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Competency in Nursing Students: A Systematic Review

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Abstract

Introduction: Nursing students require highly specialized competencies to accurately determine patients' states and to predict and cope with problems that may occur during nursing care. This study explores the definition, domains, and levels of nursing students' competency.

Methods: This study was a systematic review of nursing students' competencies in English (ISI, SCOPUS, Ovid, Proquest, Iranmedex, Google scholar, PubMed) and Persian (Scientific Information Database) databases (1985–2015), according to the University of York Center for Reviewers and Dissemination Guidance approach, 2008.

Results: From a total of 13,115 articles, 20 were retrieved in the final step. The individual experiences, dynamic process, and positive interactive social and beneficial changes in the equality of one's professional life that cause meta-cognitive abilities, touch reality, motivation, decision making, job involvement, professional authority, self-confidence, knowledge and professional skills formulated the definition of nursing students' competency. Educational, cultural, individual, professional and inter-professional, research, clinical and practical domains were defined as belonging to nursing students' competency. Seven nursing student competency levels were identified.

Conclusion: Although the definitions of competency, its domains, and its levels vary by profession and country, this systematic review demonstrated the comprehensive ones in three scopes. However, more research is needed to examine the three scopes in the nursing student competency concept.

Keywords: Competency, Nursing Student, Systematic Review

1. Introduction

Healthcare institutions and organizations face numerous challenges, such as increasing amounts of information, the introduction of new technologies, decreased funding, and demands for accountability [1-3]; the practice of nursing requires a complex combination of various attributes [4-7], and nursing students require highly specialized competencies to accurately determine patients' states and predict and cope with the problems that may occur during nursing care [1, 8]. The urgency of adequate nursing competencies in changing and improving care is evident. Most employers expect new nursing graduates to be prepared to perform a wide range of functions and have the skills to provide safe care [1]. Nurses at the undergraduate level should play an important role in developing the competency of new routines in quality improvement programs for patients [1]. The requirement reflected in one of the first definitions of nursing competency given by Short et al. describes a competency as a quality possessed by someone without exact specifications of what one can do in specific circumstances [5]; however, many employers are concerned that recent graduates cannot competently perform basic clinical tasks or that their education and work competencies are disconnected [1].

The assessment of clinical competency has always been a key component of clinical education for health professionals [9].

Clinical placement experiences are an integral aspect of practice development for undergraduate nursing students undertaking a Bachelor of Nursing degree to acquire competencies and abilities to learn independently, make decisions, and express ethical commitments [8, 10, 11]. Development of nursing practice requires the synchronicity of both knowledge application and clinical skills, and students must demonstrate the ability to integrate these professional requirements of the qualified nurse for which they are being prepared [4]. Otherwise, the situation results in disappointed employers, frustrated new graduates, and dissatisfied patients [12, 13].

According to many authors, the most effective way to ensure students acquire competencies is to integrate the teaching of those skills into course curricula in a holistic approach to teach disciplinary knowledge and generic skills [10].

A consensus was reached regarding strategies for assessing the competence of nursing students as they progress through their program of study based on the views of experienced clinicians and academics [14]. Furthermore, in health care settings, it is important to assess the competencies that are essential for the professional role of nursing students to prepare them for future professional duties [15].

However, extensive review of the literature showed that the definition of nursing student's competency, its dimensions, levels, and scopes were obscure. The purpose of this systematic review was to explore the definition, domains, and levels of nursing student's competency; it sought to answer the following questions:

1. What is a comprehensive definition of nursing students' competency?
2. What are the domains of nursing students' competency?
3. What are the levels of nursing students' competency?

2. Methods

For this systematic review of the competency of nursing students, the University of York Center for Reviewers and Dissemination Guidance approach was used as the research framework [16, 17]. This approach has seven steps as follows:

2.1. Research Question Formulation

The study questions were three:

1. What is the comprehensive definition of nursing students' competency?
2. What are the domains of nursing students' competency?
3. What are the nursing students' competency levels?

2.2. Defining Search Strategy

An extensive review was made of the available literature in English and Persian databases (1985–2015), including ISI, SCOPUS, Ovid, Proquest, Iranmedex, Google Scholar, Pub Med, and Scientific Information Database (SID). The keywords searched included "nursing student competency," "nursing student ability," "undergraduate nurses competency," "nursing student professional," "nursing student skill," "clinical and educational nursing competency," "clinical qualification in nursing student," and different combinations of the aforesaid words. To find more related articles, the references of the searched articles were comprehensively investigated. Furthermore, the generalization of the retrieved final data, information, and knowledge was increased through a general and specific search on http://www.searchenginelist.blogfa.com. The mentioned site has several engine and super-engine search motors on different topics and scopes. In this section, oceans and oceans of data and information were retrieved. Some of the retrieved materials were repetitious and similar to previously searched documents, but some novel materials were detected and used in responding to Question 2. Keywords in the selected databases were utilized in the title, abstract, and keyword domains. It should be noted that some databases have overlap as some articles were cited in several databases. A reference manager software (Endnote version 7) was used to prevent re-entry of any retrieved articles.

2.3. Setting the Inclusion and Exclusion Criteria

The inclusion criteria for articles were publication from 1985 to August 2015; written in either the English or the Persian language; electronic publication with a formal peer-review process; congruency between the topic of the article and the study questions and purpose; application of different aspects of competency in nursing students; and originality of the paper. A total of 13,115 articles were found, including 7,730 articles in Pub Med, 3,590 in Google Scholar, 75 articles in Ovid, 14 articles in Proquest, 23 articles in Iranmedex, and 1,683 articles in SID. Searches were conducted by three members (AVA, AE, and BN).

2.4. Designing Quality Investigation Checklist

A checklist was designed based on the inclusion criteria, and all articles were assessed accordingly.

2.5. Usage of the Checklist

The full text of the articles was investigated according to the designed checklist described in the previous step. After the quality of the articles was checked, only 20 articles were retrieved in the review process (Table 1) [1, 4, 15, 18-34]. The validation processes were conducted by three members (AVA, AE, and BN).

2.6. Deriving the Question's Responses

Based on the research questions, the responses were extracted from the retrieved articles in the review process.

2.7. Combination of Information Derived from Retrieved Articles

Information derived from the retrieved articles regarding the study questions and purpose were combined in this step. Figure 1 demonstrates the flow diagram of the article selection.

3. Results

From 13,115 articles selected in the first step, only 20 articles remained in the last step. The core concepts in the nursing students' competency scope were related to the definition, domains, and levels of nursing student's competency. In the following, the responses of the questions are explained.

3.1. First Question: Comprehensive Definition of Nursing Students' Competency

The common usage domain of the word "competency" existed in nursing and midwifery education from 1983 until the present; however, authorities have expressed concern over the lack of knowledge and skills of graduating nursing students, saying that they are not necessarily equipped to work [24]. Defining and measuring competency in nursing students is difficult [35].
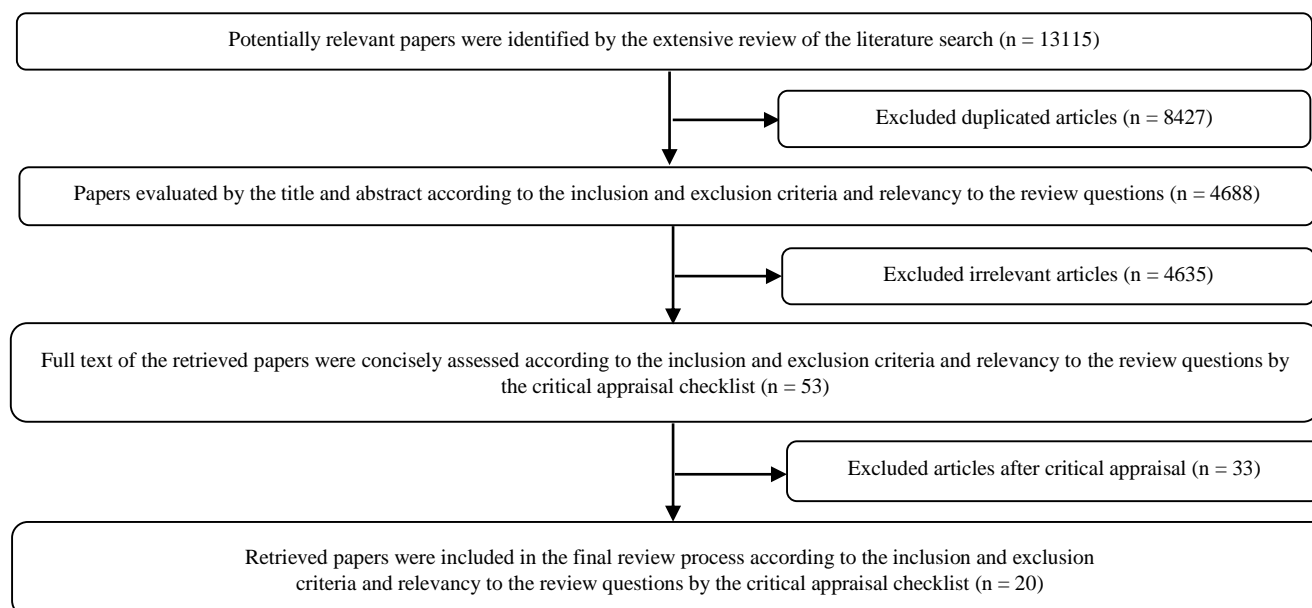

Figure 1. Flow diagram of articles selection

Table 1. Final retrieved articles in the review process

Author & Data	Running Title	Study Design	Participants (n)	Instrument/ Tool	Main Results	Conclusion	Theme
Ebadi (2015)[1]	Clinical Competence of Critical Care Nursing Students	Descriptive cross-sectional	250 MSc students of critical care nursing	Researcher-made questionnaire	Five domains and higher areas of clinical competency.	To enhance the efficiency of the course a revised curriculum is recommended.	Care management; Practical competency; Scholarship; Patient centered. and Individualized management
Fan, et al (2015)[2]	Performance Evaluation of Competency-based Education	Quasi-experimental	312 second-year undergraduate nursing students	OSCE Checklist	Higher scores in medical–surgical nursing courses and practicum, after adjusting for seven covariates.	Competency-based education is worth implementing and may close the gap between education and the ever-changing work environment.	Competency-based education; meta cognitive, and abilities.
Kim Fan, et al (2015)[3]	Professional Quality of Life and Clinical Competencies	Cross-sectional	335 nurse students	The Pro QOL Questionnaire	Low Pro QOL experience, can be negatively impacted on the clinical competence	As professional quality of life may affect clinical competence, increase nurses' compassion satisfaction and relieve compassion fatigue are needed.	Professional quality of life
Khomeiran, et al(2006)[4]	Influencing Factors of Professional Competence Development	Content analysis	27 registered nurses	Tape-recorded semi-structured interviews	Experience, opportunities, environment, personal characteristics, motivation and theoretical knowledge were identified.	Influencing factors of professional competence development extend across personal and extra-personal domains.	Touching the realities, decision making, learning, opportunities, precious experience, job involvement, motivated agent, and theoretical knowledge.
Wu, et al (2014)[5]	Application of Nursing Core Competency Standard Education	Quasi-experimental	42 nursing undergraduates	Researcher-made questionnaire	Significantly higher performance in the health information collection, physical assessment, scenario simulation and communication in the experimental group	Nursing core competency standard education is helpful for the training of nursing students' core competencies	Nursing core competency standard education; professional knowledge; professional skills; medical humanistic knowledge; rich clinical knowledge of interdisciplinary.
Hagbaghery, et al(2004)[6]	Iranian Nurses' Understanding and Experiences of Professional Power	Grounded-theory approach	44 participants	Semi-structured interviews and participant observation methods	Application of knowledge and skills gives feeling powerful in nurses	Nurses' power depends on gaining and applying professional knowledge and skills	Application of knowledge and skills Authority; Being self-confident; Unification and solidarity; Being supported, Organizational culture, and organizational structure.
Ličen, et al (2015)[7]	Nursing Competency Assessment Tools and Possibility Use in Nursing Education	Systematic literature review	7 studies	PRISMA flowchart methodology	Assessment of clinical competences by access to some highly reliable tools	For measures actual clinical nursing competences, it is important to compose an assessment tool in each country.	Cognitive performance; critical thinking; general clinical skills; basic biomedical science; humanity; responsibility; communication; teamwork ability; patient care; ethics; accountability; Lifelong learning; simulation, and skill verification.
Ääri, et al (2008)[8]	Competence in Intensive and Critical Care Nursing.	Systematic literature review	45 article	PRISMA flowchart methodology	In intensive care nursing clinical competence has three and professional competence four constituent domains.	Competence in intensive care nursing differs from overall competence in nursing.	Knowledge base; Skill base; Attitude and value base; Experience base; Ethical activity; Decision making; Collaboration; Development work; Nursing intervention; Clinical guidance, and Principle of nursing care.
Forsberg, et al (2014)[9]	Clinical Reasoning in Nursing is a base for an Innovative Assessment	Qualitative descriptive	30 RNs	Short interview with structured questions	For making clinical decisions, high specific competence and experience was so important.	For assessing the clinical reasoning process and clinical decision making, virtual patient's model is suitable but how to score and grade such exams is the challenge.	Hypothesis orientation; high specific competence, and high specific experience.

Author & Data	Running Title	Study Design	Participants (n)	Instrument/ Tool	Main Results	Conclusion	Theme
Wallace, et al (2014)[10]	Skill Development and Reflective Writing Rubrics	Two Focus groups session	8 NP faculty members and preceptors	Rubrics (scoring tools specifying expectations for successful performance)	Rubrics scoring tools clarify levels of competency in practitioner nurse	Having a complete understanding of the transitional needs of new NPs from students to advanced practitioners can markedly improve future efforts in role development and skill acquisition and thereby ease the shortage of PCPs.	Analytic skills; Communication skills; Policy development/program; Planning skills; Cultural skills; Basic public; Health sciences skills; Financial planning, and management skills.
Wilhelmsson, et al (2012)[11]	Inter Professional Competence	Systematic theoretical base	78 students	The meta cognitive model as a tool for designing IPE curricula	A meta cognitive model for inter-professional education and practice has been developed as a tool for analyzing professional competence on three levels: individual, team and organization with seven basic components of professional competence and the way they are related and interact.	The IP learning situations for IPE educators and developing professional practitioners is more helpful than one profession's perspective.	Teamwork and group processes; Reflection and documentation; Communication; Shared knowledge or general common knowledge, and Ethics.
Kelton (2014)[12]	Clinical Coaching	Systematic literature review	188 students	Clinical Coaching assessment	Using Clinical Coaching model for nursing students has successful outcomes for them	Clinical Coaching begins with referral of a student whose clinical nursing practice has raised concerns amongst the supervising clinical staff.	Unconsciously incompetent; Consciously incompetent; consciously competent, and Unconsciously competent.
Hagbaghery, et al (2004)[13]	Effective Facilitating and Inhibiting Factors in Clinical Decision-Making	Qualitative method	38 participants	Semi-structured interviews and participant observation	Two groups of internal and external variables can facilitate or inhibit the nurses' clinical decision making.	Being competent and self-confident are the most important personal factors influencing nurses clinical decision-making.	Feeling; Competent; being self-confident; Organizational structure; Nursing education, and being supported.
Olson (2014)[14]	Interactive Process for Cross Sectorial Development	Competency discussion	93 students	PRISMA flowchart methodology	Some domains have been used to develop a framework for integrating one health competencies into programmers' and curricula based on a common understanding of an inter-professional, multi-sectorial approach to operating effective health systems from the village to the clinic.	Priorities include the production of a working set of competency domains. Sharing of these domains is more important than ownership or approval and informing work in global health about commonalities between and among development efforts forms the basis for accomplishment of the goal.	Communication conflict resolution systems analysis/thinking; values and ethics; Creating an enabling environment, advocating change; Teamwork, and leadership management.
Andreou, et al (2013)[15]	Learning Styles and Critical Thinking Relationship	Systematic review	6 studies	The guidance of the Centre for Reviews and Dissemination	Learning styles' diversities, weak critical thinking and inconsistent evolution through academic progress were revealed across studies. Critical thinking differed significantly between learning styles.	All learning styles might be positive determinants toward critical thinking evolution, suggesting that there is a relationship between learning styles and critical thinking.	Predominant learning styles; Critical thinking scoring; Critical thinking evolution across academic progress; Learning styles–critical thinking correlations

Author & Data	Running Title	Study Design	Participants (n)	Instrument/ Tool	Main Results	Conclusion	Theme
Ballangrud, et al (2014)[16]	Intensive Care Nurses' Perceptions of Simulation-based Team Training	Qualitative descriptive	18 intensive care nurses	Individual qualitative interviews	Training increases awareness of clinical practice and acknowledges the importance of structured work in teams	Intensive care nurses perceive simulation-based team training has advantages for building patient safety in the ICU and that realistic training makes them more prepared to care for severely ill patients.	Realistic training contributes to safe care reflection and openness motivates learning, and finding a common understanding of team performance.
Vanaki, et al (2009)[17]	Professional Ethics	Qualitative method	36 Nurses	Semi structured interviews	Clinical competency is acquired when the nurse has an awakened conscience, possesses a philanthropic personality, has a sense of professional responsibility in any clinical situation, and aims to seek out essential knowledge and expertise to provide care in a confident manner	Nurse resorts to sense of responsibility and accountability toward professional Obligations in the course of a patient-centered approach to fulfilling their diverse professional duties.	Philanthropy strong conscience; being attentive; accepting responsibility; being committed to and respecting self and others Appropriate; management systems; in-service training; provision employment laws; control mechanisms; suitable and adequate equipment; love of the profession; critical thinking; nursing knowledge; professional expertise; self- assurance; self- respect; responsibility; accountability; nursing science; interest in profession, and professional proficiency.
Niezen, et al (2014)[18]	Reframing Professional Boundaries in Healthcare	Systematic literature review	13 articles	PRISMA flowchart methodology	The implementation of the NP served to tackle issues such as expected shortages in workforce and value for money.	Introducing nurse practitioners in healthcare requires organizational redesign and the reframing of professional boundaries.	Knowledge and capabilities; professional boundaries; organizational environment, and institutional environment.
Cassidy, et al (2012)[19]	Preceptors' Views of Assessing Nursing Students	Mixed method	Mental health and intellectual disability nursing (n = 16). Nursing preceptors (n =837)	Semi-structured interview	Attitudes to competencies; being a preceptor, and competencies in practice were categorized.	The importance of a regional and national review of competency assessment systems to find a common language for student assessment as well as promoting greater student skill development within competency frameworks is recommended.	Attitudes to competencies; being a preceptor, and competencies in practice.
Cabaniss (2014)[20]	Competencies of Quality and Safety Education	Descriptive Cross-sectional	Master's degree female with teaching responsibilities in both the classroom and clinical settings	Questionnaire	Education related to the safety, teamwork, and collaboration competencies occurs more frequently in the clinical setting than in the classroom.	The concepts of quality and safety, although familiar to faculty, are not identifiable nor taught at the complexity level.	Safety and teamwork collaboration

In the literature review, competency in general has been defined as "the ability to perform the task with desirable outcomes under the varied circumstances of the real world" [24], and as "the overlap of knowledge with the performance components of psychomotor skills and clinical problem solving within the realm of affective responses" [36]. Competency has general attributes that refers to having ability to successfully perform something [37]. Moreover, the concept in nursing practice has multi factorial natures including empirical evidence, behavioristic, generic, holistic role [38] and responsibility [39]. Competency has also been defined as the skill and ability to practice safely and effectively without the need for direct supervision, and as a level of performance demonstrating an effective application of knowledge, skill and judgment [40]. Moreover, competency reflects knowledge, understanding and judgment, a range of skills, and a range of personal attitudes and attributes [41].

Based on the extensive literature review in this study (Table 1), researchers believe that nursing students' competency is the individual experiences, dynamic process, and positive interactive social and beneficial changes in the equality of one's professional life which causes meta-cognitive abilities, touch reality, motivation, decision making, job involvement, professional authority, self-confidence, knowledge and professional skills, in which are included the five factors of "nursing process," "caring," "professionalism," "communities," and "diversity." The basic factors of nursing students' competency (Figure 12) were provider of care, manager of care, and professional identity, all three of which are very important in the progress of nursing students. Basically, they are basically the infrastructure of nursing students' competency levels.

3.2. Second Question: Domains of Nursing Students' Competency

According to the review of the literature (Table1), competency in nursing students has 6 domains and 12 sub-domains. Educational-based competency, Cultural-based competency, individualized-based competency, research-based competency, professional and inter-professional-based competency, and clinical and practical-based competency were defined as nursing students' competency domains (Figure 12).

3.3. Third Question: Levels of Nursing Students' Competency

The literature review (Table 1) indicated that experiences of researchers in the nursing students' competency scope [18], the three basic factors of nursing student's competency (provider of care, manager of care, and professional identity), and the combination of the matters define seven levels as follows:

1. Nursing students do not have sufficient acceptable levels of educational and clinical abilities.
2. Nursing students have sufficient and acceptable levels of educational abilities but his/her abiliities still need to be checked and supervised; they do nothave sufficient and acceptable levels of clinical abilities.
3. Nursing students have competency in educational abilities, but still need occasional checking and supervision in his/her abilities; they do not have sufficient and acceptable levels of clinical abilities, but do have minimal abilities in the clinical settings.
4. Nursing students are proficient in educational abilities, but still need periodic checking and supervision of

his/her abilities; they are competent and have sufficient and acceptable levels of clinical abilities, but may also need occasional checking and supervision in his/her abilities.

5. Nursing students are expert in educational abilities, are proficient, and have sufficient and acceptable levels of clinical abilities; they may need periodic checking and supervision in his/her abilities.
6. Nursing students are expert in educational and clinical abilities, but may need to be reminded by their supervisors of some special points in educational and clinical settings .
7. Nursing students are expert in educational and clinical abilities and are teachers and supervisors of educational and clinical skills and proficiencies.
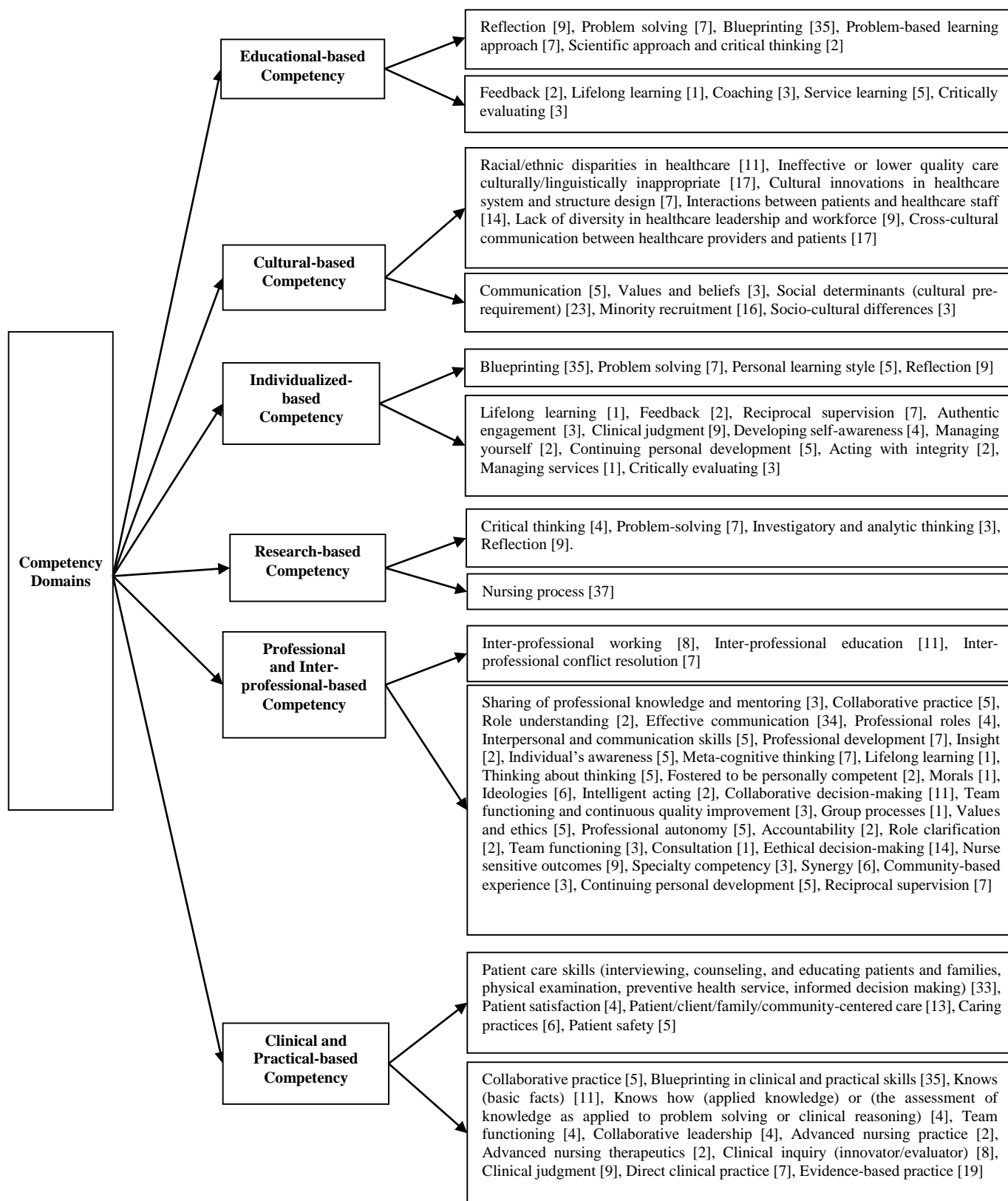
4. Discussion

In this study, the researchers sought to define and describe the definition, domains, and levels of nursing students' competency in light of previous studies using the systematic review approach. Definitions of competence vary by profession and country [42, 43], and many of the studies reviewed offered no clear or coherent definition or description of the mentioned concepts (Table 1). In the English language, the terms competence and competency are often used interchangeably. The term 'competency' should strictly be used for a "skill" itself, while competence is "the ability to perform that skill and the attribute of the performer" [42, 43]. In this study, nursing students' competency was clearly defined, and 6 domains with 12 sub-domains of nursing student's competency were identified (Figure 2). Moreover, seven steps of nursing students' competency were introduced for the first time in competency-related literature.

The main purpose of the different domains of nursing students' competency is proper, correct, and exact use of knowledge and skills and the ability to apply the three basic factors of care management, care providing, and achieving and demonstrating a professional identity in different academic and clinical settings (Figure 12). This is congruent with the declaration that competency represents the integration of knowledge, skills, values, and attitudes [42, 43].

In other words, the definition, domains, and levels of competency should separate the novice student from the expert student in the progress of different working, academic, and clinical settings. However, there are some problematic areas in the application of the mentioned concepts, including assessment and measurement of clinical competency, general versus specific competency, and divergent values among stakeholders.

In the assessment and measurement area, it is necessary to note that competency is difficult, perhaps impossible, to measure [44]. It is also problematic to determine at what level of performance a student should be deemed competent [42, 43]. In this study, however, seven levels were identified for overcoming the problems in different clinical and academic settings. Moreover, the holistic nature of competency which "identifies broad clusters of general attributes which are considered essential for effective performance" means that competency is "more than the sum of individual competencies" [45]. This definition resists the breaking down of competency into more manageable and measurable pieces, and objective assessment of competence suffers as a result.

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Competency Domains

Educational-based Competency
- Reflection [9], Problem solving [7], Blueprinting [35], Problem-based learning approach [7], Scientific approach and critical thinking [2]
- Feedback [2], Lifelong learning [1], Coaching [3], Service learning [5], Critically evaluating [3]

Cultural-based Competency
- Racial/ethnic disparities in healthcare [11], Ineffective or lower quality care culturally/linguistically inappropriate [17], Cultural innovations in healthcare system and structure design [7], Interactions between patients and healthcare staff [14], Lack of diversity in healthcare leadership and workforce [9], Cross-cultural communication between healthcare providers and patients [17]
- Communication [5], Values and beliefs [3], Social determinants (cultural pre-requirement) [23], Minority recruitment [16], Socio-cultural differences [3]

Individualized-based Competency
- Blueprinting [35], Problem solving [7], Personal learning style [5], Reflection [9]
- Lifelong learning [1], Feedback [2], Reciprocal supervision [7], Authentic engagement [3], Clinical judgment [9], Developing self-awareness [4], Managing yourself [2], Continuing personal development [5], Acting with integrity [2], Managing services [1], Critically evaluating [3]

Research-based Competency
- Critical thinking [4], Problem-solving [7], Investigatory and analytic thinking [3], Reflection [9].
- Nursing process [37]

Professional and Inter-professional-based Competency
- Inter-professional working [8], Inter-professional education [11], Inter-professional conflict resolution [7]
- Sharing of professional knowledge and mentoring [3], Collaborative practice [5], Role understanding [2], Effective communication [34], Professional roles [4], Interpersonal and communication skills [5], Professional development [7], Insight [2], Individual's awareness [5], Meta-cognitive thinking [7], Lifelong learning [1], Thinking about thinking [5], Fostered to be personally competent [2], Morals [1], Ideologies [6], Intelligent acting [2], Collaborative decision-making [11], Team functioning and continuous quality improvement [3], Group processes [1], Values and ethics [5], Professional autonomy [5], Accountability [2], Role clarification [2], Team functioning [3], Consultation [1], Eethical decision-making [14], Nurse sensitive outcomes [9], Specialty competency [3], Synergy [6], Community-based experience [3], Continuing personal development [5], Reciprocal supervision [7]

Clinical and Practical-based Competency
- Patient care skills (interviewing, counseling, and educating patients and families, physical examination, preventive health service, informed decision making) [33], Patient satisfaction [4], Patient/client/family/community-centered care [13], Caring practices [6], Patient safety [5]
- Collaborative practice [5], Blueprinting in clinical and practical skills [35], Knows (basic facts) [11], Knows how (applied knowledge) or (the assessment of knowledge as applied to problem solving or clinical reasoning) [4], Team functioning [4], Collaborative leadership [4], Advanced nursing practice [2], Advanced nursing therapeutics [2], Clinical inquiry (innovator/evaluator) [8], Clinical judgment [9], Direct clinical practice [7], Evidence-based practice [19]

*The number in parenthesess is the frequency of repetition of an item in the whole literature review.

Figure 2. Domains of nursing students' competency

However, the study definition of nursing students' competency is congruent with the breaking down of competency into more manageable and measurable pieces and defined the concept as "the individual experiences, dynamic process, and positive interactive social and beneficial changes in the equality of one's professional life that causes meta-cognitive abilities, touch reality, motivation, decision making, job involvement, professional authority, self-confidence, knowledge and professional skills, which includes the five factors of "nursing process," "caring," "professionalism," "communities," and "diversity." Moreover, one very important point to overcoming the unclear nursing students' competency is that the determination of competency is often influenced by a student's level of comfort, confidence, and self-efficacy in a variety of contexts and considers more than one perspective

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[46]. Next, the study defined seven steps of nursing students' competency in different academic and clinical settings.

Regarding general versus specific competencies, it seems that clinical nursing skills have taken a back seat to other priorities [47-49]. The set of general competencies tends to be so vague that it fails to demarcate nursing from other professions while also failing to define nursing practices [50]; while general competencies are often used to assess students, it may be of greater benefit (and challenge) for students to attain specific nursing competencies. If students lack exposure to basic nursing skills, they may gain insufficient experience for even minimal competency [47, 49]. Furthermore, tooverpower the problem, the researcher suggested seven steps for first-year nursing students to senior nursing students.

In connection with the diverse values among stakeholders, there is often a lack of shared assumptions between educational institutions, employers, patients, and regulatory bodies about what to expect from new nursing graduates [47, 49, 51]. The researchers strongly believe that nursing stakeholders must be accompanied by the seven nursing students' competencies for different academic and clinical settings to overcome the problems.

Moreover, it is of paramount importance that the nursing students' stakeholders manage different academic and clinical settings to achieve flexibility, personalization, self-pacing, a supportive environment, a skill-based, respected, and finally affordable points in the mentioned settings [37, 52] in teaching different educational and practical skills and abilities in different academic and clinical settings.

5. Conclusion

The current study gives more comprehensively described definition, domains, and levels of nursing students' competency in different academic and clinical settings than previous studies, but it is more obvious that more systematic reviews, concept analyses, and even meta-analysis are needed to scrutinize specifically nursing students' competency in academic and clinical settings. The current study was the first review study in the nursing competency scope to introduce seven new competency levels in nursing students. However, the concept strictly depends on the profession and country.

Authors' Contributions
BN, AB, ZV, JMN, and SMKH were responsible for the study conception and design, data collection and analysis, and the drafting of the manuscript. Furthermore, they made critical revisions to the paper for important intellectual content.

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