

## **The Use of Electronic Health Record In Doctor-Patient Interaction: A Systematic Review**

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**Abstract**— Electronic Medical Record (EMR) is a document containing patient data using an electronic system. In the future, electronic medical records are not any digital paper charts, but a digital application that can actively interact with providers and patients. The amount of time for doctors to complete EMR and the presence of a computer screen in the middle of interactions between doctors and patients might cause distractions in interactions between doctors and patients. This review aims to conclude how the use of EMR affects the interaction between doctors and patients also how it may improve the quality of doctor-patient relationships in clinical settings. The method used in this study is a systematic search following the PRISMA guidelines. With 10 articles obtained, various results were found regarding the relationship between the use of EMR and the interaction between doctors and patients. Adaptation between users and the application is needed to respond to medical challenges and improve service performance. Involving patients in the use of EMR can resulting a better impact on the quality of interaction between doctors and patients which can ultimately increase satisfaction and the outcome in therapy. Further research is needed to optimize the use of EMR.

**Keywords:** Electronic Medical Record, Electronic Health Record, Doctor-Patient Interaction, Doctor-Patient Communication

### **1. Introduction**

Until now, there are still many terms related to electronic medical records with similar but not entirely the same meanings, such as Automated Health Electronic (AHR), Electronic Medical Record (EMR), Computer-based Patient Record (CPR), or Electronic Health Record (EHR). WHO itself defines an Electronic Health Record (EHR) as a document that contains all of a person's health information, inputted and accessed electronically by healthcare workers every time a patient receives treatment, whether outpatient or inpatient.[1]Based on the regulation of the Minister of Health Republic Indonesia (PMK) number 24 year 2022, Electronic Medical Record (RME) is a document that contains patient identity data, examinations, treatment, actions, and other services that have been provided to patients using an electronic system.[2]

In the future, the electronic medical record will not be just digital paper charts, but a digital application that can actively interact with providers and patients and consists of a series of data fields suitable for analysis, processing, and reporting to support communication, appropriate clinical interventions, quality improvement, and patient safety, so that it is not only used for personal health services but also useful in the field of public health.[3][4][5][6][7][8][9] This is also in line with the 'One Health' system where

resources must be mobilized, data evidence-based must be identified and validated, information to be provided promptly, and efforts and actions to enable better digital data access must be managed and implemented.[10] Indonesia itself is said to lead ASEAN in implementing 'One Health'. [11] In line with that, the Indonesian government has established for all healthcare facilities in Indonesia to switch to using electronic medical records in documenting patients' medical history by the end of 2023.[2] The use of electronic medical records are expected can improve the quality and efficiency of health services. [3]

The process of healthcare services certainly can't be separated from the interaction between doctors and patients. Good interaction and communication between doctors and patients will certainly lead to better results. On the other hand, poor doctor-patient communication contributes to increased conflicts, complaints, demands, and the outcome.[12]

The interaction between doctors and patients continues to transform along with the times. In ancient times doctors were "authoritarian" where patients were seen as passive elements, incapable of understanding, knowing, and acting for their health. The doctor then became a "paternalistic" figure. However, today patients are seen as responsible subjects who need to be actively involved and informed, participate in the therapeutic process, and monitor the effects of the treatment.[13]:[14] Good interpersonal skills are believed can increase the level of trust and patient satisfaction.[15]:[16]

The use of EMR during interactions between doctors and patients raises several opposing opinions. Some said the use of EMR can improve reliability, quality, and efficiency over time.[3]:[17] On the other hand, some others considered if the use of EMR interferes with doctor-patient communication. The transition to electronic medical records (EMR) is seen as a threat to the doctor-patient relationship, and patient privacy, and as an additional administrative burden on the healthcare system.[18]:[19] Time spent on EMR can lead to burnout which is then associated with negative patient outcomes.[19] An observational study involving outpatient settings found that during the workday, physicians spent 27.0% of their total time face-to-face clinical with patients and 49.2% of their time on EHR and desk work.[20] This review aims to find out how the use of RME affects the interaction between doctors and patients and how the use of RME can improve the quality of the relationship between doctors and patients.

## **2. Methods**

This study followed PRISMA guidelines (Preferred Reporting Items for Systematic Review and Meta-Analysis). The search aimed to see how implementing EMR affects doctor-patient interactions. The term electronic medical record (EMR) in this review refers to "the collection of a person's health information stored on a computer, linked by a person's identifier".[21] The investigation conducted through PUBMED and Proquest, with inclusion criteria limited to the last 10 years (2013 to 2023) and articles in English or Indonesian, with keywords "Electronic Medical Record" OR "Electronic Health Record" AND "Doctor-patient interaction" OR "Doctor-patient communication". The exclusion criteria used were review articles.

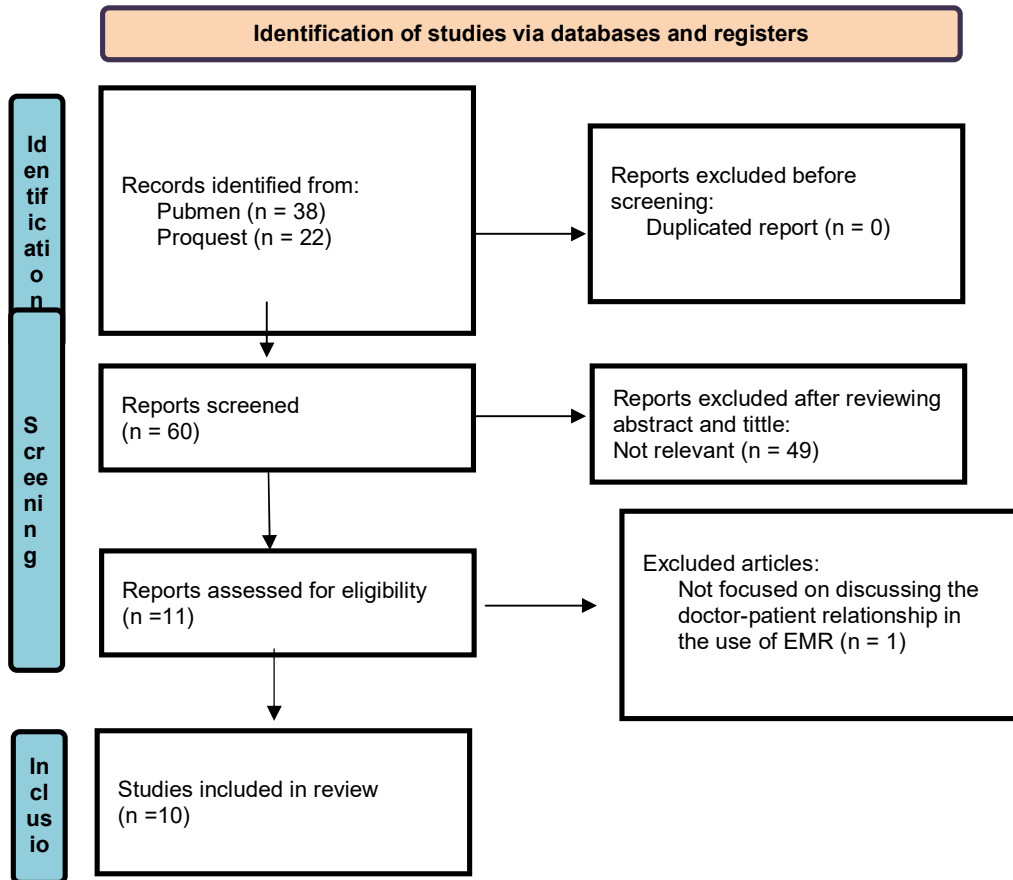


Figure 1. Inclusion with PRISMA guideline (*Preferred Reporting Items for Systematic Review and Meta-Analysis*).

### 3. Result

**Table 1.** Result

No.	Judul	Penulis	Metode	Hubungan RME dengan interaksi dokter-pasien
1.	“Why Do They Need to Check Me?” Patient Participation Through eHealth and the Doctor-Patient Relationship: Qualitative Study[22]	Christiane Grünloh, et al. 2018.	Qualitative , semi-structured interviews	Unknowingly, paternalistic interactions still occur between doctors and patients. In this study, PAEHRs (patient-accessible electronic health records) can contribute to developing doctor-patient relationships, where patients can play an active role. Even so, there is still a risk that doctors and patients do not establish a good communication relationship.
2.	A Survey of Patient’s Perceptions and Proposed Provision of a ‘Patient Portal’ in Endocrine Outpatients[23]	Sam Lockhart, et al. 2019.	Cross-sectional	Study participants saw the main benefits of the patient portal in increasing access to test results and communication with healthcare professionals, and believed that the patient portal could improve understanding of their medical issues. However, the main limitation of any electronic medical record is security. Although in this study, most of the respondents said they were not too worried about it.
3.	Dynamic modeling of patient and physician eye gaze to understand the effects of electronic health records on doctorpatient communication and attention[24]	Enid Montague, et al. 2014	Observational	Physicians spend about a third of the length of visits interacting with EHRs. The doctor's gaze greatly influences the patient's gaze at the first appointment, meaning that any intervention that influences the doctor to focus on technology will reduce patient-physician eye contact.
4.	Effects of electronic health record use on the exam room communication skills of resident physicians: a randomized within subjects study[25]	Teresa Taft, et al. 2015.	a randomized within subject study	In this study, structured doctor-patient communication occurred better when using EHR compares to paper notes. This research shows that EHR may be a supporting tool for communication. We suspect this effect could be enhanced by the careful design the EHR interface.
5.	How physician electronic health record screen sharing affects patient and doctor non-verbal communication in primary care[26]	Onur Asan, et al. 2015.	Observasional	When the doctor uses EHR but the patient cannot see the EHR screen, the patient seems to disengage from interaction during that period. However, if there is continuous screen sharing, it is more likely that the patient will be looking at the screen while the doctor is looking at the patient, or vice versa. Patients who opted in to view their charts saw it as a better way of collaborating with their doctors.

				Integrating EHR into communication as a bridge rather than a divider can contribute to patient-centered care and encourage patient activation.
6.	More Screen Time, Less Face time – Implications for EHR Design[27]	Onur Asan, et al. 2014.	Observational Study	The proportion of time doctors spent looking at medical records during EHR visits (staring at the computer monitor and staring at the hard copy of the EHR sections or worksheets) was significantly greater than during the paper chart visits. A much smaller proportion of the doctor's time was spent staring at the patient when using the EHR than when using a paper chart, but significantly more patients gazed at the doctor when using the EHR compared to using the paper chart.
7.	Patient Perceptions of Electronic Medical Record Use by Faculty and Resident Physicians: A Mixed Methods Study[28]	Wei Wei Lee, et al. 2016.	prospective mixed-methods study	Most of the patients in this study (90%) were satisfied with the use of the doctor's computer in the clinic. Most patients report that it helps them to understand better their medical conditions and treatments and also makes it easier for them to communicate during visits. A few of the patients (8%) agreed that computers were distracting and prevented doctors from focusing on them.
8.	Strategizing EHR use to achieve patient-centered care in exam rooms: a qualitative study on primary care providers[29]	Jing Zhang, et al. 2016.	Qualitative, semi-structured interviews	Many providers complain about how the increased demands of EHRs make it difficult to engage in patient-centered care. The majority of providers interviewed reported that more than half of their time during patient visits was spent for using the EHR system.
9.	Technology versus humanism: how patients perceive the use of electronic health records in physicians' offices—a qualitative study[30]	Ari K. Mwachofi, et al. 2015.	exploratory qualitative study	40% of patients reported no change in the amount of time their doctor spent with them. Some participants (24%) reported less face-to-face time because doctors were facing computer screens and not making eye contact with patients. Some elderly (age ≥65) interprets the lack of eye contact to mean that doctors are more concerned with taking notes than patients.
10.	'It is like texting at the dinner table': a qualitative analysis of the impact of electronic health records on patient-physician interaction in hospitals[31]	Pelland K.D, et al. 2017.	qualitative analysis	Hospital-based physicians in most specialties indicated that they generally perceive EHR as a negatively altering patient interaction. Hospital-based doctors most often comment that they spend less time with patients because they have to spend more time at the computer; office-based clinicians feel EHR worsens the quality of their patient interactions and relationships.

From the investigation involving two search engines (Pubmed and Proquest) with inclusion and exclusion as written in the method, a total of 10 articles that answered the question in this review were obtained. Various results were obtained regarding the relationship between the use of EMR and the interaction between doctors and patients. EMR considered to be able to improve communication between doctors and patients. However, on the other hand, the doctor's focus facing the screen is one of the obstacles in the interaction between doctors and patients.

#### **4. Discussion**

Electronic Medical Records (EMR) is one of the game-changing paradigm in healthcare services. EMR is expected to improve information accuracy, support clinical decision making, increase treatment continuation by information accessibility, and generate statistical information for healthcare planning and management. Utilization of EMR in healthcare services brings up a few dilemmas including security problems and hampering interpersonal interaction between doctors and patients.[32], [33]

Interpersonal interaction is hampered due to how much time doctors spend looking at the computer.[24] Doctors are expected to complete patients' data in the EMR system, which reducing the amount of interaction to patients, cause this dilemma.[29]:[31]:[34] Additionally, the quality of doctor-patient relationships could be disturbed because EMR depersonalized interaction and divert doctors' attention. Based on studies that was done by Enid Montague et al in 2014 and Jing Zhang et al in 2016, doctors spent about half of their time to fill the EMR/EHR.[24]:[29] This is unfortunate for doctor patient interaction cause when the doctor lost focus on their patients, patient' focus will hindered as well.[26]

Compared to paper-based medical records, the amount of time spent on EMR is influenced by the doctor's familiarity with the system. A study showed a significant decline in eye contact interaction between doctor and patient when using EMR compared to paper-based.[27] However, another study showed a better result in structured communication when using EMR compared to paper-based, although there is a possible negative impact on communication behavior, especially maintaining eye contact.[25] The improvement in structured communication is consistent with other systematic investigations stating that the use of EMR in practice is capable of transforming the interaction between doctors and patients into a more formal and standardized manner.[35] As there is no such thing as the perfect couple, EMR is not perfect either. EMR has to constantly evolve and adapt to needs. Moreover, there is a need for users to familiarize themselves with the application and apply RME in their daily practice.[7]:[33]:[34] This is supported by other studies that stated cost efficiency and usability depend on EMR implementation and design. Furthermore, the workflow becomes inefficient when EMR and paper documentation are used simultaneously.[36]

This study showed that EMR could have a positive impact on doctor-patient interaction by most notably, utilizing EMR to support non-verbal communication between doctors and patients. Providing patients with access to EMR/EHR or involving them by showing graphs

or results on EMR/EHR can contribute to developing the doctor-patient relationship.[22][23][26] In a study regarding patient perception of EMR, the majority expressed satisfaction with doctors using computers in a clinical setting. Patients also felt that when used properly, EMR can effectively serve as a tool to facilitate communication and enhance their understanding of medical issues and treatment plans.[28]

Integrating Electronic Health Records (EHR) or EMR into communication as a bridge rather than a divider can contribute to patient-centered care and promote patient engagement.[26] Patient access to medical records empowers them to play a more active role in managing their health by putting more information in their hands, which can ultimately improve clinical outcomes.[37], [38] However, doctors facing computer screens and having limited eye contact with patients' tendency remain a barrier to interaction, especially among the elderly ( $\geq 65$  years old).[28][30] This is also supported by research explaining age-related variations in the use of patient-accessible electronic health records. Although older respondents may find the technology challenging to use, they still perceive it as useful in understanding their health conditions, engaging in their healthcare, and acknowledging the potential of technology. This also demonstrates the need for specific population groups when tailoring and presenting health information.[39]

The use of EMR or EHR is continuously evolving. In its implementation, several studies have been conducted to improve the quality of the doctor-patient relationship, both verbally and non-verbally. Involving patients in using EMR could enhance communication between doctors and patients, especially in non-verbal aspects. [22][26] Demands on doctors to complete the data in the EMR/EHR could be reduced with the help of other medical officers (Scribes) to help fill in the documents, without sacrificing patient satisfaction.[40] In addition, to help doctors understand what topics need further discussion, patient expectations regarding the results of treatment, as well as the patient's attitudes and beliefs about the treatment, the pre-consultation sheet can be used. Patients also feel that the pre-consultation sheet improves the quality of communication and creates an atmosphere in which they feel heard.[41]

## **5. Limitations and Recommendation**

Limitations in this study, we did not specifically classify and pay attention to specific factors in the use of RME, such as age, environment, social and culture, and level of education, as well as the patient's sense of security in using RME. Further research is needed, especially to determine the doctor-patient interaction relationship in certain groups.

## **6. Conclusion**

Electronic medical records are still evolving and will not only be digital paper charts in the future. Adaptation between users and applications is needed to respond to medical challenges and improve service performance. Involving patients during the use of RME can increase the quality of interactions between doctors and patients, which most certainly, affects satisfaction and the outcome in therapy. Further research is needed to optimize the use of EMR.

## 7. References

- [1] World Health Organization, “Electronic Health Records Manual for Developing Countries,” 2006.
- [2] Menteri Kesehatan Republik Indonesia, “PERATURAN MENTERI KESEHATAN REPUBLIK INDONESIA NOMOR 24 TAHUN 2022 TENTANG REKAM MEDIS,” 2022.
- [3] R. S. Janett and P. P. Yeracaris, “Electronic medical records in the american health system: Challenges and lessons learned,” *Cienc. e Saude Coletiva*, vol. 25, no. 4, pp. 1293–1304, 2020, doi: 10.1590/1413-81232020254.28922019.
- [4] L. Dornan, K. Pinyopornpanish, W. Jiraporncharoen, A. Hashmi, N. Dejkriengkraikul, and C. Angkurawaranon, “Utilisation of Electronic Health Records for Public Health in Asia : A Review of Success Factors and Potential Challenges,” vol. 2019, 2019.
- [5] P. Campanella *et al.*, “The impact of electronic health records on healthcare quality : a systematic review and meta-analysis,” vol. 26, no. 1, pp. 60–64, 2015, doi: 10.1093/eurpub/ckv122.
- [6] R. Selvia and W. Sulistiadi, “RELATIVE EFFECTIVENESS OF ELECTRONIC MEDICAL RECORD COMPARED TO PHYSICAL MEDICAL RECORD : A SYSTEMATIC REVIEW,” pp. 495–500, 2019.
- [7] M. Firdaus, “Improving Patient Safety and Hospital Service Quality Through Electronic Medical Record : A Systematic Review,” vol. 6, no. 1, pp. 37–46.
- [8] P. Gatiti, E. Ndirangu, J. Mwangi, A. Mwanzu, and T. Ramadhani, “Enhancing Healthcare Quality in Hospitals through Electronic Health Records : A Systematic Review,” vol. 15, no. 2, 2021.
- [9] V. Yofiani and A. C. Sjaaf, “EFFECTIVENESS OF PHYSICAL THERAPY SERVICES THROUGH TELEMEDICINE DURING THE COVID-19 PANDEMIC : SYSTEMATIC REVIEW,” vol. 5, 2021.
- [10] G. H. Summit, “The Lombok G20 One Health Policy Brief Context How to implement One Health effectively and successfully,” pp. 8–13, 2022.
- [11] S. N. Tarmizi, “Indonesia Pimpin ASEAN Implementasikan One Health,” 2023. <https://sehatnegeriku.kemkes.go.id/baca/rilis-media/20230317/0542592/indonesia-pimpin-asean-implementasikan-one-health/> (accessed Apr. 30, 2023).
- [12] C. Vega-Hurtado, “[Importance of doctor-patient communication strategies].,” *Rev. Med. Inst. Mex. Seguro Soc.*, vol. 58, no. 2, pp. 197–201, Apr. 2020, doi: 10.24875/RMIMSS.M20000017.
- [13] J. R. Smolen, J. J. Wang, and S. P. Anane, “Challenges and strategies for hypertension management: qualitative analysis of small primary care practices with varying blood pressure control.,” *Fam. Pract.*, vol. 36, no. 5, pp. 644–649, Oct. 2019, doi: 10.1093/fampra/cmz004.
- [14] F. Fiorini and A. Granata, “[Doctor-Patient communication].,” *G. Ital. di Nefrol. organo Uff. della Soc. Ital. di Nefrol.*, vol. 36, no. 2, Apr. 2019.
- [15] R. Berger, B. Bulmash, N. Drori, O. Ben-assuli, and R. Herstein, “The patient – physician relationship : an account of the physician ’ s perspective,” pp. 1–16, 2020.
- [16] P. Y. Lee, “Quality doctor-patient communication for better patient satisfaction in primary care practice,” vol. 17, no. 2, p. 104761, 2022, doi: 10.51866/oa1308.3.



- [17] A. Uslu and J. Stausberg, "Value of the Electronic Medical Record for Hospital Care: Update from the Literature," *J. Med. Internet Res.*, vol. 23, no. 12, 2021, doi: 10.2196/26323.
- [18] D. Gorn, "These Doctors Think Electronic Health Records Are Hurting Their Relationships With Patients," 2017. <https://www.pbs.org/newshour/health/doctors-think-electronic-health-records-hurting-relationships-patients> (accessed Apr. 30, 2023).
- [19] C. Li, C. Parpia, A. Sriharan, and D. T. Keefe, "Electronic medical record-related burnout in healthcare providers: A scoping review of outcomes and interventions," *BMJ Open*, vol. 12, no. 8, pp. 1–11, 2022, doi: 10.1136/bmjopen-2022-060865.
- [20] C. Sinsky *et al.*, "Allocation of physician time in ambulatory practice: A time and motion study in 4 specialties," *Ann. Intern. Med.*, vol. 165, no. 11, pp. 753–760, 2016, doi: 10.7326/M16-0961.
- [21] C. P. Waegemann, "The five levels of electronic health records.," *M.D. computing : computers in medical practice*, vol. 13, no. 3. United States, pp. 199–203, 1996.
- [22] C. Grünloh, G. Myreteg, Å. Cajander, and H. Rexhepi, "'Why Do They Need to Check Me?' Patient Participation Through eHealth and the Doctor-Patient Relationship: Qualitative Study.," *J. Med. Internet Res.*, vol. 20, no. 1, p. e11, Jan. 2018, doi: 10.2196/jmir.8444.
- [23] S. Lockhart, I. Wallace, A. Nugent, N. Black, M. Quinn, and P. C. Johnston, "A Survey of Patient's Perceptions and Proposed Provision of a 'Patient Portal' in Endocrine Outpatients.," *Ulster Med. J.*, vol. 88, no. 3, pp. 157–161, Sep. 2019.
- [24] E. Montague and O. Asan, "Dynamic modeling of patient and physician eye gaze to understand the effects of electronic health records on doctor-patient communication and attention.," *Int. J. Med. Inform.*, vol. 83, no. 3, pp. 225–234, Mar. 2014, doi: 10.1016/j.ijmedinf.2013.11.003.
- [25] T. Taft, L. Lenert, F. Sakaguchi, G. Stoddard, and C. Milne, "Effects of electronic health record use on the exam room communication skills of resident physicians: a randomized within-subjects study.," *J. Am. Med. Inform. Assoc.*, vol. 22, no. 1, pp. 192–198, Jan. 2015, doi: 10.1136/amiajnl-2014-002871.
- [26] O. Asan, H. N. Young, B. Chewing, and E. Montague, "How physician electronic health record screen sharing affects patient and doctor non-verbal communication in primary care.," *Patient Educ. Couns.*, vol. 98, no. 3, pp. 310–316, Mar. 2015, doi: 10.1016/j.pec.2014.11.024.
- [27] O. Asan, P. D. Smith, and E. Montague, "More screen time, less face time - implications for EHR design.," *J. Eval. Clin. Pract.*, vol. 20, no. 6, pp. 896–901, Dec. 2014, doi: 10.1111/jep.12182.
- [28] W. W. Lee *et al.*, "Patient Perceptions of Electronic Medical Record Use by Faculty and Resident Physicians: A Mixed Methods Study.," *J. Gen. Intern. Med.*, vol. 31, no. 11, pp. 1315–1322, Nov. 2016, doi: 10.1007/s11606-016-3774-3.
- [29] J. Zhang *et al.*, "Strategizing EHR use to achieve patient-centered care in exam rooms: a qualitative study on primary care providers.," *J. Am. Med. Inform. Assoc.*, vol. 23, no. 1, pp. 137–143, Jan. 2016, doi: 10.1093/jamia/ocv142.

- [30] A. K. Mwachofi, A. A. Khaliq, E. R. Carrillo, and W. Winfree, "Technology versus humanism: how patients perceive the use of electronic health records in physicians' offices--a qualitative study.," *Health Commun.*, vol. 31, no. 3, pp. 257–264, 2016, doi: 10.1080/10410236.2014.947467.
- [31] K. D. Pelland, R. R. Baier, and R. L. Gardner, "'It's like texting at the dinner table': A qualitative analysis of the impact of electronic health records on patient-physician interaction in hospitals.," *J. Innov. Heal. informatics*, vol. 24, no. 2, p. 894, Jun. 2017, doi: 10.14236/jhi.v24i2.894.
- [32] N. N. Basil, S. Ambe, C. Ekhatior, and E. Fonkem, "Health Records Database and Inherent Security Concerns: A Review of the Literature.," *Cureus*, vol. 14, no. 10, p. e30168, Oct. 2022, doi: 10.7759/cureus.30168.
- [33] S. G. Honavar, "Electronic medical records - The good, the bad and the ugly.," *Indian journal of ophthalmology*, vol. 68, no. 3, pp. 417–418, Mar. 2020. doi: 10.4103/ijo.IJO\_278\_20.
- [34] M. Al Ani, G. Garas, J. Hollingshead, D. Cheetham, T. Athanasiou, and V. Patel, "Which Electronic Health Record System Should We Use? A Systematic Review," *Med. Princ. Pract.*, vol. 31, no. 4, pp. 342–351, 2022, doi: 10.1159/000525135.
- [35] A. Boonstra, J. Vos, and L. Rosenberg, "The effect of Electronic Health Records on the medical professional The effect of Electronic Health a Records on the medical professional identity of physicians : systematic literature review identity of physicians : a systematic literature review," *Procedia Comput. Sci.*, vol. 196, no. 2021, pp. 272–279, 2022, doi: 10.1016/j.procs.2021.12.014.
- [36] B. Gopidasan, S. Amanullah, and A. Adebowale, "Electronic Medical Records – A Review of Cost - Effectiveness , Efficiency , Quality of Care , and Usability," pp. 76–79, 2022, doi: 10.4103/jopsys.jopsys.
- [37] L. Agrawal, T. Ndabu, P. Mulgund, and R. Sharman, "Factors Affecting the Extent of Patients' Electronic Medical Record Use: An Empirical Study Focusing on System and Patient Characteristics.," *J. Med. Internet Res.*, vol. 23, no. 10, p. e30637, Oct. 2021, doi: 10.2196/30637.
- [38] M. Ennis-O'Connor, "What Does It Mean To Be An Empowered Patient?," 2018. <https://powerfulpatients.org/2018/05/22/what-does-it-mean-to-be-an-empowered-patient/> (accessed May 21, 2023).
- [39] Z. Xiong, L. Zhang, Z. Li, W. Xu, Y. Zhang, and T. Ye, "Frequency of Online Health Information Seeking and Types of Information Sought among the General Chinese Population: Cross-sectional Study," *J. Med. Internet Res.*, vol. 23, no. 12, pp. 1–13, 2021, doi: 10.2196/30855.
- [40] A. Pozdnyakova *et al.*, "Impact of Medical Scribes on Physician and Patient Satisfaction in Primary Care.," *J. Gen. Intern. Med.*, vol. 33, no. 7, pp. 1109–1115, Jul. 2018, doi: 10.1007/s11606-018-4434-6.
- [41] C. Zanini, P. Maino, J. C. Möller, C. Gobbi, M. Raimondi, and S. Rubinelli, "Enhancing clinical decisions about care through a pre-consultation sheet that captures patients' views on their health conditions and treatments: A qualitative study in the field of chronic pain.," *Patient Educ. Couns.*, vol. 99, no. 5, pp. 747–753, May 2016, doi: 10.1016/j.pec.2015.11.029.



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