The use of nursing and pharmacy notes in electronic medical records for predicting patient outcomes: Review

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Abstract---**Background:** The integration of Electronic Medical Records (EMRs) in healthcare systems has revolutionized the management of patient information, enhancing efficiency and accessibility. This study explores the impact of EMRs on Clinical Safety Indicator (CSI) behavior among healthcare professionals, focusing on doctors and nurses, who play crucial roles in medical record creation and utilization. **Methods:** A comprehensive literature review was conducted to assess the prevalence of EMR usage, perceived benefits, concerns, and attitudes toward digital record-keeping. Data was collected to understand the relationship between EMR adoption, professional roles, and perceptions of data security and integrity. **Results:** Findings revealed a higher inclination of doctors towards EMR adoption compared to nurses, with concerns shared by both groups regarding data accessibility, reliability, and comprehensibility. Nurses tended to prefer traditional paper records, impacting their engagement with EMRs. Security and privacy concerns surrounding EMRs were highlighted, influencing professionals' trust in Health Information Systems (HIS) and data privacy safeguards. **Conclusion:** The study underscores the importance of addressing healthcare professionals' attitudes and concerns toward EMRs to enhance their integration and utilization. Improved training on digital healthcare systems and addressing data security issues are crucial for promoting EMR adoption and ensuring effective communication and collaboration among healthcare teams. Future research should focus on mitigating barriers to EMR use and enhancing trust in digital healthcare technologies.

Keywords---Electronic Medical Records, Clinical Safety Indicators, Healthcare Professionals, Data Security, Digital Healthcare.

1. Introduction

Digitalization, characterized as "the real-time collection, analysis, and application of digital data for specific objectives", is linked to enhanced efficiency, greater accessibility, and optimized resource utilization [1, 2]. The advancement of health information systems alongside the evolution of information and communication technologies, the necessity to assess health services comprehensively, and the COVID-19 pandemic revealing pre-existing obstacles in accessing medical records have expedited the development of digital hospital services (DHS) [3-5].

The Hospital Information System (HIS) is used to monitor patient status within healthcare organizations, maintain health records, and archive historical data for

further diagnosis, providing multi-center and multi-user access for the preservation and utilization of electronic medical records (EMRs) [6,7]. As the significance of information in corporate performance escalates, the emphasis on knowledge sharing as a mechanism for success and competitive advantage correspondingly intensifies [8]. Originally used for recordkeeping, EMRs are becoming more vital for the dissemination of medical information essential for the efficient provision of healthcare services, provided that access, quality, and security standards are satisfied within the DHS [9].

Electronic Medical Records (EMR), generated through the electronic documentation of routine procedures such as laboratory tests, imaging, nursing, billing, and pharmacology, about diagnostic and therapeutic activities within healthcare organizations or through manual data entry, constitute a fundamental element of the Digital Health System (DHS) [10-14]. Created across various departments, at disparate times, and by diverse healthcare professionals, EMRs facilitate multi-center and multi-user access to the storage and utilization of health records, significantly contributing to the delivery of treatment services, patient follow-up, and remote management of chronic conditions; disease detection and classification; enhancement of clinical decision-making; and the optimization of healthcare service efficiency [15].

Electronic Medical Records (EMR) facilitate integration among healthcare professionals and organizations by ensuring continuous documentation of data generated during treatment and adherence to standards [16-19]. They support health platforms, including telemedicine and e-health, by establishing a medical database. It minimizes expenses by optimizing resource use, mitigates waste, and enhances happiness among patients and employees [20-25]. Simultaneously, it establishes a legal safety net by documenting treatment and care services, providing legal protection for patients, healthcare professionals, and healthcare institutions as stakeholders in healthcare services.

Altering health practices via EMRs is perceived as a straightforward process with a clear, anticipated result; however, since it relies on a negotiation process among various health professionals, "digital health technologies do not ensure a favorable transformation in the health sector, as invisible labor is perpetually required for coordination and information dissemination" [2]. This "invisible labor" is diligently performed by healthcare professionals. The presence of proficient health staff capable of effective communication and information dissemination is crucial in the delivery of health services [26-28]. In a multidisciplinary healthcare team, proficient communication and collaboration skills, alongside effective coordination, are essential to avert redundancy and inconsistency in patient care, mitigate the financial strain caused by poor communication, and enhance operational efficiency, quality of care, job satisfaction, and patient safety [29-32]. Healthcare workers must interact successfully, share their expertise, and maintain open communication to function as a cohesive team [33]. Effective communication skills are essential for improving communication and coordination, resolving disputes, establishing problem-solving techniques, strengthening the performance of healthcare professionals, and contributing to the efficacy of care services [34-37].

Ensuring continuity in healthcare services and enhancing the clinical decision-making process necessitates prompt access to precise and enough data/information [16,23,28]. Currently, EMR enhances communication and the exchange of medical information among healthcare workers, particularly pharmacists, by providing enhanced communication, increased accessibility, and support for excellent treatment [12,31,38,39]. It enhances collaborative chances for obtaining essential healthcare data/information, diminishes the probability of adverse occurrences, and correlates with reduced morbidity levels [9]. Healthcare professionals experiencing communication and information overload may utilize wearable technologies and electronic medical records (EMRs) to enhance patient care, and their engagement with EMRs may alleviate the need for additional efforts to complete their responsibilities [40]. Utilizing EMR enhances the clarity of clinical notes and prompts, accelerates information interchange, enables immediate viewing, and provides access to essential data, so augmenting the visibility of diagnoses, procedures, and test results, while promoting knowledge transfer [41].

The adoption of electronic medical records (EMRs) is increasingly prevalent, despite claims that they prolong the time physicians dedicate to documentation, thereby diminishing their interaction with patients and nurses [42,43]. Additionally, EMRs may hinder direct communication between physicians and nurses, elevate the risk of incomplete and fragmented exchanges by limiting opportunities for verification, collaborative problem-solving, and clarification essential for effective communication, and potentially compromise "patient ownership." Notwithstanding these concerns, the use of EMR is swiftly escalating owing to its benefits [44-46].

Despite the abundance of literature on the general and specialized applications of EMRs, along with their associated benefits and drawbacks, there is a scarcity of research explicitly examining their impact on CSI behavior among healthcare professionals [9,31,44,47]. To enhance the efficacy of EMR use in healthcare services, it is essential to understand the obstacles encountered by health professionals in using EMRs. This research was conducted as a field investigation to ascertain the correlation between the views of pharmacists and nurses, the principal creators and consumers of medical records, regarding Electronic Medical Records (EMR) and Clinical Safety indicators (CSI) behaviors. The study is significant for elucidating the impact of EMR use on CSI behavior among healthcare workers by disclosing existing practices, hence informing future research.

2. The Significance of EMR in the Digital Healthcare System

The rising utilization of Electronic Medical Records (EMR) coincides with the regulation of administrative and legal frameworks alongside advancements in digital healthcare systems, as well as a growing focus on the confidentiality, integrity, and accessibility of medical records [47,48]. Additionally, the disposition of healthcare professionals towards EMR significantly influences its adoption. The current research shows that pharmacists were more inclined to use EMR than nurses. Given that paper forms continue to be used in healthcare service delivery, it is reasonable for nurses to exhibit a more restricted engagement with electronic

medical records in their daily routines. Pharmacists had more favorable opinions toward EMRs; nonetheless, both professional groups expressed concerns about access to sufficient, trustworthy, comprehensible, and current information on EMRs. The infrequent use of EMR by nurses was attributed to their attitude towards EMR and a preference for printed forms for medical recordkeeping, which were deemed adequate. It is believed that the use of EMR will become prevalent with the incorporation of electronic care plans into the HIS and the implementation of standardized care protocols within the institution [39]. Consequently, it was determined that the use of EMR is associated not only with the hospital's present operations but also with the perceptions and attitudes of healthcare professionals toward HIS and EMR [40].

Concerns regarding the security and privacy of personal data, along with skepticism about electronic medical records (EMRs), diminish the motivation to use EMRs [41,42]. As the use of electronic medical records (EMR) grows prevalent, apprehensions about the potential harm caused by damaged, erased, or lost information—serving as administrative and legal evidence—are increasing [18]. The findings indicated that both professional groups exhibited little consensus about the trustworthiness of Electronic Medical Records (EMR), which serve as a legal safeguard by documenting treatment and care services to protect personal data privacy, as well as on the efficacy of the Health Information System (HIS). The link between personal data privacy, excluding individual and improper uses, and the HIS is directly proportional since personal data privacy is mostly a technological problem inside the HIS. The proportion of pharmacists and nurses seeing HIS as effective was below average, whereas faculty members prioritizing record security and personal data protection had higher unfavorable sentiments. Despite the increasing evidence that deep learning-based identity concealment techniques may perform well in data sharing across inter-organizational contexts, the challenges encountered by professionals in practice foster ongoing skepticism towards the Health Information System (HIS) [43]. As confidence in Health Information Systems (HIS) grows with advancements in digital healthcare, trust in Electronic Medical Records (EMR) about the safeguarding of personal data and its use will similarly rise.

Advancements in information and communication technology, especially in database systems, the internet, and communication technologies, have prompted a shift in health care in Türkiye. The intimate relationship between digital healthcare services and information and communication technology necessitates that healthcare workers possess a certain degree of technical proficiency to use these systems effectively. Insufficient technical proficiency among healthcare personnel is a barrier to the use of Electronic Medical Records (EMR) and confidence in Health Information Systems (HIS) [9,44]. Not all healthcare providers possess similar proficiency in using the tools provided by digital healthcare systems [41]. Certain organizations may oppose the shift to digital technology by refraining from its use and restricting its application [2]. This predicament, anticipated owing to the structure and workload of healthcare staff, remains an institutional challenge that must be addressed following the evolving digital healthcare services.

The current research on CSI behavior among healthcare professionals revealed that, although there was no significant difference in communication rates between pharmacists and nurses overall, the items with elevated involvement rates varied. In contrast to the results of Karadağ et al., the participation rate of pharmacists on items reflecting communication among health professionals exceeded that of nurses [35]. Erjavec et al. indicated that the frequency of pharmacists' interactions with other healthcare professionals was elevated [45]. Compelling data indicates that healthcare workers in a hospital environment allocate a substantial amount of their time to the exchange of information, namely communication [29]. While both professional groups are receptive to communication on medical information exchange and collaboration, it is significant that pharmacists exhibit more caution in disseminating medical information. Reports indicate that variations in the use of EMR regarding scope and structure influence the collaborative interactions between pharmacists and nurses, and the correlation between EMR usage and care service coordination is contingent upon the degree of cohesion among team members [46, 47]. The use of EMR proved to be a successful method for eliminating communication obstacles and enhancing information transmission between pharmacists and nurses. Cost-effective hardware, adaptable software, and an atmosphere that progressively appreciates the efficiencies provided by computers are fostering the advancement of systems for various healthcare situations [48].

The management of EMR must be meticulous to enhance its efficacy in healthcare services and its positive impact on CSI [31]. EMR facilitates communication among team members in the provision of healthcare services necessitating collaborative effort. The development of EMR, like many other domains within DHS, must fulfill several expectations about communication among healthcare professionals. The anticipated efficacy of EMR in communication is expected to rise when these predictions are fulfilled. The rising reliance on EMR for consultations, a vital communication technique among pharmacists, underscores its expanding significance in healthcare communication.

3. Constraints

Given that this research was performed at a singular healthcare facility, the correlation between EMR use and CSI behavior may vary in alternative environments. This research focused only on pharmacists and nurses; nevertheless, it is essential to assess the attitudes and practices of other healthcare workers in this domain. A further constraint is the use of a printed questionnaire form in the investigation. Additional variables not included in the questionnaire or unarticulated by individuals may further influence EMR use and CSI behavior.

Notwithstanding these constraints, the current research is significant as its results illuminate pharmacists' and nurses' overall views regarding EMR, the frequency of EMR use in everyday activities, and CSI practices. This research underscores the growing significance of EMR within the digital healthcare framework and enhances the literature by elucidating the influence of EMR on CSI behavior. Determining the factors influencing health professionals' choices for

record types may provide significant insights for enhancing the adoption of digital healthcare systems.

4. Conclusions

EMR establishes a complete network by enabling communication, cooperation, and the exchange of medical information among healthcare providers via the systematic integration of patient data, allowing instantaneous access regardless of time and location. The impact of EMRs on CSI behavior was determined to be minimal; nevertheless, the use of EMRs effectively enhances CSI behaviors. EMR may remove obstacles to obtaining health records and enhance communication among health providers; it also has the potential to promote CSI behavior among them.

Electronic Medical Records (EMR) are favored and often used by doctors and nurses for executing everyday responsibilities inside healthcare institutions. Physicians have a greater frequency of EMR use and possess more positive opinions about EMR compared to nurses. A positive and strong correlation exists between EMR use and CSI activity, with EMR usage fostering CSI conduct. Physicians, who depend heavily on information for delivering health services, encounter greater challenges regarding information access, privacy, and technical support; whereas nurses, tasked with the creation of medical records, experience difficulties in record creation and preservation.

Findings reveal that the amount of technology adoption is a significant factor influencing EMR usage and CSI behavior. Alongside the procurement of the necessary software and hardware to enhance EMR use in hospitals, it is believed that training would be beneficial in promoting technology adoption among healthcare staff and mitigating the current opposition among them. While paper records cannot be entirely eradicated, the use of EMRs by nurses may be enhanced by promoting the generation of medical records in electronic format that need nurses' input and their application in collaborative efforts. The advancement of Health Information Systems (HIS) would enhance trust in Electronic Medical Records (EMRs) regarding the electronic creation of health data and the safeguarding of personal information, while also improving communication among healthcare providers.

References

1. Tomar D, Agarwal S. A Survey on data mining approaches for healthcare. Int J Bio Sci Bio Technol 2013;5(5):241–66.
2. Dang J, Hedayati A, Hampel K, Toklu C. An ontological knowledge framework for adaptive medical workflow. J Biomed Inf 2008;41(5):829–36.
3. Dadlani R, Mani S, A UJ G, et al. The impact of telemedicine in the postoperative care of the neurosurgery patient in an outpatient clinic: a unique perspective of this valuable resource in the developing world–an experience of more than 3000 teleconsultations. World Neurosurg 2004;82(3–4):270–83.
4. Riege A. Three dozen knowledge-sharing barriers managers must consider. J Knowl Manag 2005;9(3):18–35.

5. Bardach SH, Real K, Bardach DR. Perspectives of healthcare practitioners: an exploration of interprofessional communication using electronic medical records. J Interprof Care 2017;31(3):300–6.

6. Avaner T, Avaner EB. Yazılım teknolojileri ve sag̃lık yo�̈netimi: HIMSS ya da dijital hastane hizmetleri üzerine bir deg̃erlendirme. Yasama Derg 2018;37:5–28.

7. Li RC, Wang JK, Sharp C, Chen JH. When order sets do not align with clinician workflow: assessing practice patterns in the electronic health record. BMJ Qual Saf 2019;28:987–96.

8. Dog̃an RO̊, Kayıkçıog̃lu T, Yag̃cı Y, Yıldırım O̊. Elektronik sag̃lık kayıtlarının WCF web servisleri kullanılarak aktarılması ve depolanması. SDÜ Fen Bilimleri Enstitüsü Dergisi 2018;22(1):232–6.

9. Xiao C, Choi E, Sun J. Opportunities and challenges in developing deep learning models using electronic health records data: a systematic review. J Am Med Inf Assoc 2018;25(10):1419–28.

10. Toygar S̨A. E-sag̃lık uygulamaları. Yasama Derg 2018;37:101–23.

11. Tüfekçi N, Yorulmaz R, Cansever IH. Dijital hastane. J Curr Res Health Sect (JoCReHes) 2017;7(2):143–56.

12. Tagaris A, et al. EXploiting ontology-based search and EHR interoperability to facilitate clinical trial design. In: Koutsouris DD, Lazakidou A, editors. Concepts and trends in healthcare information systems. Annals of information systems, vol. 16. Cham: Springer; 2014. p. 21–42.

13. I̊klim NS̨, Derin N. Dünyadan ve Türkiye'den o̊rneklerle sag̃lık hizmetlerinde yalın yo̊netim. Hacettepe Saglik Idaresi Derg 2016;19(4):481–502.

14. Sahney R, Sharma M. Electronic health records: a general overview. Curr Med Res Pract 2018;8:67–70.

15. Limon S. Hastanelerdeki tıbbi dokümanların geleneksel ortamdan elektronik ortama do̊nüs̨ümü. Isparta Uygulamalı Bilimler Üniversitesi Uygulamalı Sosyal Bilimler ve Güzel Sanatlar Dergisi 2019;1(1):30–9.

16. Yücel YB, Aytekin A, Ayaz A, Tümiçin F. Bilis̨im sistemlerinin sag̃lık sekto̊rü açısından o̊nemi. Avrasya Sos ve Ekon Arastirmalari Derg(ASEAD) 2018;5(8): 147–55.

17. Ay F. Uluslararası elektronik hasta kayıt sistemleri, hems̨irelik uygulamaları ve bilgisayar ilis̨kisi. Gülhane Tıp Dergisi 2009;51:131–6.

18. Altundis̨ M. Tıbbi kis̨isel verilerin tutulması ve korunması yükümlülüg̃ü ve idarenin

19. bu yükümlülüg̃ünü yerine getirmemesinden dog̃an sorumlulug̃u. Türkiye Adalet Akademisi Derg 2016;7(28):313–51.

20. Gürdog̃an H. Birinci basamak sag̃lık kurumlarında çalıs̨an hekim ve hems̨irelerin O̊rgütsel Is̨birlig̃i. Master thesis. Beykent Universitiy; 2017.

21. Agarwal R, Sands DZ, Schneider JD. Quantifying the economic impact of communication inefficiencies in U.S. hospitals. J Healthc Manag 2010;55(4): 265–82.

22. Anthoine E, Delmas C, Coutherut J, Moret L. Development and psychometric testing of a scale assessing the sharing of medical information and interprofessional communication: the CSI scale. BMC Health Serv Res 2014;14:126.

23. Yildirim A, Akinci F, Ates M, Ross T, Issever H, Isci E, Selimen D. Turkish version of the Jefferson Scale of attitudes toward physician-nurse collaboration: a preliminary study. Contemp Nurse 2006;23(1):38–45.

24. Öner C, Dinçer E. Sağlık çalışanları ve ekip hizmetleri: bitlis il merkezi örneği. IKSAD Publishing; 2018.

25. Kwateng O, Osei HV, Abban EE. Organizational communication in public health institutions. Int J Bus Manag 2014;9(11):179–88.

26. Karadağ M, Oğuz I, Cankul IH, Abuhanoğlu H. Hekim ve hemşirelerin iletişim becerilerinin değerlendirilmesi. Gazi Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi 2015;17(1):60–179.

27. Hamouda IB, Tantan OC, Boughzala I. Towards an ontological framework for knowledge sharing in healthcare systems. In: Proceedings, vol. 19. PACIS; 2016.

28. Ömürbek N, Demirgürbüz MÖ, Tunca M. Hastanelerdeki bilişim sistemlerinden klinik bilgi sistemlerinin kullanımına yönelik bir araştırma: denizli ve Isparta örneği. Selçuk Üniversitesi İktisadi ve İdari Bilimler Fakültesi Sosyal ve Ekonomik Araştırmalar Derg 2013;13(25):301–28.

29. Strong DM, Volkoff O, Johnson SA at al. A Theory of organization-EHR affordance actualization. J Assoc Inf Syst Online 2014;5(2).

30. Petrakaki D, Klecun E, Cornford T. Changes in healthcare professional work afforded by technology: the introduction of a national electronic patient record in an English hospital. Organization 2016;23(2):206–26.

31. Laerum H, Faxvaag A. Task-oriented evaluation of electronic medical records systems: development and validation of a questionnaire for physicians. BMC Med Inf Decis Making 2004;4:1.

32. Park SY, Lee SY, Chen Y. The effects of EMR deployment on doctors' work practices: a qualitative study in the emergency department of a teaching hospital. Int J Med Inf 2012;81(3):204–17.

33. Taylor SP, Ledford R, Palmer V, Abel E. We need to talk: about an observational study of the impact of electronic medical record implementation on hospital communication. BMJ Qual Saf 2014;23(7):584–8.

34. Robinson FP, Gorman G, Slimmer LW, Yudkowsky R. Perceptions of effective and ineffective nurse-physician communication in hospitals. Nurs Forum 2010;45(3): 206–16.

35. Schopf TR, Nedrebo B, Hufthammer KO, Daphu IK, Laerum H. How well is the electronic health record supporting the clinical tasks of hospital physicians? A survey of physicians at three Norwegian hospitals. BMC Health Serv Res 2019;19: 934.

36. Erdil E, Uğurbaş HS, Albayrak AS. Evaluation of an electronic medical record system: zonular Karaelmas University hospital survey. Zonguldak Karaelmas

37. Üniversitesi Sosyal Bilimler Derg 2010;6(12):37–65.

38. Türe Yılmaz A, Yıldırım A. İletişim ve bilgi paylaşımı ölçeği'nin türkçe geçerlik ve güvenirliği. Akademik Sosyal Arastirmalar Derg 2018;70(6):76–90.

39. Karagöz Y. SPSS and AMOS applications quantitative-qualitative-miXed scientific research methods and research Ethics. Nobel Academic Publishing. Ankara; 2017.

40. Smith C. New technology continues to invade healthcare. What are the strategic implications/outcomes? Nurs Adm Q 2004;28(2):92–8.
41. Baran S, Sener E. Hastanelerde bilgi güvenliği yönetimi: nitel bir araştırma. SDÜ Vizyoner Derg 2019;10(23):108–25.
42. Zhang P, Schmidt DC, White J, Lenz G. Blockchain technology use cases in healthcare. In: Raj P, Deka GC, editors. Advances in computers, vol. 111; 2018. p. 1–41.
43. Yang X, Liu T, Li Q, Lee C, Bian J, Hogan WR, Wu Y. A study of deep learning methods for de-identification of clinical notes in cross-institute settings. BMC Med Inf Decis Making 2019;19:232.
44. Vermişli Peker S, Van Giersbergen MY, Bicersoy G. Sağlık bilişimi ve Türkiye'de hastanelerin dijitalleşmesi. Sağlık Akademisi Kastamonu 2018;3(3):228–67.
45. Steers WD. The Electronic medical record: how not to communicate. J Urol 2013; 190(5):1636–7.
46. Wu RC, Lo V, al Rossos P at. Improving hospital care and collaborative communications for the 21st century: key recommendations for general internal medicine. Interact J Med Res 2012;1(2):e9.
47. Graetz I, Reed M, Shortell SM, Rundall TG, Bellows J, Hsu J. The association between EHRs and care coordination varies by team cohesion. Health Serv Res 2014;49(1pt2):438–52.
48. Haug PJ, Gardner RM, Evans RS, Rocha BH, Rocha RA. Clinical decision support at Intermountain Healthcare. In: Clinical decision support systems: Theory and practice. Springer; 2016. p. 245–74.

استخدام ملاحظات التمريض والصيدلة في السجلات الطبية الإلكترونية لتوقع نتائج المرضى: مراجعة

الملخص

الخلفية: أدى دمـج السـجلات الطبيـة الإلكترونيـة (EMRs) فـي أنظمـة الرعايـة الصـحية إلـى إحداث ثـورة فـي إدارة معلومـات المرضى، مما عزز الكفاءة وسهولة الوصول إلى البيانات. تستكشف هذه الدراسـة تـأثير السـجلات الطبيـة الإلكترونيـة علـى سـلوك مؤشر السلامة السريرية (CSI) بين المهنيين الصحيين، مـع التركيـز علـى الأطبـاء والممرضـين الـذين يلعبـون أدوارًا حيويـة فـي إنشاء واستخدام السجلات الطبية.

الطرق: تم إجراء مراجعة شاملة للأدبيات لتقييم مدى انتشار استخدام السجلات الطبية الإلكترونية، والفوائد المتصورة، والمخاوف، والمواقف تجاه حفظ السجلات الرقمية. تـم جمـع البيانـات لفهم العلاقـة بـين اعتمـاد السـجلات الطبيـة الإلكترونيـة والأدوار المهنيـة والتصورات المتعلقة بأمن البيانات وسلامتها.

النتائج: أظهرت النتائج ميلاً أكبر لدى الأطباء لاعتماد السجلات الطبية الإلكترونية مقارنة بالممرضين، حيث أعرب كـلا الفريقين عن مخـاوف مشتركة بشأن سهولة الوصول إلـى البيانـات وموثوقيتهـا وفهمهـا. وُجد أن الممرضـين يميلـون إلـى تفضـيل السـجلات الورقية التقليدية، مما يؤثر على مشاركتهم في استخدام السجلات الطبية الإلكترونيـة. تـم تسليط الضـوء علـى مخـاوف تتعلق بـأمن وخصوصية البيانات المحفوظة في السجلات الطبية الإلكترونية، مما أثر على ثقة المهنيين في نظم المعلومـات الصـحية (HIS) وضمانات الخصوصية.

الاستنتاج: تؤكد الدراسة على أهمية معالجة مواقف المهنيين الصحيين ومخاوفهم تجاه السجلات الطبية الإلكترونية لتعزيز تكاملهـا واستخدامها. التدريب المحسن علـى الأنظمة الصـحية الرقمية ومعالجة قضـايا أمن البيانات أمران أساسيان لتعزيـز اعتمـاد السـجلات الطبية الإلكترونية وضمان التواصل الفعال والتعاون بـين فـرق الرعايـة الصـحية. ينبغـي أن تركـز الأبحـاث المستقبلية علـى تقليل الحواجز أمام استخدام السجلات الطبية الإلكترونية وتعزيز الثقة في تقنيات الرعاية الصحية الرقمية.

الكلمات المفتاحية: السجلات الطبية الإلكترونية، مؤشرات السلامة السريرية، المهنيون الصحيون، أمن البيانات، الرعايـة الصـحية الرقمية.