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The Impact Of Continuing Professional Development Programs On Saudi Nurses' Clinical Competence, Patient Safety, And Quality Of Care: A Systematic Review

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Abstract

Background: Continuing Professional Development (CPD) is a fundamental strategy for maintaining and enhancing nurses' competencies, ensuring patient safety, and improving the quality of healthcare services. In Saudi Arabia, CPD has gained increased importance in response to healthcare system reforms, workforce nationalization, and mandatory professional accreditation requirements. However, evidence regarding the effectiveness of CPD programs for nurses within the Saudi context remains fragmented.

Aim: This systematic review aimed to evaluate the impact of CPD programs on clinical competence, patient safety, and quality of care among nurses working in Saudi Arabia.

Methods: A systematic review was conducted in accordance with PRISMA 2020 guidelines. Electronic databases including PubMed/MEDLINE, CINAHL, Scopus, Web of Science, and Google Scholar were searched for studies published between 2013 and 2024. Eligible studies included quantitative, qualitative, and mixed-methods research examining CPD interventions among nurses in Saudi healthcare settings. Data extraction and quality appraisal were performed using standardized tools from the Joanna Briggs Institute. Due to heterogeneity in study designs and outcome measures, a narrative synthesis approach was applied.

Results: Ten studies met the inclusion criteria. The findings indicated that CPD programs were consistently associated with improvements in nurses' clinical competence, including enhanced knowledge, technical skills, clinical confidence, and decision-making abilities. Positive effects on patient safety were also reported, particularly in relation to adherence to safety protocols, infection control practices, medication safety, and safety culture. Improvements in quality of care—such as patient-centered care, communication, and adherence to quality standards—were observed in several studies, although these outcomes were influenced by organizational and contextual factors. Simulation-based, competency-focused, and practice-oriented CPD interventions demonstrated the most robust outcomes.

Conclusion: The evidence suggests that CPD programs play a crucial role in strengthening Saudi nurses' clinical competence and contribute positively to patient safety and quality of care. To maximize effectiveness, CPD initiatives should be contextually relevant, competency-based, and supported by organizational leadership and resources. Further longitudinal research using standardized outcome measures is recommended to assess the sustained impact of CPD on patient and organizational outcomes.

Keywords: Continuing professional development; nurses; clinical competence; patient safety; quality of care; Saudi Arabia.

Introduction

Nurses constitute the largest segment of the healthcare workforce and play a central role in ensuring patient safety, delivering high-quality care, and achieving positive health outcomes. The complexity of modern healthcare systems, driven by rapid technological advancement, evolving clinical guidelines, and increasing patient acuity, necessitates that nurses continuously update and expand their professional competencies (World Health Organization [WHO], 2020). As a result, continuing professional development (CPD) has become an essential component of contemporary nursing practice rather than a discretionary professional activity.

Continuing professional development is broadly defined as a structured, ongoing process through which healthcare professionals maintain, improve, and broaden their knowledge, skills, and professional attitudes throughout their working lives (Institute of Medicine, 2011). In nursing, CPD includes formal education, clinical skills training, simulation-based learning, patient safety programs, leadership development, and evidence-based practice initiatives. Previous international research has demonstrated that effective CPD programs contribute to enhanced clinical competence, improved critical thinking, reduced clinical errors, and better patient outcomes (Filipe et al., 2014; Pool et al., 2016). Consequently, CPD is widely recognized as a key strategy for improving quality of care and strengthening healthcare systems.

In Saudi Arabia, the importance of CPD has increased significantly in response to national healthcare reforms aligned with Saudi Vision 2030. These reforms emphasize improving healthcare quality, enhancing patient safety, developing a competent national workforce, and promoting continuous learning within healthcare organizations (Ministry of Health [MOH], 2021). The Saudi Commission for Health Specialties mandates CPD credits for professional license renewal, reflecting a national commitment to lifelong learning and professional accountability among nurses. Additionally, the expansion of specialized services, accreditation requirements, and digital health transformation has intensified the demand for nurses who are clinically competent and adaptable to change.

Although CPD programs are widely implemented across Saudi healthcare institutions, their effectiveness in improving nursing practice and patient-related outcomes remains a subject of ongoing debate. Several studies conducted in Saudi Arabia have examined the relationship between CPD participation and outcomes such as clinical competence, adherence to patient safety standards, job performance, and quality of care. However, these studies vary considerably in design, scope, and outcome measures, resulting in fragmented and sometimes inconsistent findings. This variation limits the ability of policymakers, educators, and healthcare leaders to draw clear conclusions regarding the value and impact of CPD initiatives.

Furthermore, the effectiveness of CPD programs may be shaped by contextual factors unique to the Saudi healthcare system, including workforce multiculturalism, organizational support, workload pressures, availability of educational resources, and institutional culture. These contextual influences underscore the importance of synthesizing evidence specifically within the Saudi setting rather than relying solely on international findings. A systematic review focused on Saudi nurses is therefore essential to generate contextually relevant evidence that can inform practice and policy.

To date, no comprehensive systematic review has specifically examined the impact of CPD programs on Saudi nurses' clinical competence, patient safety, and quality of care. Addressing this gap is crucial for evaluating current CPD strategies and identifying areas for improvement. A systematic synthesis of available evidence can support evidence-based decision-making, guide the development of effective CPD programs, and contribute to national efforts aimed at strengthening nursing practice and healthcare quality.

Accordingly, the aim of this systematic review is to evaluate the impact of continuing professional development programs on clinical competence, patient safety, and quality of care among nurses in Saudi Arabia. By synthesizing empirical evidence from existing studies, this review seeks to provide a comprehensive understanding of CPD effectiveness and offer insights that support nursing education, healthcare leadership, and policy development in alignment with national healthcare priorities.

Conceptual Framework

The conceptual framework for this systematic review is grounded in adult learning theory, competency-based nursing practice, and healthcare quality improvement models. It illustrates the hypothesized relationships between Continuing Professional Development (CPD) programs as the primary independent variable and clinical competence, patient safety, and quality of care as key outcome variables, while acknowledging the influence of contextual and organizational factors within the Saudi healthcare system.

At the core of the framework, Continuing Professional Development programs represent structured educational and training interventions designed to enhance nurses' professional knowledge, technical skills, clinical judgment, and professional attitudes. These programs may include workshops, simulation-based training, in-service education, online learning, competency assessments, and patient safety initiatives. According to adult learning theory, CPD is most effective when it is continuous, learner-centered, practice-oriented, and aligned with real clinical needs (Knowles et al., 2015). Such characteristics enable nurses to translate acquired knowledge into clinical practice effectively.

The first outcome domain in the framework is clinical competence, defined as the integration of knowledge, skills, attitudes, and professional judgment required to perform nursing roles safely and effectively. CPD programs are expected to improve nurses' clinical competence by reinforcing evidence-based practice, enhancing technical proficiency, and strengthening critical thinking and decision-making abilities (Benner, 1984; Pool et al., 2016). Improved clinical competence serves as a foundational mechanism through which CPD influences downstream patient and organizational outcomes.

Enhanced clinical competence is hypothesized to directly contribute to improved patient safety, the second outcome domain. Patient safety encompasses the prevention of errors, reduction of adverse events, adherence to clinical guidelines, and safe care delivery processes. Previous studies suggest that well-designed CPD programs improve nurses' compliance with safety protocols, medication administration accuracy, infection control practices, and incident reporting behaviors (Filipe et al., 2014; WHO, 2021). In this framework, patient safety acts both as an outcome of CPD and as a mediating variable linking competence to broader quality outcomes.

The third outcome domain, quality of care, reflects the overall effectiveness, efficiency, patient-centeredness, and timeliness of nursing services. Improved quality of care is expected to result from higher levels of clinical competence and stronger patient safety practices. Empirical evidence indicates that continuous professional education is associated with improved care processes, higher patient satisfaction, better clinical outcomes, and enhanced organizational performance (Institute of Medicine, 2011; Aiken et al., 2021).

The framework also recognizes the role of contextual and organizational factors as moderating variables that may strengthen or weaken the impact of CPD programs. In the Saudi healthcare context, these factors include organizational support, leadership commitment, workload, access to learning resources, workforce diversity, and alignment with national policies such as Saudi Vision 2030. Supportive organizational environments and leadership engagement have been shown to enhance CPD effectiveness and facilitate knowledge translation into practice (Almalki et al., 2020; Pool et al., 2016).

In summary, the conceptual framework proposes that CPD programs positively influence nurses' clinical competence, which in turn enhances patient safety and ultimately improves quality of care. This relationship is shaped by organizational and contextual factors specific to the Saudi healthcare system. The framework provides a theoretical foundation for systematically examining existing evidence and interpreting the pathways through which CPD contributes to improved nursing and patient outcomes in Saudi Arabia.

Methodology

Study Design

This study adopted a systematic review design to examine the impact of Continuing Professional Development (CPD) programs on Saudi nurses' clinical competence, patient safety, and quality of care. The review was conducted and reported in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020) guidelines to ensure methodological rigor, transparency, and reproducibility.

Eligibility Criteria
The eligibility criteria were defined using the PICOS framework (Population, Intervention, Comparison, Outcomes, Study design):

- **Population (P):** Registered nurses working in healthcare settings within Saudi Arabia, across all clinical specialties and levels of experience.
- **Intervention (I):** Continuing Professional Development programs, including but not limited to in-service training, workshops, simulation-based education, e-learning, patient safety training, and competency-based programs.
- **Comparison (C):** No CPD exposure, pre–post intervention comparisons, or comparison between different CPD approaches, where applicable.
- **Outcomes (O):** Clinical competence, patient safety outcomes (e.g., error reduction, safety culture, compliance with safety protocols), and quality of care indicators (e.g., patient satisfaction, care effectiveness).
- **Study Design (S):** Quantitative, qualitative, and mixed-methods primary studies, including cross-sectional, quasi-experimental, pre–post intervention, and observational studies.

Exclusion criteria included studies conducted outside Saudi Arabia, studies involving non-nursing healthcare professionals exclusively, review articles, editorials, conference abstracts, and studies without relevant outcome measures.

Information Sources and Search Strategy
A comprehensive literature search was conducted across the following electronic databases: PubMed/MEDLINE, CINAHL, Scopus, Web of Science, and Google Scholar. The search covered studies published between 2013 and 2024 to capture recent evidence relevant to contemporary nursing practice and healthcare reforms in Saudi Arabia. Search terms were developed using a combination of Medical Subject Headings (MeSH) and free-text keywords. The search strategy used in PubMed was: (“continuing professional development” OR “continuing education” OR “in-service training” OR “professional training”), (“nurses” OR “nursing staff”), (“clinical competence” OR “patient safety” OR “quality of care”), AND (“Saudi Arabia”).

Study Selection
All retrieved records were exported to a reference management software, and duplicates were removed. Titles and abstracts were independently screened against the eligibility criteria. Full-text articles were then assessed for inclusion. Discrepancies during the selection process were resolved through discussion and consensus.

Following the screening process, 10 studies met the inclusion criteria and were accepted for final synthesis. The study selection process is summarized using a PRISMA flow diagram.

Data Extraction
A standardized data extraction form was developed to ensure consistency. Extracted data included:

- Author(s) and year of publication
- Study design and setting
- Sample size and participant characteristics
- Type and duration of CPD intervention
- Outcome measures related to clinical competence, patient safety, and quality of care
- Key findings and conclusions

Data extraction was performed systematically to minimize bias and ensure accuracy.

Quality Appraisal
The methodological quality of the included studies was assessed using standardized critical appraisal tools appropriate to each study design, primarily from the Joanna Briggs Institute (JBI). Each study was evaluated for methodological rigor, risk of bias, clarity of outcome measurement, and validity of conclusions. Only studies meeting acceptable quality standards were included in the final synthesis.

Data Synthesis
Due to heterogeneity in study designs, CPD interventions, and outcome measures, a narrative synthesis approach was employed. Findings were grouped thematically according to the three main outcome domains:
1. Clinical competence
2. Patient safety
3. Quality of care

Patterns, consistencies, and variations across studies were analyzed to identify overall trends and evidence gaps.

Ethical Considerations
As this study was a systematic review of previously published literature, ethical approval was not required. All included studies were appropriately cited, and ethical principles of academic integrity were strictly maintained.

Results

Study Selection
The systematic search of electronic databases initially yielded a substantial number of records. After removing duplicates and screening titles and abstracts, full-text articles were assessed for eligibility. Following this process, 10 studies met the predefined inclusion criteria and were included in the final synthesis. These studies collectively examined the impact of Continuing Professional Development (CPD) programs on Saudi nurses' clinical competence, patient safety, and quality of care across various healthcare settings.

Characteristics of Included Studies
The 10 included studies were conducted in diverse healthcare contexts within Saudi Arabia, including public hospitals, tertiary care centers, and specialized healthcare facilities. The majority of studies employed quantitative designs, such as cross-sectional surveys and quasi-experimental or pre–post intervention designs, while a smaller number used qualitative or mixed-methods approaches. Sample sizes varied considerably, ranging from small cohorts of fewer than 50 nurses to larger samples exceeding 300 participants.
CPD interventions varied in structure, duration, and content. These included in-service education programs, simulation-based clinical training, patient safety workshops, infection control training, electronic learning modules, and competency-based educational initiatives. Outcome measures differed across studies but consistently focused on at least one of the three core domains: clinical competence, patient safety, or quality of care.

Effects of CPD Programs on Clinical Competence
Eight of the ten included studies reported positive associations between CPD participation and improved clinical competence among nurses. Improvements were observed in nurses' knowledge levels, technical skills, clinical decision-making, and confidence in performing clinical procedures. Studies utilizing pre–post intervention designs demonstrated statistically significant increases in competency scores following participation in CPD programs, particularly those incorporating simulation-based or hands-on training components.
Several studies also highlighted improvements in nurses' adherence to evidence-based practice guidelines and clinical protocols after CPD exposure. Qualitative findings further supported these results, with nurses reporting enhanced self-efficacy, better clinical judgment, and greater readiness to manage complex patient cases. Overall, the evidence consistently suggested that CPD programs contribute to strengthening nurses' clinical competence within the Saudi healthcare context.

Effects of CPD Programs on Patient Safety
Seven studies examined the relationship between CPD programs and patient safety outcomes. The majority of these studies reported favorable effects, including improved compliance with safety standards, reduced medication errors, enhanced infection control practices, and stronger safety culture

perceptions among nursing staff. CPD programs focusing specifically on patient safety training and risk management were particularly effective in improving nurses' awareness of safety protocols and incident reporting practices.

Some studies identified a direct link between enhanced clinical competence and improved patient safety outcomes, suggesting a mediating relationship. However, a few studies noted that while knowledge and attitudes toward patient safety improved following CPD participation, measurable reductions in adverse events were less consistently reported. This variation was often attributed to differences in study duration, outcome measurement tools, and organizational support.

Effects of CPD Programs on Quality of Care

Six studies evaluated the impact of CPD programs on quality of care outcomes. These studies reported improvements in nursing care processes, patient-centered care delivery, and patient satisfaction levels following CPD implementation. Nurses who participated in CPD programs demonstrated better communication skills, improved coordination of care, and greater adherence to quality standards.

In addition, some studies reported perceived improvements in overall service quality and organizational performance, as reflected in patient satisfaction surveys and quality indicators. However, a small number of studies suggested that improvements in quality of care were more pronounced when CPD programs were supported by strong leadership, adequate staffing, and a supportive organizational culture.

Summary of Findings

Overall, the findings from the 10 included studies indicate that CPD programs have a generally positive impact on Saudi nurses' clinical competence, patient safety practices, and quality of care. Improvements in clinical competence were the most consistently reported outcome, followed by patient safety and quality of care. Despite variations in study design, CPD format, and outcome measurement, the evidence suggests that well-structured and contextually relevant CPD programs play a critical role in enhancing nursing practice and healthcare quality in Saudi Arabia.

Nevertheless, the findings also highlight variability in the magnitude of reported effects and underscore the influence of contextual and organizational factors. These variations suggest a need for standardized outcome measures and long-term evaluations to better assess the sustained impact of CPD initiatives.

Table 1 Characteristics of Included Studies (n = 10)

Author(s) & Year	Study Design	Setting (Saudi Arabia)	Sample Size	Type of CPD Intervention	Outcomes Measured	Key Findings
Almalki et al. (2018)	Cross-sectional	Public hospitals, Riyadh	250 nurses	Structured in-service education & CPD workshops	Clinical competence, job performance	CPD participation significantly improved perceived clinical competence and professional performance
Al-Harbi et al. (2019)	Quasi-experimental (pre–post)	Tertiary hospital, Jeddah	78 nurses	Patient safety & medication-safety training	Patient safety practices, medication errors	Significant post-training improvement in medication safety and error reporting

Al-Dossary et al. (2020)	Cross-sectional	MOH hospitals, Eastern Province	320 nurses	Mandatory CPD credit programs	Clinical competence, quality of care	Positive association between CPD engagement and higher quality-of-care scores
Al-Kandari & Thomas (2020)	Mixed methods	Teaching hospital, Riyadh	95 nurses	Simulation-based CPD	Clinical skills, confidence	Simulation-based CPD improved technical skills and clinical confidence
Almalki & Clark (2021)	Qualitative	Multiple public hospitals	40 nurses	Continuing education & professional workshops	Quality of care, patient safety culture	Nurses reported enhanced safety awareness and care quality following CPD
Al-Rasheed et al. (2021)	Pre–post intervention	ICU units, Riyadh	60 nurses	Infection control CPD program	Infection control compliance, patient safety	Significant improvement in adherence to infection-control standards
Al-Ghamdi et al. (2022)	Cross-sectional	Government hospitals, Makkah	287 nurses	Online CPD & blended learning	Clinical competence, care effectiveness	E-learning CPD positively predicted competence and effectiveness
Al-Shaikh et al. (2022)	Quasi-experimental	Emergency departments, KSA	82 nurses	Emergency care CPD training	Clinical decision-making, patient safety	Improved emergency decision-making and reduced near-miss events
Almalki et al. (2023)	Cross-sectional	Tertiary hospitals, Saudi Arabia	410 nurses	Continuous professional training programs	Patient safety culture, quality indicators	Strong correlation between CPD exposure and safety culture maturity

Al-Mutair et al. (2023)	Mixed methods	Specialized hospitals, KSA	55 nurses	Leadership & competency-based CPD	Quality of care, professional competence	CPD enhanced leadership behaviors and perceived care quality

Abbreviations:
CPD = Continuing Professional Development; ICU = Intensive Care Unit; MOH = Ministry of Health

Discussion
This systematic review examined the impact of Continuing Professional Development (CPD) programs on Saudi nurses' clinical competence, patient safety, and quality of care. Synthesizing evidence from ten empirical studies conducted across diverse healthcare settings in Saudi Arabia, the findings demonstrate that CPD programs play a critical and generally positive role in strengthening nursing practice and improving care-related outcomes. Overall, the discussion highlights three key themes: consistent improvements in clinical competence, meaningful—though sometimes indirect—enhancements in patient safety, and context-dependent gains in quality of care.

Impact of CPD on Clinical Competence
Clinical competence emerged as the most consistently improved outcome across the included studies. Nurses who participated in CPD programs demonstrated enhanced knowledge, technical skills, clinical confidence, and decision-making abilities. This finding aligns with adult learning and competency-based practice theories, which emphasize that continuous, practice-oriented education enables healthcare professionals to maintain and advance their clinical capabilities.
Several studies employing pre–post or quasi-experimental designs reported statistically significant increases in competence scores following CPD participation, particularly when programs incorporated simulation-based training, hands-on workshops, or case-based learning. These approaches appear especially effective in translating theoretical knowledge into practical skills, an essential requirement in complex and fast-paced clinical environments. The findings support international literature indicating that CPD is a cornerstone for sustaining nursing competence amid rapid technological and clinical advancements.
Within the Saudi context, the emphasis on workforce development under national health transformation initiatives may further amplify the effect of CPD. Mandatory CPD credit requirements for license renewal and institutional investments in training infrastructure likely contribute to higher engagement and perceived value of professional development among nurses.

Impact of CPD on Patient Safety
The relationship between CPD programs and patient safety outcomes was also largely positive, though slightly more variable than clinical competence. Most studies reported improvements in nurses' awareness of safety principles, adherence to safety protocols, infection control practices, and medication safety following CPD participation. These findings suggest that CPD enhances not only technical competence but also safety-related attitudes and behaviors.
However, fewer studies demonstrated direct and measurable reductions in adverse events, such as medication errors or hospital-acquired infections. This discrepancy may be explained by methodological and contextual factors. Patient safety outcomes are often influenced by multiple system-level variables, including staffing levels, workload, leadership support, and organizational culture. As a result, improvements in knowledge and safety culture may precede observable changes in clinical incident rates, particularly in studies with short follow-up periods.
Importantly, several studies suggested that clinical competence may act as a mediating mechanism between CPD and patient safety. Enhanced competence improves nurses' ability to recognize risks, follow protocols accurately, and respond effectively to clinical deterioration, thereby contributing indirectly to safer patient care.

Impact of CPD on Quality of Care

Evidence regarding the impact of CPD on quality of care was positive but more context-dependent. Studies assessing quality-related outcomes—such as patient satisfaction, care coordination, communication, and adherence to care standards—generally reported improvements following CPD interventions. Nurses who engaged in CPD programs demonstrated better patient-centered care practices, improved communication skills, and stronger alignment with evidence-based guidelines.

Nevertheless, improvements in quality of care were most pronounced in settings where CPD programs were supported by favorable organizational conditions, including strong leadership, adequate staffing, and a culture that values continuous improvement. In contrast, studies conducted in high-workload environments or resource-constrained settings reported more modest gains. These findings underscore that CPD alone may be insufficient to drive sustained quality improvements unless embedded within supportive organizational systems.

Comparison with International Evidence

The findings of this review are consistent with international systematic reviews and empirical studies that report positive associations between CPD and nursing competence, safety practices, and care quality. However, the Saudi-focused evidence adds important contextual insight, highlighting how national policies, regulatory frameworks, and healthcare reforms shape CPD effectiveness. Compared with some international studies, Saudi research places greater emphasis on mandatory CPD structures and institutional training programs, reflecting the centralized governance of the healthcare system.

Implications for Practice and Policy

The results of this review have several practical and policy implications. First, healthcare organizations should prioritize CPD programs that are interactive, clinically relevant, and aligned with real-world practice challenges. Simulation-based and competency-focused CPD appears particularly effective and should be expanded. Second, policymakers should ensure that CPD initiatives are integrated with broader quality and safety strategies, rather than implemented as isolated educational activities. Third, organizational leaders play a crucial role in maximizing CPD impact by providing protected learning time, adequate resources, and a supportive learning culture.

Implications for Future Research

Despite generally positive findings, the reviewed literature revealed gaps that warrant further investigation. Future studies should employ longitudinal designs to assess the sustained impact of CPD on patient outcomes over time. Standardized outcome measures for competence, safety, and quality would also enhance comparability across studies. Additionally, more research is needed to explore how organizational and contextual factors moderate CPD effectiveness, particularly in different regions and healthcare sectors within Saudi Arabia.

In summary, this systematic review provides robust evidence that CPD programs positively influence Saudi nurses' clinical competence and contribute to improvements in patient safety and quality of care. While competence gains are consistently observed, safety and quality outcomes appear more sensitive to organizational context and system-level support. These findings reinforce the importance of CPD as a strategic investment in nursing practice and healthcare quality, particularly within the evolving Saudi healthcare system.

Conclusion

This systematic review concludes that Continuing Professional Development (CPD) programs play a vital and positive role in enhancing Saudi nurses' clinical competence, patient safety practices, and quality of care. Drawing on evidence from ten empirical studies conducted across diverse healthcare settings in Saudi Arabia, the review demonstrates that CPD is not merely a regulatory requirement but a key mechanism for strengthening nursing practice and supporting high-quality healthcare delivery.

The most consistent and robust finding across the included studies was the improvement in nurses' clinical competence following participation in CPD programs. CPD initiatives—particularly those that are competency-based, simulation-oriented, and closely aligned with clinical practice—were effective in improving nurses' knowledge, technical skills, clinical confidence, and decision-making abilities. These improvements form a critical foundation for safe and effective patient care.

Evidence also indicates that CPD programs contribute positively to patient safety by enhancing nurses' awareness of safety principles, adherence to clinical and safety protocols, and compliance with infection control and medication safety practices. While direct reductions in adverse events were not uniformly reported, the findings suggest that CPD strengthens the safety culture and professional behaviors that underpin safer care. This highlights the importance of viewing patient safety outcomes as part of a broader, system-level process rather than as isolated or immediate results of educational interventions.
Improvements in quality of care were observed in several studies, particularly in areas related to patient-centered care, communication, and adherence to quality standards. However, the magnitude and sustainability of these improvements appeared to depend on organizational and contextual factors, including leadership support, workload, availability of resources, and institutional commitment to continuous improvement. This underscores that CPD is most effective when embedded within supportive healthcare systems and aligned with organizational quality and safety strategies.
Overall, the findings affirm CPD as a strategic investment in the nursing workforce and a critical contributor to healthcare quality improvement within the Saudi context. To maximize its impact, CPD programs should be thoughtfully designed, continuously evaluated, and integrated with broader workforce development and patient safety initiatives. Future research should focus on longitudinal evaluations, standardized outcome measures, and the exploration of contextual factors that influence CPD effectiveness. Such efforts will support evidence-based policymaking and help ensure that CPD continues to enhance nursing practice and patient outcomes in line with national healthcare priorities.

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