

OPTIMIZING CLINICAL SUPERVISION TO ENHANCE NURSING STUDENTS' COMPETENCE: A SYSTEMATIC LITERATURE REVIEW

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ABSTRACT

Clinical supervision is a crucial element in nursing education, serving as a bridge between theoretical learning and clinical practice, aiming to ensure students are able to provide safe nursing care while developing clinical skills and professionalism. The implementation of clinical supervision in various nursing educational institutions still faces challenges, such as limited supervisors, varying quality of clinical instructors, and weak coordination with network hospitals. This study aims to analyze and synthesize the latest scientific evidence regarding clinical supervision strategies and their impact on improving nursing student competency, with an emphasis on optimizing clinical supervision in nursing education. This research method is a literature review of various scientific sources, in the form of articles taken from Google Scholar, CINAHL, PubMed, and ScienceDirect, a total of twelve articles published in the last five years, namely 2019 to 2025 from leading international journals and accredited national journals selected following PRISMA guidelines. Then, narrative analysis was conducted for inclusion in the articles. This study revealed that structured, competency-based clinical supervision significantly improves clinical skills, critical thinking, effective communication, and professionalism of nursing students. Optimizing clinical supervision is supported by supervisor competence, the role of clinical instructors, a conducive clinical learning environment, and strong collaboration between educational institutions and practice settings. This study concludes that optimizing clinical supervision is a key strategy in improving nursing students' competency and readiness for professional practice.

Keywords: Clinical Supervision, Nursing Education, Nursing Student Competencies

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INTRODUCTION

Nursing education plays a strategic role in producing competent, professional nurses capable of providing safe and high-quality nursing care. One essential component of nursing education is clinical supervision, which serves as a bridge between theoretical learning in educational institutions and real-world practice in the clinical setting. Clinical supervision allows nursing students to receive direct guidance, constructive feedback, and opportunities for ongoing reflection to develop clinical skills, critical thinking skills, and professional attitudes (Shahzeydi et al., 2024; Mathisen et al., 2025).

Numerous studies have shown that the quality of clinical supervision significantly influences nursing students' competency achievement. Structured, competency-based clinical supervision has been shown to improve student performance in the nursing process, clinical decision-making skills, and the quality of documentation and therapeutic communication (Shahzeydi et al., 2024; Huslianti, 2025). Furthermore, systematic reviews and scoping reviews report that supportive supervisory relationships, reflective learning, and consistent feedback are key elements of effective clinical supervision (Zonneveld et al., 2024; Ryu et al., 2025).

However, the implementation of clinical supervision in various nursing colleges still faces complex challenges. Limited numbers and competencies of clinical supervisors, high clinical workloads, varying supervision models, and weak coordination between educational institutions and network hospitals are often reported as major barriers to optimal clinical supervision (Mathisen et al., 2025; Mathisen et al., 2023). These conditions have the potential to degrade the quality of the clinical learning environment and student competency achievement. The results of a recent literature review confirm that optimizing clinical supervision requires a systemic approach involving the development of a clear supervision model, increasing supervisor capacity through ongoing training, and providing adequate organizational support. The role of the clinical education facilitator has also been identified as a crucial factor in strengthening collaboration between educational institutions and clinical practice settings (Mathisen et al., 2025). Therefore, this literature review is crucial as a scientific basis for formulating strategies to optimize clinical supervision to continuously improve nursing student competency.

In addition to contributing to the achievement of clinical competency, clinical supervision also plays a crucial role in ensuring quality and patient safety. Nursing students who receive effective clinical supervision tend to demonstrate better adherence to practice standards, patient safety procedures, and professional ethics. Several studies confirm that structured clinical supervision helps students identify clinical risks, perform nursing actions appropriately, and reduce practice errors during the clinical learning process (Shahzeydi et al., 2024; Zonneveld et al., 2024). Thus, clinical supervision not only impacts student learning but also contributes to the quality and safety of healthcare services in the practice setting.

The development of the nursing education system toward a competency-based approach demands a more systematic, measurable, and sustainable clinical supervision model. Recent scoping and systematic reviews indicate that there is still wide variation in the implementation of clinical supervision, both in terms of structure, frequency, and supervisor role, resulting in inconsistent clinical learning outcomes for students (Ryu et al., 2025; Huslianti, 2025). This situation indicates a gap between the ideal concept of clinical supervision and actual practice, particularly in developing countries and institutions with limited resources.

Based on this situation, a comprehensive literature review is needed to identify key elements, strategies, and best practices for optimizing clinical supervision in nursing education. This literature review is expected to provide a robust scientific synthesis as a basis for developing academic policies, improving clinical practice curricula, and enhancing the capacity of clinical supervisors. By integrating empirical findings from reputable journals, this study contributes to strengthening the conceptual and practical foundations for optimizing clinical supervision to

continuously improve nursing student competency (Mathisen et al., 2025; Mathisen et al., 2023).

RESEARCH METHODOLOGY

The research method used was a literature review using the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) approach. The initial stage of the research was carried out through literature identification by establishing relevant search keywords, namely clinical supervision, nursing education, and nursing student competencies. Article searches were conducted in several scientific databases, including Google Scholar, CINAHL, PubMed, and ScienceDirect, with a publication year range of 2019-2025. The included literature consisted of empirical studies published in reputable international journals and accredited national journals. Based on the results of the initial search across all databases, 384 scientific articles were obtained that matched the search keywords. Next, the first stage of screening was carried out by eliminating duplicate articles, resulting in 238 articles being excluded, leaving 146 articles. In the next stage, screening was carried out based on the suitability of the title and abstract, resulting in 72 articles deemed relevant to the research focus. The next stage was an eligibility assessment, which was carried out by reviewing the full text of the 72 articles. The feasibility assessment focused on the suitability of the article content to the research topic, namely clinical supervision strategies in nursing education and their contribution to improving nursing student competency. At this stage, 60 articles were eliminated because they did not specifically discuss clinical supervision in the context of nursing education or used populations other than nursing students. The final result of the selection process based on the PRISMA flow obtained 12 articles that met all inclusion criteria. Next, the twelve articles were analyzed and synthesized to formulate clinical supervision strategies in nursing education to improve nursing student competency, as presented in this research article.

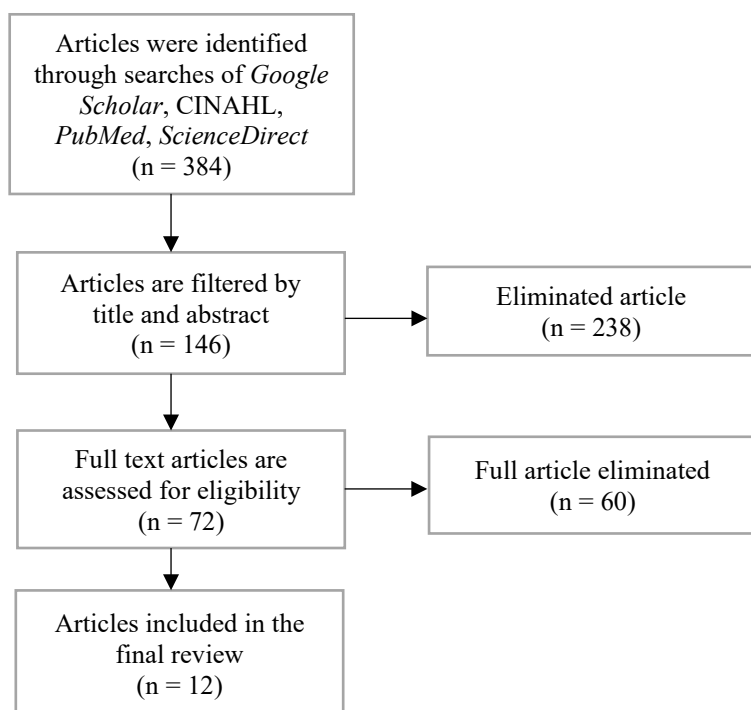


Figure 1 PRISMA Flowchart

RESEARCH RESULTS AND DISCUSSION

General Characteristics of the Reviewed Studies

This literature review analyzed ten reputable scientific articles published in the last five years (2019-2025) relevant to the topic of optimizing clinical supervision in nursing education. The reviewed articles comprised three systematic reviews and scoping reviews, four qualitative studies, and three quantitative/experimental studies. All articles were published in reputable international journals indexed by Scopus and Web of Science, such as BMC Nursing and the Journal of Advanced Nursing, as well as accredited national journals with rigorous peer review processes.

In general, the research focuses include clinical supervision models, the role of clinical supervisors and facilitators of practicum education, nursing students' experiences in the clinical learning environment, and the impact of clinical supervision on competency, clinical performance, and the quality of practicum learning. The predominance of articles from international journals indicates that the issue of clinical supervision is a global concern in nursing education, particularly in ensuring students' competency readiness before entering professional practice.

The Concept and Model of Clinical Supervision in Nursing Education

The literature review indicates that clinical supervision is understood as a planned, structured, reflective, and ongoing professional guidance process that serves as the primary mechanism for bridging the gap between theoretical learning in educational institutions and the application of nursing practice in the clinical setting. Effective clinical supervision is viewed not only as a technical oversight activity for students' procedural skills, but also as a pedagogical strategy oriented toward developing critical thinking skills, clinical reflection, evidence-based decision-making, and the formation of professional attitudes and nursing ethics. This approach enables students to holistically integrate knowledge, skills, and professional values within the context of real-world practice (Zonneveld et al., 2024; Mathisen et al., 2025).

Strong empirical evidence is provided by an experimental study conducted by Shahzeydi et al. (2024), which demonstrated that the implementation of a nursing process-based clinical supervision model significantly improved nursing student performance across all stages of nursing care, from assessment, diagnosis, planning, implementation, and evaluation. In this model, the clinical supervisor acts as an active learning facilitator who systematically provides performance-based feedback and encourages students' clinical reflection. These findings confirm that optimizing clinical supervision requires a clear, structured, and competency-oriented framework to ensure consistent and measurable supervision (Shahzeydi et al., 2024). Consistent with these findings, a systematic review published by Zonneveld et al. (2024) identified several key characteristics of effective clinical supervision: a supportive and collaborative supervisory relationship, clarity of roles and responsibilities between supervisor and supervisee, the application of reflective learning, and the provision of constructive and ongoing feedback. Although most of the studies in this systematic review focused on professional nurses and advanced nursing practice, the resulting principles of clinical supervision were deemed highly relevant and applicable to the clinical education context of nursing students. Implementing these principles has the potential to strengthen the quality of clinical learning and enhance students' readiness to enter professional nursing practice (Zonneveld et al., 2024).

The Role of Clinical Supervisors and Practice Education Facilitators

Several articles in this literature review consistently highlight the strategic role of clinical supervisors and Practice Education Facilitators (PEFs) in improving the quality of clinical supervision in nursing education settings. These two roles are seen as complementary, with clinical supervisors focusing on direct student guidance in the practice setting, while PEFs play a role in coordinating, facilitating, and strengthening synergies between the educational

institution and the clinical setting. Mathisen et al. (2025) found that the presence of practice education facilitators significantly supports clinical supervisors, particularly in clarifying learning expectations, aligning academic curricula with clinical practice needs, and strengthening collaborative relationships between universities and networked hospitals.

Clinical supervisors who receive adequate organizational support, including the presence of PEFs and clear institutional policies, tend to provide more structured, consistent, and responsive guidance to students' learning needs. This support enables supervisors to optimally allocate time for supervision activities, provide systematic feedback, and encourage students' clinical reflection. These findings confirm that optimal clinical supervision is not solely determined by the supervisor's individual competency but also relies heavily on the existence of a strong and sustainable institutional support system (Mathisen et al., 2025; Zonneveld et al., 2024).

These findings are reinforced by a qualitative study published by Mathisen et al. (2023), which explored the experiences of practice education facilitators in the context of nursing clinical learning. This study identified that practice education facilitators serve as strategic liaisons between faculty, clinical supervisors, and students, thereby creating more effective coordination and improving the quality of the clinical learning environment. However, the effectiveness of the facilitator's role is significantly influenced by clear job descriptions, adequate time availability, and managerial support from the healthcare organization. Without such support, the facilitator's role has the potential to be suboptimal and less impactful in improving the quality of clinical supervision (Mathisen et al., 2023).

Clinical Supervision and the Clinical Learning Environment

The clinical learning environment is a fundamental context for implementing clinical supervision and plays a crucial role in determining the quality of nursing students' learning experiences. A literature review indicates that the effectiveness of clinical supervision is inseparable from the clinical environment, the organizational culture of the hospital, and the quality of the interpersonal relationship between students and clinical supervisors. A supportive, psychologically safe, and learning-friendly clinical environment has been shown to facilitate effective supervision, increase student engagement, and encourage reflective learning during clinical practice (Zonneveld et al., 2024; Mathisen et al., 2025).

Comparative studies evaluating nursing students' perceptions of various clinical supervision models report that individual supervision models provide a more positive learning experience compared to traditional or group supervision models. Students receiving individual supervision report higher levels of satisfaction with the quality of feedback, emotional support from supervisors, and opportunities to actively participate in the clinical learning process. These findings indicate that a balanced supervisor-student ratio and continuity of guidance during clinical practice are important factors in creating an optimal clinical learning environment, according to the Nursing Students' Evaluation of Clinical Learning Environment and Supervision Models (2025).

Furthermore, a scoping review examining factors influencing the implementation of clinical supervision identified several structural and contextual barriers that have the potential to degrade the quality of the clinical learning environment. These barriers include supervisors' limited time due to high clinical workloads, lack of formal supervision training, and the absence of integrated supervision standards within institutional policies. These conditions often lead to inconsistent and unstructured clinical supervision, negatively impacting the quality of clinical learning and nursing students' competency achievement (Ryu et al., 2025).

Overall, these findings emphasize that optimizing clinical supervision must be done holistically, taking into account aspects of the clinical learning environment, including organizational support, learning culture, and the quality of the supervisory relationship. Strengthening a conducive clinical learning environment, accompanied by an appropriate

supervision model and adequate institutional support, is an important prerequisite for improving the quality of clinical supervision and the achievement of nursing students' competencies in a sustainable manner (Zonneveld et al., 2024; Mathisen et al., 2025).

The Impact of Clinical Supervision on Nursing Student Competence

A synthesis of all reviewed articles consistently demonstrates the finding that effective clinical supervision significantly contributes to improving nursing students' overall competency. Competence developed through clinical supervision encompasses not only technical skills in implementing nursing care but also therapeutic communication skills, appropriate clinical decision-making, critical thinking skills, and the development of professional attitudes and nursing ethics. Structured clinical supervision allows students to receive direct guidance, constructive feedback, and systematic reflection, which are essential foundations for the clinical learning process (Shahzeydi et al., 2024; Zonneveld et al., 2024).

Strong empirical evidence is provided by an experimental study published by Shahzeydi et al. (2024), which reported a significant increase in nursing students' competency scores after implementing a structured, nursing process-based clinical supervision model. This supervision model has been shown to be effective in improving student performance at every stage of nursing care, from assessment to evaluation. These findings reinforce the view that systematically designed and competency-oriented clinical supervision can significantly improve the quality of students' clinical learning (Shahzeydi et al., 2024).

These results align with the findings of a 2025 systematic review, which concluded that clinical supervision plays a crucial role in improving technical skills, the quality of nursing documentation, and nurses' clinical performance. Although most studies in that review focused on practicing nurses, the principles of clinical supervision identified, such as tiered supervision, structured feedback, and ongoing evaluation, are considered highly relevant for application in the context of nursing student education (Huslianti, 2025).

Furthermore, several scoping review articles confirmed that planned and ongoing clinical supervision contributes to students' professional readiness to face the complexities of clinical practice. Effective supervision helps students integrate theoretical knowledge with real-world practice, boosting self-confidence, and strengthening adaptability in a dynamic clinical environment. Thus, clinical supervision not only impacts on improving short-term competency, but also supports the formation of sustainable professional competency and is oriented towards quality and patient safety (Ryu et al., 2025).

Strategies for Optimizing Clinical Supervision

Based on a synthesis of ten reputable scientific articles, optimizing clinical supervision in nursing education requires a systematic, structured approach oriented toward achieving student competencies. The primary strategy identified is the development of a standardized, competency-based clinical supervision model, with clear, measurable learning outcome indicators aligned with the nursing education curriculum and the demands of clinical practice. A structured supervision model allows for consistent, sustainable guidance and focuses on the comprehensive development of students' clinical skills (Shahzeydi et al., 2024; Zonneveld et al., 2024).

In addition to strengthening the supervision model, improving the capacity of clinical supervisors is crucial in ensuring effective supervision. Several studies emphasize the importance of clinical supervision training, which includes effective communication skills, providing constructive feedback, and implementing reflective learning in clinical practice. Supervisors with adequate supervisory competencies have been shown to create supportive supervisory relationships, increase student engagement in the learning process, and encourage optimal clinical competency achievement (Mathisen et al., 2025).

Strengthening collaboration between nursing colleges and network hospitals has been identified as a key strategy for ensuring the continuity and quality of clinical supervision.

Effective collaboration enables alignment between academic learning objectives and clinical practice needs, and clarifies the roles and responsibilities of clinical supervisors and supervising faculty. Several studies have shown that the presence of a practice education facilitator plays a crucial role as a liaison between the educational institution and the practice site, thereby improving coordination, consistency of supervision, and the quality of the clinical learning environment (Mathisen et al., 2025; Mathisen et al., 2023).

Organizational support and institutional policies are also crucial prerequisites for optimizing clinical supervision. A scoping review study confirmed that without managerial support, adequate time allocation, and clear supervision policies, clinical supervision tends to be informal and unstructured, potentially reducing the quality of student clinical learning (Ryu et al., 2025). Therefore, educational institutions and hospitals need to integrate clinical supervision into their clinical education policies and quality assurance systems. This literature review revealed that clinical supervision not only impacts the development of technical competencies but also contributes to improving non-technical aspects of nursing students, such as professional resilience, self-confidence, and readiness to face the demands of clinical practice. A recent scoping review demonstrated that supportive and reflective clinical supervision can strengthen students' adaptability in complex clinical environments, thus supporting the holistic development of professional competencies (Zonneveld et al., 2024).

Clinical supervision, as a comprehensive process encompassing mentoring, guidance, and supervision of students during clinical practice, is not understood solely as oversight of students' technical skills, but also as a systematic effort to shape professional attitudes, increase responsibility, and instill ethical values and patient safety in nursing practice. This understanding reflects a paradigm shift in supervision from a control approach to a learning and continuous professional development approach. These findings align with previous research, which states that clinical supervision serves as an essential learning tool for integrating theory into real-world practice and provides authentic learning experiences for nursing students in complex and dynamic clinical environments (Mathisen et al., 2025; Mugwari et al., 2025).

Through effective supervision, students receive not only technical guidance but also the opportunity to reflect on their practice, develop clinical reasoning, and enhance their professional preparedness as future nurses. Furthermore, supportive and collaborative clinical supervision helps students connect theoretical concepts with real-world clinical situations in a safe and conducive learning environment. This research also confirms that the success of clinical supervision is greatly influenced by the quality of interactions between students, clinical supervisors, and educational institutions. Therefore, strong collaboration between universities and practice settings is a key factor in optimizing the clinical supervision process (Mugwari et al., 2025).

CONCLUSION

Based on the results of the literature review, it can be concluded that clinical supervision plays a strategic and substantial role in nursing education, particularly in improving the competence of nursing students during clinical practice. Effective clinical supervision serves not only as a monitoring mechanism but also as a structured, reflective learning process oriented toward the development of clinical competence, professionalism, and patient safety. Optimizing clinical supervision requires a comprehensive and systemic approach, including the development of a standardized and contextual supervision model, improving the competence of clinical supervisors, creating a conducive clinical learning environment, and providing ongoing institutional support from both educational institutions and practice sites. Optimal integration of clinical supervision into the nursing practice curriculum is a strategic step to ensure the quality of the clinical learning process. With the implementation of planned and high-quality

clinical supervision, nursing students are expected to achieve the clinical competence, critical thinking skills, and professional attitudes necessary to provide safe, high-quality, and patient safety-oriented nursing care.

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