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Disparity Between Electronic Medical Record Knowledge and Documentation Compliance Among Physicians

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ABSTRACT
The implementation of Electronic Medical Records (EMR) has become a national priority in Indonesia as part of healthcare digitalization efforts. Successful EMR implementation requires not only technological readiness but also adequate user knowledge and compliance with documentation procedures. Physicians play a critical role in ensuring the completeness and accuracy of EMR data, which directly affects healthcare quality and continuity of care. This study aimed to analyze the relationship between physicians' knowledge of Electronic Medical Records and their compliance with EMR documentation at Gunung Jati Regional Hospital, Cirebon City, Indonesia. An analytical quantitative study with a cross-sectional design was conducted among physicians using the EMR system at Gunung Jati Regional Hospital. A total sampling technique was applied, involving 50 physicians who met the inclusion criteria. Primary data were collected using a structured questionnaire administered through Google Forms. The questionnaire consisted of 18 items assessing EMR knowledge and 13 items measuring compliance with EMR documentation. Data were analyzed using univariate statistics to describe respondent characteristics and study variables, while Spearman's rank correlation test was employed to examine the relationship between EMR knowledge and documentation compliance. Most respondents demonstrated a good level of knowledge regarding EMRs and were categorized as compliant with EMR documentation requirements. The findings indicate that physicians generally possess adequate understanding of EMR concepts, functions, benefits, and documentation procedures. However, Spearman correlation analysis revealed no statistically significant relationship between EMR knowledge and compliance with EMR documentation. These results suggest that compliance behavior is influenced not only by knowledge but also by other factors, including organizational support, supervision, workload, system usability, and workplace culture. In conclusion, physicians at Gunung Jati Regional Hospital generally exhibited good knowledge of EMR and high compliance with EMR documentation. Nevertheless, knowledge level was not significantly associated with compliance behavior.
Keywords: electronic medical records; knowledge; documentation compliance; physicians

INTRODUCTION
Electronic Medical Records (EMR) are defined as digital systems used to create, manage, and store patients' health information. These systems are specifically designed to facilitate administrative and clinical processes that were previously performed manually, including patient identification data, examination results, medical procedures, prescribed treatments, and other healthcare services received by patients. The implementation and management of EMR involve various healthcare professionals, including general practitioners, specialists, dentists, and other medical personnel directly engaged in patient care [1].

The transition to electronic documentation systems has emerged in response to the rapid advancement of digital technology, which has increasingly transformed healthcare service delivery. The Indonesian Ministry of Health required all healthcare facilities to implement EMR by the end of 2023 and further targeted full EMR integration across all hospitals by 2024. However, evidence from the field suggests that these objectives have not been fully achieved. This situation is reflected in the issuance of a circular letter in March 2025 that emphasized the acceleration of EMR implementation and data integration into the national SATUSEHAT platform. The circular extended compliance deadlines according to hospital classifications, allowing six months for Type A and Type B hospitals and twelve months for Type C and Type D hospitals [2].

Human resource factors, particularly knowledge, digital literacy, and motivation, play a crucial role in determining the successful implementation of EMR [2]. In the context of EMR utilization, compliance refers to the conscious adherence to established regulations and instructions regarding EMR documentation and is theoretically influenced by an individual's level of knowledge [3]. Compliance is particularly important because incomplete or inaccurate EMR documentation may compromise the validity and reliability of data integrated into the national SATUSEHAT platform.

Previous studies have demonstrated that EMR implementation is associated with increased workload and higher stress levels among healthcare professionals, particularly physicians. This condition is related to physicians' responsibilities in obtaining patient histories, conducting physical examinations, making clinical decisions, and documenting all relevant information comprehensively within the EMR system [4].

Theoretically, individual behavior and actions are strongly influenced by knowledge. Knowledge is considered a fundamental domain in shaping attitudes, which subsequently affect practices and behavioral outcomes. In a professional context, adequate knowledge regarding the functions, benefits, and procedures of EMR use is expected to foster awareness and discipline, thereby enhancing physicians' compliance with EMR documentation requirements [3].

A study conducted by Azzahra et al. (2025) reported that EMR implementation in public health centers in Cirebon City achieved a very good assessment score of 84.7%, with perceived usefulness at 90%, perceived ease of use at 78%, behavioral intention at 88%, and actual system use at 83%. These findings indicate that when users understand both the benefits and operational procedures of EMR, system implementation becomes more effective. This evidence supports the assumption that a higher level of knowledge contributes positively to compliance with electronic medical record documentation [53].

Physicians' knowledge of medical records refers to their understanding of the procedures, standards, and importance of completing medical records accurately and comprehensively. This level of knowledge directly influences the quality of medical record documentation. Compliance, in this context, refers to the extent to which healthcare personnel adhere to established procedures and standards in completing medical records. High compliance ensures that all required information is documented correctly and comprehensively [6].

Several previous studies have identified a significant relationship between knowledge of EMR and compliance-related behaviors among healthcare professionals [7]. However, other studies have reported contradictory findings, indicating that a high level of knowledge does not

necessarily guarantee compliance. These inconsistencies suggest that the relationship between knowledge and compliance in the context of EMR implementation is complex and warrants further investigation.

Gunung Jati Regional Hospital is one of the healthcare institutions that has implemented an EMR system to enhance healthcare quality, improve the efficiency of medical documentation, and support hospital management information systems. The implementation of EMR is expected to assist physicians in recording patient information more accurately, comprehensively, and promptly while facilitating healthcare delivery and clinical decision-making processes.

Given these circumstances, compliance with EMR documentation requirements, particularly regarding completeness, timeliness, and authentication, is essential for supporting healthcare quality and ensuring smooth hospital administrative operations. Therefore, this study was conducted to determine and analyze the relationship between EMR knowledge and compliance with EMR documentation among physicians at Gunung Jati Regional Hospital. The findings are expected to provide a basis for evaluating and improving the EMR documentation system in the future. To date, no study has specifically examined physicians' knowledge of EMR and their compliance with EMR documentation practices at Gunung Jati Regional Hospital.

METHODS

This study was conducted at Gunung Jati Regional Hospital, Cirebon City, Indonesia, among physicians utilizing the EMR system. Data collection was carried out after obtaining ethical approval and institutional permission from the hospital. This study was conducted in accordance with established ethical principles for human subject research. Ethical clearance was obtained prior to data collection. All respondents were provided with information regarding the study objectives, procedures, potential benefits, and their rights as participants, and informed consent was obtained before participation. The principles of voluntary participation, anonymity, confidentiality, and data privacy were strictly maintained throughout the study to ensure the protection of respondents' personal information and research data.

An analytical quantitative study with a cross-sectional design was employed to examine the relationship between physicians' knowledge of EMRs and their compliance with EMR documentation. The cross-sectional approach enabled the measurement of both variables simultaneously within a single period of observation. The study population consisted of all physicians using the EMR system at Gunung Jati Regional Hospital. A total sampling technique was applied, whereby all eligible physicians who met the inclusion and exclusion criteria were invited to participate. Consequently, a total of 50 physicians were included as study respondents.

The independent variable was physicians' level of knowledge regarding EMR, while the dependent variable was compliance with EMR documentation. Primary data were collected using a structured, closed-ended questionnaire administered through Google Forms. The questionnaire comprised two sections. EMR knowledge questionnaire consisted of 18 items designed to assess respondents' understanding of EMR concepts, functions, benefits, procedures, and documentation requirements. Knowledge scores were calculated and categorized as: good knowledge: 76%-100%; moderate knowledge: 56%-75%; and poor knowledge: 0%-55%. EMR documentation compliance questionnaire consisted of 13 items evaluating respondents' adherence to established standards and procedures for EMR completion. Compliance was classified as compliant: score ≥75% and non-compliant: score <75%.

The collected data were analyzed using both descriptive and bivariate statistical methods. Descriptive analysis was performed to describe respondents' characteristics and the distribution of study variables using frequencies, percentages, and descriptive statistics. Bivariate analysis was conducted using the Spearman rank correlation test to determine the relationship between physicians' knowledge of EMR and their compliance with EMR documentation. A significance level of $p < 0.05$ was used to determine statistical significance.

RESULTS

Based on Table 1, the majority of physicians were female (56%). Regarding professional competence, most physicians were general practitioners (54%). In terms of age, the largest proportions of physicians were found in the 24-29 years and 30-34 years age groups (48%). Overall, the physicians profile was predominantly characterized by female physicians, general practitioners, and individuals aged between 24 and 34 years.

As shown in Table 2, the median EMR knowledge score was 16, with scores ranging from 12 to 18. The median was selected as the measure of central tendency because the normality test indicated that the knowledge variable was not normally distributed. Based on the classification results, the majority of respondents demonstrated a good level of EMR knowledge (90.0%). These findings indicate that most physicians at Gunung Jati Regional Hospital possess adequate knowledge regarding EMR, including their concepts, functions, benefits, and operational procedures in supporting healthcare service delivery.

Based on Table 3, the mean score of EMR documentation compliance was 45.94, with a standard deviation of 4.863. The mean was used as the measure of central tendency because the compliance variable was normally distributed according to the results of the normality test. The categorization analysis revealed that most respondents were classified as compliant with EMR documentation requirements (86.0%). These results suggest that physicians at Gunung Jati Regional Hospital generally demonstrate a high level of compliance with EMR documentation standards. The high compliance rate indicates

Table 1. Distribution of gender, professional category, and age among physicians at Gunung Jati Regional Hospital, Cirebon in 2025

Characteristic	Category	Frequency	Percentage
Gender	Male	22	44.0
	Female	28	56.0
Professional Category	Specialist physician	23	46.0
	General practitioner	27	54.0
Age (years)	24-29	12	24.0
	30-34	12	24.0
	35-39	10	20.0
	40-44	8	16.0
	45-50	8	16.0

Table 2. Distribution of EMR knowledge levels among physicians at Gunung Jati Regional Hospital, Cirebon in 2025

Knowledge	Frequency	Median	Minimum-maximum	Percentage
Good	45	16	12-18	90.0
Moderate	5			10.0
Poor	0			0.0

Table 3. Distribution of compliance with EMR documentation among physicians at Gunung Jati Regional Hospital, Cirebon in 2025

Compliance	Frequency	Mean	Standard deviation	Percentage
Compliant	43	45.94	4.863	86.0
Non-compliant	7			14.0

that the EMR system has been successfully integrated into routine clinical documentation practices and effectively supports medical service documentation within the hospital.

Table 4. Relationship between EMR knowledge and compliance with EMR documentation among physicians at Gunung Jati Regional Hospital, Cirebon in 2025

Variable	Correlation coefficient (r)	p-value	Interpretation
EMR knowledge and EMR documentation compliance	0.058	0.691	No statistically significant relationship

Based on Table 4, the Spearman rank correlation analysis yielded a correlation coefficient of 0.058 and a p-value of 0.691. Since the p-value exceeded the predetermined significance level of 0.05, there was no statistically significant relationship between physicians' EMR knowledge and their compliance with EMR documentation at Gunung Jati Regional Hospital. Although the correlation coefficient was positive, its magnitude (r = 0.058) indicated a very weak positive correlation. This finding suggests that a higher level of knowledge regarding EMRs was not significantly associated with increased compliance in completing EMR documentation among physicians in this study. Therefore, the null hypothesis was accepted. Overall, the results indicate that although the majority of physicians demonstrated both good knowledge and high compliance regarding EMR implementation, knowledge alone was insufficient to explain variations in compliance behavior. Other factors, such as workload, organizational support, system usability, monitoring mechanisms, and physicians' attitudes toward EMR use, may play a more substantial role in influencing compliance with EMR documentation practices.

DISCUSSION

EMR knowledge among physicians

The present study found that most physicians at Gunung Jati Regional Hospital, Cirebon City, demonstrated a good level of knowledge regarding EMR. The 90.0% physicians were classified as having good knowledge. These findings indicate that the majority of physicians had a sound understanding of EMR concepts, benefits, regulatory requirements, and documentation procedures. The high level of knowledge observed in this study suggests that EMR implementation at Gunung Jati Regional Hospital has been accompanied by a successful adaptation process among healthcare professionals, enabling physicians to develop adequate competencies in the use of the system.

Theoretically, knowledge is one of the fundamental factors influencing human behavior [21,22]. Knowledge is acquired through sensory experiences that subsequently develop into understanding and become the basis for decision-making and action [23]. Individuals with a higher level of knowledge tend to be more receptive to change, including the transition toward digital healthcare systems such as EMR [24]. Therefore, the high proportion of physicians with good knowledge in the present study indicates that both institutional socialization activities and practical experience with EMR use have contributed substantially to respondents' understanding of the system.

The findings of this study are consistent with those reported by Widyaningrum et al., who found that most physicians possessed good knowledge of EMR and were therefore able to understand their functions, benefits, and documentation procedures in patient care [25]. Such knowledge was influenced by practical experience with the system and hospital policies mandating EMR utilization in daily clinical practice [26]. These findings indicate that consistent implementation of EMRs can enhance healthcare professionals' understanding of the system and its application in clinical settings [27].

Similarly, Putri et al. reported that healthcare professionals generally demonstrated good knowledge of EMR, which was associated with greater readiness to utilize electronic systems [28]. Their study emphasized that training programs, socialization efforts, and direct experience with the system were important factors contributing to better understanding and facilitating adaptation to EMR implementation.

Comparable findings have also been reported in systematic reviews of EMR implementation in Indonesia, which identified human resource readiness as one of the key determinants of successful EMR adoption [29]. Hospitals that provide continuous training and technical support to healthcare professionals tend to achieve higher levels of digital literacy, thereby facilitating more effective EMR implementation [30].

Nevertheless, the results of the present study are not entirely consistent with findings from other settings. Several studies of EMR implementation in Indonesian hospitals have reported considerable variability in healthcare professionals' knowledge levels, largely attributable to differences in training opportunities, digital literacy skills, and technological readiness across healthcare facilities [31]. Such limitations may hinder healthcare professionals from fully understanding all EMR features despite the formal implementation of the system [32].

Other studies have also reported that healthcare professionals' understanding of EMR is often limited during the early stages of implementation [33]. Limited experience with electronic systems, inadequate technical assistance, and resistance to organizational change may slow the adaptation process and result in varying levels of user knowledge [34].

In addition, several investigations have identified technological infrastructure, internet connectivity, and organizational support as ongoing challenges to EMR implementation [35]. These barriers may impede learning opportunities and constrain the development of healthcare professionals' competencies in system utilization [36].

The discrepancy between the present findings and previous studies may be attributed to institutional characteristics. Gunung Jati Regional Hospital has implemented EMR for an extended period, allowing physicians to become familiar with the system through routine clinical practice. Repeated use of the system enables physicians to gain practical experience, which contributes to increased knowledge concerning EMR functions, benefits, and documentation procedures [37]. Furthermore, national regulations, particularly the Indonesian Ministry of Health Regulation No. 24 of 2022, have encouraged healthcare facilities to strengthen EMR implementation and provide opportunities for healthcare professionals to enhance their competencies [38].

In the researchers' opinion, the high level of physician knowledge observed in this study can be attributed not only to formal educational backgrounds but also to professional experience, frequency of EMR use, internal hospital socialization programs, and mandatory EMR utilization in clinical services. Frequent interaction with EMR systems allows physicians to develop a deeper understanding of system features, benefits, and governing regulations. Therefore, practical experience serves as an effective learning mechanism for improving healthcare professionals' EMR-related knowledge.

Based on these findings, hospitals should continue to strengthen competency development programs through regular training sessions, updated educational materials aligned with evolving regulations, technical support for new users, and periodic evaluations of healthcare

professionals' understanding of EMR utilization. Such measures are necessary to maintain and further enhance the already favorable level of knowledge and to support optimal EMR implementation in healthcare services.

Compliance with EMR documentation among physicians

The findings revealed that most physicians at Gunung Jati Regional Hospital demonstrated a high level of compliance with EMR documentation requirements. The 86.0% physicians were categorized as compliant. These findings indicate that physicians generally completed EMR documentation in accordance with applicable hospital regulations and standards. The high level of compliance further suggests that EMR have been widely accepted by physicians as an integral component of routine healthcare delivery.

Compliance with EMR documentation is an essential indicator of healthcare quality [39]. Complete, timely, and accurate medical records not only serve as documentation of clinical services but also support continuity of care, interprofessional communication, quality assurance activities, reimbursement processes, and legal protection for both healthcare professionals and healthcare institutions [40]. Consequently, a high level of compliance reflects the effectiveness of clinical documentation practices within the hospital setting.

According to Ajzen's Theory of Planned Behavior (TPB), individual behavior is influenced by behavioral intention, which is itself shaped by attitudes toward the behavior, subjective norms, and perceived behavioral control [38]. In the context of the current study, physicians' compliance with EMR documentation may be influenced not only by their knowledge but also by hospital regulations, organizational support, system usability, and professional responsibilities toward patient care [41]. Compliance should therefore be understood as the result of interactions among multiple determinants.

The findings are consistent with those reported, who found high levels of EMR documentation compliance among healthcare professionals in private hospitals [42]. Their study emphasized that standard operating procedures (SOPs), strong managerial commitment, and routine evaluations of medical record completeness contributed significantly to sustaining compliance among healthcare personnel.

Similarly, Purwaningrum reported that attending physicians were more likely to comply with EMR documentation requirements when hospitals implemented integrated EMR systems [43]. However, the study still identified incomplete medical summaries in some cases, indicating that compliance is influenced not only by individual willingness but also by workload and case complexity.

Comparable findings were reported by Ayuni et al., who concluded that EMR implementation can improve documentation quality when supported by a stable system, continuous training, and strong commitment among healthcare professionals to utilize the system effectively [31]. Their findings suggest that successful EMR implementation depends not only on technological factors but also on users' compliance in documenting patient information completely and promptly.

Conversely, several studies have reported different findings. Olakotan et al. observed that EMR utilization could increase physicians' workload because electronic documentation often requires more time than conventional paper-based systems [44]. Such conditions may contribute to fatigue among healthcare professionals and subsequently reduce compliance, particularly in high-volume clinical settings.

Likewise, Erawantini et al. reported that incomplete medical records continue to occur even in healthcare facilities utilizing electronic systems. The most frequently cited causes of non-compliance included limited time, excessive workload, inadequate monitoring, and an underdeveloped documentation culture within healthcare organizations [45].

Hartati also found that EMR implementation does not automatically improve healthcare professionals' compliance. Although electronic systems generally improve documentation completeness compared with manual records, incompleteness may persist due to human factors, established work habits, and insufficient managerial supervision [46].

These differences may be attributed to variations among healthcare institutions. Hospitals differ in organizational policies, information technology infrastructure, organizational culture, and monitoring systems. Institutions conducting regular medical record audits and operating stable information systems generally achieve higher levels of compliance than facilities still undergoing early-stage EMR implementation. Furthermore, differences in patient volume, physician workload, and service complexity may influence compliance behavior.

In the researchers' opinion, the high compliance observed among physicians at Gunung Jati Regional Hospital may result from the combined influence of mandatory EMR utilization, internal hospital regulations, and increased awareness of the importance of complete medical documentation. Physicians likely recognize that EMR completion extends beyond administrative obligations and constitutes an essential component of professional responsibility for ensuring patient safety, continuity of care, and legal protection in the event of future medical disputes.

Although compliance levels were high in this study, continuous quality improvement efforts remain necessary. Strategies such as regular medical record audits, constructive feedback to physicians, enhancement of system usability through more user-friendly interfaces, and periodic training programs should be maintained to preserve and further improve compliance. Moreover, hospital management support in providing reliable technological infrastructure remains crucial for facilitating optimal EMR documentation practices.

Relationship between EMR knowledge and compliance with EMR documentation among physicians

The bivariate analysis revealed a correlation coefficient of 0.058 and p-value of 0.691, so no statistically significant relationship was identified between physicians' knowledge of EMR and their compliance with EMR documentation. Furthermore, the correlation coefficient indicated a very weak positive association, suggesting that the relationship between the two variables lacked practical and statistical significance.

These findings indicate that good knowledge of EMR does not necessarily result in higher documentation compliance. Although most respondents demonstrated good knowledge, the observed variation in compliance could not be explained by knowledge alone. This finding suggests that compliance behavior is multifactorial and influenced by numerous determinants beyond cognitive factors [47].

The findings can be interpreted within the framework of Ajzen's Theory of Planned Behavior [48]. According to this theory, behavior is influenced not only by knowledge but also by attitudes, subjective norms, and perceived behavioral control [49]. Consequently, a physician may possess extensive knowledge of EMRs but still exhibit inconsistent compliance if confronted with excessive workload, inadequate information systems, or insufficient organizational oversight. Knowledge therefore represents only one component contributing to compliance behavior.

The present findings are also consistent with Notoatmodjo's health behavior model, which identifies knowledge as a predisposing factor rather than a sole determinant of behavior. Behavioral outcomes are additionally influenced by enabling factors, such as the availability of facilities and infrastructure, and reinforcing factors, including organizational policies, supervision, and workplace support. Therefore, high levels of knowledge may not necessarily translate into consistent compliance when supporting and reinforcing factors are inadequate.

The present findings are supported by Darabi et al., who reported that healthcare professionals' compliance with EMR documentation was more strongly influenced by organizational factors. Routine supervision, leadership commitment, periodic evaluations, and clearly defined standard operating procedures were found to have greater effects on compliance than individual knowledge levels [16]. Similarly, Uktuvia et al. emphasized

that successful EMR implementation results from the interaction among human resource readiness, information system quality, managerial support, and organizational culture [50]. While knowledge constitutes an important prerequisite, it is insufficient to guarantee successful implementation in the absence of a stable system and a supportive work environment. Ayuni et al. likewise argued that EMR implementation requires a multidimensional approach. In addition to improving users' competencies, healthcare organizations should simultaneously strengthen technical infrastructure, provide continuous training, and establish effective evaluation mechanisms to sustain compliance over time [31].

However, the findings differ from those reported by Noviarti et al., who identified a significant relationship between knowledge level and physicians' EMR documentation behavior. Their study found that physicians with higher knowledge levels were more likely to comply with EMR documentation requirements [51]. Such differences may be attributable to variations in respondent characteristics, measurement instruments, and behavioral indicators used across studies. Tsehay & Matlhaba also reported that better knowledge was associated with greater readiness among healthcare professionals to adopt EMRs. Although their outcome variable differed from that investigated in the present study, the findings suggest that knowledge remains an important determinant of technology acceptance, particularly during the early phases of implementation [52]. Likewise, Muhtaruddin et al. found that enhanced knowledge of medical record management was associated with greater compliance with standard operating procedures. Their study emphasized that understanding regulations and documentation procedures may increase healthcare professionals' awareness of the importance of proper medical record completion [53].

Several explanations may account for the differences between the present findings and those reported in previous studies. First, knowledge levels among respondents were highly homogeneous, with 90% classified as having good knowledge. This limited variability may have reduced the ability to detect statistically significant associations. Second, compliance may be more strongly influenced by organizational factors, including hospital policies, monitoring systems, organizational culture, time availability, workload, and system usability, than by individual knowledge alone. Third, the use of self-administered questionnaires may have introduced social desirability bias, whereby respondents provided answers reflecting ideal rather than actual behaviors.

In the researchers' opinion, the absence of a significant association between knowledge and compliance does not imply that knowledge is unimportant for EMR implementation. Rather, the findings suggest that knowledge has already reached a relatively high level among most physicians and therefore no longer serves as a differentiating factor influencing compliance. Under such circumstances, factors such as organizational culture, leadership, supervision systems, application usability, clinical workload, and intrinsic motivation may exert a greater influence on physicians' compliance behavior.

Based on these findings, interventions aimed at improving EMR compliance should extend beyond knowledge enhancement through training alone. Hospitals should also strengthen supervision systems, conduct regular medical record audits, improve application interfaces to enhance usability, provide feedback based on audit results, and foster a patient safety culture that recognizes medical documentation as an integral component of healthcare quality. Such a comprehensive approach is expected to promote sustainable improvements in physician compliance and support the long-term success of EMR implementation at Gunung Jati Regional Hospital, Cirebon City.

CONCLUSION

Most physicians at Gunung Jati Regional Hospital, Cirebon City, demonstrated a good level of knowledge regarding EMRs and showed high compliance with EMR documentation practices. However, the study found no statistically significant relationship between physicians' knowledge of EMRs and their compliance with EMR documentation. These findings suggest that although knowledge is an important foundation for EMR implementation, it is not the sole determinant of documentation compliance. Physician compliance appears to be influenced by a broader range of factors, including organizational support, supervision mechanisms, workload, system usability, and workplace culture.

The findings imply that efforts to improve EMR documentation compliance should not focus exclusively on enhancing physicians' knowledge through training and educational programs. Healthcare institutions should also strengthen organizational and system-related factors that support compliance, such as regular medical record audits, effective monitoring and feedback systems, user-friendly EMR interfaces, adequate technical support, and a supportive organizational culture. A comprehensive approach that integrates individual, organizational, and technological factors is essential to ensure the sustainability and effectiveness of EMR implementation and to promote high-quality healthcare services.

Ethical consideration, competing interest and source of funding

-All respondents were provided with information regarding the study objectives, procedures, potential benefits, and their rights as participants, and informed consent was obtained before participation. The principles of voluntary participation, anonymity, confidentiality, and data privacy were strictly maintained throughout the study to ensure the protection of respondents' personal information and research data.
-There is no conflict of interest related to this publication.
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