ASPI | Afarand Scholarly Publishing Institute; Turkey
eISSN: 2645-7687. Journal of Clinical Care and Skills. 2025;6(4):185-202 10.58209/jccs.6.4.185

A Systematic Review and Nursing Organizations Guidelines on Professional Competence Standards for Nurses

ARTICLE INFO

Article Type
Systematic Review

Authors
Zarshenas L.[1] *PhD*
Mehri Z.*[2] *PhD*
Rakhshan M.[1] *PhD*
Khademian Z.[3] *PhD*
Mehrabi M.[4] *PhD*
Jamshidi Z.[1] *PhD*

How to cite this article
Zarshenas L, Mehri Z, Rakhshan M, Khademian Z, Mehrabi M, Jamshidi Z. A Systematic Review and Nursing Organizations Guidelines on Professional Competence Standards for Nurses. Journal of Clinical Care and Skills. 2025;6(4):185-202.

[1]Department of Nursing, School of Nursing and Midwifery, Shiraz University of Medical Sciences, Shiraz, Iran
[2]Student Research Committee, Shiraz University of Medical Sciences, Shiraz, Iran
[3]"Community Based Psychiatric Care Research Center" and "School of Nursing and Midwifery", Shiraz University of Medical Sciences, Shiraz, Iran
[4]Department of e-Learning in Medical Sciences, Virtual School, Center of Excellence for e-Learning in Medical Sciences, Shiraz University of Medical Sciences, Shiraz, Iran

***Correspondence**
Address: Fatemeh (P.B.U.H) School of Nursing and Midwifery, Namazee Hospital, Namazee Boulevard, Shiraz, Iran. Postal Code: 71936-13119
Phone: +98 (71) 36474254
zahra_mehri@sums.ac.ir

Article History
Received: August 12, 2025
Accepted: September 28, 2025
ePublished: Octber 3, 2025

ABSTRACT

Aims This study aimed to conduct a systematic review of professional competence standards for nurses based on literature and nursing organization guidelines.

Information & Methods This systematic review assessed nursing professional competence standards in 2023, based on articles from national and international nursing organizations, and utilized the preferred reporting items for systematic reviews and meta-analyses guidelines. The databases reviewed included PubMed, MEDLINE, Embase, Scopus, Cochrane, ProQuest, Web of Science, Google Scholar, SID, IranMedex, IranDoc, and Magiran. Search strategies were performed using keywords, such as "Nurse," "Professional Competence," and "Competence Standard," based on Medical Subject Headings, employing the syntax and operators "AND" and "OR." Inclusion and exclusion criteria were applied in the selection of studies. The handling of the results was carried out using Mendeley software, and screening and quality control were conducted based on appropriate checklists. Finally, data extraction and synthesis of results were performed, and the standards were presented.

Findings A total of 2,078 documents from scientific articles and national Iranian and international nursing organizations were reviewed, resulting in a final total of 50 included documents. There were 428 standards as standards of professional competence for nurses. The synthesis of these standards led to the identification of five domains of professional competence standards for nurses.

Conclusion Clinical competence, educational and research competence, ethical competence, communication and interpersonal competence, and management and leadership competence are five domains of competence based on articles and guidelines from nursing organizations.

Keywords Nurses; Professional Competence; Systematic Review

CITATION LINKS

[1] Nursing and midwifery ... [2] The future ... [3] Nursing ... [4] Nursing competency ... [5] Nurses' professional ... [6] Competency in ... [7] Professional competence ... [8] Professional ... [9] Modeling the relationship ... [10] Novice nurses' ... [11] Factors related to ... [12] A concept analysis ... [13] Competence ... [14] Managerial competence ... [15] Developing professional ... [16] Nursing competency ... [17] Nurse competence ... [18] Factors that affect ... [19] Improving the ... [20] How to get ... [21] Preferred reporting ... [22] Medline and ... [23] What is lost when ... [24] Competency in ... [25] Systematic review and ... [26] PICO, PICOS and ... [27] Developing competency ... [28] The PRISMA statement ... [29] Consolidated ... [30] The mixed methods ... [31] PRISMA ... [32] Clinical practice ... [33] Clinical practice ... [34] Updated nursing scope ... [35] Global standards ... [36] New competencies ... [37] Safe and competent ... [38] Perceptions ... [39] Developing nursing standard ... [40] Guiding ... [41] Competency based ... [42] Standards for ... [43] The development ... [44] Guidelines for ... [45] Standards of ... [46] Deputy for ... [47] Nursing ... [48] The competency standards ... [49] Standards of practice ... [50] Standards of ... [51] Professional standards ... [52] Helene Fuld ... [53] Registered nurse ... [54] Standards of practice ... [55] College of Registered ... [56] Professional ... [57] Nursing and ... [58] Standards ... [59] Registered ... [60] The development ... [61] Nurse registration ... [62] Guideline for ... [63] The code ... [64] Nursing: Scope ... [65] The cod ... [66] National nursing ... [67] Core ... [68] Standards ... [69] Standards ... [70] The 2012 national nursing ... [71] National competency ... [72] Nursing: Scope and ... [73] Standards for competence ... [74] Standards ... [75] ICN framework ... [76] Revisiting ... [77] 2005 nursing ... [78] National ... [79] Papua ... [80] A scoping review ... [81] Hospital ... [82] Nursing ... [83] A study of ... [84] Hypothetical model ... [85] How to assess nurse ... [86] Feedback among nursing professionals ... [87] Working environments have ...

Copyright© 2025, the Authors | Publishing Rights, ASPI. This open-access article is published under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License which permits Share (copy and redistribute the material in any medium or format) and Adapt (remix, transform, and build upon the material) under the Attribution-NonCommercial terms.

Introduction

Nurses make up a large proportion of the health workforce in many countries worldwide, and through the provision of services and basic care, they are a key component of healthcare systems [1]. The increasing role of nurses in healthcare has led to a growing need for them to fulfill a variety of roles [2]. This creates a high demand for nurses to work in various healthcare settings, including hospitals, public and private health centers, primary care centers, nursing homes, ambulatory surgery centers, schools, psychiatric centers, the military, industrial centers, healthcare research centers, universities, home care centers, and insurance companies [3]. As providers of comprehensive care to patients, nurses are expected to act in accordance with their professional responsibilities when caring for individuals [4]. In this regard, it should be noted that the improvement of healthcare quality is directly linked to the professional competence of nurses [5].

Professional competence has many dimensions and is influenced by a variety of factors [6]. It is one of the dimensions of competence and is an important and fundamental concept in the field of nursing [5]. The concept of professional competence is complex, multi-layered, and contextual [7]. To date, different dimensions of competence in nursing have been introduced; in this respect, the following can be mentioned: professional competence, interdisciplinary competence, clinical competence, individual competence, research competence, educational competence, and cultural competence [6]. Professional competence is considered a continuum that may increase or decrease over time, depending on various factors [8]. Improving the competencies of nurses across these dimensions will lead to various achievements, including the professional socialization and professionalization of nurses, as well as the provision of high-quality services to patients [4, 9, 10].

Different country-specific definitions of competence have been provided, depending on the context of each country [11]. This has resulted in ambiguity and complexity regarding the concept, as well as the absence of a uniform definition of competence [12, 13]. The Merriam-Webster Online Dictionary defines competence as having sufficient knowledge, skills, judgment, and ability to carry out a particular task or function [13]. Gunawan and Aungsuroch refer to competence as a set of knowledge, attitudes, and skills that are manifested through behavior [14]. According to Fukada, competence is a behavioral trait and an acquisition of skills that results from experience and learning. It is achieved by the individual based on their attitudes and motivations, and by utilizing their individual interests and experiences [4].

DeGrande *et al.* define professional competence as the ability to make clinical decisions in accordance with clinical circumstances and based on prior experience [15].

Numerous studies show that there are significant differences and discrepancies in the implementation of standards and dimensions of nurse competencies, as well as the factors that influence them. Halcomb *et al.* listed clinical performance, professionalism, communication, and improving patient health as standards of competence for nurses [16]. According to the study by Valizadeh *et al.*, the concept of competence is based on knowledge, attitude, skills, motivation, experience, creativity, responsibility, holistic care, ethical action, clinical judgment, communication with patients, cooperation and teamwork, management and leadership, perseverance and stability, and the ability to cope with difficult and complex situations [7]. In the study by DeGrande *et al.*, the main dimensions of a nurse's competence are described as situation management, teamwork, and decision-making [15]. In the study conducted by Smith, the integration of knowledge and practice, critical thinking, motivation, experience, skill, environment, communication, and professionalism are introduced as characteristics of nurse competence [17].

In the existing literature, various factors have been identified as influencing the development of nurses' professional competencies and the support they receive. The competence of nurses is affected by several factors, such as individual characteristics, educational level, work experience, professionalism, the type of environment in which they work, and critical thinking [18]. Tabari Khomeiran *et al.* report individual characteristics, motivation, theoretical knowledge, opportunities, experience, and environment as personal and non-personal factors that influence the development of nurses' professional competencies [8]. In a study by Gunawan *et al.*, age, marital status, educational level, specialized knowledge, clinical experience, job satisfaction, employment status, job position, income, burnout, and continuing education are identified as factors influencing clinical competence in nurses [11]. Nehrir *et al.* report other factors, such as knowledge, personal experiences, professional skills, motivation, decision-making power, self-confidence, professional independence, and positive social interactions as factors affecting nurses' competence [6].

Nurses face a number of professional competency needs during their careers [19]. If these needs are not addressed and met, many nurses will leave the profession [19]; if these nurses are retained in the health system, the quality of care will deteriorate, and public health will be compromised [5]. Therefore, it appears necessary to focus on the standards of professional competence for nurses. Different standards have been implemented in various organizations; however, given the context-dependent nature of standards of professional competence, a

systematic review is needed. This is because no comprehensive study has been found that reviews these standards based on existing literature, scientific articles, and the guidelines of national and international nursing organizations. Consequently, we decided to conduct a systematic review of the literature and nursing organizations' guidelines to determine the competence standards for nurses. The results are expected to further develop the professional competencies of nurses, improve the quality of care, increase patient satisfaction, and promote the health of individuals in society.

Information and Methods

This systematic review of nursing professional competence standards was conducted based on the available scientific literature in Iran and worldwide, with the aim of reviewing the standards of nursing professional competence in 2023. Databases, such as the International Prospective Register of Systematic Reviews (PROSPERO) and the Cochrane Library were consulted to determine the standards of competence for nurses and to confirm that the study was not duplicative [20].

Guidance, such as the preferred reporting items for systematic reviews and meta-analyses (PRISMA) statement is used in the preparation of the study protocol [20, 21]. Following the development of the protocol, the standards were reviewed based on the PRISMA 2020 statement to identify the standards of competence for nurses.

To ensure that the articles are fully covered, simultaneous searches of the databases PubMed, MEDLINE, and Embase are required [22, 23]. Researchers examined external databases, such as PubMed, MEDLINE, Embase, Scopus, Cochrane, ProQuest, and the Web of Science. Google Scholar was also reviewed to ensure that the search is comprehensive. Additionally, internal databases, such as SID, IranMedex, IranDoc, and Magiran were searched.

A national nursing organization is a professional entity that coordinates, exchanges ideas, promotes, stimulates, educates, researches, and organizes scientific activities while providing human resources through policy development, legislation, and standardization. The International Council of Nurses is a large, global organization of nurses that influences nursing practice by setting standards and communicating procedures [24].

The keywords were selected from the Medical Subject Headings (MeSH), synonyms in various databases, and related free terms by two researchers. Studies on the competence of nurses were also examined to identify keywords relevant to this issue [20, 25]. Searches were performed in the title, abstract, and keywords in foreign databases using Population or Problem, Intervention or Exposure, Comparison, Outcome, Study Design (PICOS) and Sample, Phenomenon of Interest, Design, Evaluation, Research Type (SPIDER) [26]. Additionally, the search was also conducted in Persian databases using translations of the aforementioned keywords in Persian and the same search strategy (Table 1).

Syntaxes were developed and utilized to search both Iranian and foreign databases comprehensively and accurately, based on search strategies specific to each database (Table 2).

The inclusion criteria were Quantitative, qualitative, and mixed-method articles that contain at least one of the professional competence standards for nurses in the title, keywords, or abstract of the article, scientific articles that have been published in peer-reviewed journals, articles from Iranian and foreign conferences that include at least one of the professional competence standards for nurses in the title, keywords, or abstract, guidelines and reports from reputable Iranian and international nursing organizations that feature at least one of the professional competence standards for nurses, and scientific articles, conference papers, guidelines, and reports that are relevant to the research question. Since the oldest article mentioning the competence standards for nurses was Davey's article in 1995 [27], studies published from 1995 onwards were included in the study. A study was excluded if there was a lack of access to the full article due to unresolved journal access constraints.

Table 1. Review of professional competence standards for nurses using PICOS and SPIDER search strategies

Strategy	Description	
PICOS (P AND I AND O AND S)		
P	Population	"Nurse" OR "Nurses" OR "Nursing Student" OR "Nursing Students" OR "Nursing" OR "Novice Nurse" OR "Novice Nurses"
I	Intervention	"Novice Nurse' Professional Competence Promotion Program"
C	Comparison	No comparison is made in this study
O	Outcome(s)	"Professional Competence" OR "Clinical Competence" OR "Competence" OR "Competence Standard" OR "Competence Standards" OR "Standard" OR "Standards"
S	Study type	"Mixed Method Study" OR "Qualitative Study" OR "Quantitative Study" OR "Randomized Clinical Trial" OR "RCT" OR "Cross-Sectional Study" OR "Case Control Study" OR "Review Study" OR "Cohort Study"
SPIDER (S AND PI AND D AND E AND R)		
S	Sample	"Nurse" OR "Nurses" OR "Nursing Student" OR "Nursing Students" OR "Nursing" OR "Novice Nurse" OR "Novice Nurses"
PI	Phenomenon of Interest	"Professional Competence" OR "Clinical Competence" OR "Competence" OR "Competence Standard" OR "Competence Standards" OR "Standard" OR "Standards"
D	Design	"Mixed Method Study" OR "Qualitative Study OR Quantitative Study"
E	Evaluation	"Novice Nurse' Professional Competence"
R	Research type	"Mixed Method Study" OR "Qualitative Study" OR "Quantitative Study" OR "Randomized Clinical Trial" OR "RCT" OR "Cross-Sectional Study" OR "Case Control Study" OR "Review Study" OR "Cohort Study"

Table 2. Internal and external database syntaxes

Database	Syntaxe
PubMed/MEDLINE	("Nurs*"[tiab[1]]) OR ("Nursing Student*"[tiab]) OR ("Nursing"[tiab]) OR ("Novice Nurs*"[tiab]) AND ("Professional Competence"[tiab]) OR ("Clinical Competence"[tiab]) OR ("Competence"[tiab]) OR ("Competence Standard*"[tiab]) OR ("Standard*"[tiab]) AND (("Nurs*"[tiab]) AND ("Competence"[tiab]))
Embase	Nurs*:ti,ab.kw[2] OR 'Nursing Student*':ti,ab,kw OR Nursing:ti,ab,kw OR 'Novice Nurs*':ti,ab,kw AND 'Professional Competence':ti,ab.kw OR 'Clinical Competence':ti,ab,kw OR Competence:ti,ab,kw OR 'Competence Standard*':ti,ab,kw OR Standard*:ti,ab,kw AND (Nurs*:ti,ab,kw AND Competence:ti,ab,kw)
Scopus	TITLE-ABS-KEY[3] (Nurs*) OR TITLE-ABS-KEY (Nursing Student*) OR TITLE-ABS-KEY (Nursing) OR TITLE-ABS-KEY (Novice Nurs*) AND TITLE-ABS-KEY (Professional Competence) OR TITLE-ABS-KEY (Clinical Competence) OR TITLE-ABS-KEY (Competence) OR TITLE-ABS-KEY (Competence Standard*) OR TITLE-ABS-KEY (Standard*) AND ((TITLE-ABS-KEY (Nurs*) AND TITLE-ABS-KEY (Competence))
Cochrane	TITLE-ABS-KEY (Nurs*) OR TITLE-ABS-KEY (Nursing Student*) OR TITLE-ABS-KEY (Nursing) OR TITLE-ABS-KEY (Novice Nurs*) AND TITLE-ABS-KEY (Professional Competence) OR TITLE-ABS-KEY (Clinical Competence) OR TITLE-ABS-KEY (Competence) OR TITLE-ABS-KEY (Competence Standard*) OR TITLE-ABS-KEY (Standard*) AND ((TITLE-ABS-KEY (Nurs*) AND TITLE-ABS-KEY (Competence))
ProQuest	noft[4] (Nurs*) OR noft(Nursing Student*) OR noft(Nursing) OR noft(Novice Nurs*) AND noft("Professional Competence") OR noft("Clinical Competence") OR noft("Competence") OR noft("Competence Standard*") OR noft("Standard*") AND ((noft(Nurs*) AND noft(Competence))
Web of Science	ALL FIELDS: ("Nurs*") OR ALL FIELDS: ("Nursing Student*") OR ALL FIELDS: ("Nursing") OR ALL FIELDS: ("Novice Nurs*") AND ALL FIELDS: ("Professional Competence") OR ALL FIELDS: ("Clinical Competence") OR ALL FIELDS: ("Competence") OR ALL FIELDS: ("Competence Standard*") OR ALL FIELDS: ("Standard*") AND (ALL FIELDS: ("Nurs*") AND ALL FIELDS: ("Competence")) AND TOPIC: ("Nurs*") OR TOPIC: ("Nursing Student*") OR TOPIC: ("Nursing") OR TOPIC: ("Novice Nurs*") AND TOPIC: ("Professional Competence") OR TOPIC: ("Clinical Competence") OR TOPIC: ("Competence") OR TOPIC: ("Competence Standard*") OR TOPIC: ("Standard*") AND ((TOPIC: ("Nurs*") AND TOPIC: ("Competence"))
SID	"Nurse" OR "Nurses" OR "Nursing Student" OR "Nursing Students" OR "Nursing" OR "Novice Nurse" OR "Novice Nurses" AND "Professional Competence" OR "Clinical Competence" OR "Competence" OR "Competence Standard" OR "Competence Standards" OR "Standard" OR "Standards" *Search was done in Persian and English languages in all fields.*
IranMedex	"Nurse" OR "Nurses" OR "Nursing Student" OR "Nursing Students" OR "Nursing" OR "Novice Nurse" OR "Novice Nurses" AND "Professional Competence" OR "Clinical Competence" OR "Competence" OR "Competence Standard" OR "Competence Standards" OR "Standard" OR "Standards" *Search was done in Persian and English languages in all fields.*
IranDoc	"Nurse" OR "Nurses" OR "Nursing Student" OR "Nursing Students" OR "Nursing" OR "Novice Nurse" OR "Novice Nurses" AND "Professional Competence" OR "Clinical Competence" OR "Competence" OR "Competence Standard" OR "Competence Standards" OR "Standard" OR "Standards" *Search was done in Persian and English languages in all fields.*
Magiran	"Nurse" OR "Nurses" OR "Nursing Student" OR "Nursing Students" OR "Nursing" OR "Novice Nurse" OR "Novice Nurses" AND "Professional Competence" OR "Clinical Competence" OR "Competence" OR "Competence Standard" OR "Competence Standards" OR "Standard" OR "Standards" *Search was done in Persian and English languages in all fields.*

1. Title and Abstract; 2. Title, Abstract, and Keyword; 3. Title, Abstract, and Keywords; 4. Anywhere Except Full Text

The search results were compiled into a comprehensive list of articles, guidelines, and reports related to the research question. For better management of the results, references were stored in Mendeley Reference Management Software (version 1.19.8, 2008-2020, Mendeley Ltd) to facilitate the identification and removal of duplicate articles, guidelines, and reports [20].

After managing the search results and removing duplicate sources, the results were screened to identify resources related to the research question that met the inclusion criteria for studies. Accordingly, the titles and abstracts were first reviewed by two researchers, and in cases of disagreement, a third researcher was consulted. The screening occurred in two stages. First, sources were screened and briefly reviewed to identify potentially relevant materials. The full text of these potentially relevant sources was downloaded and printed before the complete study of the sources was conducted and the selection of those meeting the inclusion criteria was finalized. Following the screening, sources were selected to help establish the standards of professional competence for nurses [20].

The quality of quantitative articles was assessed using the strengthening the reporting of observational studies in epidemiology (STROBE) checklist, qualitative articles were assessed with the consolidated criteria for reporting qualitative research (COREQ) checklist, and mixed-method articles were evaluated using the mixed methods appraisal tool (MMAT) [28-30].

A list of characteristics of the sources and the number of imported and exported resources was prepared to facilitate future revisions [20]. In this regard, a flowchart was developed based on the PRISMA 2020 statement to illustrate the number of imported and exported resources [28].

After screening the search results, a data extraction process was carried out. The researcher accomplished this by creating a table for data extraction [20]. The data extraction table for the articles contained the title of the study, the purpose, the authors, the year of publication, the location of the study, the data collection methods and tools, the study sample, and the results related to the proficiency standards for nurses. Additionally, given the type of available data on Iranian and international

nursing organizations, the proposed form included information, such as the name of the organization, the year of publication, and the results concerning the standards of nursing competence.

The obtained findings were pooled after data extraction [20]. In this regard, a data extraction table was completed for each resource. Then, the tables were set up in Microsoft Word Professional Plus 2016 (16.0.17126.20132). Each of the extracted resources, which had been entered in the aggregated forms, was then recorded in one form for scientific articles and another form for nursing organizations. After categorizing the extracted information, the standards of competence for nurses were determined.

Findings

A total of 2,078 documents were initially received from scientific articles and from Iranian and international nursing organizations. After removing duplicate documents using Mendeley software, 1,619 documents remained. The researchers selected 52 documents relevant to the study objectives by examining the remaining documents and abstracts. Due to the lack of full text for two articles, the systematic review of the standards of competence for nurses ultimately covered 50 eligible documents, including 16 articles, 2 national nursing organizations, and 32 international nursing organizations (Figure 1) [31].

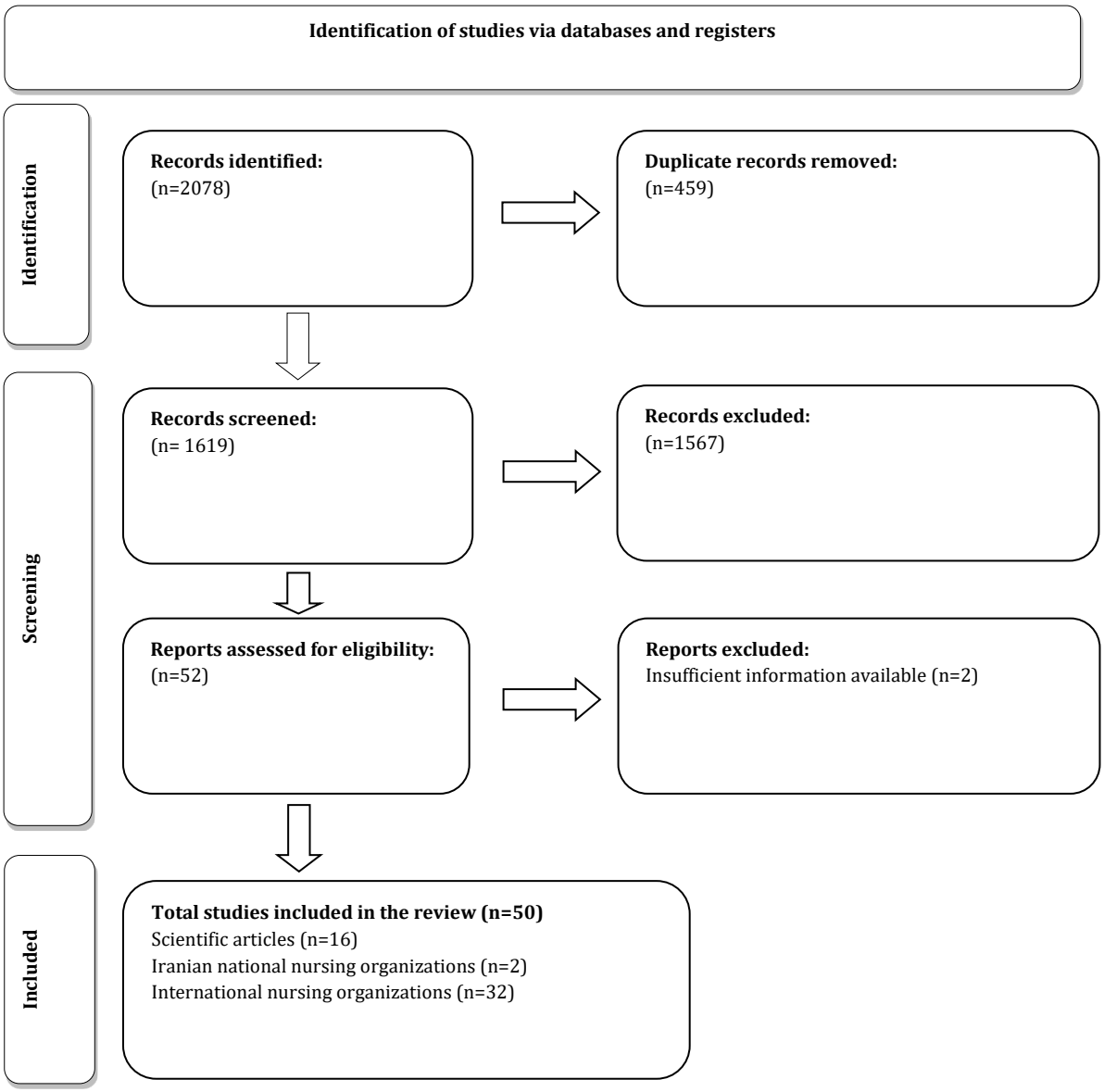

Figure 1. PRISMA 2020 flow diagram for updated systematic reviews, which included searches of databases and registers only.

The obtained findings were synthesized after screening and assessing the quality of the documentation. A thematic synthesis approach was used for the data synthesis. From the examination of the 50 included documents, a total of 428 standards of competence for nurses were identified. Of these, 136 professional competence standards for nurses were extracted from 16 scientific articles (Table 3). Fifteen standards were identified from two national nursing organizations (Table 4).

Table 3. Professional competence standards for nurses via scientific articles

Author(s), year, place	Title	Aim	Method/data collection instrument	Sample/literature	Professional competence standards for nurses
Sakuramoto *et al.*, 2023, Japan [32]	Clinical practice competencies for standard critical care nursing: Consensus statement based on a systematic review and Delphi survey	Investigating clinical practice competencies for standard critical care nursing	- Systematic review - Focus group interview - Delphi approach (online survey)	- 685 articles - 10 critical care nurses - 239 critical care experts (physicians, nurses and physical therapists)	Disease management and clinical decision-making Care Supportive organization and with conscience Evidence-based practice Collaboration and management ability Education and self-development ability
Dung *et al.*, 2021, Vietnam [33]	Nurses' knowledge, practice and confidence about wound care based on the competency standards in 8 hospitals in Vietnam	Investigating nurses' knowledge, practice and confidence about wound care based on the competency standards	Questionnaire	518 wound nurses	Knowledge and skills in caring for clean, infected, exuding wounds and bedsores Knowledge of infection control Knowledge and skills in communication and teamwork Knowledge and skills in health education and patient counseling Knowledge of management and professional development Knowledge of suturing Knowledge of drainage Observation of the patient and wound Wound care equipment (sufficient, ready and relevant) Planning and decision-making for wound care Ensuring the patient's readiness for care Introducing oneself to the patient and introducing the procedure Changing bandages (both dirty and clean) safely Strict adherence to sterile principles Appropriate treatment of the patient and using appropriate equipment Ensuring patient privacy Communicating with the patient during wound care Care for the wound according to its stages and observing the appropriate time Ensuring the patient's comfort with the dressing Collecting equipment and ensuring hand washing Ensuring clear and completeness of the patient's medical records Observe the patient after care for pain and bleeding Skill in assessing the patient's condition and assessing the wound Identify wound care problems
Bickford, 2021, America [34]	Updated nursing scope and standards. Foundational document in healthcare	Updating nursing scope and standards	Interview	17 expert nurses	Patient advocacy Respectful and fair practice Research and scientific research Use of scientific resources
Baker *et al.*, 2021, Canada, United States, and Portugal [35]	Global standards for professional nursing education: The time is now	Investigating global standards for professional nursing education	Delphi approach	12 nursing education managers	Knowledge and clinical practices Communication and collaboration Critical thinking, clinical reasoning, and clinical judgment Professionalization and leadership Student admission policies Curriculum Learning experiences Faculty, instructors, and preceptors Educational resources Leadership and management of the educational organization Educational program evaluation

Continue of Table 3 from the last page.

Ha & Nuntaboot, 2020, Vietnam [36]	New competencies required for nurses as compared to the national nursing competency standards in Vietnam	Discovering new competencies required for nurses as compared to the national nursing competency standards in Vietnam	- Deep interview - Focus group interview	31 clinical nurse, physician, physiotherapist, health manager, instructor, patient and family	Knowledge Skills Attitude- and value-based nursing practice Ethical and legal competencies Transcultural competencies Essential characteristics of nurses (health, uniform and neat clothing, unhurried activity, positive attitude in communication, compassion, calmness, self-confidence)
Tønnessen *et al.*, 2020, Norway [37]	Safe and competent nursing care: An argument for a minimum standard?	Investigating minimum standard for safe and competent nursing care	- Review of health legislation - Review of official government documents	- Health legislation - Official government documents	Providing care based on the physiological, psychological, social and spiritual needs of patients Paying attention to the needs of patients in accordance with the Charter of Professional Ethics for Nurses Determining the minimum basic care in accordance with the socio-economic context of the society
Maphumulo & Bhengu, 2020, South Africa [38]	Perceptions of professional nurses regarding the national core standards tool in tertiary hospitals in KwaZulu-Natal	Determining perceptions of professional nurses regarding the National Core Standards tool	Questionnaire	437 professional nurses	Patient rights Patient safety, clinical governance and clinical care Clinical support services (care monitoring, timely access to medicines, provision of effective medicines and medical equipment) Community cooperation in health provision Organizational management and leadership Operational management (human resources, financial, consumables and documents) Facilities and physical infrastructure
Lee *et al.*, 2020, South Korea [39]	Developing nursing standard guidelines for nurses in a neonatal intensive care unit: A delphi study	Developing nursing standard guidelines for nurses in a neonatal intensive care unit	- Literature review - Clinical observation - Expert panel - Delphi approach	- International nursing books and organizations - 2 clinical observations - 13 professional nurses and physicians	Collecting information about the patient's condition Nursing diagnosis Care planning Nursing interventions Evaluation of nursing interventions Ethics Performance evaluation Knowledge and skills training Evidence-based practice and research Consulting and collaborating with the health team Utilizing resources in nursing practice Quality management in nursing
Usui & Yamauchi, 2019, Japan [40]	Guiding patients to appropriate care: Developing Japanese outpatient triage nurse competencies	Expert consensus on triage nursing standards for secondary and higher-level health care facilities in Japan	Delphi approach	85 expert nurses	Application of knowledge and purposeful patient assessment Interpersonal skills Professional and ethical performance Multidisciplinary and interprofessional collaboration
Salem *et al.*, 2018, Saudi Arabia [41]	Competency based nursing curriculum: Establishing the standards for nursing competencies in higher education	Developing professional nursing standards in higher education	Literature review	Articles and international nursing organizations	Patient-centered care Professionalization Communication Nursing leadership Patient and nurse safety Research Teaching and learning
Cashin *et al.*, 2017, Australia [42]	Standards for practice for registered nurses in Australia	Explanation national standards for nursing competence and developing standards for nursing practice	- Literature review - Online survey - Clinical observation	- 8 international organization of nurses - 4413 nurses and people - 44 clinical observations	Critical thinking and analysis of nursing practice Engaging in therapeutic and professional communication Maintaining capabilities for practice Comprehensive patient assessment Developing a plan for nursing practice Ensuring safe, appropriate, and accountable nursing practice Evaluating outcomes to inform nursing practice

Continue of Table 3 from the last page.

Halcomb *et al.*, 2017, Australia [43]	The development of professional practice standards for Australian general practice nurses	Developing professional practice standards for Australian general practice nurses	- First online survey - Second online survey - 14 focus group interview	- 203 nurses - 262 nurses - 200 nurses	Professional practice Nursing care General practice knowledge and skills and information technology Collaborative practice
Halcomb *et al.*, 2016, Australia [16]	Nursing competency standards in primary health care: An integrative review	Reviewing nursing competency standards in primary health care	Literature review	9 articles	Teamwork and team communication Clinical performance and skills Communication skills Professionalization and staff development Education and learning Problem solving and health promotion Context-based performance Information technology knowledge Research and supervision of nurses Infection control
Douglas *et al.*, 2014, America [44]	Guidelines for implementing culturally competent nursing care	Providing guidelines for Implementing culturally competent nursing care	Literature review	More than 50 international nursing organizations	Cultural knowledge Culturally-informed care education Critical reflection Intercultural communication Culturally competent practice Determining and addressing the patient's cultural needs by the organization Supporting the patient's beliefs and culture Providing a multicultural workforce Influencing and interacting with diverse groups and developing culturally competent guidelines Evidence-based practice and research
Douglas *et al.*, 2011, America [45]	Standards of practice for culturally competent nursing care: 2011 update	Explanation set of applicable global standards for cultural care	Literature review	More than 50 international nursing organizations	Promoting social justice for individuals in the community by nurses Critical reflection Cultural knowledge Culturally competent practice Determining and addressing the patient's cultural needs by the organization Supporting the patient's beliefs and culture Providing a multicultural workforce Training in culturally-informed care Intercultural communication Influencing and engaging with diverse groups and developing culturally competent guidelines Developing culturally assessed interventions Evidence-based practice and research
Davey, 1995, Australia [27]	Developing competency standards for occupational health nurses in Australia	Developing competency standards for occupational health nurses in Australia	- Literature review - Noun group technique - Consulting or questionnaire	- Articles and international nursing organizations - Physician, researcher and nursing instructor - Nurses outside the faculty of occupational health nurses in Australia	Performance based on law, standards and guidelines Management of health services in the organization Assessment of the work environment and provision of suggestions for preventing complications Examination, monitoring and evaluation of the patient's condition and the nurse's ability Provision of information and training on occupational health and safety Management of personnel health promotion activities Management of health services Rehabilitation of patients 136. Application of research to examine occupational health and safety

Also, 277 standards were identified from 32 international nursing organizations (Table 5).

Following the synthesis of the findings from the systematic review, comparable standards were compared and consolidated, which were then grouped and organized into domains. The synthesis of the studies led to the identification of five domains of professional competence standards for nurses, which included clinical competence, educational and research competence, ethical competence, communication and interpersonal competence, and management and leadership competence (Table 6).

Table 4. Professional competence standards for nurses via the Iranian national nursing organizations

Number	Iranian national nursing organizations	Professional competence standards for nurses
1	Deputy for nursing, Ministry of Health and Medical Education, Ministry of Health [46]	Responsibility and accountability Continuity of proficiency and effectiveness Application of knowledge, skills and judgment Professional ethics Professional communication and participation Professional management and leadership Quality of care Self-monitoring and performance evaluation
2	Iranian nursing organization [47]	Accountability Continuing professional development Professional ethics Knowledge Application of knowledge Leadership Communication

Table 5. Professional competence standards for nurses via international nursing organizations

Number	International nursing organizations	Year	Professional competence standards for nurses
1	Palliative Care Nurses Australia (PCNA) [48]	2022	Therapeutic communication Advanced supportive care Collaborative performance Leadership Performance enhancement
2	Nurses Association of New Brunswick [49]	2022	Responsibility and accountability Knowledge-based practice Patient-centered practice Professional communication and leadership
3	Indiana University Southeast [50]	2022	Assessment the patient's condition Nursing diagnosis Identifying expected outcomes Plan designing Plan implementation Evaluation of goals and outcomes Ethical practice Culture-based performance Effective communication Nurse collaboration with patient Leadership in the workplace Nurse training Evidence-based practice and research High-quality performance Professional performance evaluation Use of appropriate, safe and effective resources Environmental health and safety
4	British Columbia College of Nurses and Midwives (BCCNM) [51]	2020	Professional responsibility and accountability Knowledge-based practice Providing patient-centered services Ethical practice
5	Helene Fuld College of Nursing (HFCN) [52]	2020	Communication competence Observation competence Cognitive competence Technical competence (performing interventions) Behavioral and social competence
6	Saskatchewan Registered Nurses Association (SRNA) [53]	2019	Professional responsibility and accountability Knowledge-based practice Ethical practice Serving the people Self-regulation
7	College of Registered Nurses of Newfoundland and Labrador (CRNNL) [54]	2019	Responsibility and accountability Knowledge-based practice Patient-centered practice Professional communication and leadership Collaboration, consultation and referral Patient assessment and nursing diagnosis Patient-centered management
8	College of Registered Nurses of Prince Edward Island [55]	2018	Unique knowledge Application of knowledge Responsibility and accountability Patient advocacy Continuous competence

Continue of Table 5 from the last page.

9	College of Nurses of Ontario (CNO) [56]	2018	Responsibility Continuous competence Ethic Knowledge Application of knowledge Leadership Therapeutic communication between nurse and patient Professional communications
10	Nursing and Midwifery Council (NMC) [57]	2018	Professional accountability Health promotion and disease prevention Needs assessment and care planning Care and its evaluation Leadership and management nursing care and teamwork Improving the safety and quality of care Care coordination
11	Nova Scotia College of Nursing (NSCN) [58]	2017	Responsibility and accountability Knowledge-based practice Patient-centered communication Professional communication and leadership Personal self-regulation
12	Nursing and Midwifery Board of Australia [59]	2016	Critical thinking and analysis of nursing practice Therapeutic and professional communication Performance ability Comprehensive and holistic assessment Planning for nursing practice Safe, appropriate, and accountable nursing practice Outcome assessment to inform nursing practice
13	Australian College of Children and Young People's Nurses (ACCYPN) [60]	2016	Performance in accordance with the law, health standards and relevant policies Ethical practice Respect for the dignity, values, and spiritual and cultural beliefs of the patient and family Comprehensive nursing knowledge, education and continuing professional development Applying critical reflection, critical thinking, and problem solving Support and collaborate for health promotion and patient well-being through research, evaluation, and quality of care assurance activities A suitable environment to promote safety, security and optimal health Effective collaboration and care management through partnership with the patient, determining unique needs and the family's role in care Knowledge of primary health care, health promotion, and ongoing care Negotiate to provide adequate resources for effective and safe care Creating peer networks of children and youth Communicate effectively with the patient and family through techniques appropriate to culture, age, and developmental stage Patient advocacy Effective participation in interdisciplinary teams and skill combinations Knowledge, skills, health education and therapeutic communication
14	Nursing and Midwifery Board of Ireland [61]	2016	Professional values and nurse behavior Nursing practice and clinical decision making Knowledge and cognitive competence Communication and interpersonal competence Management and teamwork Leadership ability and professional scholarship
15	Hospital Services Department and Cambodian Council of Nurses [62]	2015	Comprehensive review and collection of patient information Nursing diagnosis with data analysis Planning and determining alternative strategies Implementation of the designated care plan Evaluation of outcomes Ethical practice of nurse Continuing education Evidence-based practice and research High-quality performance Communications Leadership and management Resource exploitation Collaboration in care Health education and health promotion
16	The Queen's Nursing Institute (QNI) and The Queen's Nursing Institute Scotland (QNIS) [63]	2015	Clinical care Leadership and management Learning facilities Evidence, research and development

Continue of Table 5 from the last page.

17	American Nurses Association (ANA) [64]	2015	Patient assessment Nursing diagnosis Identifying outcomes Planning Implementation Care coordination Health education and health promotion Evaluation Ethic Performance appropriate to culture Communications Collaboration Leadership Education Evidence-based practice and research Performance quality Professional performance evaluation Use of resources and facilities Environmental health
18	Nursing and Midwifery Council (NMC) [65]	2015	Prioritizing patients (identifying needs, treating patients with respect and respecting their rights) Effective performance Ensuring patient safety Promoting professionalism and patient and public trust in the profession
19	International Labour Organization (ILO) [66]	2014	Performance based on legal principles and ethical codes related to personal and professional judgment; Application of the nursing process in interdisciplinary care for patient empowerment and quality improvement of care; Completing and updating the documenting and reporting system Establishing collaborative communication with colleagues and members of the care team to improve nursing and care services Promoting personal and professional growth Management and leadership skills for safe and quality care Responsibility for safe nursing practice Management and leadership skills to provide effective services to specific patients in the community Community management based on nursing facilities and services Ability to leadership and supervise nurses Appropriate use of networking, communication and referral mechanisms Participate in nursing or health-related research under the supervision of an expert researcher Research evaluation and reporting using research critique guidelines Applying research to improve care through quality improvement, quality assurance, and the nursing audit team
20	Ministry of Health Brunei Darussalam [67]	2013	Legal and ethical framework of practice Professional performance Leadership and management Continuous personal and professional development Education and research
21	College of Registered Nurses of Nova Scotia (CRNNS) [68]	2012	Responsibility and accountability; Competence and knowledge-based practice; Patient advocacy and communication with the patient; Professional communication and leadership; Personal self-regulation
22	New Zealand Nurses Organization [69]	2012	Responsibility and accountability Evidence-based practice and knowledge specific to nursing Communications Continuous competence Ethic Leadership Resource and facilities management
23	Professional Regulatory Board of Nursing [70]	2012	Performance based on legal principles and ethical codes related to personal and professional judgment; Application of the nursing process in interdisciplinary care for patient empowerment and quality improvement of care; Completing and updating the documenting and reporting system Establishing collaborative communication with colleagues and members of the care team to improve nursing and care services; Promoting personal and professional growth; Management and leadership skills for safe and quality care; Responsibility for safe nursing practice; Management and leadership skills to provide effective services to specific patients in the community; Community management based on nursing facilities and services; Ability to leadership and supervise nurses; Appropriate use of networking, communication and referral mechanisms; Participate in nursing or health-related research under the supervision of an expert researcher; Research evaluation and reporting using research critique guidelines; Applying research to improve care through quality improvement, quality assurance, and the nursing audit team

Continue of Table 5 from the last page.

24	Nursing and Midwifery Board of Australia (NMBA) [71]	2010	Professional performance Critical thinking and analysis Provision and coordination of care Collaborative and therapeutic performance
25	American Nurses Association (ANA) [72]	2010	Patient assessment Nursing diagnosis Identifying outcomes Planning Implementation Care coordination Health education and health promotion Patient counseling Authority to prescribe medication and treatment Evaluation Ethic Education Evidence-based practice and research Performance quality Communication Leadership Cooperation Professional performance evaluation Use of resources and facilities Environmental health
26	Nursing and Midwifery Council (NMC) [73]	2018	Professional values Communication and interpersonal skills Nursing practice and decision making Leadership, management and teamwork
27	Expert Panel on Global Nursing & Health [74]	2010	Social justice Critical reflection Cultural knowledge Culturally competent practice Determining and addressing the patient's cultural needs by the organization Support for patient beliefs and culture Provision of a multicultural workforce Education in culturally informed care Intercultural communication Intercultural leadership Development of culturally assessed interventions Evidence-based practice and research
28	International Council of Nurses (ICN) [75]	2009	Responsibility Ethical practice Legal performance Principles of care provision Health promotion Patient assessment Planning Implementation Evaluation Therapeutic and interpersonal communication Leadership and management Safe environment Interprofessional health care Delegation of authority and supervision Profession promotion Quality improvement of care Continuing education
29	Republic of the Philippines Professional Regulation Commission (PRC) [76]	2009	Safe and quality nursing care Communication Collaboration and teamwork Health education Legal accountability Ethical conscientious accountability Personal and professional development Medical records management Resource and environmental management Quality improvement Research
30	Queensland University of Technology [77]	2005	Therapeutic communication Advanced supportive care Collaboration in performance Leadership Performance enhancement

Continue of Table 5 from the last page.

31	Australian Nursing and Midwifery Council (ANMC) [78]	2004	Dynamic performance involving the application of knowledge and high-level skills in stable, unpredictable, and complex situations Professional effectiveness (increased autonomy and responsibility following performance based on a nursing model) Clinical leadership (leading to the advancement of clinical care and collaboration at all levels of health services)
32	Papua New Guinea Nursing Council [79]	2002	Nursing practice in accordance with the law Providing nursing services in compliance with ethical standards and codes of practice for nursing Patient advocacy Responsibility and accountability for one's own performance Research to help improve knowledge and standards of nursing practice Effective communication to support the patient through the care experience Appropriate management of facilities and human resources Creating an environment with maximum safety, independence, quality of life and patient health Respectful nursing practice Comprehensive and detailed assessment of the patient Developing a care plan with the patient Implementing planned care to achieve specific outcomes Evaluation and modification of expected outcomes Helping the patient and the community to achieve optimal conditions Promoting collaboration with others

Table 6. Domains and identified standards of nursing professional competence

Domain	Identified standards
Clinical competence	- Acquiring clinical skills - Attention to clinical guidelines - Acquiring skills in working with hospital information system (HIS) - Focus on decision-making, clinical reasoning, critical thinking, and problem-solving
Educational and research competence	- Enhancing patient care knowledge - Using theoretical knowledge, evidence-based and nursing process in the clinical setting - Employing experienced professors - Employing efficient teaching methods - Increasing the quantity and quality of clinical training - Providing education based on the patient demands and the patient's companion - Familiarity with scientific research and participation in research activities
Ethical competence	- Adherence to ethical aspects - Regarding fairness and justice for care - Conscientiousness in care - Promoting professional responsibility - Honoring the patient by nurses - Self-regulation - Attention to the legal components of the profession
Communication and interpersonal competence	- Improving professional communication - Enhancing teamwork
Management and leadership competence	- Improve the orientation period for nurses - Review the staff training program - Review the methods of providing feedback to nurses - Providing hospital facilities and equipment - Specialization

Clinical competence

Clinical competence is often regarded as one of the most basic and fundamental professional competencies for nurses. The ability of nurses to perform various technical skills has always been considered one of the elements essential for developing competent nurses, and the application of nursing knowledge has been an important factor in enhancing their clinical competence. Nurses should acquire clinical skills and pay attention to clinical guidelines to provide effective services. Moreover, proficiency in working with hospital information systems (HIS) is considered a prerequisite for nurses to achieve clinical competence. Standards, such as a focus on decision-making, clinical reasoning, critical thinking, and problem-solving have been introduced as key elements of clinical competence.

Educational and research competence

In addition to strengthening the clinical competencies of nurses, the central elements of this competence area include enhancing patient care knowledge and utilizing theoretical knowledge, evidence-based practices, and the nursing process in the clinical setting. By regularly reviewing theoretical knowledge and applying evidence-based practices along with the nursing process, nurses can help consolidate their knowledge and prevent forgetting. The completion of this competence involves considering teaching and learning in universities, including employing experienced professors,

utilizing effective teaching methods, and increasing the quantity and quality of clinical training. In addition to providing care, nurses play an important role in delivering education based on patient demands and those of the patient's companions. Familiarity with scientific research and participation in research activities are essential for nurses to acquire research competencies.

Ethical competence

In addition to the need for nurses to possess clinical knowledge and skills, it is also important to pay attention to ethical values when caring for patients. Focusing on the patient as the center of care will help achieve competence. In this regard, adherence to ethical principles, such as fairness and justice in care, conscientiousness in caregiving, and the promotion of professional responsibility, are considered key factors in the ethical competence of nurses. Moreover, honoring the patient, self-regulation, and attention to the legal components of the profession are effective in achieving this competence.

Communication and interpersonal competence

Improving professional communication is a crucial aspect of nurses' competence and encompasses various dimensions, including relationships between nurses and their colleagues, doctors, patients, and patients' families. We identified communication and interpersonal relationships within the care team as one of the key factors in achieving competence and providing quality care. In this regard, enhancing professional communication and teamwork is essential for ensuring this competence. Nurses will be able to develop their teamwork skills by acquiring professional communication skills. In addition to developing communication and teamwork abilities, it is essential for organizations to promote teamwork and cultivate a supportive culture. In this context, members of the health team must be fully aware of their job descriptions and act accordingly.

Management and leadership competence

The competencies introduced are not sufficient on their own and that a focus on management and leadership competencies is important. Factors such as improving the orientation period for nurses, reviewing the staff training program, evaluating the methods of providing feedback to nurses, ensuring access to hospital facilities and equipment, and promoting specialization are some of the areas that health managers and leaders can focus on to ensure that nurses are adequately supported and trained.

Discussion

This study was conducted to establish professional competence standards for nurses. The findings were obtained through a systematic review of the literature and guidelines from nursing organizations. Five domains of competence were identified, comprising 25 standards. For nurses, four, seven, seven, two, and five standards of professional competence were identified in the five domains, including clinical, educational and research, ethical, communication and interpersonal, and management and leadership.

Clinical competence was one of the identified domains in the systematic review. The four standards identified within the clinical competence domain included acquiring clinical skills, adhering to clinical guidelines, developing skills in working with HISs, and focusing on decision-making, clinical reasoning, critical thinking, and problem-solving.

Nurses can provide high-quality and safe care to patients by relying on their clinical knowledge [80]. Our study demonstrated that attention to clinical skills and guidelines is recognized as one of the professional competencies of nurses. Several studies included in the review confirmed the results of this study, such as the research conducted by Ha & Nuntaboot, identifying nursing skills and practice as new competencies required for nurses compared to the national nursing competence standards in Vietnam [36].

Halcomb *et al.* report professional practice and nursing care as the professional standards of practice for nurses in Australia [43]. In other studies and nursing organizations, clinical practice and skills have been reported as one of the competencies for nurses [16, 67]. The acquisition of skills for working with HISs was identified as an additional clinical competence standard, in line with the findings of the study recognizing information technology knowledge and skills as a competence standard [16, 43].

This is important for accessing patient clinical records, providing diagnostic and therapeutic services, and monitoring patient treatment. The computer literacy of nurses is a prerequisite for gaining competence and delivering quality, cost-effective care [81]. Other clinical competence standards included the reinforcement of decision-making, clinical reasoning, critical thinking, and problem-solving. Some studies have shown that clinical decision-making is one of the competencies essential for clinical performance in nursing care [32]. Clinical reasoning and critical thinking [35, 42] are also vital for the training and competence of nurses. According to Halcomb *et al.*, problem-solving is recognized as one of the nursing competence standards in primary care [16]. This finding aligns with international guidelines, such as those from the Nursing and Midwifery Board of Australia, which emphasize critical thinking and analysis of nursing performance as essential nursing competence standards [59].

One of the domains most frequently addressed in our systematic review was educational and research competence. This domain consisted of seven identified standards: enhancing patient care knowledge, using theoretical knowledge, applying evidence-based practices and the nursing process in the clinical setting, employing experienced

professors, utilizing effective teaching methods, increasing the quantity and quality of clinical training, providing education based on patient demands and those of the patient's companions, and fostering familiarity with scientific research and participation in research activities.

Some studies included indicated that improving the competencies of nurses requires knowledge acquisition [35, 36]. Once knowledge is acquired, the application of theoretical knowledge, scientific evidence, and the nursing process in clinical practice may enhance educational and research competence. Several studies have shown that the use of evidence-based practice is effective in improving nursing competence, corroborating the results of our study [32, 39, 44, 45]. This finding aligns with the emphasis placed by the American Nurses Association on the importance of evidence-based practice in nursing [72]. In accordance with the findings of this study, the nursing process is established as an important standard of competence for nurses by Lee *et al.* [39]. University professors play a crucial role in qualifying nurses through their training. Professors are responsible for teaching nursing students and preparing them for future careers in healthcare. To acquire the knowledge and skills necessary for providing quality care, it is essential that teaching institutions, especially professors, recognize the significance of their work in training professionals and develop the attitudes and skills needed for success.

Clinical educators must possess characteristics, such as effective communication with students, professional skills, evaluation skills, teaching abilities, and personal attributes for teaching. Therefore, it is essential for professors to evaluate their teaching and improve their practice by identifying aspects of their instruction that are incomplete [82]. Baker *et al.* report the curriculum, learning experiences, faculty, instructors, mentors, and educational resources as standards for the competence of nurses [35]. Supporting these findings, teaching and learning have been shown to be effective in the development of competence [16, 41]. Need-based education for patients and their families is another standard introduced in the study by Dung *et al.* as a component of nurse competence [33], and this is consistent with our results. In addition to educational competence, research competence is also a requirement for nurses' professional competence. In this respect, the studies reviewed indicate that scientific inquiry and research are among the standards of competence for nurses [34, 41], which is confirmed by the results of this study.

Ethical competence is considered an important domain of professional competence for nurses. In the ethical competence domain, seven identified standards include adherence to ethical principles, fairness and justice in care, conscientiousness in care, promoting professional responsibility, honoring patients, self-regulation, and attention to the legal components of the profession.

It is necessary for nurses to acquire professional competencies through ethical and legal competence [36] and ethical practice [39, 40]. The College of Nurses of Ontario also considers ethics to be a standard of competence [56]. Bickford identifies fair practice as one of the competence standards for nurses in the field of nursing [34]. In another study, the promotion of equity by nurses was based on standards derived from a systematic review of several international organizations [45]. Ethical conscientious accountability was another standard that the Republic of the Philippines Professional Regulation Commission deemed important [76], and our study's results reinforce this.

Another frequently cited standard is responsibility. The International Labour Organization and the Professional Regulatory Board of Nursing are among the nursing organizations that consider this standard essential [66, 70], supporting our results. It was found that honoring patients was effective in ensuring the ethical competence of nurses. Consistent with our findings, patient advocacy has been identified as a standard competence for nurses [34]. The Nursing and Midwifery Council also considers that prioritizing patients through identifying their demands, demonstrating respectful behavior, and upholding patients' rights is an effective way to develop competent nurses [65]. Self-regulation of nurses is another factor in promoting professional competence, a result confirmed by several studies included in the review [53, 58, 68].

Improving professional communication and enhancing teamwork were two standards in the domain of communication and interpersonal competence. A study by Parnikh *et al.* has shown a positive and significant relationship between professional communication and professional engagement, as well as interest in one's job, leading to quality care and patient safety [83]. Improving professional communication aligns with the guidelines for nurses, which consider this standard an integral part of nursing competencies [46, 47]. Regarding teamwork enhancement, studies highlight the importance of focusing on teamwork as one of the key standards for improving nurses' competencies [40, 43]. Therefore, strengthening communication and teamwork skills should be prioritized in the training of nurses.

Finally, in the domain of management and leadership competence, five standards were identified: improving the orientation period for nurses, reviewing the staff training program, assessing the methods of providing feedback to nurses, ensuring the availability of hospital facilities and equipment, and promoting specialization.

Improving in-service training was another standard identified as a prerequisite for enhancing professional aptitude. Supporting the findings of this

study, Sato & Ishimaru argue that in-service training is necessary to improve nurses' competencies [84]. The training provided should be tailored to the educational needs of nurses. These needs can be assessed through an analysis of educational requirements [85]. Indiana University Southeast also considers that the training of nurses is a factor in improving their competence [50], which aligns with our results.

Another standard identified was the review of the methods used to provide feedback to nurses. Feedback is a crucial component of nursing. If nurses do not receive feedback about their performance, they may assume they do not need to improve in any area. Therefore, nursing specialists should consider feedback as part of their learning process and monitor how they receive it. Feedback is most effective when provided in a supportive environment and on a regular basis. Nursing managers should ensure that they offer feedback in a timely manner and focus on specific aspects of an individual's performance. This type of feedback is considered very valuable and useful, enabling individuals to assess their own skills and enhancing motivation, self-confidence, self-esteem, and abilities [86].

Providing hospital facilities and equipment is considered a standard of nursing competence. Maphumulo & Bhengu also emphasize the importance of facilities and physical infrastructure, in accordance with this study [38]. The physical environment, including the design and performance of hospital buildings, had a significant influence on nurses' recruitment and retention. Available facilities can have a substantial impact on nurses' performance and the quality of care provided to patients [87].

Our findings serve as a reliable source of information for nurses and the nursing management system regarding the standards of nursing competence. Attention has been given to some of the standards of professional competence for nurses. By considering these domains, managers can effectively address the needs for nurses' professional competencies, train competent nurses, and improve the quality of healthcare.

Conclusion

Clinical competence, educational and research competence, ethical competence, communication and interpersonal competence, and management and leadership competence are five domains of competence based on articles and guidelines from nursing organizations.

Acknowledgments: We express our gratitude to the Vice Chancellor for Research and Technology at Shiraz University of Medical Sciences.

Ethical Permissions: The current study was approved by the Research Ethics Committee of Shiraz University of Medical Sciences (Approval ID: IR.SUMS.NUMIMG.REC.1400.033, approval date: 2021.15.09).

Conflicts of Interests: The authors have no conflicts of interest to declare.

Authors' Contribution: Zarshenas L (First Author), Introduction Writer/Methodologist/Main Researcher/Discussion Writer/Statistical Analyst (25%); Mehri Z (Second Author), Introduction Writer/Methodologist/Assistant Researcher/Discussion Writer/Statistical Analyst (25%); Rakhshan M (Third Author), Methodologist/Assistant Researcher/Statistical Analyst (15%); Khademian Z (Fourth Author), Methodologist/Assistant Researcher/Statistical Analyst (15%); Mehrabi M (Fifth Author), Methodologist/Assistant Researcher/Discussion Writer/Statistical Analyst (10%); Jamshidi Z (Sixth Author), Methodologist/Assistant Researcher (10%)

Funding/Support: This study was financially supported by the Vice Chancellor for Research and Technology at Shiraz University of Medical Sciences.

References

1- WHO. Nursing and midwifery in the history of the World Health Organization (1948-2017). Geneva: World Health Organization; 2017.

2- Health Resources and Services Administration. The future of the nursing workforce: National- and state-level projections, 2012-2025. Rockville. Department of Health and Human Services; 2014.

3- AACN. Nursing fact sheet [Internet]. Washington, DC: American Association of Colleges of Nursing; 2019 [cited 2024 May 20]. Available from: https://www.aacnnursing.org/news-data/fact-sheets/nursing-shortage.

4- Fukada M. Nursing competency: Definition, structure and development. Yonago Acta Med. 2018;61(1):1-7.

5- Karami A, Farokhzadian J, Foroughameri G. Nurses' professional competency and organizational commitment: Is it important for human resource management?. PLoS One. 2017;12(11):e187863.

6- Nehrir B, Vanaki Z, Mokhtari Nouri J, Khademolhosseini SM, Ebadi A. Competency in nursing students: A systematic review. Int J Travel Med Glob Health. 2016;4(1):3-11.

7- Valizadeh L, Zamanzadeh V, Eskandari M, Alizadeh S. Professional competence in nursing: A hybrid concept analysis. Med Surg Nurs J. 2019;8(2):e90580.

8- Tabari Khomeiran R, Yekta ZP, Kiger AM, Ahmadi F. Professional competence: Factors described by nurses as influencing their development. Int Nurs Rev. 2006;53(1):66-72.

9- Pai HC, Huang YL, Cheng HH, Yen WJ, Lu YC. Modeling the relationship between nursing competence and professional socialization of novice nursing students using a latent growth curve analysis. Nurse Educ Pract. 2020;49:102916.

10- Mehri Z, Zarshenas L, Rakhshan M, Khademian Z, Mehrabi M, Jamshidi Z. Novice nurses' professional competence: A qualitative content analysis. J Educ Health Promot. 2025;14(1):17.

11- Gunawan J, Aungsuroch Y, Fisher ML, Marzill C, Liu Y. Factors related to the clinical competence of registered nurses: Systematic review and meta-analysis. J Nurs Scholarsh. 2020;52(6):623-33.

12- Garside JR, Nhemachen JZZ. A concept analysis of competence and its transition in nursing. Nurse Educ Today. 2013;33(5):541-5.

13- Merriam-Webster. Competence. Springfield: Merriam-Webster Dictionary Online; 2020 [cited 2021 Jan 1]. Available from: https://www.merriam-webster.com/dictionary/competence?src=search-dict-box.
14- Gunawan J, Aungsuroch Y. Managerial competence of first-line nurse managers: A concept analysis. Int J Nurs Pract. 2017;23(1):e12502.
15- DeGrande H, Liu F, Greene P, Stankus JA. Developing professional competence among critical care nurses: An integrative review of literature. Intensive Crit Care Nurs. 2018;49:65-71.
16- Halcomb E, Stephens M, Bryce J, Foley E, Ashley C. Nursing competency standards in primary health care: An integrative review. J Clin Nurs. 2016;25(9-10):1193-205.
17- Smith SA. Nurse competence: A concept analysis. Int J Nurs Knowl. 2012;23(3):172-82.
18- Rizany I, Hariyati R, Handayani H. Factors that affect the development of nurses' competencies: A systematic review. ENFERMERÍA CLÍNICA. 2018;28(Suppl 1):154-7.
19- Almada P, Carafoli K, Flattery JB, French DA, McNamara M. Improving the retention rate of newly graduated nurses. J Nurses Staff Dev. 2004;20(6):268-273.
20- Denison HJ, Dodds RM, Ntani G, Cooper R, Cooper C, Sayer AA, et al. How to get started with a systematic review in epidemiology: An introductory guide for early career researchers. Arch Public Health. 2013;71(1):21.
21- Moher D, Liberati A, Tetzlaff J, Altman DG. Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. PLoS Med. 2009;6(7):e1000097.
22- Woods D, Trewheellar K. Medline and embase complement each other in literature searches. BMJ. 1998;316(7138):1166.
23- Lawrence DW. What is lost when searching only one literature database for articles relevant to injury prevention and safety promotion?. Inj Prev. 2008;14(6):401-4.
24- Nehrir B, Vanaki Z, Mokhtari Nouri J, Khademolhosseini SM, Ebadi A. Competency in nursing students: a systematic review. Int J Travel Med Glob Health. 2016;4(1):3-11..
25- Haghdoust A, Sadeghirad B. Systematic review and meta-analysis. 4th ed. Tehran: Gap; 2017. [Persian]
26- Methley AM, Campbell S, Chew-Graham C, McNally R, Cheraghi-Sohi S. PICO, PICOS and SPIDER: A comparison study of specificity and sensitivity in three search tools for qualitative systematic reviews. BMC Health Serv Res. 2014;14(1):579.
27- Davey GD. Developing competency standards for occupational health nurses in Australia. AAOHN J. 1995;43(3):138-43.
28- Liberati A, Altman DG, Tetzlaff J, Mulrow C, Gøtzsche PC, Ioannidis JPA, et al. The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate healthcare interventions: Explanation and elaboration. BMJ. 2009;339:b2700.
29- Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): A 32-item checklist for interviews and focus groups. Int J Qual Health Care. 2007;19(6):349-57.
30- Hong QN, Fàbregues S, Bartlett G, Boardman F, Cargo M, Dagenais P, et al. The mixed methods appraisal tool (MMAT) version 2018 for information professionals and researchers. Educ Inf. 2018;34(4):285-91.
31- PRISMA flow diagram [Internet]. Greenville: PRISMA Executive; 2020 [cited 2025 Sep 26]. Available from: https://www.prisma-statement.org/prisma-2020-flow-diagram.
32- Sakuramoto H, Kuribara T, Ouchi A, Haruna J, Unoki T, et al. Clinical practice competencies for standard critical care nursing: Consensus statement based on a systematic review and Delphi survey. BMJ Open. 2023;13(1):e068734.
33- Dung PT, Hung DK, Cuong BM, Trang LTT. Nurses' knowledge, practice and confidence about wound care based on the competency standards in 8 hospitals in Vietnam. J Clin Images Med Case Rep. 2021;2(5):1364.
34- Bickford CJ. Updated nursing scope and standards. Foundational document reflects changes in healthcare. Maryland: American Nurses Association; 2021.
35- Baker C, Cary AH, Da Conceicao Bento M. Global standards for professional nursing education: The time is now. J Prof Nurs. 2021;37(1):86-92.
36- Ha DT, Nuntaboot K. New competencies required for nurses as compared to the national nursing competency standards in Vietnam. KONTAKT. 2020;22(2):92-5.
37- Tønnessen S, Scott A, Nortvedt P. Safe and competent nursing care: An argument for a minimum standard?. Nurs Ethics. 2020;27(6):1396-407.
38- Maphumulo WT, Bhengu BR. Perceptions of professional nurses regarding the national core standards tool in tertiary hospitals in KwaZulu-Natal. Curationis. 2020;43(1):1971.
39- Lee H, Kim DJ, Han JW. Developing nursing standard guidelines for nurses in a neonatal intensive care unit: A delphi study. Healthcare. 2020;8(3):320.
40- Usui M, Yamauchi T. Guiding patients to appropriate care: Developing Japanese outpatient triage nurse competencies. Nagoya J Med Sci. 2019;81(4):597-612.
41- Salem OA, Aboshaiqah AE, Mubaraki MA, Pandaan IN. Competency based nursing curriculum: Establishing the standards for nursing competencies in higher education. Open Access Libr J. 2018;5(11):1-8.
42- Cashin A, Heartfield M, Bryce J, Devey L, Buckley T, Cox D, et al. Standards for practice for registered nurses in Australia. Collegian. 2017;24(3):255-66.
43- Halcomb E, Stephens M, Bryce J, Foley E, Ashley C. The development of professional practice standards for Australian general practice nurses. J Adv Nurs. 2017;73(8):1958-69.
44- Douglas MK, Rosenkoetter M, Pacquiao DF, Callister LC, et al. Guidelines for implementing culturally competent nursing care. J Transcult Nurs. 2014;25(2):109-21.
45- Douglas MK, Pierce JU, Rosenkoetter M, Pacquiao D, Callister LC, Hattar-Pollara M, et al. Standards of practice for culturally competent nursing care: 2011 update. J Transcult Nurs. 2011;22(4):317-33.
46- Deputy for nursing, Ministry of Health and Medical Education, Ministry of Health. Professional Nursing Care Standards. 2020.
47- Iranian Nursing Organization. Nursing service standards. Tehran: Iranian Nursing Organization; 2010.
48- Palliative Care Nurses Australia. The competency standards for specialist palliative care nursing practice comprise five domains. Brisbane: Palliative Care Nurses Australia; 2022.
49- Nurses Association of New Brunswick. Standards of practice for registered nurses. Fredericton: Nurses Association of New Brunswick; 2022.
50- Indiana University Southeast. Standards of professional performance. New Albany: Indiana University Southeast; 2022.

51- BCCNM. Professional standards for registered nurses and nurse practitioners. Vancouver: British Columbia College of Nurses and Midwives; 2020.
52- Helene Fuld College of Nursing (HFCN). Helene Fuld College of Nursing technical standards for core professional nursing competency performance. New York: Helene Fuld College of Nursing; 2020.
53- Saskatchewan Registered Nurses Association (SRNA). Registered nurse practice standards. Canada: Saskatchewan Registered Nurses Association; 2019.
54- College of Registered Nurses of Newfoundland and Labrador (CRNNL). Standards of practice for registered nurses and nurse practitioners. Mount Pearl: College of Registered Nurses of Newfoundland and Labrador; 2019.
55- College of Registered Nurses of Prince Edward Island. Standards for nursing practice. Charlottetown: College of Registered Nurses of Prince Edward Island; 2018.
56- CNO. Professional standards, revised 2002. Toronto: College of Nurses of Ontario; 2018.
57- Nursing and Midwifery Council (NMC). Future nurse: Standards of proficiency for registered nurses. London: Nursing and Midwifery Council; 2018.
58- Nova Scotia College of Nursing (NSCN). Standards of practice for registered nurses. Canada: Nova Scotia College of Nursing; 2017.
59- NMBA. Registered nurse standards for practice. Melbourne: Nursing and Midwifery Board of Australia; 2016.
60- Australian College of Children and Young People's Nurses (ACCYPN). The development of standards of practice for children and young people's nurses. Brisbane City: Australian College of Children and Young People's Nurses; 2016.
61- Nursing and Midwifery Board of Ireland. Nurse registration programmes standards and requirements. Dublin: Nursing and Midwifery Board of Ireland; 2016.
62- Hospital Services Department and Cambodian Council of Nurses. Guideline for the standard of nursing care, Cambodia. Cambodia: Cambodian Council of Nurses; 2015.
63- The Queen's Nursing Institute (QNI) and The Queen's Nursing Institute Scotland (QNIS). The QNI/QNIS voluntary standards for district nurse education and practice. London: The Queen's Nursing Institute; 2015.
64- American Nurses Association. Nursing: Scope and standards of practice. 3rd ed. Maryland: American Nurses Association; 2015.
65- Nursing and Midwifery Council (NMC). The code: Professional standards of practice and behaviour for nurses, midwives and nursing associates. London: Nursing and Midwifery Council; 2015.
66- International Labour Organization (ILO). National nursing core competency standards-training modules for the Philippines. Geneva: International Labour Office; 2014.
67- Ministry of Health Brunei Darussalam. Core competency standards for registered nurses and midwives in Brunei Darussalam. Bandar Seri Begawan: Ministry of Health Brunei Darussalam; 2013.
68- College of Registered Nurses of Nova Scotia (CRNNS). Standards of practice for registered nurses. Canada: College of Registered Nurses of Nova Scotia; 2012.
69- New Zealand Nurses Organization. Standards of professional nursing practice. Wellington: New Zealand Nurses Organization; 2012.
70- Professional Regulatory Board of Nursing. The 2012 national nursing core competency standards. Manila: Professional Regulation Commission; 2012.
71- Nursing and Midwifery Board of Australia (NMBA). National competency standards for the registered nurse. Melbourne: Nursing and Midwifery Board of Australia; 2010.
72- American Nurses Association. Nursing: Scope and standards of practice. 2nd ed. Maryland: American Nurses Association; 2010.
73- NMC. Standards for competence for registered nurses. London: Nursing and Midwifery Council; 2018.
74- Expert Panel on Global Nursing & Health. Standards of practice for culturally competent nursing care. Livonia: Transcultural Nursing Society; 2010.
75- Affara F. ICN framework of competencies for the nurse specialist. Geneva: International Council of Nurses; 2009.
76- Professional Regulation Commission (PRC). Revisiting the core competency standards of nursing practice in the Philippines. Manila: Republic of the Philippines Professional Regulation Commission; 2009.
77- Queensland University of Technology. 2005 nursing core competency standards. Manila: Professional Regulation Commission; 2005.
78- Australian Nursing and Midwifery Council (ANMC). National competency standards for the nurse practitioner. Canberra: Australian Nursing and Midwifery Council; 2004.
79- Papua New Guinea Nursing Council. Papua New Guinea nursing competency standards. Port Moresby: Papua New Guinea Nursing Council; 2002.
80- Currie J, Thompson C, Grootemaat P, Andersen P, Finnegan A, Carter M, et al. A scoping review of clinical skill development of preregistration registered nurses in Australia and five other English-speaking countries. J Clin Nurs. 2023;32(1-2):283-97.
81- Li L, Benton WC. Hospital technology and nurse staffing management decisions. J Oper Manag. 2006;24(5):676-91.
82- Cook MP, Álvarez E. Nursing clinical teacher's characteristics. HORIZONTE DE ENFERMERIA. 2010;20(2):53-61. [Spanish]
83- Parnikh H, Torabizadeh C, Najafi Kalyani M, Soltanian M, Maesoumi S. A study of the relationship between professional communication and professional commitment in operating room nurses. Nurs Res Pract. 2022;2022:5871846.
84- Sato T, Ishimaru M. Hypothetical model for on-the-job training through case conferences of public health nurses. Public Health Nurs. 2022;39(6):1334-45.
85- Sudarmika P, Santyasa IW, Tegeh IM, Sudarma IK. How to assess nurse learning needs through training needs analysis: Mixed methods study. Int J Health Sci. 2023;7(1):13-25.
86- Panneerselvam S. Feedback among nursing professionals: A narrative review. Int J Health Sci Res. 2018;8(2):266-71.
87- Scott H. Working environments have a direct impact on care. Br J Nurs. 2004;13(15):893.