

Effectiveness of supervision on patient safety during nursing students' clinical practice: A systematic-narrative hybrid literature review

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ABSTRACT

Aim: To synthesize empirical evidence on the effectiveness of supervision on patient safety of nursing students during clinical practice, students' perceptions and the influencing factors.

Background: Patient safety is a key component of nursing education, yet its integration into clinical practice remains inconsistent internationally, with supervision serving as an important determinant of students' safety learning.

Design: A systematic-narrative hybrid review (registered on PROSPERO: CRD42025636289), combining the methodological rigor of systematic reviews with interpretive depth of narrative synthesis.

Methods: Following Preferred Reporting Items for Systematic Reviews and Meta-Analyses, ten databases were searched (January–August 2025) using SPIDER tool. Thirty-four empirical studies met the inclusion criteria and were critically appraised using the Mixed Methods Appraisal Tool. Qualitative and mixed-method evidence underwent inductive coding; quantitative findings were analyzed using correlation-based effect sizes. Finally, evidence was analyzed through convergent synthesis.

Results: Three overarching themes emerged: (1) *scope and models of safety supervision*; (2) *supervision as a determinant of patient safety*; and (3) *factors influencing safety supervision*. Structured and supportive supervision models demonstrated moderate to strong associations with patient safety ($r \approx .30$ – $.60$). Key supervisory attributes included competence, authority, continuity and professional coherence in cooperation settings. The emotional aspects experienced by students during supervision are pivotal for their confidence in speaking up and acting safely. Supervisor- and student-related factors, as well as workplace determinants, further shaped the effectiveness of supervision.

Conclusion: Supervision has a positive effect on nursing students' patient safety during clinical practice. Structured, supportive and psychologically safe supervision enhances students' competence, confidence and safety-oriented behaviors.

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1. Introduction

Patient safety is a core priority in healthcare and a crucial component of undergraduate nursing education. Although international frameworks, such as the World Health Organization (WHO) Patient Safety Curriculum Guide and national competency models, emphasize its integration, the extent to which patient safety is embedded in nursing curricula remains inconsistent across countries (Kirwan et al., 2019). Existing protocols have emerged for specific aspects of patient safety, such as educational interventions, knowledge development, or blame-free culture (e.g., Glarcher and Vaismoradi, 2024; Menezes et al., 2024); moreover, reviews on topic-focused areas are available, including medication safety, unsafe student behaviours, or the culture of safety in nursing programs (e.g., Lee and Quinn, 2019; O Sullivan et al., 2024). The clinical environment is crucial for nursing students to acquire the foundational skills, attitudes and situational awareness necessary for safe patient care (Mansour et al., 2018; Tella et al., 2015). Among the many factors influencing safe learning in clinical practice, supervision consistently emerges as a central determinant (Kohanová et al., 2023).

Supervision was defined as a formal professional agreement between a supervisor and one or more students, aiming to support critical reflection on practice and the development of clinical skills and knowledge, professional identity, self-awareness, resilience and emotional intelligence in the workplace (Jarden et al., 2025). Two main types of supervision in clinical setting were described within nursing studies regarding the provision by supervisors from educational institutions (faculty coordinators or teachers) or healthcare facilities (registered nurses or nursing managers), which corresponds to findings across global evidence (Dobrowolska et al., 2016). In the US, it is recommended that supervisors (instructor or preceptor) ensure patient safety during high-risk procedures performed by nursing students (Schroers et al., 2023). Supervision provides the structure, continuity and psychological safety that students need to develop competence and confidence in real-life situations (Mikkonen et al., 2022). Students learn safe practices primarily by observing supervisors' decision-making, communication and professional behaviours (Bartoníčková et al., 2025). Yet supervision quality varies widely across settings and countries, influenced by differing supervision models, responsibilities and levels of supervisor preparation (Dobrowolska et al., 2016). Many supervisors lack formal pedagogical training and adequate time for teaching (Čuk et al., 2014), while students frequently report inconsistent supervision or lack of supervisory support (Rothwell et al., 2021).

Emerging research highlights that the supervisory relationship has a profound impact not only on students' learning but also on their emotional safety and ability to speak up about patient safety concerns. Supportive "companionship" enables growth, whereas feelings of abandonment trigger vulnerability and silence (Javornická et al., 2024; Steven et al., 2023). Conceptual work has described critical elements of effective supervision in preregistration nursing education (Lee and Chiang, 2021). Still, these frameworks have not yet been explicitly examined through the lens of patient safety.

Despite growing interest in patient safety education, no summary of empirical evidence is available on how supervision influences nursing students' patient safety during clinical practice. This gap limits the ability of educational institutions and clinical settings to design supervision models that effectively support the delivery of safe care.

2. Aim

This study aims to summarize empirical data on the effectiveness of supervision on patient safety for nursing students during clinical practice, as well as the nursing students' perceptions and factors that influence the impact of supervision during their clinical practice.

3. Methods

3.1. Design

A systematic–narrative hybrid review approach was selected to combine the methodological transparency of systematic reviews with the interpretive depth of narrative synthesis. Narrative reviews offer rich conceptual insight but may lack the rigor needed to minimize bias (Paré et al., 2015), whereas systematic reviews apply a consistent and transparent process (Linnenluecke et al., 2020). The hybrid approach provides an appropriate balance by aligning clearly formulated research questions with transparent search strategies, applying consistent criteria-based study selection and critical appraisal and enabling the integration of both quantitative and qualitative evidence. Following Turnbull et al. (2023), this review therefore proceeded through six stages: defining research questions, establishing justification and protocol, identifying literature sources, specifying search parameters, screening and cleaning data and conducting an integrative synthesis of findings. The review was registered on PROSPERO (CRD42025636289) to ensure transparency, minimize bias and avoid duplication of research efforts.

3.2. Research questions

The general research question (RQ) was stated as "What has been empirically studied regarding the effectiveness of supervision on patient safety during the nursing students' clinical practice?" Specified RQs were:

- RQ1.** a) How do nursing students perceive supervision during clinical practice and its effects on patient safety?
- RQ2.** b) How much does supervision influence nursing students' perceptions of patient safety during their clinical practice?
- RQ3.** c) Which factors influence nursing students' perceptions of clinical practice supervision regarding patient safety?
- RQ4.** d) What methods are used to assess nursing students' perceptions of supervision regarding patient safety?

3.3. Literature search

A SPIDER tool (Sample, Phenomena of Interest, Design, Evaluation, type of Research) was used to formulate search terms (Cooke et al., 2012). The search was carried out in January 2025 and updated in August 2025 across 10 scientific databases. The Boolean operators and various combinations of keywords were used, including patient safety, nursing students, supervisor/mentor and clinical practice (see Supplementary File 1).

3.4. Inclusion/exclusion criteria

Predefined criteria (Table 1) were set, which served as a proxy for the following criteria: a) empirical studies (qualitative, quantitative or mixed method); b) published in peer-reviewed journal; c) written in English; d) focused on the topic of interest (the effectiveness of supervision on patient safety of nursing students during clinical practice); e) involving nursing students (undergraduate and postgraduate); and (f) with good methodological quality. Gray literature and dissertations were also eligible. The exclusion criteria were that the study was an editorial, commentary, research protocol, or review and included other than nursing students (e.g., medical, midwifery students).

3.5. Data retrieval

Study selection followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines and is

Table 1
SPIDER tool according to inclusion/exclusion criteria.

Criteria	Inclusion	Exclusion
S (Sample)	Nursing students	Medical, midwifery, paramedics, and other healthcare students
PI (Phenomena of Interest)	The effectiveness of supervision on patient safety	Unidentified effectiveness of supervision on patient safety
D (Design)	Qualitative / Quantitative, Mixed method	None
E (Evaluation)	Nursing students' perspective	Other than the nursing students' perspective
R (Research type)	Empirical research	Reviews, editorials, commentaries, study protocols

illustrated in Fig. 1 (Page et al., 2021). Rayyan QCRI® program was used for screening (Ouzzani et al., 2016). The search yielded 1342 records. After removing duplicates (n = 475), a total of 867 studies were analyzed by two authors who read the titles and abstracts. At the end of this process, a third independent researcher was invited to reach a consensus about selected studies (n = 46). Following detailed screening for conceptual relevance, nine studies were excluded. In the second phase, 37 records were screened by all members of the research team.

All studies retrieved for complete assessment were then evaluated for methodological quality using the Mixed Methods Appraisal Tool (MMAT; Hong et al., 2018), resulting in the exclusion of three low-quality studies and a final total of 34 included studies.

3.6. Data extraction and analysis

The spreadsheet (see Supplementary File 2) of extracted data from 34 studies was conducted in Microsoft Excel. Qualitative (QUAL) and mixed-method evidence were synthesized using an inductive approach. Textual data were open-coded into first-order, informant-centric terms, iteratively clustered into second-order Gioia codes (Gioia, 2021) and integrated into sub-ordinary categories, thereafter subthemes. Coding was double-checked against an evolving codebook (DB, EG), with discrepancies resolved by consensus (DB, EG, DK). Regarding quantitative (QUAN) evidence, to enable visual and statistical comparison of the evaluation of supervision, standardized effect sizes, primarily Pearson's/Spearman's correlation coefficient (*r*), were used. When *r* was not directly reported, it was approximated using conversions from odds ratios, p-values with sample sizes, or mean differences based on available Likert scales. Each *r* value was accompanied by a 95% confidence interval (CI) and visualized in a forest plot, illustrating the strength and consistency of the association between clinical supervision and patient safety. In one study (Dormehl et al., 2023), supervision-related patient

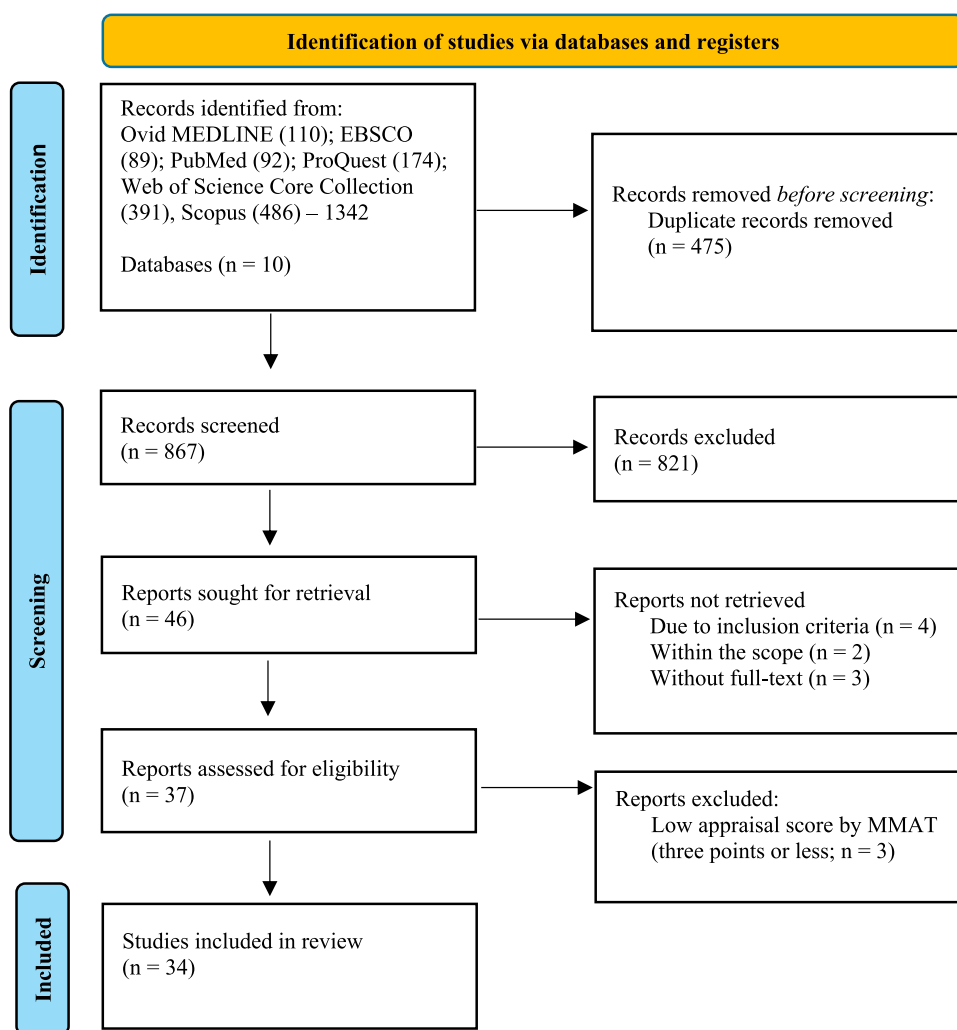


Fig. 1. Flow diagram – PRISMA guidelines, All studies that reached the final screening stage were appraised for methodological quality using the Mixed Methods Appraisal Tool (MMAT; Hong et al., 2018; Supplementary File 2), designed specifically for both quantitative and qualitative designs. Three studies were excluded in this stage, yielding the final set reported. PRISMA: Preferred Reporting Items for Systematic Reviews and Meta-Analyses.

safety values were not explicitly reported; therefore, the findings were analyzed within QUAL/mixed-method findings.

QUAN, QUAL and mixed-method evidence were finally integrated through a convergent approach (Creswell and Plano Clark, 2017) involving parallel synthesis, common coding and generation of overarching themes. A single codebook aligned to RQs (description of supervision, factors influencing supervision, perception of supervision) was used. QUAL findings (text/excerpts) were open-coded and iteratively refined; QUAN results (effect directions/sizes and author-stated findings) were qualitized into concise evidence statements and coded to the same nodes to enable comparison. Matrix queries (theme \times study) were used to ensure convergence, complementarity and dissonance, maintain an audit trail (node memos/decision logs) and resolve discrepancies through team discussion. The final synthesis yielded overarching themes, supported by traceable, coded evidence from each included study.

3.7. Rigorousness

The international research team held several online meetings to develop and agree on the review protocol. To minimize bias, the protocol was refined collaboratively; two researchers independently conducted the retrieval process (DB, DK) with a third resolving disagreements (EG); and three additional experts reviewed the relevance of included articles (AP, SCH, AO). All team members contributed to methodological quality appraisal and data extraction. For any studies authored by members of the review team, screening, appraisal and data extraction were performed by other team members to ensure independence. Condensed and tabulated data were double-checked for accuracy and progress at each stage was confirmed collectively during three online meetings (August, October and November 2025).

4. Results

Overall, 34 studies were published from 2011 to 2024, with most conducted in Europe, particularly in Italy, Spain and Sweden ($n = 3$ each), as well as in Australia, Canada and Iran ($n = 3$ each). Two studies originated from Israel, Saudi Arabia and the United Kingdom, while single studies were conducted in Belgium, Chile, Ghana, Hong Kong, Norway, Portugal, Slovakia, Slovenia, South Africa and the USA. Clinical settings ranged from general hospital wards to emergency, elderly care, psychiatric care and community care. Sample sizes varied from small samples of eight students (da Silva et al., 2023) to extensive national surveys exceeding 9600 participants (e.g., Palese et al., 2018).

The review included 20 qualitative studies using interviews or focus groups with thematic or content analysis, as well as studies with Q-methodology, mixed methods and one experimental design. Eleven quantitative cross-sectional or correlational studies were also included (Supplementary File 2).

Three overarching themes were identified, which together formed a conceptual framework linking supervision to patient safety (Fig. 3).

4.1. Theme 1. Scope and models of safety supervision

Terminology for supervision varied across countries and settings (e.g., mentor, preceptor, tutor, supervisor) but consistently referred to guidance that links theory to safe clinical practice. Supervision models differed internationally: in Saudi Arabia and Iran, final-year students were directly supervised through structured rotations and formal evaluation (e.g., Alanazi et al., 2023; Shahzeydi et al., 2024); European countries largely used preceptorship or tutorial models; Spain employed experienced nurses or peer mentoring (Albert-Galbis et al., 2024; Cuesta-Martínez et al., 2024); Italy followed a tutorial structure (e.g., Palese et al., 2018), while Belgium combined academic and clinical supervision (Ulenaers et al., 2021). In some settings, supervision was inconsistent – over half of Slovak students were supervised by nurses

without pedagogical preparation (Kalankova et al., 2022). Canada used a cluster model before transitioning to individual supervision (Webster et al., 2016) and in Australia, supervisors acted as course tutors (Hanson et al., 2020). Across various contexts, supervision supported reflection, ethical and safe practice and students' willingness to voice concerns (e.g., Amsrud et al., 2015; Ewertsson et al., 2017; Fagan et al., 2021). Effective supervisors fostered confidence, professional behavior and psychological safety, thereby enhancing readiness for safe practice (e.g., Ghasempour et al., 2023), whereas inadequate or poorly structured supervision diminished students' preparedness (Vaismoradi et al., 2014).

4.2. Theme 2. Supervision as determinant of patient safety

The analysis produced three sub-themes that described how supervision was perceived in relation to patient safety. The sub-theme on the essential role of supervision derived solely from quantitative evidence, whereas the sub-themes attributes of supervision and emotional aspects of supervision were grounded in qualitative and mixed-method findings (Supplementary File 3).

4.2.1. Subtheme 2.1. Essential role of supervision

Across 11 quantitative studies, supervision was consistently associated with patient safety in a positive, though variable, manner (Fig. 2). The most substantial effects appeared in structured, supportive models (e.g., Shahzeydi et al., 2024, $r = 0.65$; Rozani and Abdelhadi, 2025, $r = 0.63$) and in supervision emphasizing coaching and communication (Ulenaers et al., 2021, $r = 0.52$). Moderate effects were linked to reflective practice, reinforcement and learning support (Amsrud et al., 2015, $r = 0.45$; Livshiz-Riven et al., 2023, $r = 0.40$; Baghdadi et al., 2023, $r = 0.35$). Studies focused on general supervision models or styles have shown more minor associations (Palese et al., 2018, 2019; Kalankova et al., 2022) and one study found a near-zero effect (Bickel et al., 2020). Overall, structured and supportive supervision was associated with greater student competence, confidence and safer clinical behavior.

4.2.2. Subtheme 2.2. Attributes of supervision

Four categories described key supervisory attributes. Competence and authority were essential, as supervisors served as role models who connected theory with practice (Albert-Galbis et al., 2024; Dunn and Hansford, 1997; Kane et al., 2025) and strengthened students' confidence in clinical decision-making (Löfgren et al., 2023). Responsibility and professional coherence were critical; inadequate supervision characterised by passivity; role ambiguity, lack of sensitivity, or weak role modelling undermined patient safety (Alanazi et al., 2023; Killam et al., 2012; Lundell Rudberg et al., 2022; Ropero-Padilla et al., 2022). Clarity and continuity related to structured supervision, an individualised approach and regular feedback (da Silva et al., 2023; Lyman and Mendon, 2021). Inconsistent or unstructured supervision, often due to limited supervisor presence or support, compromised safety (Atakro et al., 2019; Ghasempour et al., 2023). Collaboration between academic and clinical settings supported a shared safety culture (Albert-Galbis et al., 2024), although contextual clarity could be hindered by time constraints, workload and competing teaching demands (Killam et al., 2012; Lundell Rudberg et al., 2022). Academic support through methods such as case-based learning could further enhance effective supervision (Hanson et al., 2020; Ulenaers et al., 2021).

4.2.3. Subtheme 2.3. Emotional aspects of supervision

Emotional aspects of supervision were reflected in three categories as experienced by nursing students during clinical practice, shaping their confidence in speaking up and engaging with patient safety. Support and trust were related to supervisors' approachability, which encouraged reflection, built confidence and promoted emotional safety for students (Löfgren et al., 2023; Steven et al., 2023; Webster et al., 2016). Positive supervisory relationships fostered collective trust (da Silva et al., 2023),

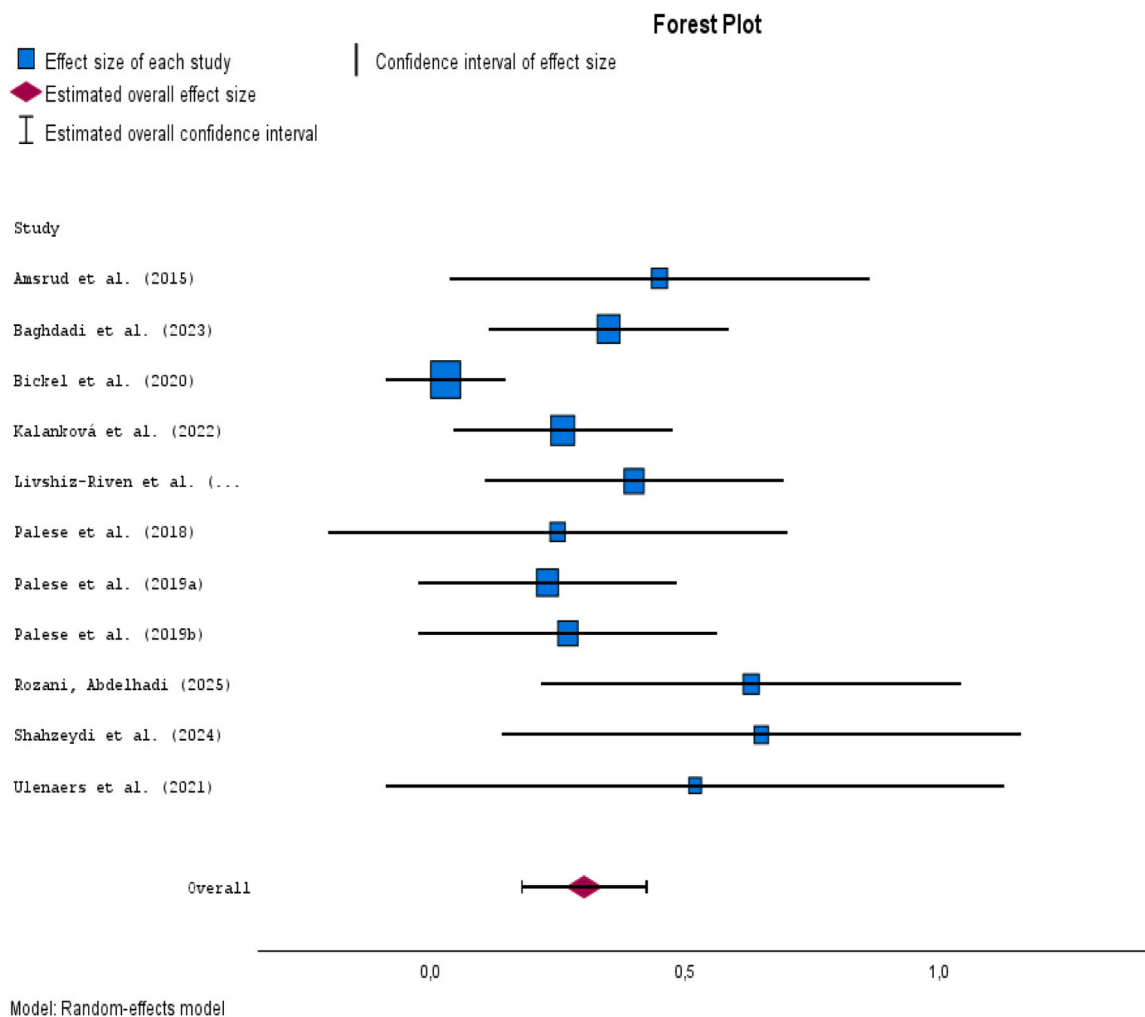


Fig. 2. Forest plot of quantitative findings, Blue squares show study effect sizes (r) with 95% CIs (horizontal lines). The diamond is the pooled random-effects estimate (width = overall CI). Larger squares = greater study weight. Most studies report a positive, moderate association (r ≈ .30-.60) between supervision quality and patient safety, supporting a significant overall effect.

while peer support helped students feel heard and understood (Cuesta-Martínez et al., 2024). Open communication and psychological safety enhanced patient safety (Albert-Galbis et al., 2024), yet could be compromised by avoidance, concealment, or conflict (Lyman and Mendon, 2021). Students frequently experienced fear of punishment, power imbalance and fear of appearing incompetent, which could create psychological barriers, delay incident reporting and lead to feelings of abandonment during clinical placements, thereby influencing how they perceived and enacted patient safety (Atakro et al., 2019; Fagan et al., 2021; Gradišnik et al., 2024). When trust in the clinical environment was compromised, it was necessary to escalate concerns to university staff (Brown et al., 2020). Reflective and collaborative supervision fostered critical thinking, engagement and patient safety (Ewertsson et al., 2017; Kane et al., 2025), while the active presence of supervisors enhanced students' empowerment and readiness for safe practice (Alanazi et al., 2023). Conversely, weak supervisory relationships could lead to defensive behaviours such as masking mistakes (Ghasempour et al., 2023), underscoring the importance of emotionally supportive supervision for nursing students in clinical practice.

4.3. Theme 3. Factors influencing safety supervision

Three subthemes described factors influencing safety through supervision at different levels (Table 2). Supervisor-related factors included availability and continuity (e.g., Alanazi et al., 2023; Dormehl

et al., 2023), professional skills (e.g., Ewertsson et al., 2017; Löfgren et al., 2023) and attitudes or behaviors that supported or hindered safe practice (e.g., Brown et al., 2020; Fagan et al., 2021). Workplace determinants encompassed organizational conditions, communication and feedback processes, ethical climates and educational opportunities in the clinical setting (e.g., Baghdadi et al., 2023; Hanson et al., 2020; Killam et al., 2012). Student-related factors included individual attitudes and coping strategies, level of involvement and expectations of supervision (e.g., Livshiz-Riven et al., 2023; Lyman and Mendon, 2021). Together, these factors influenced the consistency, safety and overall effectiveness of clinical supervision.

5. Discussion

This systematic-narrative review synthesized quantitative and qualitative evidence on the effectiveness of clinical supervision on patient safety during nursing students' clinical practice. Supervision is widely recognized as a cornerstone of nursing education; its influence on patient safety is multifactorial and context-dependent. Although supervision is a historical manner of clinical learning in the nursing profession, only 34 studies have been retrieved regarding safety. The findings indicate that the effectiveness of supervision in promoting patient safety can be understood through three interconnected domains: (1) the scope and models of safety supervision, which define the structural and procedural organization of supervision across contexts; (2) the supervision

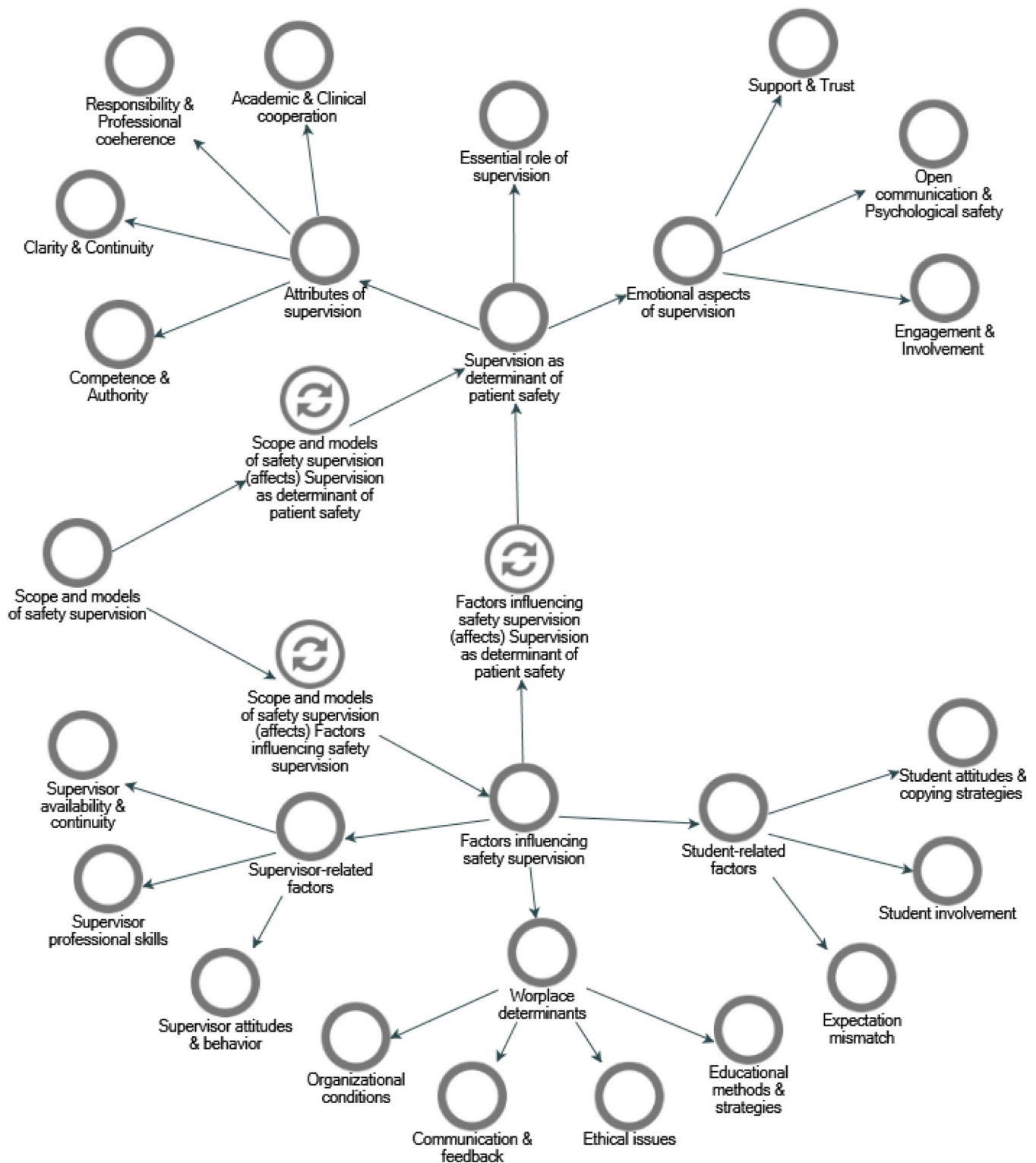


Fig. 3. Conceptual framework of supervision effectiveness on patient safety. Legend: Conceptual model of supervision effectiveness on patient safety. The triangle in the middle connects three areas: (1) scope and models of safety supervision, (2) supervision as a determinant of patient safety, and (3) factors influencing safety supervision. From this, two sub-themes expanded: Supervision as a determinant of safety: attributes ensuring safe, effective supervision and its emotional aspects by nursing students. Factors influencing safety supervision: supervisor, workplace, and student determinants shaping supervisory effectiveness. Together, these pathways show that structured, well-supported supervision improves patient safety in nursing education.

as a determinant of patient safety, encompassing the supervisory attributes and emotional aspects that promote students' competence, confidence and safe behavior; and (3) the factors influencing safety supervision, including supervisor-, student-related and workplace

determinants. Together, these domains form a comprehensive framework illustrating that supervision functions not merely as an educational tool, but as an enabling mechanism that supports the conditions for safe clinical learning and practice.

Table 2
Factors influencing effectiveness of safety supervision.

Subtheme	Sub-ordinary categories	2nd-order Gioia codes	
Supervisor-related factors	Supervisor availability & continuity	<ul style="list-style-type: none"> - Importance of consistent supervisory contact (Ulenaers et al., 2021) - Infrequent presence of academic supervisors (Vaismoradi et al., 2014) - Presence of supervisor enhances supervision (Alanazi et al., 2023; Dormehl et al., 2023) - High workloads limit supervision (Alanazi et al., 2023; Killam et al., 2012; Vaismoradi et al., 2014; Webster et al., 2016) - Continuity and consistency in supervision (Webster et al., 2016) 	
	Supervisor professional skills	<ul style="list-style-type: none"> - Importance of structured orientation (Lundell Rudberg et al., 2022) - Supervisor preparedness and competence (Ewertsson et al., 2017; Ghasempour et al., 2023; Löfgren et al., 2023) - Constructive feedback is key to supervision (Alanazi et al., 2023; Chan et al., 2017; Löfgren et al., 2023; Lyman and Mendon, 2021) - Faculty-led supervision enhances patient safety (Palese et al., 2018; Palese et al., 2019a) - Fair and diverse assessment improves supervision (Alanazi et al., 2023) - Value placed on supervisor expertise (Chan et al., 2017) 	
	Supervisor attitudes & behavior	<ul style="list-style-type: none"> - Supervisor's behavior and interpersonal style (Dormehl et al., 2023) - Negative climate of supervision (Silva et al., 2023) - Resistance to student teaching (Alanazi et al., 2023) - Supervisors' attitudes influence learning opportunities (Vaismoradi et al., 2014) - Supervisor approachability supports psychological safety (Brown et al., 2020; Ulenaers et al., 2021) - Supervisor responsiveness affects student action (Fagan et al., 2021) - Variability in supervision approach (Ewertsson et al., 2017; Ghasempour et al., 2023; Lundell Rudberg et al., 2022) 	
	Workplace determinants	Organizational conditions	<ul style="list-style-type: none"> - System-level context influences perceived supervision quality (Baghdadi et al., 2023) - Organizational culture shapes supervisory support (Vaismoradi et al., 2014) - Inadequate unit-level conditions (Alanazi et al., 2023; Dormehl et al., 2023; Killam et al., 2012; Löfgren et al., 2023; Ulenaers et al., 2021; Webster et al., 2016) - Clinical conditions affecting supervision (Baghdadi et al., 2023; Bickel et al., 2020; Ewertsson et al., 2017) - General orientation supports learning (Alanazi et al., 2023)
		Communication & feedback	<ul style="list-style-type: none"> - Supportive communication enables learning (Alanazi et al., 2023; Kane et al., 2025) - Poor supervisory communication (da Silva et al., 2023; Killam et al., 2012; Löfgren et al., 2023) - Poor communication reduces supervisory impact (Alanazi et al., 2023) - Emotional safety and clear feedback support learning (Kane et al., 2025; Löfgren et al., 2023; Lyman and Mendon, 2021)
		Ethical issues	<ul style="list-style-type: none"> - Power imbalance and fear inhibit speaking up (Brown et al., 2020; Chan et al., 2017; Ghasempour et al., 2023; Lundell Rudberg et al., 2022; Lyman and Mendon, 2021) - Ethical concern suppression due to power imbalance (Palese et al., 2019b) - Dual roles of supervisor and assessor create tension (Brown et al., 2020) - Lack of trust reduces likelihood of raising concerns (Brown et al., 2020) - Limited supervisory guidance on raising concerns (Brown et al., 2020)
		Educational methods & strategies	<ul style="list-style-type: none"> - Interactive teaching strategies (da Silva et al., 2023; Hanson et al., 2020; Lyman and Mendon, 2021) - Integration of theory and practice (Löfgren et al., 2023; Lundell Rudberg et al., 2022) - Learning through contrastive experiences (Lundell Rudberg et al., 2022) - Respectful supervision supports safe practice (Alanazi et al., 2023) - Supervision encourages patient safety actions (Kalankova et al., 2022) - Supervision supports learning and patient safety (Amsrud et al., 2015)
		Student-related factors	Student attitudes & copying strategies
	Student involvement		<ul style="list-style-type: none"> - Students' inclusion in the care team (Fagan et al., 2021) - Supportive supervision encourages speaking up (Fagan et al., 2021) - Quality of supervisor-student relationship (Killam et al., 2012; Lyman and Mendon, 2021) - Presence of supervisor enhances compliance (Livshiz-Riven et al., 2023)
Expectations mismatch	<ul style="list-style-type: none"> - Setbacks in confidence from negative experiences (Lyman and Mendon, 2021) - Lack of supervision undermines student confidence (Vaismoradi et al., 2014) - Students modify behavior to avoid negative outcomes (Brown et al., 2020) - Lack of supervisor training in handling student concerns (Brown et al., 2020) - Gender roles and patient comfort affect supervision (Alanazi et al., 2023) 		

Clinical practice varies considerably across countries; however, nursing education institutions must uphold standards that ensure quality and safety (Helminen et al., 2016). Although an increased number of students does not appear to compromise patient safety (Williamson et al., 2020), multiple factors influence students' ability to provide safe care, including gaps between theory and practice, clinical simulation that positively strengthens preparedness, clinical judgement and patient safety competencies, reporting adverse events, as well as professional team and personal factors (Gore and Schrems, 2025). Clinical supervision offers essential structural and emotional support, guiding students'

professional development and facilitating the safe integration of learning into practice (Immonen et al., 2019). Consistent with the quantitative findings of this review, structured and supportive supervision models were associated with improved competence, confidence and safety behaviour.

Structured learning, clear expectations and a supportive environment have been identified as critical components of effective supervision (Gore and Schrems, 2025) and are closely linked to students' overall competence (Kajander-Unkuri et al., 2016). Variability in supervision effectiveness stems not only from the form of supervision but also from

the supervisor's profile, responsibilities and professional preparation. The requirements for supervisors vary globally, with the emphasis on experience in a clinical environment, completion of specific courses or training, knowledge of assessment strategies, communication skills, up-to-date practical expertise and continuous professional development (Dobrowolska et al., 2016). Supervisory attributes—such as competence, authority, clarity, continuity, responsibility and professional integrity—were consistently described as essential to safe learning. Supervisors act as role models whose clinical and ethical behaviours are closely observed and replicated by students (Javornická et al., 2024). Emotional aspects emerged as a critical dimension of supervision. Trust, psychological safety and open communication enable students to ask questions, express concerns and engage in constructive discussions about errors. Supportive supervisory relationships foster a sense of belonging, reduce anxiety and enhance engagement in safety-related decision-making (Gore and Schrems, 2025). Psychological safety is therefore not an additional benefit but a prerequisite for safe learning environments. Interventions such as guided reflection, structured supervision and relationship-based programmes have been shown to reduce stress, anxiety and depression among nursing students (Aloufi et al., 2021). Inclusive supervision strategies that promote a culture of safety, strengthen students' confidence and encourage active learning are likewise beneficial (Chicca and Shellenbarger, 2020).

The findings further show that factors influencing supervision quality and safety operate at multiple levels. Supervisor-related determinants include professional competence, availability and interpersonal skills and student-related determinants include motivation, coping strategies and readiness for clinical learning. Positive supervisory experiences enhance students' professional attitudes toward safe practice and strengthen their competence and clinical decision-making (Helminen et al., 2016). Supervisors themselves strive to be positive role models, yet their effectiveness depends on adequate preparation, institutional support and continuity within the supervisory relationship (Bianchi et al., 2016; Gore and Schrems, 2025). Generally, there are no formal globally applicable rules regarding supervisor qualifications and both clinical and academic types of supervision, or their combination, are commonly used (Dobrowolska et al., 2016). Supervision is necessary to provide feedback to students, which is an important aspect of learning (Schroers et al., 2023). Active student engagement stimulates critical thinking, interprofessional communication and feedback exchange, thereby improving the quality of supervision (Bianchi et al., 2016). However, students often face unsafe practices and unsupportive supervisory behaviours that hinder their critical reflection and confidence in delivering safe care, despite expectations for professional preparedness (Purabdollah et al., 2023).

Organisations that cultivate a learning-oriented and innovative culture supporting safety-related behaviours strengthen clinical experiences and enhance teamwork and quality of care (Gore and Schrems, 2025). Clinical supervision is thus a dynamic and multifaceted process influenced by institutional, interpersonal and individual factors (Dobrowolska et al., 2016). Organisational conditions, communication and feedback mechanisms, ethical issues and educational strategies all shape students' capacity to provide safe care. To achieve optimal outcomes, nursing education must embed communication skills, critical thinking and active learning approaches into supervision processes (Pivač et al., 2021). National and institutional standards should explicitly acknowledge supervision as a key determinant of patient safety, ensuring adequate supervisor preparation, workload management and support mechanisms for both educators and students.

Overall, this review documents that effective supervision—structured, supportive and psychologically safe—plays a pivotal role in developing competent, confident and safety-oriented nursing students. Strengthening supervision pedagogically, relationally and organisationally should therefore be a central priority for nursing education and healthcare systems seeking to enhance the safety and quality of patient care delivered by future nurses.

5.1. Study strengths and limitations

The included studies were heterogeneous in design and measurement, which limited direct comparability and causal interpretation. Most were cross-sectional and self-reported, increasing the risk of bias and contextual variability across settings reduced generalizability. Nevertheless, the hybrid systematic–narrative design strengthened explanatory depth, triangulated multiple data types and provided an integrated view of the mechanisms of supervision. Despite terminological inconsistencies, a unified coding framework ensured coherence. While the conceptual model requires empirical validation, it provides clear and testable pathways that link supervision to patient safety.

6. Conclusion

The contribution of clinical supervision to nursing students' patient safety is associative, context-dependent and shaped by multiple levels rather than uniformly causal. Across diverse settings, structured and supportive supervision—with clear expectations, continuity, timely feedback and credible role modelling—was consistently linked to stronger perceived competence, confidence and adherence to safe practices. In contrast, inconsistent or weak supervision coincided with uncertainty and reduced readiness for safe care. The emotional aspects of supervision (trust, open communication, psychological safety) influenced whether students felt able to ask questions, disclose concerns and act on risks. Effects varied with supervisor attributes, workplace conditions and student factors; underscoring the need for coordinated academic–clinical support. Integrating psychological safety, reflective dialogue and structured guidance into supervisory practice appears most conducive to safety learning. Overall, the evidence supports prioritising supervision pedagogically, relationally and organizationally, with investment in prepared supervisors and supportive environments to enhance student development and the safety of patient care.

7. Implications for nursing policy

Clinical supervision should be viewed as a patient safety requirement, not merely an educational activity. National standards and accreditations should require supervisor training, committed time and clear expectations about their role, with the quality of supervision monitored as a key indicator alongside patient safety outcomes. Institutions should adopt evidence-based models that ensure continuity, structured feedback, reflective dialogue and psychological safety, with clear procedures for voicing concerns and reporting incidents that guarantee protection from potential retaliation. Health service and university policies need to be aligned to ensure adequate staffing and shared responsibility for the quality of supervision. Supervision of nursing students should be presented as a system-level mechanism that links education, professional development and the provision of safe patient care.

CRedit authorship contribution statement

Aysel Özşaban: Writing – original draft, Conceptualization. **Aysun Bayram:** Writing – original draft, Conceptualization. **Seher Basaran-Acil:** Writing – original draft, Conceptualization. **Öznur İspir Demir:** Writing – original draft, Conceptualization. **Stefania Chiappinotto:** Writing – review & editing, Writing – original draft, Methodology, Conceptualization. **Dominika Kohanová:** Writing – review & editing, Writing – original draft, Conceptualization. **Elena Gurková:** Writing – review & editing, Writing – original draft, Investigation, Conceptualization. **Alvisa Palese:** Writing – review & editing, Writing – original draft, Conceptualization. **Zuzana Svobodová:** Writing – review & editing, Methodology, Conceptualization. **Daniela Bartoníčková:** Writing – review & editing, Writing – original draft, Visualization, Methodology, Investigation, Conceptualization.

Ethical approval

Given the nature and design of this study—a systematic–narrative review synthesizing data from previously published research—ethical approval was not required. The review did not involve the collection of primary data, direct contact with participants, or the use of identifiable personal information. All included studies were assumed to have obtained ethical approvals from their institutional review boards, as reported by the original authors.

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Declaration of Generative AI and AI-assisted technologies in the writing process

The research team declares that no artificial intelligence or AI-assisted technology was used at any point during this study.

Declaration of Competing Interest

The authors declare that they have no competing interests.

Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at [doi:10.1016/j.nepr.2026.104783](https://doi.org/10.1016/j.nepr.2026.104783).

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