Review

A systematic review of clinical assessment for undergraduate nursing students

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A R T I C L E   I N F O

S U M M A R Y

Background: Consolidated clinical practicum prepares pre-registration nursing students to function as beginning practitioners. The clinical competencies of final-year nursing students provide a key indication of professional standards of practice and patient safety. Thus, clinical assessment of nursing students is a crucial issue for educators and administrators.
Objective: The aim of this systematic review was to explore the clinical competency assessment for undergraduate nursing students.
Data sources: PubMed, CINAHL, ScienceDirect, Web of Science, and EBSCO were systematically searched from January 2000 to December 2013.
Methods: The systematic review was in line with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines. Published quantitative and qualitative studies that examined clinical assessment practices and tools used in clinical nursing education were retrieved. Quality assessment, data extraction, and analysis were completed on all included studies.
Results: This review screened 2073 titles, abstracts and full-text records, resulting in 33 included studies. Two reviewers assessed the quality of the included studies. Fourteen quantitative and qualitative studies were identified for this evaluation. The evidence was ordered into emergent themes; the overarching themes were current practices in clinical assessment, issues of learning and assessment, development of assessment tools, and reliability and validity of assessment tools.
Conclusion: There is a need to develop a holistic clinical assessment tool with reasonable level of validity and reliability. Clinical assessment is a robust activity and requires collaboration between clinical partners and academia to enhance the clinical experiences of students, the professional development of preceptors, and the clinical credibility of academics.

Introduction

Consolidated clinical practicum prepares pre-registration nursing students to develop the required level of competency to function as beginning practitioners upon licensure registration. The clinical competence of final-year nursing students is a key element related to professional standards and patient safety (Kim, 2007); assessment of clinical competency is a crucial factor for educators and administrators.

The purpose of clinical assessment is to prepare and induct students to work as safe, ethical, and accountable nurses (Bourbonnais et al., 2008). Assessment ought to consider the multidimensional nature of competence and the attributes required for the nursing profession (Levett-Jones et al., 2011). The reliability and validity of the instrument are fundamental to ensure fairness and consistency of assessment across settings and assessors. The complex clinical environment pose additional challenges for clinical assessment (Lewin, 2007). Despite the fact that the active involvement of students in their own work enhances learning, exposure to the real-life clinical environment has always created stressful situations for students. Nursing educators have historically served as advisors, providing resources and support for both students and preceptors in the assessment process (Chow and Suen, 2001). As such, clinical assessment is a collaborative exercise among students, preceptors and academics.

This paper aims to discuss the current assessment process and practice, as well as explore the development of assessment tools, and the

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Table 1
PICOS comprehensive review.

Categories	Criteria
Population	Studies focus on pre-registration undergraduate nursing students undergoing clinical practice. Preceptors, nurse clinicians and academics who are guiding pre-registration undergraduate nursing students in their transition to practice are also included in the study.
Intervention and phenomena of interest	Quantitative and qualitative study designs are both considered, For example, the review included studies with interventions such as clinical assessment, skill competency assessment and evaluation of the assessment tool. It also included studies without the intervention of an assessment tool, and qualitative studies exploring the experiences of clinical assessment practices for nursing students, preceptors and academics.
Comparator	Studies evaluate the effectiveness of the assessment tool or assessment strategy, or the effectiveness of clinical teaching strategies and clinical practice programs in relation to students' learning outcomes.
Outcome and context	Primary outcome: • Clinical competency assessment tool for transition to practice Secondary outcomes: • Clinical teaching pedagogy • Clinical support system for nursing students and preceptors • The role of academics in clinical practice Preceptors' competency in clinical teaching and assessment
Specific exclusion criteria	• Editorials, opinion pieces, conference abstracts • Review papers • Papers written in a language other than English • Research focusing on competency assessment for nurses in clinical settings

validity and reliability of assessment instruments. A systematic review was performed using the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) schema (Moher et al., 2009).

Background

Competency is defined as behaviors that reveal mastery at work and can be applied to determine work standards and formulate strategies to describe individuals and teams. Furthermore, competency is reflected in the terms of formation of power and responsibility, and the extension of decision-making (Hsieh and Chihuikao, 2003). Clinical competence is described as the theoretical and clinical knowledge used in the practice of nursing, incorporating psychomotor skills and problem-solving ability with the goal of safely providing care for patients (Hickey, 2010). Nevertheless, in the seminar work of Benner (1982), she emphasized that clinical competence develops over time as nurses progress through various levels of proficiency.

Nursing has been recognized as a respectable profession worldwide. Professional regulatory bodies are set up in many countries to establish guidelines for nursing licensure and regulation of practice and education. The Nursing and Midwifery Board of Australia (2006) defines competency standards for registered nurses (RN) as the combination of skills, knowledge, attitudes, values, and abilities that underpin effective and/or superior performance in a profession/occupational area. The Singapore Nursing Board (SNB, 2012a, 2012b) states that the core competencies set the foundation for RNs to maintain their competence and acquire additional competencies or advanced clinical skills to deliver safe client care in response to changing healthcare needs and advancement in technology.

According to the American Association of Colleges of Nursing (2008), clinical practicums provide opportunities for nursing students to learn in multiple care settings and receive appropriate guidance that fosters the development of clinical competence and professionalism. The preceptor model is used commonly in clinical education, and it allows the student to experience the realities of the nurse's role while practicing their skills (Bergjan and Hertel, 2013; Hickey, 2010). In the Standards for Clinical Nursing Education (SNB, 2012a, 2012b), a nurse is qualified as a preceptor if he or she has a minimum of three

years of clinical experience, has recognized skills in the area of practice, and has completed a preceptorship course. The student works alongside their preceptor and provides direct care to the patients under the guidance of their preceptor. A comparison study evidenced that preceptorship was an important criteria for improving the competency of new graduate nurses (Bartlett et al., 2000).

Methods

The questions for this review were developed using the Population, Intervention, Comparison, Outcomes, Specific exclusion process (PICOS, Table 1): 'What are the current assessment practices for nursing undergraduates in transition to practice?', 'What are the issues and concerns with learning and assessment?', 'How are the assessment tools developed?', and 'How reliable and valid are the assessment tools?'.

Search strategy

This review is based on the relevant criteria from PRISMA checklist (Moher et al., 2009) and the *Cochrane Handbook for Systematic Reviews of Interventions*. A total of five electronic databases were searched, including PubMed, CINAHL, ScienceDirect, Web of Science, and EBSCO. A systematic search strategy was formed, including key search terms and related text words. 'Clinical assessment', 'clinical evaluation', 'clinical measurement', 'clinical competence', 'clinical standards', 'assessment tool', 'assessment standard', 'educational measurement', 'undergraduate nursing students', 'preceptorship', 'competence-based education' were used in the search process. The search was conducted using combination of exact keywords on the title and abstract as these addressed by breaking down the review questions.

Inclusion and exclusion criteria

The inclusion criteria were (1) articles published from January 2000 to December 2013; (2) peer-reviewed research; (3) experimental, cohort, survey, or qualitative studies; (4) English language publications; and (5) research was on clinical competency assessment for undergraduate nursing students. The exclusion criteria were (1) editorials, opinion pieces, and conference abstracts; (2) review papers; (3) non-English language papers; and (4) the research focused on competency assessment for nurses in clinical settings.

Search outcomes

The reference management software Endnote X6 (Thomson Reuters, New York) was used to sort the records. After the removal of duplicates, the remaining 1290 records were assessed for relevance by the researcher, based on title and abstracts. Subsequently, 67 full-text records were retrieved. Thirty-three studies (16 quantitative studies and 17 qualitative studies) met the criteria of this systematic review. The process used to reduce and evaluate the records is illustrated in Fig. 1.

Analysis

It was anticipated that selection of papers would be biased by factors such as sample size, sample composition and tool selection. Each paper was critically appraised using the Qualitative Assessment and Review Instrument (QARI) critical appraisal instrument including 10 criteria (Pearson, 2004), and the Joanna Briggs Institute Meta Analysis of Statistics Assessment and Review Instrument (JBI-MAStARI) critical appraisal instrument. As most of the studies selected were descriptive studies, the nine critical appraisal criteria for descriptive/case series studies were used (Joanna Briggs Institute, 2011).