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MODELS USED TO ENHANCE THE QUALITY OF CLINICAL PRACTICE EVALUATION AMONG NURSING STUDENTS: A SYSTEMATIC REVIEW

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ABSTRACT

Background: Clinical practice evaluation in nursing education is crucial to ensuring students have the competencies for optimal nursing practice, aligning with WHO standards. However, data from NCSBN indicates a significant need for more effective and comprehensive evaluation models. Aim: This aims to do a systematic review to identify and analyse evaluation models used in nursing education to enhance the quality of clinical practice evaluation for students, as well as strengths and weaknesses. Methodology: This systematic review was conducted by searching electronic database sources through journal search engines such as Google Scholar, ProQuest, CINAHL, PubMed, and Science Direct. The inclusion criteria were open-access journals published within the last five years (2018-2023). A journal search used key terms "mobile phone application" and "nursing students". Analysing using PRISMA and Software computer for journal review. Results: 12 eligible journals were found relevant to the topic out of 5,727 journals. Journals that were not eligible were excluded based on exclusion criteria. Each journal provided systematic information regarding methods of evaluating nursing students' clinical practice. Conclusion: Implementing appropriate evaluation models is crucial to enhance the quality of clinical practice evaluation for nursing students. The selection of evaluation methods should also be tailored to the evaluation objectives, available resources, and clinical education context. Combining multiple methods is often used to obtain a holistic and accurate picture of students' performance.

Keywords: Models, Enhance, Quality Evaluation, Clinical Practice, Nursing Students

INTRODUCTION

Clinical practice evaluation in nursing education plays a crucial role in ensuring that nursing students have the necessary competencies to deliver optimal healthcare services. Clinical practice evaluation is a key component in nursing education, aiming to ensure that students acquire the skills and knowledge needed for safe and effective nursing practice. According to the World Health Organization (WHO) (2018), nursing competencies should include clinical skills, communication abilities, and prompt and accurate decision-making. However, data from the National Council of State Boards of Nursing (NCSBN) indicates that about 15% of nursing graduates still need to meet expected clinical competency standards. It underscores the urgent need for more effective and comprehensive evaluation models (Altman et al., 2016).

In recent years, various new evaluation models have been developed and implemented to enhance the quality of clinical practice evaluation. Competency-based models are among

the most commonly used. These models utilize structured assessment rubrics to measure various aspects of clinical competency. Studies by Al Kandari & Qattan (2020) indicate that using competency-based assessment rubrics can improve objectivity and consistency in assessment, reduce evaluator bias, and provide students with more specific and useful feedback. Participatory evaluation models involving active student engagement have also been successfully implemented. Research by Jamshidi et al. (2016) revealed that self-assessment and peer assessment can enhance students' self-awareness of their clinical abilities and help them identify areas for improvement. Active participation in the evaluation process has also increased students' motivation and responsibility for their learning (Held &Mejeh, 2024; Nordahl-Pedersen &Heggholmen, 2021). However, with technological advancements, evaluation models have also undergone a shift.

Information and communication technology (ICT) has significantly improved clinical practice evaluation. Using mobile applications and online platforms for evaluation allows for real-time data collection, instant feedback provision, and more efficient tracking of student progress (Freitas et al., 2017; Haleem et al., 2022). A study by Smith (2019) indicates that students evaluated using digital platforms showed significant improvements in clinical competencies compared to those evaluated using traditional methods. However, despite developing various evaluation models, their implementation often needs to be improved. One major challenge is resistance to change among teaching staff and clinical preceptors (Díaz-Alonso et al., 2022). According to research by Jin et al. (2021), many teaching staff members are comfortable with traditional evaluation methods and reluctant to transition to new evaluation models. It poses a challenge for both institutions and educators (Longhurst et al., 2020). Adequate training and strong institutional support are needed to overcome these barriers.

Furthermore, adapting evaluation models to consider local and cultural contexts is also crucial. Studies by Wang & Wu (2023) suggest that evaluation models that are successful in Western countries may not be effective in Asian countries without adjustments. When developing and implementing evaluation models, cultural factors, healthcare systems, and educational structures must be considered (Curtis et al., 2019). Collaboration among academics, practitioners, and policymakers is crucial in developing and implementing effective evaluation models (Cox et al., 2016; Wang & Wu, 2023). Only through collaboration among these stakeholders can evaluation models be designed to meet academic and practical needs. According to reports from the American Association of Colleges of Nursing (AACN), institutions involving various stakeholders in the model development process tend to have better student satisfaction and competence outcomes (Moran et al., 2023; Zaccagnini & Pechacek, 2019).

Ongoing research in clinical practice evaluation is also crucial. The nursing world continues to evolve with the emergence of new techniques and technologies. Evaluation models must be continuously updated to ensure their relevance and effectiveness. Longitudinal studies by Parker & Grech (2018) highlight that periodically adapted evaluation models in line with the latest developments show better outcomes regarding graduates' readiness for the workforce. The importance of constructive feedback in clinical practice evaluation must be noticed (Mohamadirizi et al., 2021). Feedback should be specific, timely, and focused

on developing students' skills. Research by (Holmboe et al., 2020) indicates that effective feedback can enhance student engagement in learning and help them achieve higher clinical competencies. Moreover, student involvement in the evaluation process can also enhance the quality of the evaluation itself. By engaging students in self-assessment and peer assessment, they can better understand expected competency standards and develop reflective skills (Christiansen et al., 2021). According to Pueyo-Garrigues et al. (2022), active evaluation involvement can help students develop critical thinking skills and improve their learning outcomes.

In some cases, evaluation models also integrate multi-source or 360-degree feedback approaches. This approach involves various assessment sources, including colleagues, patients, and clinical supervisors. According to a study by Chango et al. (2021), the multi-source approach can provide a more comprehensive perspective on student performance and help identify areas for improvement. Challenges in implementing evaluation models also include logistical issues and resource constraints. Comprehensive evaluation requires significant time and resources, including adequate staff numbers and facilities. According to a report by Smith et al. (2019), the lack of resources and institutional support often pose major barriers to effective clinical practice evaluation implementation. Ethical aspects of clinical practice evaluation should also be considered. Evaluation should be conducted transparently and fairly, without discrimination or bias (Schinkel, 2020). Students should be treated respectfully and allowed to provide input on the evaluation process. According to research by Weiss et al. (2023), transparency and fairness in evaluation can increase students' trust in the evaluation process and its outcomes.

Good and accurate documentation will greatly aid in tracking students' progress and provide a strong basis for feedback and final assessment. It also facilitates accreditation processes and quality assurance. Studies by Orellano & Carcamo (2021) suggest that good documentation can enhance clarity and transparency in the evaluation process. Sustainability and continuous development of evaluation models are also important (Gray & Grove, 2021). The nursing and healthcare world continues to evolve, requiring evaluation models to be adapted accordingly. Continuous research will help identify areas for improvement and innovations in clinical practice evaluation. According to reports from Fawaz et al. (2018), adaptive and innovative nursing education is key to facing future challenges. Effective and comprehensive clinical practice evaluation is crucial in nursing education.

Various evaluation models have been developed to enhance the quality of this evaluation, including competency-based, participatory, and technological models. Implementing these models still needs challenges, including resistance to change, logistical issues, lack of resources, and collaboration among academics, practitioners, and policymakers. Moreover, ongoing research is crucial to address these challenges and improve the overall quality of clinical practice evaluation. However, on the other hand, there is one most important thing that also needs to be answered, which is "What models have been made or developed by previous researchers to improve the quality of clinical practice evaluation of nursing students?" and "What are their strengths and weaknesses?". These questions need to be answered by conducting systematic reviews because is necessary to know what has been made by previous researchers to make an

innovation. Finding the answers to these questions is hoped that new ideas will emerge from researchers so that the quality of evaluation and nursing education can be more optimal.

METHODS

This systematic review aims to analyse the various models that previous researchers have developed to enhance the quality of clinical practice evaluation involving nursing students as the research sample. Besides serving as a means to share information, this systematic review will also serve as a fundamental consideration for researchers in developing innovative methods to adopt and incorporate into their research. The systematic review process was conducted by sourcing data from several open electronic databases using journal search engines such as Google Scholar, ProQuest, CINAHL, PubMed, and Science Direct. Journals selected were within the past five years (2019-2024).

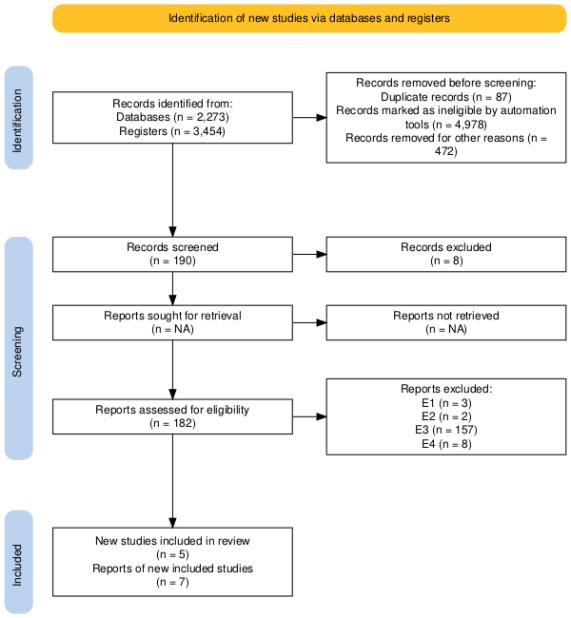
The keywords used to obtain sources for the systematic review were made specific, namely "Models used to enhance OR improve the quality of clinical practice evaluation among nursing students", OR "Models of clinical practice evaluation", OR "Clinical practice evaluation nursing students of models", OR "nursing clinical practice evaluation", OR "evaluation models", OR "nursing education", OR "clinical assessment", OR "student nurses", OR "quality improvement." The use of specific keywords aimed to ensure that researchers directly accessed relevant journals to the topic under discussion, thus making the process more effective and efficient.

Journal analysis was conducted using the Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) method and computer software (Haddaway et al., 2022). The data extraction process involved: (1) examining the database starting from author, title, date, year, journal type, keywords, topic, and primary source of reference used; (2) ensuring that the content provided contained topics relevant to the keywords.

The researchers established the following criteria: (1) Year of Publication: Articles published within the last five years; (2) Title and abstract (screening): Inclusion, at least one operational research, models of clinical practice evaluation and nursing students with name or general in the article title, journal title, or keywords AND/OR at least one model of clinical practice evaluation and nursing students in the article title, journal title, keywords, or abstract AND discuss models of clinical practice evaluation of nursing students in the abstract or method. Exclusion, the title or journal of publication had no relevance to operational research OR no abstract AND/OR just review type of article (E1), abstract not indicate the models of clinical practice evaluation and nursing students (E2), paper not focused on models of clinical practice evaluation and nursing students (E3); (3) Full Text (Eligibility): Inclusion, discuss the models of clinical practice evaluation and nursing students in the abstract and body of the paper AND/OR discuss the models of clinical practice evaluation and nursing students in the abstract and body of the paper, quantitative research type. The exclusion was that all did not meet the inclusion criteria (E4).

RESEARCH RESULT

The results of the journal search conducted are presented in the PRISMA Flow Chart as follows: Figure 1. Flow chart of the literature review selection process



From the assessment results depicted in the flow chart above, it was found that 12 out of 5,727 journals were relevant to the topic discussed. During the journal identification process, 4,978 journals were deemed ineligible, 87 were removed due to being duplicates, and 472 were removed for reasons such as incomplete structure and other issues, leaving 190 journals eligible for screening. During the screening process, 178 journals were excluded. Three journals meet the criteria for E1 because they do not include abstracts and are just review-type articles. Two journals meet the criteria for E2 because the abstracts do not indicate models of clinical practice evaluation and nursing students. A total of 157 journals meet the criteria for E3 because they are not focused on evaluating models of clinical practice for nursing students. Meanwhile, eight journals meet the criteria for E4 because their results and discussions are off-topic. Therefore, 12 journals were included.

RESULT AND DISCUSSION

Based on the search results, 12 journals were relevant to the discussed topic. The methods of clinical practice evaluation play a crucial role as a means for educators to assess the development of nursing students' competencies. These evaluation methods are continually developed and refined to be more effective. The Objective Structured Clinical Examination (OSCE) method is a station-based evaluation method where nursing students must perform specific clinical tasks within a limited time. The advantages of this method are its objectivity, structure, and ability to assess various aspects of clinical skills, while its disadvantages include the requirement for extensive resources and intensive preparation (Fawaz &Alsalamah, 2021).

The Clinical Performance Examination (CPE) method evaluates students' clinical performance through direct observation in a real clinical environment. Its advantages include contextual and reflective of actual performance, while disadvantages are evaluator subjectivity and variability among evaluators (Bowman et al., 2021). The Mini Clinical Evaluation Exercise (Mini-CEX) method involves a brief and direct evaluation of clinical skills during real patient interactions. Its advantages include immediate feedback and flexibility, while its disadvantages include the need for evaluator training and potential bias (Batra et al., 2022). The Direct Observation of Procedural Skills (DOPS) method involves direct evaluation of procedural skills through observation and assessment. Its advantages include a focused evaluation of specific skills and direct feedback, while disadvantages include the required time, resources, and subjectivity (Nayyeri et al., 2021).

Simulation-based assessment method uses simulations to assess clinical skills in a controlled environment. Its advantages are safety, repeatability, and realism, while disadvantages include the need for special facilities and high costs (Arrogante et al., 2021). The Standardised Patient Assessment method uses trained standardised patients to assess students' communication and clinical skills. Its advantages include consistency in assessment and controlled clinical experience, while disadvantages are the need for standardised patient training and high costs (Yilmazer et al., 2020).

The Portfolio-Based Assessment method also collects evidence of students' learning and performance over time. Its advantages include its holistic nature and reflection of long-term development and achievement, while its disadvantages include the time required for collection and assessment and potential subjectivity (Hoveyzian et al., 2021). The Self-Assessment and Reflection method involves students evaluating themselves and reflecting on their clinical experiences. Its advantages include the development of reflective skills and increased self-awareness, while its disadvantages are subjectivity and the need for guidance to be effective (Suikkala et al., 2020). Peer Assessment method involves students evaluating each other's clinical performance. Its advantages include enhanced teamwork and multiple perspectives, while its disadvantages include potential bias and the need for good assessment skills (De Brún et al., 2022).

The Competency-Based Assessment method evaluates students based on pre-determined competencies across various clinical aspects. Its advantages are its focus on outcomes and clear, measurable evaluation, while its disadvantages include the need for clear competency definitions and potential rigidity (Grande et al., 2021). The 360-degree Feedback method involves feedback from various sources, including peers, supervisors, and patients. Its advantages are comprehensiveness and multiple perspectives, while its disadvantages include the complexity of data collection and time requirements (Samadi et al., 2019). The E-Assessment Tools method uses technology and digital platforms to evaluate clinical skills. Its advantages include flexibility, high accessibility, and automation, while its disadvantages are the need for technological infrastructure and potential technical issues (Lajane et al., 2020).

Of these twelve methods, each evaluation method has unique strengths and effectiveness depending on the context and purpose of the evaluation. For example, Objective Structured Clinical Examination (OSCE) and Simulation-Based Assessments are highly objective and structured but require extensive resources. On the other hand, Self-Assessment, Peer Assessment, and Portfolio-Based Assessment focus more on self-development and reflection but require guidance and can be subjective. Similarly, Direct Observation, Mini Clinical Evaluation Exercise (Mini-CEX), and Direct Observation of Procedural Skills (DOPS) provide immediate feedback and are highly beneficial for practical skills evaluation but can be influenced by bias. Competency-based assessment and 360-degree Feedback offer comprehensive and structured evaluations but require clear competency definitions and complex data collection processes. The appropriate evaluation method should align with the evaluation goals, available resources, and clinical education context. A combination of several methods is often used to obtain a more holistic and accurate picture of nursing students' performance.

(Melnyk & Fineout-Overholt, 2019).

Returning to the concept, besides the methods mentioned above, there are other methods. One common method is the Competency-Based Evaluation Model, which emphasises the assessment of specific competencies that students must master. Assessment is conducted through direct observation, practical exams, and portfolios (Mills & Jordan, 2022). There is also the Reflection-Based Evaluation Model, which integrates self-reflection as part of the evaluation process. Students are asked to reflect on their clinical experiences and identify strengths and areas for improvement (Pajnkihar et al., 2019). The portfolio-based evaluation model has also been applied in several nursing education programmes. Portfolios allow students to systematically document and reflect on their clinical experiences. Evaluators can assess these portfolios to get a more comprehensive picture of students' competency development. A study by Dolatshahi et al. (2019) showed that using portfolios in evaluation can enhance students' reflective skills and professionalism. Training for evaluators is also a critical aspect. To ensure objective and consistent evaluation, evaluators need regular training. This training can include using evaluation instruments, techniques for providing feedback, and ways to address assessment bias. Research by (Ruzafa-Martinez et al., 2021) showed that evaluator training can significantly improve the quality of clinical practice evaluations.

The latest evaluation models used in nursing education demonstrate various innovative approaches that can enhance the quality of clinical practice evaluations. Each model has its advantages and challenges. The appropriate model selection must be tailored to the education program's specific needs and student characteristics (Faridah et al., 2021; Rao, 2019). It includes choosing Technology-Based Evaluation Models that use computer-based simulations, mobile applications, and e-learning platforms to evaluate clinical skills (González-Pérez et al., 2022). Although some studies show that using technology can increase student engagement and motivation and provide real-time feedback, it must be supported by adequate resources.

Based on these concepts and the analysis results of the obtained journals, the researchers assume that while many evaluation methods can be adopted and developed, there must be alignment, a shared understanding between evaluators and students, and adherence to existing competency standards. Differences in competencies between institutions are an important issue as they will also affect the variety of developed evaluation models. Technology-based evaluation methods are very feasible today, but institutions must consider the costs for procurement, maintenance, and further development. Moreover, technology-based evaluation methods represent a shift from traditional pen-and-paper tools to digital electronic tools, so there must still be a foundational method, such as OSCE, made in digital form to replace pen-and-paper in the evaluation process.

CONCLUSION

Based on the review of 12 relevant journals, clinical practice evaluation methods play a crucial role in assessing the development of nursing students' skills. Various evaluation methods such as the OSCE, CPE, Mini-CEX, DOPS, Simulation-Based Assessment, Standardized Patient Assessment, Portfolio-Based Assessment, Self-Assessment and Reflection, Peer Assessment, Competency-Based Assessment, 360-Degree Feedback, and E-Assessment Tools will continue to be developed to achieve optimal evaluation

Each method has its strengths and weaknesses.

OSCE and Simulation-Based Assessments are highly objective and structured but require significant resources. Self-assessment, Peer Assessment, and Portfolio-Based Assessment focus on self-development and reflection but can be more subjective. Direct Observation, Mini-CEX, and DOPS provide immediate feedback but are prone to bias. Competency-based assessment and 360-degree Feedback offer comprehensive evaluations but require clear competency definitions and complex data collection processes. Implementing the right evaluation model is crucial for improving the quality of clinical practice evaluations for nursing students. The choice of evaluation method should be aligned with the evaluation goals, available resources, and the clinical education context. Combining several methods is often used to obtain a holistic and accurate picture of student performance.

The use of technology in evaluations can enhance student engagement and motivation, but institutions need to consider the costs and infrastructure required. There needs to be alignment and a shared understanding between evaluators and students, as well as among government and international nursing organizations, regarding existing competency standards to address variations in competencies between institutions. Further research is needed to evaluate these models' long-term implementation and impact on student learning outcomes.

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