

Reflective practice among nursing students in clinical teaching

Prática reflexiva em estudantes de enfermagem em ensino clínico

La práctica reflexiva en estudiantes de enfermería en la enseñanza clínica

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Abstract

Background: Reflection is increasingly recognized in nursing practice due to its contribution to the learning process and expansion of the body of nursing knowledge.

Objectives: To explore the current state-of-the-art of scientific knowledge related to reflective practice among nursing students in clinical teaching.

Methodology: A literature review was conducted based on the Institute Joanna Briggs for Scoping Reviews models. The review included 24 articles, out of the total 206 articles found.

Results: Reflective practice was considered to be an essential condition for students' professional and intellectual development. Eleven strategies to promote reflection were found.

Conclusion: Findings show that reflective practice is an essential skill in clinical settings and that both students and teachers share the responsibility of further expanding the body of nursing knowledge.

Keywords: education, nursing; nursing; nursing students; clinical clerkship

Resumo

Enquadramento: A reflexão tem adquirido um profundo reconhecimento na prática de enfermagem, assistindo o processo de aprendizagem e impulsionando o corpo de conhecimentos da própria disciplina.

Objetivos: Explorar o estado atual do conhecimento científico relacionado com a prática reflexiva em estudantes de enfermagem no ensino clínico.

Metodologia: Revisão da literatura, com base nos modelos do *Instituto Joanna Briggs* para *Scoping Reviews*. Dos 206 artigos encontrados, 24 foram incluídos.

Resultados: A prática reflexiva assumiu ser uma condição indispensável para o desenvolvimento profissional e intelectual dos estudantes. Foram encontrados 11 domínios de estratégias de promoção da reflexão.

Conclusão: Os achados assumem que a prática reflexiva é vista como uma habilidade indispensável no contexto clínico, atribuindo aos estudantes e professores responsabilidades partilhadas para continuar a expandir o corpo de conhecimentos da disciplina.

Palavras-chave: educação em enfermagem; enfermagem; estudantes de enfermagem; estágio clínico

Resumen

Marco contextual: La reflexión ha adquirido mucha importancia en la práctica de enfermería coetánea, sirve de ayuda al proceso de aprendizaje y fomenta el cuerpo de conocimientos de la disciplina.

Objetivos: Explorar el estado actual de los conocimientos científicos relacionados con la práctica reflexiva de los estudiantes de enfermería en la enseñanza clínica.

Metodología: Revisión de la literatura con base en los modelos del Instituto Joanna Briggs para las revisiones de alcance (scoping reviews). De los 206 artículos encontrados se incluyeron 24.

Resultados: La práctica reflexiva se asume como una condición esencial para el desarrollo profesional e intelectual de los estudiantes. Se encontraron 11 estrategias para promover la reflexión.

Conclusión: Los resultados suponen que la práctica reflexiva se ve como una habilidad indispensable en el contexto clínico de los estudiantes y atribuyen a los estudiantes y profesores responsabilidades compartidas para seguir ampliando el cuerpo de conocimientos de la disciplina.

Palabras clave: educación en enfermería; enfermería; estudiantes de enfermería, prácticas clínicas

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Introduction

Reflective practice has been accelerating the study and discussion of issues related to nurses' exercise and professional education by assuming a dominant trend in students and professionals' empowerment and playing a key role in the design of nursing programs. Reflective practice begins when practitioners problematize their practice and learn new knowledge, skills, and attitudes required by the practice itself (Jarvis, 1999); it has its roots in the Enlightenment idea that we can stand outside of ourselves and come to a clearer understanding of what we do and who we are by freeing ourselves of distorted ways of reasoning and acting (Brookfield, 1995); it is a dialog between thinking and doing through which the individual becomes more skillful, is based on the action science that involves reflection-in-action, reflection-on-action and reflection on reflection-in-action (Schön, 1983). Overall, reflective practice corresponds to the intellectual and affective activities, in which individuals engage to explore their experiences with the purpose of achieving a new understanding (Boud, Keogh, & Walker, 1985). The reflective practice model encourages the development of both cognitive and affective theories of moral and ethical behavior, challenging students to integrate these into their personal belief systems as a result of their experiences instead of passively absorbing the *rules* of professional conduct (MacFarlane, 1998).

Reflective practice can also serve as a facilitator of learning. Through reflection, the individual can surface and criticize the tacit understandings that have grown up around the repetitive experiences of a specialized practice, and can make new sense of the situations of uncertainty or uniqueness which the practice has allowed him to experience (Schön, 1983). Reflection is a basic mental process with either a purpose, an outcome, or both, applied in situations in which material is unstructured or uncertain and where there is no obvious solution (Moon, 1999). The purpose of reflection is to bring our reasoning processes and behavior patterns to the surface and make them explicit; however, uncovering these can be difficult because so much of this knowledge is tacit and spontaneous (Maughan, 1996).

The analysis of reflective practice leads to the need to reconstruct reflective thinking, which is inherent to the rational human being. Reflective thinking

begins with a state of doubt, perplexity and difficulty, giving rise to a mental process, followed by an act of research, inquiry, in an effort to find something to dissolve the doubt and clarify the perplexity. In other words, it is a research process that aims to turn a situation in which there is a difficulty, disturbance, or obscurity into a new situation that is clear, coherent and harmonious, based on solid foundations and serious and consecutive considerations (Dewey, 1910).

With regard to nursing, reflection is a fundamental tool for learning. The concept of reflection is assumed as a human response to the experience, where learners recapture their experience, think about it, meditate it, and evaluate it (Boud et al., 1985). In fact, reflection has been increasingly recognized in nursing practice, not only to support nurses in recognizing their strengths and weaknesses (Somerville & Keeling, 2004), but also to overcome the existing gap between nursing theory and practice, and expand the body of nursing knowledge integrated into practice (Johns, 2002).

If, on the one hand, one of the fundamental purposes of nursing education is to encourage students to develop themselves through a reflective process, on the other hand, nursing students expect to be engaged in moments of reflective learning since the beginning of their nursing degree. However, reflective practice is even more important in clinical settings, because this is where future nurses make the connection between the acquired theoretical knowledge and the actual clinical practice, which is characterized by unpredictability and requires reflection on decision-making.

This review aims to explore the current state-of-the-art of the scientific knowledge on reflective practice among nursing students, and to describe these evidences by developing a conceptual map on reflective practice among nursing students in clinical settings, with a particular emphasis on strategies that promote reflective practice. The search for literature on reflective practice among nursing students is justified by the importance of reflection in the nurses' training process, learning process in clinical contexts, and future professional practice, but also by the fact that the findings on strategies that promote reflective practice among nursing students may be a key aspect to test their true effectiveness. The results of this review may also improve nursing students'

supervision in clinical teaching and encourage reflection to action.

Reflect to act independently seems to be one of the themes of greatest relevance in international education (Alarcão, 1996). The development of a reflective practical teaching model can lead to new forms of practice-oriented research and education, creating a moment of self-impetus, or even something that is transmitted between teachers and students (Schön, 1987).

The formulation of the research question was based on the PCC (Population, Concept and Context) mnemonic: What is known in the existing literature on reflective practice among nursing students in clinical teaching?

The objectives, the inclusion criteria and methods used to conduct this review were previously specified and documented in detail in a protocol.

Methodological procedures and integrative review

To accomplish the objectives set out, we conducted a scoping review of the scientific literature on reflective practice among nursing students and its associated concepts based on the Joanna Briggs Institute methodology (The Joanna Briggs Institute, 2015) and the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) model for data organization.

The criteria for the inclusion of articles were justified during the introduction and are summarized in Table 1. They were defined based on the population, concepts, contexts, type of study, language, and date of publication.

Table 1

Inclusion criteria

POPULATION	CONCEPTS	CONTEXT
Studies including adult (<i>age</i> > 18 years) undergraduate nursing students	Studies on reflective practice concepts: <i>Reflective practice;</i> <i>Reflection;</i> <i>Reflective thinking.</i>	Studies on clinical teaching: <i>Clinical practice;</i> <i>Clinical teaching;</i> <i>Clinical placement;</i> <i>Clinical learning.</i>
TYPES OF STUDY: Primary or secondary studies, qualitative or quantitative.		
LANGUAGE: Studies published in Portuguese and English.		
PUBLICATION DATE: Studies published between 1 January 2010 and 8 December 2015.		

Search strategy

The first step was to identify the articles by searching electronic databases using the keywords specified above. Then, after consulting the most relevant articles and identifying the key search terms, we defined the Boolean search phrases. We used combinations of descriptors/medical subject headings (MeSH) and headings through the Boolean operators “OR” and “AND” and the tool “*” to create new variations of the same word, and thus expand the search.

The search strategy consisted of searching key databases for this topic: MEDLINE, CINAHL, and Cochrane Plus Library.

The search strategies used in the electronic databases (Boolean phrases and activated filters) are shown below:

MEDLINE: Boolean phrase: (MH “Students, Nursing”) AND (“reflecti* practice” OR reflecti* OR “reflecti* thinking” OR (MH “Thinking”)) AND (“clinical practice” OR (MH “Teaching”) OR “clínica* placement” OR “clínica* learning”); Activated filters: Limiters: Full text; Publication date: 2010/01/01-2015/12/08; Expanders: Also search full text; Search modes: Boolean/Phrase.

CINAHL: Boolean phrase: (MH “Students, Nursing”) AND (“reflecti* practice” OR (MH “Reflection”) OR “reflecti* thinking” OR (MH “Thinking”)) AND (“clínica* practice” OR (MH “Clinical Competence”) OR (MH “Teaching Methods, Clinical”) OR (MH “Student Placement”) OR “clinical placement” OR (MH “Learning Environment, Clinical”)); Activated filters: Limiters: Full text; Publication date: 2010/01/01-

2015/12/08; Expanders: Also search full text; Search modes: Boolean/Phrase.

COCHRANE PLUS LIBRARY: Boolean phrase: (“Students, Nursing”) AND (“reflecti* practice” OR “reflect*” OR “reflecti* thinking” OR “Think*”) AND (“clinical practice” OR “Clinical Competence” OR “clinical placement” OR “clinical learning”); Activated filters: Limiters: Full text; Publication date: 2010/01/01-2015/12/08.

This review also includes six other studies that met the inclusion criteria, which we identified through additional searches and gray literature search.

Although the search language was English, we considered studies written in English and Portuguese. To limit the search to the most recent publications on this topic (last 5 years), we considered studies published between January 2010 and 8 December 2015 (the date of search). The search strategy was not restricted to any type of study, and included all scientific studies, regardless of their design.

Identification and inclusion of studies

In addition to the studies found in the databases, gray literature studies were also included. The studies included through the gray literature search were identified through searches for documents elaborated by organizations, outside scientific publication and dissemination channels. Afterward, duplicates were removed. The study eligibility process consisted in the application of two screening tests. Screening Test I consisted in analyzing the articles’ title and abstract and identifying their population, concepts, and contexts. Screening Test II consisted in performing a full-text analysis of the articles and identifying their population, concepts, and contexts. The screening tests included four yes/no questions related to the research topic, the publication date, language of publication, and study population.

Figure 1 illustrates the procedure for study identification and inclusion.

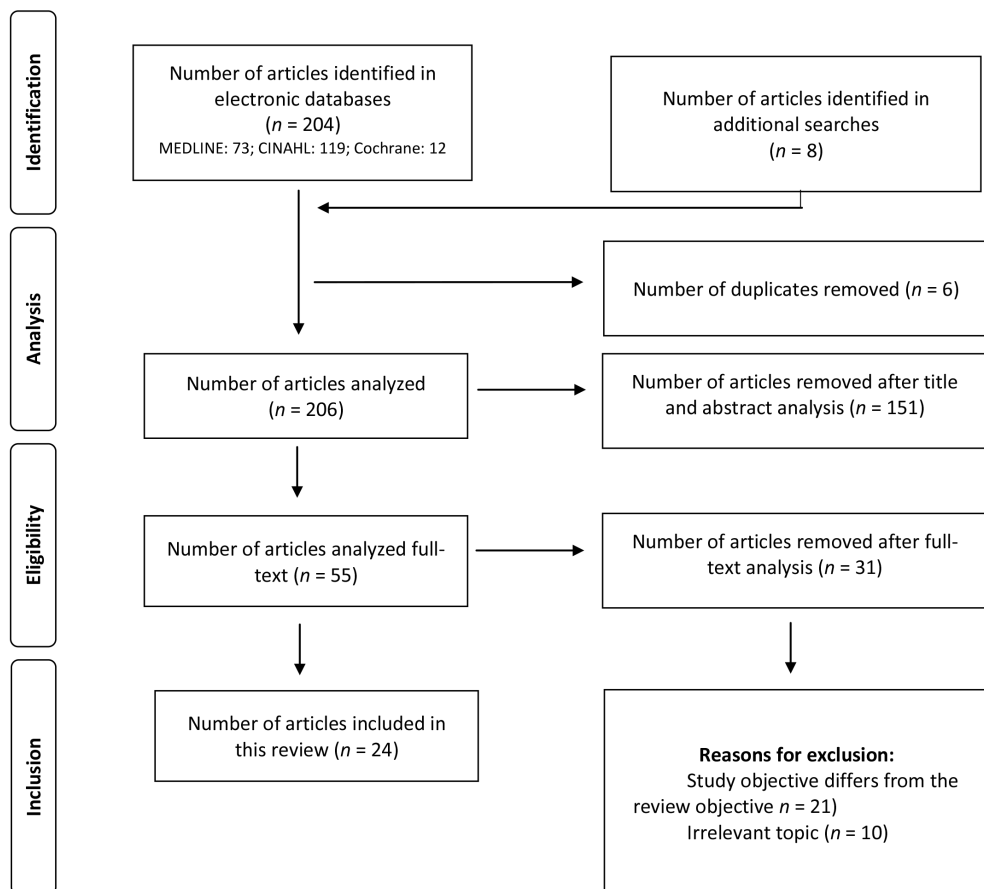


Figure 1. Study identification and inclusion process - PRISMA Diagram Flow.

Analysis of the studies

The included studies were analyzed in two phases. First, we performed a descriptive analysis and then a topical analysis of the studies.

The variables explored in the descriptive analysis of the studies included productivity and the methodological characteristics of the samples.

The productivity characteristics included the number of articles per year and the country of origin.

The methodological characteristics included the type of study design, with seven categories (descriptive, quasi-experimental, experimental, qualitative, mixed methodology, analysis and review); the type of sample - nursing students or other; sample size, defined by the intervals [0; 20],]20; 50], and]50; +∞[; the study objective, with categories according to the main topic of the study: Assessment of the reflective practice components; Assessment of the perception of reflective practice; Assessment of factors influencing reflective practice; and Assessment of reflective practice strategies.

The topical analysis of studies consisted of describing the evidence found and developing the conceptual map on reflective practice among nursing students.

Results and interpretation

Six of the 204 studies found through the scientific search were removed for being duplicates. Eight studies were then included through a gray literature search, totaling 206 studies. After Screening Test I, 151 studies moved on to Screening Test II. In the end, 24 studies were included in the review.

Description of the studies

Based on the analysis of the publication distribution per year, we found that four relevant studies had been

published in 2010, two in 2011, five in 2012, eight in 2013, and five in 2014. However, no relevant studies were published in 2015.

With regard to the country of origin, the United States of America (five studies), the United Kingdom (four), and China (three) were the countries with the most relevant publications. Portugal, Brazil and Norway had two relevant studies on this topic. Other countries, such as Australia, the Netherlands, Denmark, Jordan, Singapore, and Taiwan had one relevant publication.

With regard to the methodological characterization of the studies included, namely the types of studies included, most of them were qualitative studies (nine), but descriptive studies (four), experimental studies (two), analytical studies (seven), one review and a one mixed-methods study were also included.

As to the type of sample, 13 studies (54.2%) used exclusively nursing students, two used other types of sample (8.3%), namely nursing teachers and students' portfolios, and seven had no sample due to the study design. With regard to sample size, seven studies used samples composed of up to 20 participants, six studies had samples with 20 to 50 participants, and two studies had samples with more than 50 participants.

The objectives of the studies included are shown in Table 2, which also includes the studies' title, author and year of publication. However, all studies were divided into four categories of objectives according to the main topic of the study: six studies fell into the category Assessment of reflective practice strategies, three studies into the category Assessment of the reflective practice components, eight into the category Assessment of the perception of reflective practice, and seven into the category Assessment of factors influencing reflective practice.

Table 2

Objectives of the studies

STUDY	OBJECTIVE
S1 Rossi, N., Fortuna, C., Matumoto, S., Marciano, F., Silva, J., & Silva, J. (2014). As narrativas de estudantes de enfermagem nos portfólios do estágio curricular supervisionado. <i>Revista Eletrônica de Enfermagem</i> , 16(3), 566-574. Retrieved from https://www.researchgate.net/publication/287573775 _As_narrativas_de_estudantes_de_enfermagem_nos_portfolios_do_Estagio_Curricular_Supervisionado	To identify the types of narratives present in the portfolios and analyze the reflections of students enrolled in the supervised curricular internship.

S2

Ma, F., Li, J., Liang, H., Bai, Y., & Song, J. (2014). Baccalaureate nursing students' perspectives on learning about caring in China: A qualitative descriptive study. *BMC Medical Education, 14*(42). doi:10.1186/1472-6920-14-42

To explore nursing students' perspectives on learning about caring in China.

S3

McMahon, M., & Christopher, K. (2011). Case study method and problem-based learning: Utilizing the pedagogical model of progressive complexity in nursing education. *International Journal of Nursing Education Scholarship, 8*(1). doi: 10.2202/1548-923X.2275

To propose a conceptual model derived from the literature (Pedagogical Model of Progressive Complexity in Nursing Education), to be used by nursing teachers in nursing programs and as a model for guiding evaluation research in nursing education.

S4

Ma, F., Li, J., Zhu, D., Bai, Y., & Song, J. (2013). Confronting the caring crisis in clinical practice. *Medical Education, 47*, 1037-1047 doi: 10.1111/medu.12250

To investigate nursing students' caring ability in the Chinese context and to explore the role of clinical practice learning in the development of nursing students' caring skills.

S5

Rodrigues, N. (2012). *Contratos de aprendizagem em enfermagem: uma mais-valia para os estudantes*. (Master's dissertation). Universidade Nova de Lisboa, Faculdade de Ciências Sociais e Humanas, Portugal.

To check if the use of learning contracts in nursing clinical teaching is, in fact, an added value to students' teaching-learning process.

S6

Yhe, M., Wu, S., & Che, H. (2010). Cultural and hierarchical influences: Ethical issues faced by Taiwanese nursing students. *Medical Education, 44*, 475-484 doi: 10.1111/j.1365-2923.2009.03589.x

To explore ethical issues and dilemmas, and their impact among student nurses in clinical practice.

S7

Kennison, M. (2012). Developing reflective writing as effective pedagogy. *Nursing Education Perspectives, 33*(5), 306-311. doi: 10.5480/1536-5026-33.5.306

To describe faculty best practices in mentoring the student to effectively think critically through structured reflective writing.

S8

Green, J., Wylie, A., & Jackson, D. (2014). Electronic portfolios in nursing education: A review of the literature. *Nurse Education in Practice, 14*(1), 4-8. doi: 10.1016/j.nepr.2013.08.011

To review and detail the importance of e-portfolios in nursing education.

S9

Al-Momani, S., & Momani, W. (2013). Facilitating nursing students compliance with standard precautions through their own reflection. *Asian Journal of Nursing Education & Research, 3*(4), 248-253.

To determine the effect of students' self-reflection on their compliance with standard precautions.

S10

Edwards, S. (2014). Finding a place for story: Looking beyond reflective practice. *International Practice Development Journal, 4*(2), 1-14. Retrieved from http://www.fons.org/Resources/Documents/Journal/Vol4No2/IPDJ_0402_05.pdf

To explore nursing practice as a teaching resource using stories.

S11

Dolphin, S. (2013). How nursing students can be empowered by reflective practice. *Mental Health Practice, 16*(9), 20-23. doi:10.7748/mhp2013.06.16.9.20.e867

To understand how a critical event can stimulate reflective practice.

S12

Nielsen, C., Sommer, I., Larsen, K., & Bjørk, I. (2013). Model of practical skill performance as an instrument for supervision and formative assessment. *Nurse Education In Practice, 13*(3), 176-180. doi:10.1016/j.nepr.2012.08.014

To understand how the Model of Practical Skill Performance can facilitate the acquisition of practical skills in nursing students.

S13

Vaz, D., & Prado, C. (2014). Prática pedagógica reflexiva de licenciados de enfermagem: O portfólio como instrumento. *Revista da Escola de Enfermagem USP, 48*(6), 1103-1110. doi:10.1590/S0080-623420140000700019

To analyze the narratives related to the pedagogical practice experienced during the Supervised Curricular Internship reported in Nursing undergraduate students' portfolios, regarding the levels of reflection.

S14

Ip, W., Lui, M., Chien, W., Lee, I., Lam, L., & Lee, D. (2012). Promoting self-reflection in clinical practice among Chinese nursing undergraduates in Hong Kong. *Contemporary Nurse, 41*(2), 253-262. doi:10.5172/conu.2012.41.2.253

To evaluate the effect of a structured education program on improving the self-reflection skills of Chinese nursing undergraduates in managing clinical situations.

S15

Cleary, M., Horsfall, J., Happell, B., & Hunt, G. (2013). Reflective components in undergraduate mental health nursing curricula: Some issues for consideration. *Issues in Mental Health Nursing, 34*(2), 69-74. doi:10.3109/01612840.2012.722171

To analyze reflective components in relation to learning in the classroom and in clinical placements, and to address students' interpersonal ethical concerns about the situations under reflection.

S16

Koontz, A., Mallory, J., Burns, J., & Chapman, S. (2010). Staff nurses and students: The good, the bad, and the ugly. *MedSurg Nursing: Official Journal Of The Academy Of Medical-Surgical Nurses, 19*(4), 240-246. Retrieved from http://amsn.inurse.com/sites/default/files/documents/practice-resources/healthy-work-environment/resources/MSNJ_Koontz_19_04.pdf

To explore nursing students' perceptions of their experiences in clinical learning environments.

S17

Ganzer, C., & Zauderer, C. (2013). Structured learning and self-reflection: Strategies to decrease anxiety in the psychiatric mental health clinical nursing experience. *Nursing Education Perspectives, 34*(4), 244-247. doi:10.5480/1536-5026-34.4.244

To test a teaching-learning strategy to help reducing nursing students' stress and anxiety levels caused by the mental health clinical placement.

S18

McCallum, H. (2013). Students in the perioperative learning environment and emotional support. *Journal Of Perioperative Practice, 23*(7-8), 158-162.

To examine the responsibilities of perioperative nurses and nursing students, and to examine students' emotional growth and reflective learning.

S19

Ness, V., Duffy, K., McCallum, J., & Prince, L. (2010). Supporting and mentoring nursing students in practice. *Nursing Standard, 25*(1), 41-46.

To explore how nursing students can demonstrate their decision making, and to suggest techniques for students' mentoring and support.

S20

Dekker-Groen, A., Schaaf, M., & Stokking, K. (2010). Teacher competences required for developing reflection skills of nursing students. *Journal Of Advanced Nursing, 67*(7), 1568-1579. doi:10.1111/j.1365-2648.2010.05591.x

To develop a teacher competence framework necessary for the creation of a learning environment that supports nursing students in developing their reflection skills.

S21

Caldwell, L., & Grobbel, C. (2013). The importance of reflective practice in nursing. *International Journal of Caring Sciences, 6*(3), 319-326.

To explore the current literature and implications related to reflective practice in nursing.

S22

Correia, M., & Santiago, M. (2012). The reflective practice and development of competence of nursing students caring for critical care patients. *Journal of Nursing UFPE On Line, 6*(5), 1069-1076. doi:10.5205/reuol.2450-19397-1-1E.0605201215

To characterize how nursing students reflect on their clinical learning experiences in caring for critically ill patients at the intensive care unit.

S23

Hatlevik, I. (2012). The theory-practice relationship: Reflective skills and theoretical knowledge as key factors in bridging the gap between theory and practice in initial nursing education. *Journal of Advanced Nursing, 68*(4), 868-877. doi:10.1111/j.1365-2648.2011.05789.x

To examine the association between nursing students' acquired reflective skills, practical skills, and theoretical knowledge, and their perception of the coherence between theory and practice.

S24

Hovland, O. (2011). Together in supervision: Nurse students' experiences: A pilot study. *International Journal for Human Caring, 15*(4), 33-39.

To explore nursing students' supervision experiences in clinical settings where the teacher is involved in the daily work routine.

Note. S = Study.

Topical analysis of the studies

The topical analysis consisted of analyzing the reviewed content and identifying the key domains of the topic. The decomposition of the included studies led us to define two key areas: conceptualization of reflective practice, and strategies for the promotion of reflective practice.

With regard to the conceptualization of reflective practice, the concept of reflective practice was identified in the literature reviewed as an "individual process which, through the intellect and affection triggered by the experience, leads to the clarification of the meaning, allowing the consolidation or alteration of the sensory perception" (Fonseca apud Rodrigues, 2012, p. 7).

Other definitions found were those of Caldwell and Grobbel (2013), who restricted reflective practice to the ability to examine certain actions and experiences in order to clarify practice and enhance clinical knowledge, and Chong (as cited in Caldwell & Grobbel, 2013), who assumed that reflective practice should be a continuous cycle in which experience and reflection on experiences are interrelated.

In this review, several authors highlight reflective practice as being an obligation, a *sine qua non* for professional learning and the assimilation and synthesis of the nurses' work within a dimension that goes beyond the purely technical domain (Schön, 1987; Nielsen, Sommer, Larsen, & Bjørk, 2013; Rossi et al., 2014).

If, on the one hand, reflective practice was originally designed for skilled professionals to be able to reflect systematically on unsatisfactory clinical events, on the other hand, the conceptualization of reflective practice is anchored in the concepts of reflective learning and reflection in clinical settings (Cleary, Horsfall, Happell, & Hunt, 2013).

The concept of reflection itself is a form of critical thinking which has the opportunity to enhance the nurse's clinical reasoning while having a positive impact on patient care (Caldwell & Grobbel, 2013). By reflecting, nurses and future nurses are able to construct a new and deeper understanding of the experience and articulate knowledge in a more meaningful way (Ip et al., 2012).

According to Bringle (as cited in Al-Momani & Momania, 2013), reflection is a process in which students and nurses process and synthesize information from their practices, which can help them to learn from their experiences and improve their performance. Indeed, reflection is seen as an active commitment that provides the opportunity to analyze nursing practice

and identify new knowledge, being particularly significant in practical settings (Carr as cited in Ip et al., 2012; Chong as cited in Caldwell & Grobbel, 2013). Durgahee (as cited in Cleary et al., 2013) assumes that reflection is consistent with adult self-directed education philosophies. Mezirow (apud Ip et al., 2012) argues that, similarly to reflective practice, the reflective learning process should result in a new or reorganized interpretation of the meaning of an experience, which guides subsequent understanding, appreciation, and action.

With regard to the learning environment, reflective practice is seen as an important skill for nursing students and nurses' professional development, because it allows them to become self-aware and provide the best possible care (Dolphin, 2013). However, the ability to reflect and the reflection mechanisms can be challenging for those who want to move from the descriptive or narrative level to an interpretation or justification level (Vaz & Prado, 2014).

The pedagogical importance of reflection in practical settings increases to the extent that, through reflection, nursing students develop a new form of learning, resulting from an organized and experiential process which values experience in the learning process (Rodrigues, 2012). Therefore, the presence of a mentor/facilitator in the students' critical and reflective process who uses valid strategies for the promotion of reflective practice is particularly relevant.

With regard to the strategies for promotion of reflective practice, after analyzing the identified articles, we found 11 domains of strategies for promotion of reflective practice among nursing students. As shown in Table 3, these domains were grouped based on similarity and complementarity.

Table 3
Identified strategies, evidence and characteristics

STRATEGY	EVIDENCE AND CHARACTERISTICS
Using reflective portfolios (S1; S13; S18)	The reflections analyzed indicate that the portfolio can be a useful tool to assist students in developing their critical-reflective process (S1).
Using reflective e-portfolios (S8)	Portfolios can represent an authentic means of assessing cognitive, reflective, and affective skills and promoting professional development and learning (S8). The portfolio becomes a space for reflection on the experiences in the curricular internship, provided that it has clear objectives, is well understood by teachers and students, who should be informed about their main characteristics, construction and evaluation (S13). The use of a reflective portfolio enables critical reflection (S18).

Positive experiences (S2) Negative experiences (S2) or Experiencing a critical event (S11)	Both experiences can play an important role in promoting learning about nursing care through a reflective practice. Positive experiences promote the learning about caring, and negative experiences should be individually managed by students, fostering critical and ethical thinking (S2). The experience of a critical event and the reflection on it allows students to become self-aware of the situation and improve clinical practice (S11).
Elaborating learning contracts (S5)	The learning contract is seen as a student-centered teaching-learning tool that allows nursing students to learn professional contents, interconnect practices, and develop reasoning and questioning skills (S5).
Ethics training (S6)	Ethics training should be introduced into nursing curricula, involving ethical dilemmas, providing an opportunity for students to discuss their emotions about their experiences, and helping students to reflect on clinical scenarios to clarify their values and learn to respect the value of life (S6).
Using reflective writing (S7)	With foresight and planning, reflective writing may be an empowering strategy for facilitating nursing students' thinking skills. Teachers should be trained to stimulate this process since this skill, once internalized, can be useful for future professional practice (S7).
Story-telling (S10)	Through the telling and writing of stories, students can gain a clearer insight into their learning, grapple with professional issues that are too often excluded from formal consideration, and make explicit and transferable learning. Stories can play an extremely productive role, not only as a complement to reflective practice, but also as an aid to learning itself (S10).
Practicing joint reflection (S16)	Students considered that the nurses who reflected on the students' clinical experiences and tried to create a positive learning environment for them, within the clinical learning setting, were seen as role models, as positive elements who contribute for reflection and learning. The nurses' commitment to reflect on their past experiences as novice nurses was considered to be an important experience in students' learning. (S16)
Experiencing stressful events (S18) Experiencing challenges with a major emotional impact (S21)	When students face a stressful clinical experience, the teacher can introduce reflective practice using strategies to help them think about the event. This approach can allow students to examine and analyze their own feelings and beliefs, helping them to normalize the uncomfortable feelings that have emerged (S18). The challenges with a major emotional impact lead students to develop the reflection process, recognize the experience that has caused them distress or uneasiness, gain a better understanding of their personal response, disperse the emotional load, and think deeply about what they learned about themselves and their nursing practice (S21).
Making reflective questions (S19)	Reflective questions, such as those that lead students to verbalize their thoughts, seem to be used by mentors as an important technique to stimulate students' critical thinking skills and help them to develop their clinical competence. An important aspect to consider when using these questions as a technique to develop decision-making and reflection skills is to listen carefully to the students' answers and give constructive feedback to motivate further learning (S19).
Developing action plans (S19)	The planning of actions/interventions can be used as an important component of the reflective process or to promote learning and help in decision making. In clinical teaching, planning can be a useful tool for students, before beginning a new internship, to encourage them to identify priority learning areas in their decision-making process (S19).
Mentor/supervisor support (S21)	By providing adequate support, mentors are able to guide students through reflection, to better understand their experience, gain their trust, and challenge them to learn (S21).

Note. S = Study.

Based on the analysis of studies S1, S13, S18, and S8, the use of reflective portfolios should be highlighted as a strategy for developing nursing students' critical-reflective skills and supporting their learning. Indeed, the evidence found assumes that critical reflection through portfolios in clinical environments provides nursing students with an opportunity to develop a perspective on their daily life that goes beyond description and observation, emerging as an area of comprehension and understanding of nurses' work (Matumoto as cited in Rossi et al., 2014). It also

assumes that the portfolio, by including characteristics of *reflection-on-action* and *reflection on the reflection-in-action*, raises individuals' awareness to the intellectual development process (Vaz & Prado, 2014), and is also useful for examining issues related to complex thinking and self-assessment, allowing students to select what to write about and what to include (McCallum, 2013).

Based on the review performed, the experience of a critical event (S11), through positive or negative experiences during clinical teaching (S2), such as

errors in drug administration, observing inadequate care delivery by nurses (negative), receiving positive feedback from the tutor, and observing adequate care delivery (positive), create opportunities for individual reflection that promote learning about nursing care. An important strategy for the promotion of reflection is helping students to cope with these events, especially the negative ones, instead of ignoring them, which will allow students to transform these negative events into positive ones, and learn through a post-action reflective process (Ma, Li Liang, Bai, & Song, 2014).

In the same way, challenges with a major emotional impact (S18) and stressful events during clinical teaching (S21) induce positive stimuli to reflective practice in nursing students. After a significant event, students develop a reflection process, which allows them to recognize the experience that had a major emotional impact, that caused distress or uneasiness, and gain a better understanding of their personal response and the knowledge acquired from it, developing their critical skills through practice (S21). As reported in the literature, the elaboration of a learning contract is another strategy to promote reflection among nursing students in clinical teaching, although this is supported by a single study (S5). This descriptive-exploratory study with an interpretive-phenomenological paradigm (Rodrigues, 2012) sought to identify students and teachers' opinions about the learning contract, and concluded that it is particularly important in nursing education as a reflective methodology because it stimulates reasoning, reflection, and careful intervention. It should be noted that, from the perspective of education, the learning contract should include the objectives to be achieved, as well as the strategies and/or activities to be developed and the assessment criteria (Escola Superior de Enfermagem de Lisboa, 2008).

Study S6, which addressed ethical issues and dilemmas experienced by nursing students and their impact on clinical practice, suggests that nursing students should receive comprehensive ethics training, which creates opportunities for reflection on specific clinical scenarios. Ethics training should also ensure that nurses meet the expectations of society to critically reflect on practice (Woods, 2005).

The use of reflective writing for improving reflective practice was supported by S7 (Kennison, 2012). In this

study, the author argues that although the reflective writing on clinical practice requires planning, support and assistance from the mentor/teacher, it is a vital strategy for the development of students' reasoning skills. Teachers may use reflective questions as a strategy to promote reflection, since allowing students to verbalize their thoughts enables them to stimulate their critical and reflective thinking (S19). Another strategy is the joint reflection between teacher and student (S16), since this type of reflection is an added value reported by nursing students in clinical teaching. This strategy facilitates the development of reasoning and reflection skills and makes students feel more supported and accepted.

Nursing students can develop their reflective process in practice through a strategy belonging to the domain of reflection for action, i.e. pre-action, which focuses on the development of an action plan. According to the authors of study S19, the development of an action plan focused on the acquisition of a competence, a skill, or an aspect of care is useful when students begin a new clinical teaching, allowing them to identify areas of learning, self-development, or self-reflection.

Story-telling is believed to be another valid strategy for promoting reflective practice. In study S10, it plays a key role in connecting practical learning to theory and reflection, in conveying emotions, as well as in the critical analysis of an event (S10).

Finally, the support of the mentor/tutor to the student's reflection process is vital, stimulating the development of learning, decision-making, and critical thinking skills (S21).

Conclusion

The search for reflective practice in nursing is particularly important in professional learning and in the assimilation and synthesis of the nurses' work. It is assumed as a premise for the development of autonomous and critically reflective professionals. Therefore, reflective practice is currently seen as an essential skill for nursing students in clinical settings because it allows them to become self-aware and provide the best possible care, by adopting pre-action, action and post-action reflective attitudes.

Taking into account the research question and the objective of the review, it can be concluded that the

current literature (past 5 years) on reflective practice in nursing students focuses on the strategies used to promote reflective practice among students in clinical teaching.

This study has also demonstrated that students, mentors, tutors and teachers have a shared responsibility in understanding the strategies used to promote reflective practice in clinical settings, thus bringing nursing theory and practice closer and expanding the body of nursing knowledge.

This study can lead to further studies on the implementation and assessment of the effectiveness of the strategies found, as well as on other areas relevant to reflective practice.

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