



Exploring Healthcare Workers' Readiness And Acceptance Of Electronic Medical Record Implementation

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Abstract. This study aims to explore healthcare workers' readiness and acceptance toward the implementation of Electronic Medical Records (EMR) using a qualitative approach. A descriptive exploratory design was employed to gain an in-depth understanding of healthcare workers' experiences and perceptions. Data were collected through semi-structured in-depth interviews with healthcare workers, including doctors, nurses, and medical record staff, selected using purposive sampling. The data were analyzed using thematic analysis. The findings revealed that healthcare workers generally have positive perceptions of EMR, particularly in improving efficiency, data accuracy, and quality of healthcare services. However, variations in acceptance and readiness were identified, influenced by factors such as perceived usefulness, perceived ease of use, organizational support, and individual technological readiness. Several challenges were also found, including limited training, technical issues, and inadequate infrastructure. The results are interpreted using the Technology Acceptance Model (TAM), Theory of Planned Behavior (TPB), and Technology Readiness Index (TRI), which provide a comprehensive understanding of factors influencing EMR implementation. This study highlights the importance of system usability, organizational support, and continuous training in enhancing healthcare workers' readiness and acceptance. Strengthening these aspects is essential to ensure effective and sustainable EMR implementation in healthcare settings.

Keywords: *Electronic Medical Records, Healthcare Workers, Technology Acceptance, Technology Readiness, Health Systems.*

INTRODUCTION

The advancement of information technology has brought significant changes to healthcare systems, particularly through the digitalization of health data. One form of this transformation is the implementation of Electronic Medical Records (EMR), which enables more efficient, integrated, and accurate management of patient data. EMRs not only function as a data storage system but also support clinical decision-making, improve patient safety, and enhance the overall quality of healthcare services (Pertwi et al., 2025). In Indonesia, the implementation of EMRs has been increasingly encouraged by government policies as part of the national digital health transformation. These policies aim to improve the quality of healthcare services and ensure better integration of health information systems. However, the implementation of EMRs in healthcare facilities still faces various challenges, including technical, organizational, and human resource-related issues (Suparlan et al., 2025).

Several studies have shown that the success of EMR implementation is not only determined by technological readiness but is also highly influenced by human factors, particularly healthcare workers as the primary users of the system. Healthcare workers' readiness includes their ability to use technology, understanding of the system, and the availability of organizational support. Healthcare professionals with better knowledge and skills tend to be more prepared to implement EMRs effectively (Hossain et al., 2024).

In addition to readiness, user acceptance is a crucial factor in the successful implementation of EMRs. Healthcare workers' acceptance is influenced by several factors, such as perceived usefulness, ease of use, and support from the working environment. On the other hand, common barriers include limited technological skills, lack of training, and inadequate infrastructure (Pratama, 2024). Other studies indicate that EMR implementation in Indonesia still encounters various obstacles, such as user resistance, limited facilities, suboptimal standard operating procedures (SOPs), and technical system issues. These conditions suggest that some healthcare facilities are not fully prepared to adopt EMR systems optimally (Pertiwi et al., 2025; Suparlan et al., 2025).

Furthermore, the success of EMR implementation largely depends on the integration of technology, human resources, and organizational factors. Management support, continuous training, and information system readiness are essential in improving healthcare workers' acceptance and use of EMRs (Hossain et al., 2024). Based on these findings, although EMRs offer significant benefits in improving healthcare quality, their implementation still faces various challenges, particularly related to healthcare workers' readiness and acceptance. Therefore, it is necessary to conduct a study that explores in depth the experiences, perceptions, and factors influencing healthcare workers' readiness and acceptance of EMR implementation. Thus, this study aims to explore healthcare workers' readiness and acceptance toward the implementation of Electronic Medical Records in healthcare facilities.

LITERATURE REVIEW

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) is widely used to understand how users accept and interact with new technologies. In this study, TAM is applied as a conceptual framework to explore healthcare workers' perceptions and experiences regarding Electronic Medical Records (EMR). The key constructs of TAM perceived usefulness and perceived ease of use are used to guide qualitative exploration. Perceived usefulness refers to how healthcare workers perceive the benefits of EMR in improving efficiency and quality of care, while perceived ease of use reflects their experience in operating the system and the challenges encountered. Recent studies show that healthcare workers' perceptions of usefulness and ease of use significantly influence their engagement with EMR systems and their willingness to adopt them in clinical practice (Ondogan et al., 2023).

Theory of Planned Behavior (TPB)

The Theory of Planned Behavior (TPB) explains that behavior is influenced by intention, which is shaped by attitude toward behavior, subjective norms, and perceived behavioral control. In this qualitative study, TPB is used to explore social and psychological factors affecting healthcare workers' acceptance of EMR. Attitude reflects healthcare workers' positive or negative views toward EMR usage. Subjective norms refer to social influences, such as support from colleagues, supervisors, and organizational policies. Perceived behavioral control relates to the extent to which healthcare workers feel capable of using EMR, including access to training and technical support. Recent research highlights that factors such as digital literacy,

organizational support, and social influence play a significant role in shaping healthcare workers' intention to use EMR systems (Wan Mamat et al., 2024).

Technology Readiness Index (TRI)

The Technology Readiness Index (TRI) is used to understand individuals' readiness to adopt new technologies. In this study, TRI is applied qualitatively to explore healthcare workers' readiness based on their experiences and perceptions. TRI consists of four dimensions:

- a. Optimism (positive beliefs about technology)
- b. Innovativeness (tendency to try new technologies)
- c. Discomfort (feeling overwhelmed by technology)
- d. Insecurity (lack of trust in technology)

Recent studies indicate that readiness to adopt EMR is strongly influenced by healthcare workers' digital skills, organizational preparedness, and infrastructure availability. Lack of training and limited technological competence remain major barriers to readiness (Torkman et al., 2025; Fatmasari & Nadjib, 2023).

METHODS

This study employed a qualitative approach with a descriptive exploratory design to gain an in-depth understanding of healthcare workers' readiness and acceptance toward the implementation of Electronic Medical Records (EMR). This approach was chosen as it allows for a comprehensive exploration of participants' experiences, perceptions, and perspectives regarding factors influencing EMR implementation, such as perceived usefulness, ease of use, and the readiness of human resources and organizational support. The study was conducted in a healthcare facility located in the South Sumatra region. The participants consisted of healthcare workers directly involved in EMR usage, including doctors, nurses, and medical record staff, selected through purposive sampling based on specific criteria such as experience in using EMR systems.

The number of participants was determined based on data saturation, where no new information emerged. Data were collected through semi-structured in-depth interviews guided by concepts from the Technology Acceptance Model (TAM), Theory of Planned Behavior (TPB), and Technology Readiness Index (TRI), supported by observation and documentation as supplementary data sources. The researcher served as the primary instrument, assisted by recording devices and field notes. Data were analyzed using thematic analysis, including transcription, coding, categorization, and identification of key themes related to readiness and acceptance of EMR. Data validity was ensured through source and method triangulation as well as member checking, while ethical considerations were maintained by obtaining informed consent, ensuring confidentiality, and protecting participants' anonymity.

RESULTS

The findings of this study indicate that the implementation of Electronic Medical Records (EMR) is perceived variably among healthcare workers, which can be categorized into four main themes: perceived usefulness, perceived ease of use, organizational and social support, and technology readiness. Overall, most participants expressed positive perceptions toward EMR, particularly in terms of improving work efficiency and the quality of healthcare services. Participants reported that EMR facilitates faster and more integrated access to patient data, which enhances service delivery and supports more accurate clinical decision-making.

Table 1. Summary of Analysis Results

Main Theme	Analytical Findings	Interpretation	Example of Informant Statements
Perceived Usefulness	Most informants perceived EMR as beneficial in improving work efficiency and service quality	Indicates a high level of perceived usefulness as a key driver of acceptance	“With EMR, we can access patient history more quickly” (Informant 1)
Perceived Ease of Use	Ease of use varies depending on technological skills and user experience	Suggests that ease of use is influenced by digital literacy and training availability	“Once you get used to it, it is actually not too difficult” (Informant 2)
Organizational & Social Support	Training, facilities, and peer support play important roles in EMR implementation	Highlights the influence of external factors (TPB) on user acceptance	“If the hospital provides training, we understand the system better” (Informant 7)
Technology Readiness	Readiness differs among informants, influenced by skills, confidence, and attitudes toward technology	Reflects dimensions of technology readiness (optimism vs discomfort)	“I am still afraid

This is reflected in a participant’s statement, *“With EMR, we can access patient history more quickly, so we no longer need to search for manual records”* (Informant 1). In addition, EMR was perceived to improve the accuracy and organization of patient documentation, as expressed by another participant, *“Using an electronic system makes the data more organized and reduces the risk of writing errors”* (Informant 3). However, some participants noted that these benefits were not fully realized due to technical issues, such as system delays and errors, which could hinder service delivery, as one participant stated, *“Sometimes the system is slow or has errors, which actually delays our work”* (Informant 5). This suggests that perceived usefulness is influenced not only by the benefits of the system but also by its technical reliability.

Perceived ease of use varied among participants. Healthcare workers who were familiar with digital technology generally found EMR relatively easy to use and adaptable within a short period. This is illustrated by the statement, *“Once you get used to it, it’s actually not that difficult, it just requires some adjustment”* (Informant 2). In contrast, some participants experienced difficulties in operating the system, particularly those with limited technological skills. One participant explained, *“At the beginning, it was quite difficult, especially for those who are not used to using computers”* (Informant 4). Additionally, participants highlighted that the system interface was not always user-friendly and that insufficient training contributed to these challenges. This is supported by the statement, *“Training is still limited, so we mostly learn by ourselves”* (Informant 6). These findings indicate that ease of use is not solely dependent on system design but also on user competence and institutional support.

Organizational and social support emerged as significant factors influencing EMR implementation. Participants emphasized that management support, such as training provision, availability of facilities, and technical assistance, plays a crucial role in facilitating system use. One participant stated, *“When the hospital provides training, we understand better how to use the system”* (Informant 7). Furthermore, peer support was also important, as healthcare workers often relied on colleagues for assistance when encountering difficulties, as reflected in the

statement, *"If someone doesn't understand, we usually help each other"* (Informant 2). Nevertheless, some participants reported limitations in organizational support, particularly regarding infrastructure and unstable internet connectivity. As one participant mentioned, *"Sometimes the network is unstable, so the system cannot be used optimally"* (Informant 5). This highlights that successful EMR implementation depends not only on individual readiness but also on the organization's ability to provide a supportive environment.

Technology readiness among healthcare workers also showed considerable variation. Participants who had a positive attitude toward technology and a willingness to adapt were more prepared to use EMR and viewed technology as an essential part of modern healthcare services. This is reflected in the statement, *"I believe this technology is important, so we have to learn and adapt"* (Informant 1). On the other hand, some participants expressed a lack of confidence in using the system due to limited technological skills and experience. One participant stated, *"I'm still afraid of making mistakes when entering data because I'm not fully familiar with the system"* (Informant 4). Additionally, concerns regarding data security and system reliability were identified as barriers to readiness. As expressed by a participant, *"We are also concerned about patient data security if the system fails"* (Informant 6). These findings indicate that technology readiness involves not only technical competence but also psychological aspects such as trust and confidence in using technology.

Overall, the results suggest that healthcare workers generally have positive perceptions of EMR, particularly in terms of its benefits for improving efficiency and service quality. However, the level of acceptance and readiness is influenced by multiple factors, including ease of use, organizational support, and individual readiness to adopt technology. Key challenges identified include limited training, technical issues, and inadequate infrastructure. Therefore, comprehensive efforts addressing both technological and human resource aspects are necessary to support effective and sustainable EMR implementation.

DISCUSSION

Healthcare workers generally hold positive perceptions of Electronic Medical Records (EMR), particularly in terms of their contribution to increased efficiency and improved quality of healthcare services. These findings are in line with the Technology Acceptance Model (TAM), which emphasizes that technology adoption is influenced by perceived usefulness and perceived ease of use. In this study, most participants acknowledged that EMR facilitates faster access to patient data and improves documentation accuracy, reflecting a strong perception of usefulness. However, technical issues such as system errors and slow performance were reported to reduce the perceived benefits. This indicates that although EMR is considered useful, its effectiveness depends heavily on system reliability. In addition, differences in perceived ease of use were observed among participants. Those who were more familiar with digital technology found EMR easier to use, while others experienced difficulties due to limited training and non-user-friendly system interfaces. This supports TAM, which states that ease of use plays a crucial role in influencing users' acceptance of technology.

From the perspective of the Theory of Planned Behavior (TPB), the results show that behavioral intention to use EMR is shaped by attitude, subjective norms, and perceived behavioral control. Participants demonstrated positive attitudes toward EMR, recognizing its importance in modern healthcare practices. Subjective norms were reflected through the influence of colleagues and organizational policies, where support from peers and management encouraged the use of the system. The presence of collaborative practices among healthcare workers also indicates the role of social influence in shaping behavior. However, perceived behavioral control varied among participants, particularly due to differences in technological skills and access to training. Participants who felt confident in using EMR were more likely to adopt the system, while those with limited skills expressed hesitation and anxiety. These

findings suggest that strengthening users' competence and providing sufficient support are essential to enhance perceived control and encourage system adoption.

In relation to the Technology Readiness Index (TRI), the findings reveal that healthcare workers' readiness to adopt EMR is influenced by both positive and negative dimensions of technology readiness. Participants who showed optimism and innovativeness were more willing to accept and adapt to EMR, viewing it as a valuable tool in healthcare services. Conversely, discomfort and insecurity were also identified among some participants, particularly those who lacked confidence in using digital systems or were concerned about data security and system reliability. These findings indicate that readiness is influenced not only by technical capability but also by psychological factors such as trust and confidence. The presence of these barriers highlights the need for continuous training, technical assistance, and assurance regarding system security to improve readiness among healthcare workers.

The integration of TAM, TPB, and TRI in this study provides a comprehensive understanding of healthcare workers' readiness and acceptance of EMR. TAM explains the role of perceived usefulness and ease of use, TPB highlights the influence of social and behavioral factors, and TRI emphasizes individual readiness toward technology. The findings suggest that successful EMR implementation requires a reliable and user-friendly system, strong organizational support, and continuous efforts to improve users' skills and confidence. Without addressing these aspects, EMR implementation may not achieve optimal utilization in healthcare settings.

CONCLUSION

This study explored healthcare workers' readiness and acceptance toward the implementation of Electronic Medical Records (EMR) using a qualitative approach. The findings indicate that healthcare workers generally perceive EMR as beneficial in improving efficiency, data accuracy, and the quality of healthcare services. However, the level of acceptance and readiness varies depending on several factors, including perceived ease of use, organizational support, and individual technological competence.

Challenges such as limited training, technical system issues, and inadequate infrastructure were identified as barriers that may hinder the optimal implementation of EMR. In addition, differences in technological readiness among healthcare workers highlight the importance of addressing both technical and psychological aspects, including confidence, trust, and adaptability toward new technologies.

The application of TAM, TPB, and TRI in this study provides a comprehensive understanding of the factors influencing EMR implementation. These findings suggest that successful implementation of EMR requires not only a reliable and user-friendly system but also strong organizational support, continuous training, and efforts to enhance healthcare workers' readiness and acceptance. Future efforts should focus on improving system usability, strengthening infrastructure, and providing ongoing training and support to ensure effective and sustainable EMR implementation in healthcare settings.

LIMITATION

This study has several limitations that should be considered when interpreting the findings. First, the use of a qualitative approach with a limited number of participants may restrict the generalizability of the results to broader healthcare settings. The findings are context-specific and reflect the experiences and perceptions of healthcare workers within a particular setting.

Second, the data were collected through self-reported interviews, which may be subject to response bias, including social desirability bias, where participants may provide answers they

perceive as favorable rather than fully reflecting their actual experiences. Additionally, variations in participants' communication abilities may influence the depth and clarity of the data obtained.

Third, this study focused primarily on healthcare workers' perspectives and did not include other stakeholders, such as hospital management, IT staff, or policymakers, who may also play significant roles in EMR implementation. Including multiple perspectives could provide a more comprehensive understanding of the implementation process.

Finally, the study did not examine the technical performance of the EMR system in detail, such as system quality, interoperability, or security mechanisms, which may also influence user acceptance and readiness. Despite these limitations, this study provides valuable insights into healthcare workers' readiness and acceptance of EMR implementation, particularly from a qualitative perspective.

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