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REVIEW

Acceptance of Electronic Medical Records Among Practitioner Nurses and Nurse Managers Using the UTAUT Framework in Hospital Settings: A Scoping Review

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Background: The implementation of Electronic Medical Record (EMR) represents a strategic effort to improve efficiency, accuracy, and coordination in healthcare services. However, the success of EMR adoption is strongly influenced by user acceptance, particularly among practitioner nurses and nurse managers who are directly involved in documentation processes and clinical decision-making. The Unified Theory of Acceptance and Use of Technology (UTAUT) has been widely applied to understand the determinants of technology acceptance in various healthcare contexts, including hospitals.

Objective: This scoping review aims to map the factors influencing EMR acceptance among practitioner nurses and nurse managers using the UTAUT framework.

Methods: A scoping review was conducted following Arksey and O'Malley's methodological framework and reported in accordance with PRISMA-ScR guidelines. Literature searches were performed in PubMed, EBSCOhost, and ScienceDirect using keywords related to "Electronic Medical Record", "UTAUT", and "nurses". Eligible studies were analyzed thematically based on the four primary UTAUT constructs: performance expectancy, effort expectancy, social influence, and facilitating conditions.

Results: Ten eligible studies were included, with most studies treating nurses as a homogeneous group and only limited evidence differentiating practitioner nurses and nurse managers. The dominant factors influencing EMR acceptance included perceived usefulness for work performance, ease of system use, social support from leadership and peers, and the availability of organizational resources and training. Differences in perceptions were found between practitioner nurses and nurse managers, particularly regarding facilitating conditions and social influence.

Conclusion: This scoping review identified performance expectancy, organizational support, and infrastructure readiness as key factors commonly reported in the literature in relation to nurses' acceptance of EMR. Managerial strategies may focus on enhancing digital competencies, ensuring adequate technical support, and promoting active engagement of nursing personnel in the digitalization of clinical documentation.

Keywords: electronic medical record, nurses, nurse managers, UTAUT, scoping review

Introduction

The digital transformation of healthcare services has become a global priority aimed at improving efficiency, accuracy, and the quality of patient care. One of the most significant components of this transformation is the Electronic Medical Record (EMR), which replaces traditional paper-based documentation with an integrated digital platform.[1] Although the terms Electronic Medical Record (EMR) and Electronic Health Record (EHR) are often used interchangeably, they represent distinct concepts in international contexts. EMR generally refer to digital patient records used within a single healthcare organization, whereas EHR are designed to support interoperability and information exchange across multiple

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institutions. In this review, the term EMR is used to describe hospital-based digital documentation systems that primarily support internal clinical workflows.[2]

EMR provide practitioner nurses with real-time access to comprehensive patient information, facilitate information sharing across care teams, and, through integrated clinical decision-support tools, strengthen interprofessional collaboration and evidence-based clinical decision-making.[3–5] Numerous studies have shown that the implementation of EMR improves documentation accuracy, reduces redundant data entry, and accelerates the clinical workflow.[6] Additionally, EMR play a vital role in enhancing patient safety by minimizing medication errors, ensuring data continuity, and supporting timely clinical interventions.[6,7]

EMR in nursing activities are particularly critical due to nurses represent the largest proportion of healthcare professionals and are the most frequent users of these systems. Practitioner nurses depend on EMR for real-time documentation, medication administration, and care planning, while nurse managers use them for monitoring quality indicators, staffing, and performance reporting.[8,9] Practitioner nurses refer to bedside or direct care nurses who are primarily responsible for providing clinical nursing care and documenting patient care activities in daily practice. However, nurses' participation in the design and implementation phases of EMR systems remains limited. Studies indicate that only 23% of vendors actively engage nurses during system development, often resulting in systems that do not align with nursing workflows.[7,10] Such misalignment contributes to increased documentation workload, reduced direct patient interaction, and lower job satisfaction, which may indirectly affect care outcomes.[9] Active involvement of nurses throughout EMR design and implementation is therefore essential to ensure that the system truly supports clinical practice and patient centered care.

Despite their recognized benefits, EMR implementations continue to face significant challenges in hospitals worldwide. A large proportion of health information technology implementation failures are now traced to human factors such as poor usability, misalignment with cognitive workflows, and organizational or sociocultural barriers rather than to purely technical shortcomings.[11–13] Common barriers include user resistance, inadequate training, workflow disruptions, and poor usability.[14,15] Furthermore, hospital digital maturity, including infrastructure readiness, system integration, and organizational support, has been identified as a critical contextual factor influencing the successful implementation and acceptance of EMR.[15] In many developing countries, these challenges are compounded by unstable digital infrastructure and limited technical resources.[6] These findings emphasize that barriers to EMR acceptance are multifactorial, arising not merely from technological constraints but from human, organizational, and contextual dimensions.

To understand these dimensions, the Unified Theory of Acceptance and Use of Technology (UTAUT) offers a comprehensive framework that identifies four key determinants of behavioral intention including, performance expectancy, effort expectancy, social influence, and facilitating conditions.[16] In nursing contexts, performance expectancy and effort expectancy have consistently emerged as the strongest predictors of EMR adoption.[17,18] However, most previous studies have conceptualized nurses as a relatively homogeneous group, and differences in roles, responsibilities, and expectations between practitioner nurses and nurse managers have not always been explicitly examined.[8,9] Practitioner nurses tend to focus on usability and efficiency in daily patient care, while nurse managers emphasize data integration, performance monitoring and quality improvement.[19,20] Empirical evidence that systematically differentiates the perspectives of these two nursing roles remains limited and is largely derived from single profession focused studies.

Therefore, this scoping review aims to map and describe the available empirical evidence on EMR acceptance among practitioner nurses and nurse managers using the UTAUT framework, and to identify patterns, variations, and research gaps in the existing literature, rather than to assess causal relationships or the strength of associations between variables. This review is expected to provide a theoretical foundation for developing role-specific and sustainable EMR implementation strategies. In the current era of rapid healthcare digitalization, strengthening nurses' acceptance of EMR is crucial not only for improving workflow efficiency but also for ensuring patient safety and optimizing the overall quality of hospital care.

Methods

Study Design

This study employed a *scoping review* design guided by the methodological framework developed by Arksey and O'Malley (2005) and reported in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension

for Scoping Reviews (PRISMA-ScR) guidelines. All reporting items recommended in the PRISMA-ScR checklist were followed in this review. Consistent with the purpose of a scoping review, this study aimed to map, describe, and synthesize existing evidence rather than to assess the effectiveness of interventions or establish causal relationships. The primary focus of this review was to describe the factors that influence EMR acceptance among practitioner nurses and nurse managers using the UTAUT framework. The research questions guiding this review are: (1) What are the factors influencing nurses' acceptance of EMRs in hospitals based on the UTAUT framework? and (2) How are the perceptions of practitioner nurses and nurse managers represented in the literature regarding the adoption and acceptance of EMRs?

Search Strategy

A literature search was conducted through PubMed, EBSCOhost, and ScienceDirect using the keywords "Electronic Medical Record", "UTAUT", and "Nurses". These keywords were adapted to Medical Subject Headings (MeSH) terms to identify relevant synonyms and broaden the search coverage. These databases were selected because they provide broad coverage of peer-reviewed literature in healthcare, nursing, and health information systems relevant to the topic of EMR acceptance among nurses. The detailed search strategy, including keyword combinations and Boolean operators, is provided in Table S1. The search was performed on October 30, 2025.

No additional publication year restrictions were applied beyond the search date because studies examining EMR acceptance among nurses using the UTAUT framework are relatively limited. Therefore, all relevant studies available up to the search date were considered. In addition, manual screening of the reference lists of included articles was conducted to identify potentially relevant studies that may not have been captured through the database searches.

Eligibility Criteria

The inclusion criteria were established using the PCC (Population, Concept, Context) framework to ensure alignment with the aim of this review. The population included nurses working in hospital settings, encompassing practitioner nurses and nurse managers, regardless of educational background, years of experience, or clinical department. The concept was EMR acceptance, defined as nurses' willingness, perceptions, and intentions to adopt and use electronic systems for clinical documentation and information management. Only studies that explicitly applied the UTAUT framework, including its four core constructs (performance expectancy, effort expectancy, social influence, and facilitating conditions), were included to ensure theoretical consistency. The context comprised hospital environments, including general, specialized, and teaching hospitals in both public and private healthcare sectors. The exclusion criteria included studies that were not published in English, were conducted outside hospital settings, did not involve nursing populations, or did not explicitly apply the UTAUT framework in their analytical approach. In addition, grey literature such as theses, dissertations, conference proceedings, and institutional reports was excluded to ensure that the review focused on peer-reviewed empirical studies.

Data Extraction

The data selection and extraction process was carried out by two independent reviewers (YL and HRA). Duplicate articles were identified using Mendeley as a reference management tool and further verified manually. The selection process included title and abstract screening, assessment of full-text availability, and full-text review based on the predetermined inclusion and exclusion criteria.

Data extraction was performed manually using Microsoft Excel through a structured tabulation process. The extracted variables included first author and year of publication, study objectives, study design, population and setting, sample size, participants' age, gender, years of work experience, and country of origin. All extracted data were organized systematically to facilitate subsequent analysis and synthesis.

Data Analysis and Synthesis

Data analysis and synthesis were conducted using a narrative approach guided by the UTAUT framework. This approach was employed to systematically map and synthesize empirical evidence on factors influencing the acceptance of EMR among practitioner nurses and nurse managers in hospital settings.

Extracted data from each included study were analyzed deductively and categorized according to the four core UTAUT constructs, namely performance expectancy, effort expectancy, social influence, and facilitating conditions. This analytical process enabled the identification of recurring patterns, contextual variations, and role-based differences between practitioner nurses and nurse managers as reported across the included studies.

To enhance analytical rigor and ensure consistency of interpretation, the synthesis process involved iterative discussions among the reviewers until consensus was reached regarding thematic classification and interpretation of findings. The synthesized results are presented in a structured descriptive narrative, supported by thematic tables summarizing study characteristics and UTAUT-related determinants of EMR acceptance. This approach aligns with the objectives of a scoping review, which aims to map existing evidence, clarify key concepts, and identify knowledge gaps rather than to evaluate intervention effectiveness.

Result

Study Selection

This review yielded a total of 274 articles from databases. After removing 3 duplicates, 271 records were screened by title and abstract, resulting in 55 articles selected for full-text review. Of these, 45 studies were excluded for not meeting the eligibility criteria, with the most common reason being the absence of the UTAUT model application (n = 19). Thereby, 10 studies met all inclusion criteria and were incorporated into the final synthesis. The overall study selection process is illustrated in the PRISMA flow diagram (Figure 1).

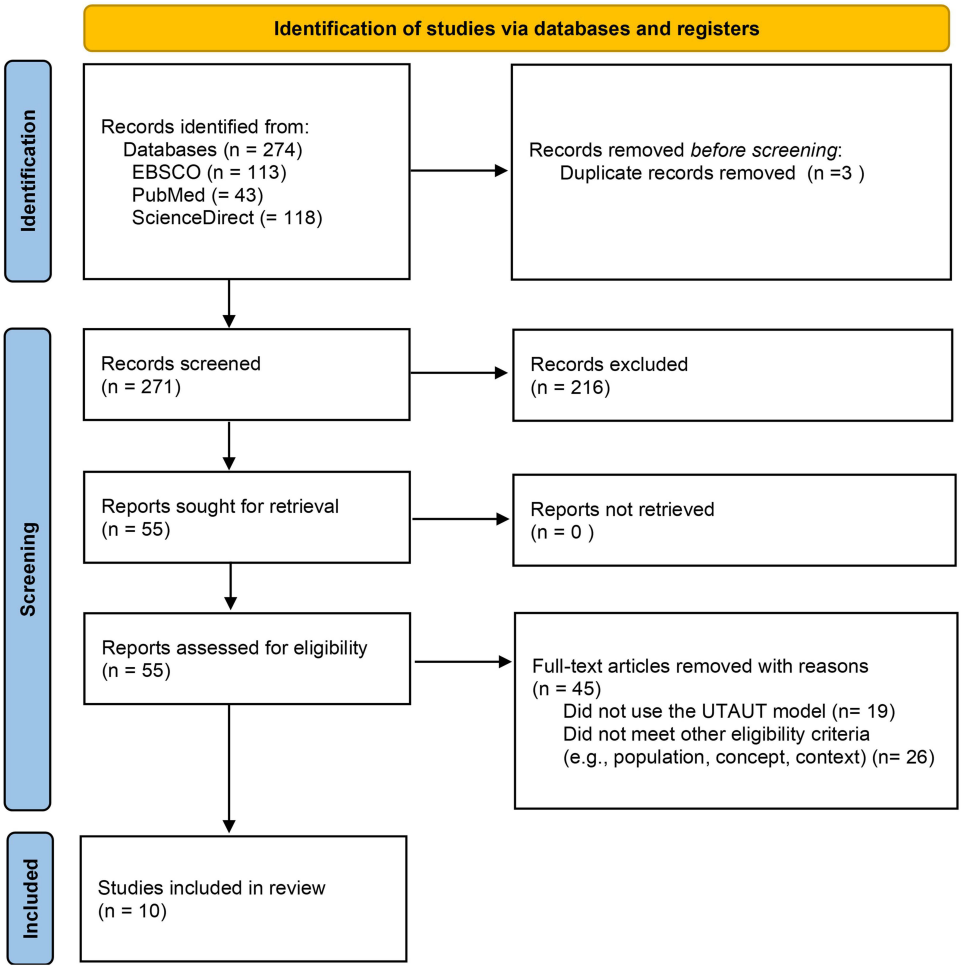

Figure 1 Study selection process based on PRISMA-ScR guidelines.

Characteristic of Included Studies

Detailed characteristics of the ten included studies are presented in Table 1. The studies were published between 2010 and 2024, indicating sustained scholarly interest in EMR acceptance among nurses over the past decade. Geographically, the studies were conducted across diverse regions, including the United States (n = 1), Iran (n = 2), Switzerland (n = 1), Germany (n = 1), South Korea (n = 2), the Netherlands (n = 1), Slovenia (n = 1), and Italy (n = 1). The study designs varied, with cross-sectional quantitative studies (n = 5) being the most frequently employed. Other designs included mixed-methods studies (n = 2), qualitative research (n = 1), descriptive surveys (n = 1), and pre–post intervention studies (n = 1). Most studies primarily involved practitioner nurses working in clinical settings such as emergency, acute care, and medical–surgical units. Participants were predominantly female, reflecting the general demographic profile of the global nursing workforce. However, detailed reporting of participants' age and years of professional experience was limited in several studies, restricting direct demographic comparisons. Overall, the included studies demonstrate substantial variability in study settings, designs, and participant characteristics while consistently addressing factors related to EMR acceptance within hospital nursing contexts. The detailed characteristics of the included studies are summarized in Table 1.

Table 1 Characteristics of the Included Studies

Study	Country	Study Aim	Design	Population & Setting	Sample Size	Age/Gender/ Experience	Main Findings (UTAUT Constructs)
Ehrler et al[21]	Switzerland	To evaluate nurses' acceptance of a mobile EMR system using the UTAUT framework	Cross-sectional	Practitioner nurses in a tertiary hospital	114	Mostly female; aged 25–45; mean experience 10 years	Performance Expectancy and Effort Expectancy were reported in relation to nurses' intention to use mobile EMRs, particularly regarding perceived efficiency and ease of use.
Cho et al[22]	South Korea	To examine factors influencing nurses' intention to use EMR-integrated clinical decision support systems on UTAUT	Cross-sectional	Nurses from multiple hospital departments	257	Predominantly female; mean age 32; mean experience 8 years	Performance Expectancy, Social Influence, and Facilitating Conditions were frequently described as influencing nurses' intention to use EMR-based CDSS.
Sharifian et al[17]	Iran	To identify determinants of hospital information system acceptance among nurses using UTAUT.	Cross-sectional	Nurses from three general hospitals	218	Majority female; 5–15 years of experience	Performance Expectancy and Effort Expectancy were commonly associated with nurses' intention to use hospital information systems.
Sheikhtaheri et al[23]	Iran	To explore nurses' and nurse managers' perceptions of EMR adoption based on UTAUT.	Mixed-methods design	Practitioner nurses and nurse managers in teaching hospitals	180	Not specified; includes both roles	Social Influence and Facilitating Conditions were highlighted, particularly leadership support and training quality, in relation to EMR adoption.

(*Continued*)

Table 1 (Continued).

Study	Country	Study Aim	Design	Population & Setting	Sample Size	Age/Gender/ Experience	Main Findings (UTAUT Constructs)
Vollmer et al[24]	Germany	To analyze nurses' acceptance of EMR and mobile documentation tools using UTAUT variables.	Pre–post intervention	Nurses in an acute care hospital	142	Mostly female	Effort Expectancy and Facilitating Conditions were reported to improve following EMR implementation and training.
Kim et al[25]	South Korea	To assess factors affecting adoption of mobile EMR among healthcare professionals using UTAUT and TAM.	Cross-sectional	Physicians and nurses in a university hospital	449	Not specified; 68% nurses	Performance Expectancy was prominently described in relation to intention to use mobile EMRs.
Kooij et al[20]	Netherlands	To evaluate acceptance of mHealth technology and self-management apps among COPD patients and nurses using UTAUT.	Mixed-methods	COPD patients and pulmonary nurses in a teaching hospital	39 patients, 3 nurses	Not specified	Effort Expectancy and Social Influence were described in relation to initial system use.
Hvalic-Touzery et al[26]	Slovenia	To assess nurses' digital readiness and EMR acceptance in public hospitals.	Descriptive survey	Nurses in regional hospitals	327	Predominantly female; broad age range	Facilitating Conditions and digital competence were reported as influencing EMR acceptance.
Walzer et al[1]	United States	To identify organizational and individual factors influencing EMR acceptance among practitioner nurses.	Cross-sectional	Nurses in a university hospital	210	Not specified	Performance Expectancy and Social Influence were frequently described, particularly management support.
Barchielli et al[27]	Italy	To explore differences in perceived benefits of digitalization between practitioner and managerial staff.	Qualitative exploratory	Nurses and nurse managers in hospitals	28	Not specified	Role-based differences were described in perceived Effort Expectancy and Facilitating Conditions.

Factors Associated with Electronic Medical Record Acceptance Among Nurses

Table 2 synthesizes the thematic classification of factors influencing nurses' acceptance of electronic medical records based on the UTAUT framework. The table outlines how Performance Expectancy relates to perceptions of improved efficiency, documentation quality, and patient safety; Effort Expectancy reflects ease of use, system intuitiveness, and the time required for adaptation; Social Influence encompasses managerial support, peer encouragement, and an innovation-driven organizational culture; and Facilitating Conditions captures the availability of training, technical assistance, infrastructure, and institutional resources. Additionally, demographic variables such as age, work experience, and digital competence are identified as moderating factors that may affect acceptance levels. Collectively, these themes illustrate

Table 2 Thematic Classification of Factors Influencing Nurses' Acceptance of Electronic Medical Records Based on the UTAUT Framework

UTAUT Construct	Sub-Themes/Specific Factors	Brief Explanation	Supporting Studies
Performance Expectancy	• Perceived improvement in work efficiency • Enhanced documentation quality and patient safety • Support for practitioner decision-making	Nurses are more likely to accept EMR systems when they believe the technology improves productivity, reduces errors, and enhances care quality.	Sharifian et al[17] Ehrler et al[21] Cho et al[22] Walzer et al[1] Kim et al[25]
Effort Expectancy	• Ease of use and intuitive interface • Minimal learning curve • Integration with practitioner workflow	The perceived simplicity of EMR systems positively influences adoption, particularly among nurses with high workloads or limited digital literacy.	Sharifian et al[17] Vollmer et al[24] Kooij et al[20] Ehrler et al[21]
Social Influence	• Leadership and managerial support • Peer encouragement and professional norms • Organizational culture toward innovation	Social and managerial support strengthen nurses' confidence and motivation to use EMR systems effectively.	Sheikhtaheri et al[23] Cho et al[22] Walzer et al[1] Barchielli et al[27]
Facilitating Conditions	• Availability of technical support and training • Adequate infrastructure and system access • Organizational policies and resource allocation	Organizational readiness including infrastructure, policies, and continuous training plays a crucial role in successful EMR implementation.	Vollmer et al[24] Sheikhtaheri et al[23] Hvalic-Touzery et al[26] Cho et al[22]
Demographic Factors (Additional)	• Age • Gender • Work experience • Digital competence	Demographic variables act as moderating factors; younger nurses and those with higher digital skills tend to show greater EMR acceptance.	Barchielli et al[27] Hvalic-Touzery et al[26] Walzer et al[1]

how individual, organizational, and technological factors interact to shape nurses' readiness and intention to adopt EMR systems, as summarized in Table 2.

Discussion

This scoping review mapped ten studies that examined the acceptance of EMR among hospital nurses using the UTAUT framework. The synthesis mapped that Performance Expectancy (PE) and Effort Expectancy (EE) were the most frequently reported UTAUT constructs examined in relation to nurses' intention to use EMR across the included studies. This finding aligns with the core theoretical propositions of UTAUT[16] and with previous empirical studies,[17,21,22] which have commonly described nurses' EMR use as being associated with perceptions of improved work efficiency, reduced documentation burden, and ease of use within clinical workflows.

A key contribution of this review lies in identifying a persistent research gap related to role-based differences among nursing professionals. Of the ten studies analyzed, eight treated nurses as a homogeneous group, focusing mainly on practitioner nurses without differentiating their roles from nurse managers. Only two studies, explicitly included nurse managers in their samples. Both studies reported differences in perceived benefits of EMR use between practitioner nurses and nurse managers. In the included studies, nurse managers described EMR as tools that support performance monitoring, quality reporting, and data-driven decision-making. In contrast, practitioner nurses in these studies reported that EMR use was associated with increased documentation workload and reduced time for direct patient interaction.[23] These findings indicate that most studies discuss EMR implementation without explicitly differentiating between practitioner nurses and nurse managers.

However, it is important to emphasize that conclusions regarding role-based differences should be interpreted with caution. Given that only a small subset of the included studies explicitly differentiated practitioner nurses and nurse managers, the observed distinctions represent emerging patterns rather than established empirical findings. This limitation reflects a structural constraint of the current evidence base and restricts the strength of comparative inferences that can be drawn. Accordingly, role-based differences in EMR acceptance should be framed as hypothesis-generating observations rather than

definitive conclusions, underscoring the need for future studies that deliberately and systematically compare nursing roles within a unified analytical framework.

The synthesis further identified several enabling and inhibiting factors influencing EMR acceptance among nurses. The most frequently reported barriers included complex system interfaces, non-intuitive navigation, and high documentation workload.[22,24] These barriers were reported in the included studies as factors related to lower Effort Expectancy and reduced intention to use EMR, particularly among nurses with limited digital competence. Moreover, inadequate training and a lack of workflow-aligned system design were repeatedly mentioned as factors linked to lower levels of acceptance and sustained use.[26]

Conversely, organizational and leadership support emerged as a major facilitating factor, aligning with the Facilitating Conditions (FC) construct of UTAUT. Studies by Sheikhtaheri et al and Simona Hvalic-Touzery et al[23,26] emphasized that such support extends beyond providing technological infrastructure to include needs-based training, active nurse leadership involvement, and an innovation friendly organizational culture Across the included studies, participatory leadership approaches were described in several studies as being linked to more positive perceptions of EMR use and greater user engagement.

Beyond the core UTAUT constructs, several studies highlighted the role of demographic factors as additional variables influencing EMR acceptance. Barchielli et al and Simona Hvalic-Touzery et al[26,27] reported patterns suggesting that younger nurses and those with higher digital literacy showed stronger intentions to adopt EMR In contrast, older nurses or those with longer professional experience were more resistant to technological changes, often preferring manual documentation methods. Wynn et al[28] described similar tendencies, noting that longer work experience can reinforce negative perceptions toward new systems when adaptive training is limited. These demographic characteristics were described in the included studies as contextual factors that may influence EMR acceptance.

Importantly, recent conceptual advances in nursing informatics suggest that EMR acceptance should not be viewed solely as a behavioral or organizational issue, but also as an epistemic challenge concerning which forms of clinical knowledge are rendered visible, actionable, and valued within digital systems. Contemporary literature indicates that EMR and EHR architectures often prioritize administratively tractable or technically measurable data, while clinically meaningful dimensions of nursing care such as clinical judgment, patient surveillance, and relational care remain underrepresented or flattened within standardized data structures.[29] From this perspective, the integration of standardized nursing terminologies into EMR systems has been shown to enhance the representation of nursing complexity and latent clinical risks, enabling nursing knowledge to be more accurately captured and operationalized within digital infrastructures.[29] Framing EMR acceptance in this way highlights that resistance may reflect not only usability or readiness issues, but also tensions related to whose clinical reasoning is encoded, amplified, or constrained by digital documentation systems.[29]

In summary, the findings of this review underscore that EMR acceptance among nurses is shaped not only by technological aspects but also by human, organizational, social, and epistemic factors. The findings highlight the importance of considering role differentiation (practitioner versus managerial), digital competence, and individual experience when examining EMR acceptance among nurses. These considerations may support more effective EMR adoption in hospital settings. Future research should further explore how demographic moderators interact with the core UTAUT constructs to provide a more comprehensive understanding of EMR acceptance dynamics within nursing populations.

Implications for Practice

The successful implementation of EMR is not determined solely by the quality of the technology itself but is strongly shaped by user readiness and organizational support. Consistent with the findings of this review, facilitating conditions and performance expectancy emerged as key determinants of EMR acceptance across the majority of included studies, particularly among practitioner nurses.[1,17,21,22]

First, ongoing technical support plays a critical role in fostering a sense of security among staff nurses. Technical challenges (eg., system errors, slow network performance, or navigation difficulties) are common sources of resistance to EMR use. Several studies included in this review reported that insufficient technical support directly weakened facilitating conditions, leading to frustration and reduced intention to use EMR.[23,24] Evidence shows that responsive IT support significantly enhances facilitating conditions and improves user experience, thereby promoting sustained system use.[14,20]

Having IT personnel available during peak clinical hours allows issues to be resolved promptly, ensuring continuity of care and efficient clinical workflows.

Second, engaging staff nurses in providing feedback on interface design, menu structure, and documentation flow promotes a sense of ownership and strengthens their behavioral intention to continue using EMR. This implication is grounded in findings related to effort expectancy, where ease of use and workflow alignment were repeatedly identified as critical factors influencing acceptance.[17,20,21] Research consistently highlights that health technologies are more effective when end-users are involved in design and evaluation processes.[10,27] In the included studies, systems perceived as misaligned with nursing workflows were associated with lower effort expectancy and higher resistance,[21,24] underscoring the importance of participatory system refinement.

Moreover, nurse managers play a strategic leadership role in ensuring effective EMR implementation. The review findings indicate that social influence and facilitating conditions are particularly salient among nurse managers, positioning them as key change agents in EMR adoption.[23] The planning phase is fundamental, requiring managers to conduct a thorough needs assessment of each unit, identify potential barriers, and evaluate staff digital readiness. Evidence indicates that technology implementation is more successful when user needs are evaluated prior to system rollout.[27,28]

Managers are responsible for routine monitoring and evaluation, including documentation audits to ensure adherence to standards and patient safety protocols. This aligns with the finding that nurse managers tend to perceive EMR primarily as tools for performance monitoring, quality reporting, and organizational oversight rather than direct clinical support.[23] Manager engagement in ongoing monitoring has been shown to improve documentation quality, reduce errors, and minimize clinical risks associated with inaccurate digital records.[1,9]

To support long-term EMR use, managers must also facilitate continuous training. Across multiple included studies, limited or one-time training was identified as a barrier that negatively affected both effort expectancy and facilitating conditions, particularly among older nurses and those with longer professional experience.[24,26,27] Research suggests that single-session training during initial implementation is insufficient, particularly for senior nurses who may face greater challenges in adapting to digital tools.[26,28] Regular training ensures that nurses' digital competencies remain current and aligned with ongoing system updates.

Infrastructure optimization also falls under the scope of managerial responsibilities. System performance, including device availability, network stability, and access speed, forms an essential component of facilitating conditions and significantly influences EMR adoption.[15,17] Evidence from the reviewed studies demonstrates that inadequate infrastructure weakens nurses' perceptions of organizational support, thereby reducing acceptance even when perceived usefulness is high.[1,26] Evidence also emphasizes that user participation in revising system features increases acceptance and reduces resistance to new technologies.[10,14] Participatory evaluation promotes continuous system improvement and reinforces a culture of collaboration within nursing units.

Limitations

This review has several limitations that should be considered when interpreting its findings. Most of the included studies employed a cross-sectional design, which limits the ability to establish causal relationships between the constructs of the UTAUT framework and nurses' acceptance of EMR. Moreover, there was notable heterogeneity in study designs, sample sizes, and measurement instruments across the included studies, which may affect the consistency and comparability of the results. Although the literature search was conducted systematically across three major databases PubMed, ScienceDirect, and EBSCOhost the number of relevant studies remained limited, as the inclusion criteria were restricted to research explicitly applying the UTAUT framework. Additionally, to ensure theoretical consistency, only studies that explicitly applied the UTAUT framework were included. While this approach strengthened conceptual coherence, it may have resulted in the exclusion of studies that examined conceptually related factors such as technology acceptance, perceived usefulness, ease of use, or organizational facilitators without formally referencing UTAUT. This methodological decision represents a trade-off between theoretical rigor and breadth of evidence and should be considered when interpreting the scope and findings of this review.

A further important limitation relates to the assessment of role-based differences between practitioner nurses and nurse managers. Although exploring such differences was identified as a key objective of this review, only a small proportion of the

included studies explicitly distinguished these roles in their analyses. As a result, conclusions regarding role-specific patterns of EMR acceptance are constrained by the limited availability of role-differentiated evidence and should be interpreted as preliminary rather than definitive. This represents a structural limitation of the current evidence base and restricts the strength of comparative inferences that can be drawn.

In addition, most of the included studies were conducted in high and upper middle-income countries such as the United States, South Korea, Switzerland, and Italy, with limited representation from low and middle-income settings. This geographic imbalance may constrain the generalizability of the findings to healthcare systems with different levels of digital maturity and resource availability. Furthermore, demographic characteristics such as age, gender, and years of experience were often not reported in detail, preventing a deeper analysis of their moderating effects on EMR acceptance. Future research should expand geographical scope, include diverse healthcare contexts, and adopt both quantitative and qualitative approaches to develop a more comprehensive understanding of EMR acceptance among practitioner nurses and nurse managers.

Conclusion

This review highlights the importance of understanding the factors influencing the acceptance of EMR among practitioner nurses and nurse managers using the UTAUT framework. The synthesis of evidence indicates that Performance Expectancy and Effort Expectancy are the most consistent predictors of nurses' behavioral intention to use EMR, while Social Influence and Facilitating Conditions serve as supporting factors that strengthen technology acceptance.

The findings emphasize that the successful implementation of EMR depends not only on technological aspects but also on individual readiness, organizational support, and effective nursing leadership. Nurses are more likely to accept and use EMR when systems are designed according to their practical needs and supported by role-specific training programs. Future research should expand its geographical scope, incorporate qualitative approaches, and consider demographic factors such as age, work experience, and digital competence to better explain EMR acceptance among nurses.

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Disclosure

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