. In the first step of the screening process, titles and abstracts will be reviewed by two independent researchers according to the established eligibility criteria. Any discrepancies that arise will be resolved through consultation with a third reviewer. The second step will entail a full-text review of the studies that pass the first step, conducted by the same independent reviewers. In the event of a disagreement, a third researcher will be consulted to assist with the literature screening. The results of the review will be reported using the PRISMA flow diagram.[21] Because this scoping review aims to provide a mapping of the available evidence rather than to offer a comprehensive, clinically meaningful answer to

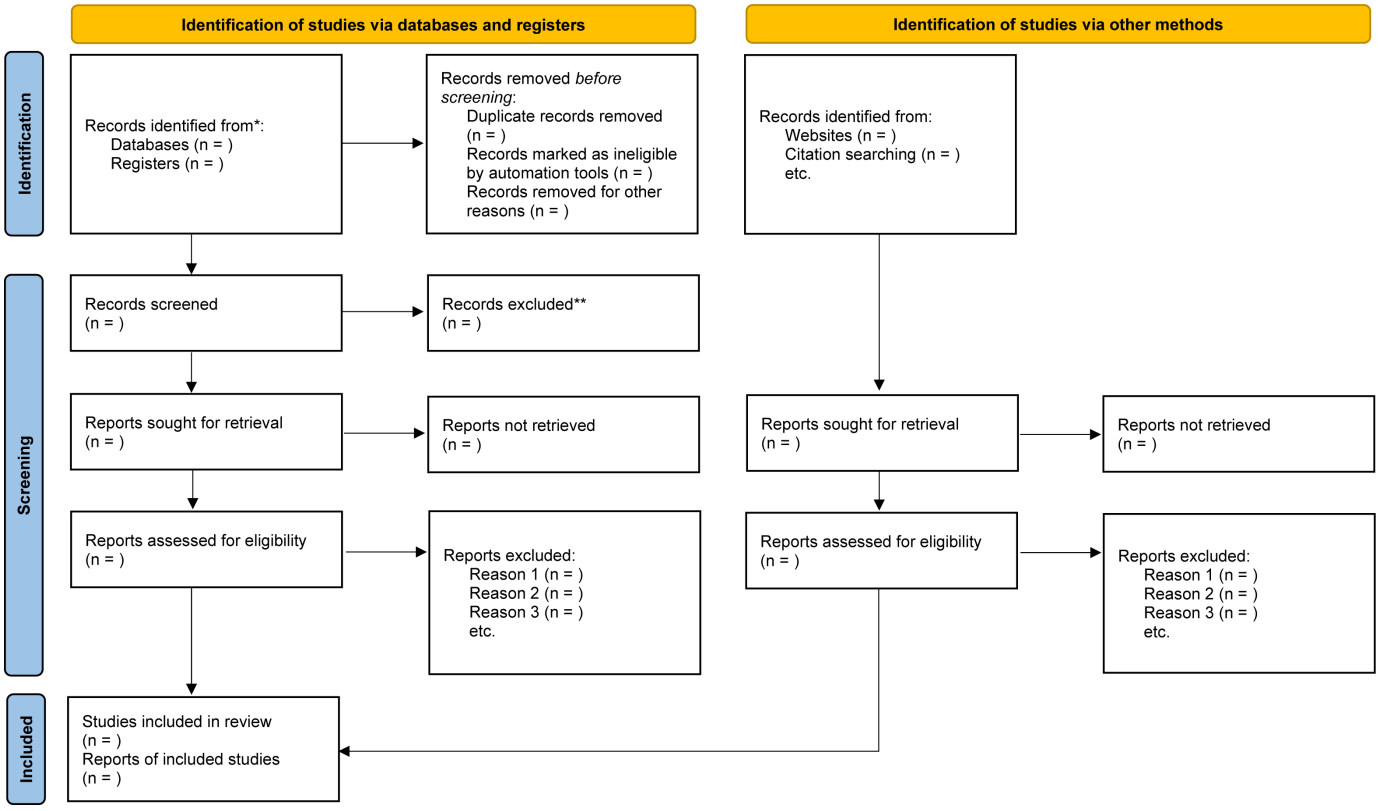

Figure 1 PRISMA flow diagram for this systematic review. *Consider, if feasible to do so, reporting the number of records identified from each database or register searched (rather than the total number across all databases/registers). **If automation tools were used, indicate how many records were excluded by a human and how many were excluded by automation tools. PRISMA, Preferred Reporting Items for Systematic Reviews and Meta-Analyses.

a specific question, we will not conduct risk of bias assessments or quality assessments for the included studies. The screening processes of this study are shown in figure 1.

Data extraction

Two reviewers will conduct data extraction from the included studies independently, using the data extraction table. The data extraction table is shown in online supplemental file 2. In case of any discrepancies or disagreements, a third reviewer will be consulted to resolve them through discussion. The data to be extracted will include: (1) characteristics of all included studies (ie, author, year of publication, country and type of study/design); (2) participants (ie, target population, sample size and study setting); (3) study aims; (4) intervention strategies (ie, teaching modalities, teaching objectives, teaching content, teaching methods, teaching duration and frequency, teaching media and teaching faculty); (5) outcomes measured; (6) outcome assessment methods and measurement instruments; (7) key findings and conclusions.

Synthesis and presentation of the results

In accordance with the study objectives of this scoping review, we aim to offer a narrative description of the data, supplemented by the utilisation of tables and flow diagrams to enhance the visual representation of our findings.

Patient and public involvement statement

None.

Ethics and dissemination

Ethical approval is not required for this study as it relies solely on published literature and does not involve private personal information or sensitive data. We will share the findings from the study at national and/or international conferences and in a peer-reviewed journal in the fields of nursing education and/or patient education.

Contributors All authors have read and agreed to the published version of the manuscript. Conceptualisation: GW, QC, ST; Methodology: QC, SW, GW; Data curation: QC, SW, KL, YQ; Writing—original draft preparation: SW, GW, KL; Writing—review and editing: QC, ST, YQ; Supervision: QC and ST. SW is the guarantor.

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Competing interests None declared.

Patient and public involvement Patients and/or the public were not involved in the design, or conduct, or reporting or dissemination plans of this research.

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REFERENCES

1 Tinetti ME, Naik AD, Dodson JA. Moving From Disease-Centered to Patient Goals-Directed Care for Patients With Multiple Chronic Conditions: Patient Value-Based Care. *JAMA Cardiol* 2016;1:9–10.
2 Wang S, Liu K, Tang S, *et al*. Instruments for measuring patient health education competence among nursing personnel: A COSMIN-based systematic review. *Nurse Educ Pract* 2023;72:103798.
3 Patient education. American Academy of Family Physicians. *Am Fam Physician* 2000;62:1712–4.
4 Sassen B. Health promotion and health education: improving patients' health status. In: Sassen B, ed. *Nursing: Health Education and Improving Patient Self-Management*. Cham: Springer International Publishing, 2018: 81–140.
5 Wittink H, Oosterhaven J. Patient education and health literacy. *Musculoskelet Sci Pract* 2018;38:120–7.
6 Bhattad PB, Pacifico L. Empowering Patients: Promoting Patient Education and Health Literacy. *Cureus* 2022;14:e27336.
7 Johnson AM, Brimhall AS, Johnson ET, *et al*. A systematic review of the effectiveness of patient education through patient portals. *JAMIA Open* 2023;6:ooac085.
8 Wang S, Liu K, Shi Z, *et al*. Instruments for measuring patient health education competence among nursing personnel: protocol for a COSMIN-based systematic review. *BMJ Open* 2023;13:e072905.
9 Lin LY, Wang RH. Patient Education Competence Scale for Registered Nurses in Taiwan: Scale development and psychometric validation. *Jpn J Nurs Sci* 2017;14:117–25.
10 Hwang HL, Kuo ML, Tu CT. Health education and competency scale: Development and testing. *J Clin Nurs* 2018;27:e658–67.
11 Pueyo-Garrigues M, Pardavila-Belio MI, Whitehead D, *et al*. Nurses' knowledge, skills and personal attributes for competent health education practice: An instrument development and psychometric validation study. *J Adv Nurs* 2021;77:715–28.
12 Weiss ME, Piacentine LB, Candela L, *et al*. Effectiveness of using a simulation combined with online learning approach to develop discharge teaching skills. *Nurse Educ Pract* 2021;52:103024.
13 Martin-Delgado L, Goni-Fuste B, Monforte-Royo C, *et al*. A teaching role practicum during the COVID-19 for final year nursing students in Spain: A qualitative study. *J Prof Nurs* 2022;42:51–7.
14 Dong X, Zhang Z, Zhang X, *et al*. Effects of an online training program on cardiovascular health behavior modification on nursing students' health education competency. *Nurse Educ Today* 2023;127:105829.
15 Sezer H, Orgun F. Effectiveness of standardized patient on patient education skills of nursing students - a pilot study. *J Pak Med Assoc* 2019;69:1848–54.
16 Torkshavand G, Khatiban M, Soltanian AR. Simulation-based learning to enhance students' knowledge and skills in educating older patients. *Nurse Educ Pract* 2020;42:102678.
17 Banayat A, Goyena KH, Valenzuela IL. EFFECTS IN EDUCATION COMPETENCY SELF-ASSESSMENT OF A BASIC HEALTH EDUCATION ONLINE COURSE FOR HEALTH PROFESSIONALS IN PEDIATRIC HEMATOLOGY-ONCOLOGY: A PILOT STUDY. *Pediatr Blood Cancer* 2022;69:S530.
18 Wang L, Wang Y, Wang X, *et al*. Effects of mind mapping based on standardized patient program in patient education among postgraduate nursing students in clinical setting. *BMC Med Educ* 2023;23:982.
19 Peters MDJ, Marnie C, Tricco AC, *et al*. Updated methodological guidance for the conduct of scoping reviews. *JBI Evid Implement* 2021;19:3–10.
20 Tricco AC, Lillie E, Zarin W, *et al*. PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation. *Ann Intern Med* 2018;169:467–73.
21 Page MJ, McKenzie JE, Bossuyt PM, *et al*. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ* 2021;372:n71.