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Factors related to nurses continuous professional development in hospitals: A scoping review

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Abstract

Background: Continuing Professional Development (CPD) is a key strategy to support lifelong learning and improve nursing practice. Despite its recognized importance, CPD implementation in hospital settings remains inconsistent and often faces various challenges. Understanding the factors that influence nurses' participation in CPD is essential to enhance its effectiveness and sustainability.
Purpose: To identify factors related to the continuing professional development of nurses in hospitals.
Method: A scoping review using the PRISMA-ScR guidelines. A systematic search was conducted in PubMed, MEDLINE, and Science Direct for articles published between 2020 and 2025. A total of 16 studies were included, comprising quantitative, qualitative, and mixed-method designs. Thematic analysis was conducted to identify key themes.
Results: Three main themes emerged: motivation and barriers to participation, CPD implementation and outcomes, and impact of working conditions. Internal motivation, financial incentives, and professional growth were key drivers, while fatigue, cost, and scheduling issues were major barriers. Nurses' perceptions of CPD were shaped by training relevance, accessibility, and effectiveness. Workload, leadership support, and organizational culture significantly influenced engagement.
Conclusion: CPD implementation among nurses is shaped by motivational factors, nurse's perceptions conduct by CPD implementation and outcome, and workplace conditions. To enhance participation and effectiveness, healthcare institutions must adopt holistic strategies that address individual needs, ensure program relevance, and foster supportive environments.

Keywords: Continuing Professional Development; Hospital; Nurses.

INTRODUCTION

Nurses are essential healthcare professionals who must continuously update their knowledge and skills to meet the dynamic demands of clinical practice. One of the key strategies to support this ongoing development is Continuing Professional Development (CPD), which serves as the foundation of lifelong learning for nurses and is necessary to ensure their competencies remain up to date (Kurtović, Gulić, Čukljek, Sedić, Smrekar, & Ledinski Fičko, 2024; Mlambo, Silén, & McGrath, 2021). CPD encompasses both formal education and informal learning through workplace training, which has been shown to enhance nurses competence and confidence in performing their duties effectively (Jakobsson, Jangland, Engström, Malmström, & Drott, 2023; Salih & Shabu, 2025).The implementation of CPD benefits not only nurses but also patients and healthcare institutions (Yu, Huang, & Liu, 2022). It improves professional competence, ethical standards, career advancement, and

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interprofessional collaboration, while also contributing to patient safety through better clinical decision-making (Baloyi & Jarvis, 2020; Faba-An & Felipe-Dimog, 2024; Yudhianto, Marni, & Purnomo, 2023).

Awareness of the importance of CPD among nurses, has led to its adoption as a mandatory requirement in many countries, such as United Kingdom, Belgium, Australia, Spain, and several countries in America and Africa (Amir, Hariyati, Novieastari, & Pakasi, 2024; Karas, Sheen, North, Ryan, & Bullock, 2020; Mlambo et al., 2021). In Indonesia, Law No. 17 of 2023 and Government Regulation No. 28 of 2024 govern the mandatory implementation of CPD for healthcare professionals, including nurses. Both public and private healthcare facilities have adopted CPD programs for nurses to improve the quality of healthcare services, prevent inappropriate nursing practices, and enhance nurses competence, work performance, and career development (Muhadi & Wahyuni, 2020; Rahmah, Hariyati, Sekarsari, & Pakasi, 2023). Despite its recognized benefits and adoption in healthcare facilities, CPD implementation for nurses remains suboptimal (Purwanti, Hariyati, Asmara, & Wildani, 2023). Several factors influence the use of CPD in healthcare settings. Various studies have noted that both individual and organizational factors may hinder participation in CPD programs (Lhbibani, Lamiri, Lotfi, Tridane, & Belaaouad, 2021; Muhadi & Wahyuni, 2020; Salih & Shabu, 2025). Nurses motivation, understanding of the importance of CPD, and workplace conditions play a crucial role in determining the success of CPD implementation (El Najm, 2020). A comprehensive understanding of these influencing factors is essential to enhance nurses' participation in CPD programs and ensure their continuous professional growth.

Although previous scoping reviews have explored general factors influencing CPD, such as facilitators and barriers, none have specifically examined the combined influence of individual and organizational factors on CPD implementation for nurses in hospital settings (Hakvoort, Dikken, Cramer-Kruit, Molendijk-van Nieuwenhuyzen, van der Schaaf, & Schuurmans, 2022). Furthermore, no review has focused on literature published between 2020 and 2025, a period marked by significant changes in healthcare education. In light of these challenges and the limited integration of recent evidence, it becomes necessary to systematically explore the factors that influence CPD implementation in hospital settings.

RESEARCH METHOD

The scoping review study followed the methodological framework of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) guidelines. This protocol is registered with the Open Science Framework. The literature search was conducted across three electronic databases: PubMed, MEDLINE with Full Text (EBSCO), and ScienceDirect, targeting articles published between 2020-2025.

The search strategy was developed using the Population, Concept, and Context (PCC) framework. The population of interest is nurses, who are healthcare professionals responsible for providing care to individuals in need of physical or mental health support. The review focuses on key concepts such as motivation, work conditions, and the importance of continuing education, all of which are critical to understanding the factors that influence nurses' participation in Continuing Professional Development (CPD). The context of the study is hospital settings, where these factors play a significant role in shaping the implementation and effectiveness of CPD programs. All identified keywords and index terms were tailored to fit the specific indexing systems of each database or information source. The keyword in this study are Nurses OR Nursing Personnel OR Health care Professionals OR Registered Nurse AND Motivation OR Incentives OR Drives OR Motivational Factors AND Work Conditions OR Working Condition OR Workplace Condition OR Work Environment AND Importance OR Relevance OR Significance AND Continuing education OR Lifelong Learning OR Continuous Learning OR Continuing Professional Development AND Hospitals OR Health Facilities OR Health Services.

Inclusion criteria encompassed full-text articles in English involving nurse participants and employing quantitative, qualitative, or mixed-methods designs. Articles that were literature reviews or not directly

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related to influencing factors of CPD were excluded. All identified citations were imported into Covidence for screening and data management. Two independent reviewers conducted title and abstract screening, followed by full-text assessment. Discrepancies were resolved through discussion or consultation with a third reviewer. Data extraction was performed using a standardized tool developed by the authors, capturing study characteristics, methods, and key findings. The quality of included studies was assessed using a custom template created by the researchers within Covidence.

RESEARCH RESULTS

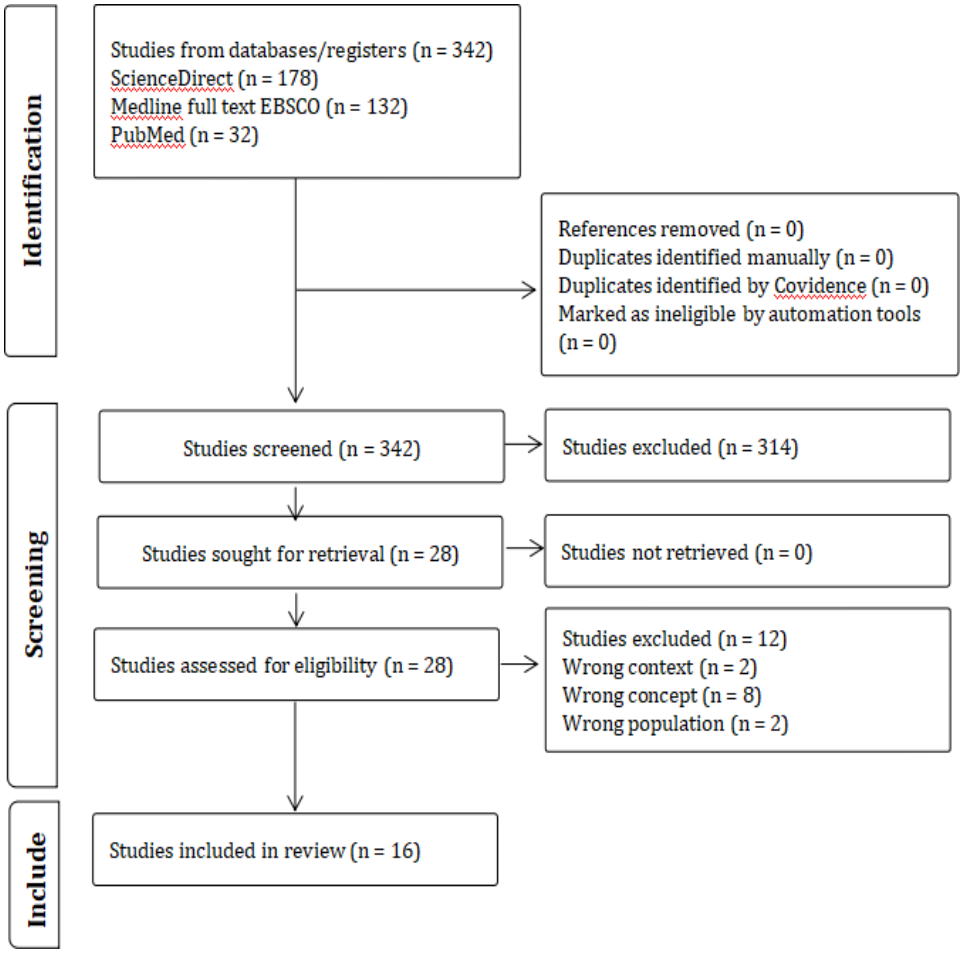


Figure PRISMA Flowchart

Maria Anita Sari[1]*, Ni Gusti Ayu Eka[1,2], Enjelica Putri Manalu[1], Erica Dorelia Pajuk[1], Keyla Friska Br Siraut[1]

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Article Data Mapping Results Table

(Author, Year) (Country)	Purpose	Method	Results
(Nezhad et al., 2022) (Iran)	To develop and evaluate an e-learning course in oxygen therapy for the ED clinicians.	A pre-post study conducted in 2021 in three phases: (1) clinicians' educational needs assessed via questionnaire (n = 181); (2) development of an interactive e-learning course; (3) evaluation of course design principles, knowledge impact, and usability.	Factor related CPD: knowledge needs, limited time, conventional training, access to e-learning, user-centered design, training effectiveness.
(Ma et al., 2022) (China)	To develop a competency-based CPD curriculum for military nurses in China and evaluate its effectiveness from a developmental pilot study.	Two-phase study: (1) two-round Delphi to design a competency-based curriculum using a clinical ladder model for military nurses; (2) redesign of one CPD programme based on findings, followed by a pilot quasi-experiment to assess effectiveness.	Factor related CPD: learning motivation and learning barriers; professional growth; role model promoted career planning; learning environment mattered.
(Zarei et al., 2022) (Iran)	To explore and describe nurses' experiences of the effect of CE programs in promoting their competencies toward non-communicable diseases.	Qualitative content analysis (Dec 2019–Apr 2020) in Shiraz University hospitals; nurses from chronic wards (n = 9: managers, supervisors, staff) selected via maximum variation sampling; semi-structured interviews (30–45 min) until saturation; trustworthiness ensured using Guba & Lincoln criteria.	Factor related CPD: training quality, workload, inconvenient timing, personal motivation.
(Lavoie et al., 2023) (Canada)	To document the facilitators and barriers to implementing a nursing competency framework on a provincial scale.	Multicentre provincial project in Quebec using a three-step implementation process; nurses self-assessed competencies with the framework; qualitative descriptive study with 58 stakeholders from 12 organizations in group interviews; thematic analysis of facilitators and barriers.	Factor related CPD: high workload and staff shortage, staff fatigue, work hours, reasons for postponing CPD.

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(Author, Year) (Country)	Purpose	Method	Results
(Alayande et al., 2024) (Nigeria)	To explore exposure of interprofessional teams in North-Central Nigeria to NTS and ascertain perceived facilitators and barriers to interprofessional training in these skills to enhance surgical safety and inform design of a relevant contextualized curriculum.	Survey of 67 surgical team members (17 anaesthesia, 21 nurses, 29 surgeons/trainees; 95.7% completion). Most (96%) unaware of NTS frameworks; only 8% had prior training. Communication and teamwork identified as most deficient (38, 57%) and most needed (45, 67%). Strong demand for NTS training (64, 96%), motivated by patient safety and team dynamics. Preferred format: week-long hybrid courses; attendance facilitated by safety/self-improvement goals, hindered by time conflicts and costs.	Factor related CPD: minimal exposure to training topics, high workload and staff shortage, time conflicts with work schedule, leadership support, cost & access, personal motivation, training content, methods, and format.
(Shen & Feng, 2024) (China)	To address the gap in effective nursing training for quality management, this study aims to implement and assess a nursing training program based on the Holton Learning Transfer System inventory, utilizing action research to enhance the practicality and effectiveness of training outcomes.	Training team established; program developed through situation analysis and literature review, focusing on motivation, learning environment, and transfer design; implemented via four-step cycle: plan, action, observation, reflection.	Factor related CPD: personal motivation, leadership support, learning environment, competency barriers (lack of skills in report writing and literature review)
(Hu et al., 2025) (China)	To examine the effect of an escape room teaching method on teamwork attitudes and intensive care knowledge of ICU new nurses, their satisfaction with, and willingness to participate in escape room training.	Convenience sample of ICU nurses (<2 years' experience) at Kunming Medical University (Apr 2023–Mar 2024); majority female (85.7%), bachelor's degree (85.7%), no prior escape room experience (92.9%). Data collected via T-TAQ, researcher-made ICU knowledge test, and questionnaires on	Factor related CPD: leadership support, cost efficiency, training relevance to practice, personal motivation.

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(Author, Year) (Country)	Purpose	Method	Results
		satisfaction/willingness. Analyses conducted in SPSS v.26 using descriptive stats, paired samples test, Wilcoxon signed-rank, regression, and Pearson correlation.	
(Almarhabi et al., 2024) (Saudi Arabia)	To explore the perspectives of ICU clinical stakeholders regarding their needs and preferences for ISE to inform the future development and implementation of effective educational interventions	A qualitative, multiple-case study supported by the "Empowering Education" theoretical framework, which emphasises the importance of stakeholder involvement in education development. Adult ICUs in three major hospitals located in two geographical areas in Saudi Arabia. Forty clinical nurses, twelve nurse managers, nine nurse leaders and seven clinical educators participated. Data were collected through semi-structured interviews followed by focus groups. Framework analysis was used for data analysis.	Factor related CPD: training content, methods, and format, personal motivation, high workload and staff shortage, work environment support, financial impact of training, training quality, work schedule.
(Fernandez-Castillo et al., 2025) (Spain)	To describe and explore ICU nurses' opinions on their work motivational factors that influenced the decision to work in the ICU setting.	Qualitative research was undertaken, with a descriptive exploratory interpretative approach, implementing a QUAL-QUAL design, where two data collection techniques are used simultaneously and complement each other. Experienced ICU nurses were interviewed by focus group, using in-depth interviews for novel nurses. A template content analysis as described by the model of Brooks was performed. The selected population was recruited from 6 different public hospitals in Spain.	Factor related CPD: formal training structure, perceived importance/benefits of training, personal motivation.

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(Author, Year) (Country)	Purpose	Method	Results
(Hanum et al., 2024) (China)	To explore the determinants influencing training transfer and evaluate how those factors change over time among nurses who graduated from clinical nurse specialist training to provide a theoretical basis for improving the training transfer of clinical nurse specialists (CNSs).	Quantitative longitudinal survey (Jun 2018–Dec 2019) with 46 new CNSs (Infusion, Wound, Ostomy); FITT questionnaire (53 items, 5 dimensions) administered at 1, 3, 6, and 12 months post-training to assess factors influencing training transfer.	Factor related CPD: managerial support, organizational barriers, training relevance to practice, personal motivation, organizational and personal facilitators.
(Lhbibani et al., 2022) (Morocco)	To measure the effects of online training "E-learning" on the learning outcomes of nurses in two hospitals in the Casablanca-Settat region with the course "Health planning" as a training theme.	This study is an experimental type, including an experimental group that benefited from online training (B, n2 = 30) and a Control group that benefited from face-to-face training (A, n1 = 30). We used a questionnaire to evaluate the nurses' knowledge (general and procedural) in pre and post-training and a questionnaire to evaluate the nurses' satisfaction with using e-learning in continuing education.	Factor related CPD: training flexibility, training content, methods, and format, work environment support, incentives and recognition after training, availability of technological infrastructure (training facilities).
(Lhbibani et al., 2021) (Morocco)	To identify the factors hampering the participation of nurses in the activities of CE sessions at the level of hospitals in the region of Casablanca.	Two-phase mixed-method study: (1) questionnaire of 930 nurses across 9 Casablanca-Settat hospitals to identify factors hindering FC session participation; (2) semi-structured interviews with 9 continuing education leaders to complement and clarify findings.	Factor related CPD: high workload and staff shortage, training relevance to needs, training flexibility, regulations requiring cpd implementation, evaluation/application of training outcomes.
(Kelkay et al., 2025) (Ethiopia)	To assess healthcare professionals' intention to use eLearning-based CPD and its predictors in Amhara region referral hospitals, in Ethiopia.	Cross-sectional study (Mar 28–Apr 28, 2023) with 976 healthcare professionals selected via proportional allocation and random sampling; UTAUT2 framework applied; structured questionnaire (5% pretest); data analyzed using EpiData 4.6, SPSS 26 (descriptive), and AMOS 23 SEM (relationships).	Factor related CPD: perceived importance of training outcomes, resource availability, technical support for CPD implementation, personal motivation, ease of use of facilities.

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(Author, Year) (Country)	Purpose	Method	Results
(Allvin et al., 2020) (Sweden)	1) to describe registered nurses' self-assessment of clinical competence as well as the need for further training, and, 2) to explore possible differences between registered nurses with varying lengths of professional experience as a nurse (≤ 0.5 year, > 0.5–5 years, and ≥ 6 years.	A cross-sectional survey design was applied, using the Professional Nurse Self-Assessment Scale of clinical core competencies II. Registered nurses (n = 266) working in medical and surgical contexts in hospitals in Sweden responded (response rate 51%). Independent student t-test and analysis of variance were carried out.	Factor related CPD: work environment support, evaluation/application of training outcomes, length of work experience, training relevance to needs.
(Jakobsson et al., 2023) (Sweden)	To explore the work conditions that influence the op-portunities for professional development of specialist nurses in surgical care.	With a purposeful sampling procedure, 14 specialist nurses in surgical care were included. Four focus-group interviews were conducted during November to December 2021 and deductively analysed using the Job Demand-Resource theory as a guiding framework. Reporting adheres to COREQ guidelines.	Factor related CPD: time constraints, personal motivation, managerial support, peer support. high workload and staff shortage.
(Campos-Zamora et al., 2022) (Mexico)	Explored the barriers that health professionals in a rural healthcare context faced participating in CPD activities and their preferences regarding educational strategies to over-come these challenges.	This mixed-methods (exploratory sequential) study in a community hospital in rural Mexico includes 22 interviews, 3 focus groups, 40 observational hours, and a questionnaire of healthcare staff.	Factor related CPD: personal motivation, training relevance to needs, lack of resources/facilities, leadership support, absence of training coordinator, work hours, type of training, high interest and awareness of learning importance, unsupportive interprofessional environment, high workload and staff shortage.

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DISCUSSION

This scoping review identified three key factors influencing the implementation of Continuing Professional Development (CPD) among nurses: motivation and barriers to participation, nurse's perceptions of CPD shaped by its implementation and outcomes, and the impact of working conditions. These findings are crucial for understanding the complex and multifaceted nature of CPD engagement, offering insights into how individual, organizational, and systemic factors interact to shape nurses' professional development.

The scoping review identified motivation and barriers as a central theme influencing nurses participation in CPD. This theme encompasses both internal and external motivational factors, as well as personal and financial barriers that shape engagement in CPD activities. Internal motivation was consistently reported across the included studies as a strong driver of CPD participation. Nurses are motivated by their need for knowledge, personal growth, professional development, and awareness of the importance of lifelong learning. These findings align with adult learning theory, which emphasizes intrinsic motivation such as learning interest and self-satisfaction as a key factor in adult education (Zhang, van Lieshout, Colizoli, Li, Yang, Liu, & Bekkering, 2025). Importantly, the review found that length of work experience and high interest in learning positively influence CPD participation, suggesting that motivation may increase with professional maturity (Friedman, 2023). This implies that experienced nurses may perceive CPD as more relevant and valuable to their clinical practice, reinforcing the role of professional identity in lifelong learning.

External motivators also play a significant role in encouraging CPD engagement. These include financial incentives, recognition, and career advancement opportunities. Organizational support through reward systems and promotion pathways can enhance nurses motivation by aligning CPD with tangible professional benefits (Hakvoort et al., 2022).

Despite strong motivational factors, several personal barriers were identified that hinder CPD participation. These include fatigue, time constraints, postponement due to workload, and technological competency gaps. These barriers reflect the challenges nurses face in balancing clinical responsibilities with professional development, and the impact of emotional exhaustion and work-life imbalance on CPD engagement (Mlambo et al., 2021).

Financial barriers emerged as significant constraints to CPD participation, particularly in low-resource settings. Nurses frequently cited costs associated with training fees, travel, and accommodation as limiting factors. These financial challenges contribute to inequities in access to CPD, disproportionately affecting nurses in remote or underserved areas. To address these disparities, there is a pressing need for cost-efficient and accessible CPD models such as online learning platforms, mobile based training, and subsidized programs that can bridge the gap and promote inclusive professional development (Alayande, Forbes, Kingpriest, Adejumo, Williams, Wina, & Isichei, 2024; Hu, Bai, Mo, Ma, Ding, Zhou, & Ma, 2025).

Building upon the previous theme on motivation and barriers, the second theme highlights how nurses perceptions of CPD, shaped by their experiences with its implementation and outcomes, play a critical role in influencing future participation. Nurses do not passively accept CPD programs. Rather, they actively evaluate the quality, relevance, and accessibility of both past and upcoming training before deciding to engage. A key factor shaping these perceptions is the implementation of CPD programs. Nurses assess whether the training is conventional or user-centered, the clarity of its format, and the effectiveness of its content and methodology. These findings align with a research which emphasized that interactive methods, updated materials, and technology integration can enhance nurses engagement and perception of CPD (Lubis, Purba, Aldona, Dina, & Siregar, 2024).

The relevance of training topics also significantly affects participation. Nurses are more likely to engage in CPD when the content addresses current clinical needs and professional challenges. Conversely, outdated or overly theoretical content can lead to disengagement and a reduced perceived value of CPD. These findings underscore the

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importance of designing CPD programs that are dynamic and responsive to evolving healthcare demands. In addition, the availability and quality of training resources and facilities such as access to e-learning platforms, technological infrastructure, and flexible scheduling were found to be essential for effective CPD implementation. Supportive learning environments and the presence of training coordinators further facilitate participation (Mustapa, Teo, Rahman, Mumin, & Rahman, 2021).

Moreover, nurses perceptions of CPD outcomes, including the applicability of training to clinical practice and its perceived benefits, influence their motivation to engage in future programs. When outcomes are seen as meaningful and impactful, CPD is viewed as a valuable investment in professional development. However, a lack of evaluation and support for applying learning outcomes remains a major barrier to CPD implementation (Al-Omary, Soltani, Stewart, & Nazar, 2024).This theme reinforces the idea that CPD implementation is not only a matter of program availability, but also of how it is experienced and perceived by nurses. These insights are essential for designing CPD initiatives that are both effective and engaging.

Following the discussion on CPD implementation and outcomes, the third theme explores the role of working conditions in shaping nurses engagement in CPD. This factor emerged as a critical determinant of nurses engagement in professional learning. The findings highlight that elements such as workload, work hours, leadership support, and work environment significantly influence nurses ability and willingness to participate in CPD activities. Workload and time constraints were consistently reported as major barriers. High patient loads, staff shortages, and demanding schedules limit opportunities for nurses to engage in CPD. These findings are consistent studies which emphasized that lack of time especially when training overlaps with clinical duties is one of the most persistent challenges in CPD implementation. Without structural adjustments to workload and scheduling, participation in CPD is likely to remain limited (Wehabe, Gebretensaye, & Bizuwork, 2024; Hamukoto, Ashipala, Muhora, & Amadhila, 2025).

Leadership support plays a pivotal role in facilitating CPD. The presence of proactive and supportive nurse managers can foster a culture of continuous learning and motivate nurses to pursue professional development. Adaptive leadership strategies are essential to overcoming organizational barriers and promoting CPD (Kurtović et al., 2024; Ominyi, Nwedu, Agom, & Eze, 2025). Furthermore, institutional policies that mandate or encourage CPD participation can strengthen its implementation and sustainability. In addition to leadership, a supportive work environment including peer encouragement, access to technical resources, and the presence of role models also contributes to CPD engagement. A positive environment not only facilitates learning but also helps nurses overcome psychological and logistical barriers. Informal learning through mentorship and peer support can be instrumental in sustaining CPD participation (Watson, Young, Whitham, Prescott, & Flynn, 2025; Jackson & Manley, 2022). Organizational culture and resource availability are key enablers of effective CPD (Mlambo et al., 2021).

This theme underscores that successful CPD implementation requires not only individual motivation and program quality, but also structural and cultural support within the workplace. Addressing these organizational factors is essential to ensure that CPD is accessible, sustainable, and impactful for nurses across diverse clinical settings.

CONCLUSION

This scoping review identified three factors shaping nurses' participation in Continuing Professional Development (CPD): motivation, program quality, and workplace conditions. Intrinsic drivers (knowledge, growth, maturity) and extrinsic incentives (financial rewards, career advancement) promote engagement, while personal and financial barriers limit access. Nurses' perceptions depend on program relevance, structure, and resource support, with outdated or poorly delivered training reducing participation. Workload, time constraints, leadership, and organizational culture further influence engagement. Effective CPD requires holistic strategies that align individual needs, ensure program relevance, and foster supportive environments for continuous learning.

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