Jurnal Aisyah: Jurnal Ilmu Kesehatan

Volume 8, Issue 2, June 2023, p. 225–232
ISSN 2502-4825 (print), ISSN 2502-9495 (online)

Principle of open communication using screen sharing on electronic medical records

Yudha Manggala[1*)], Winny Setyonugroho[2]

[1,2] Program Studi Magister Administrasi Rumah Sakit

ARTICLE INFO

Article history:

Received 21 November 2022
Accepted 1 April 2023
Published 10 June 2023

Keyword:

The participle of openness of communucation
Ability to read

A B S T R A C T

This study aims to determine the principle of open communication using screen sharing on electronic medical records. The research design used in the preparation of this article is a *literature review* method related to the Principle of Open Communication Using *Screen Sharing* on Electronic Medical Records using databases such as *Google Scholar, PUBMED, Sciencedirect,* and *Researchgate* during the period 2012-2022. The results of this study state that the Principle of Open Communication Using Screen Sharing in Electronic Medical Records can optimize health services. Optimal health services can be seen frinatient satisfaction which the establishment of positive communication between doctors and patients shows.

Kata kunci:

prinsip keterbukaan komunikasi
Kemampuan Membaca

**) corresponding author*

Yudha Manggala

Program Studi Magister Administrasi Rumah Sakit Universitas Muhammadiyah Yogyakarta Indonesia

Email: yudhamanggala@ymail.com

DOI: 10.30604/jika.v8i2.1891

A B S T R A K

Penelitian ini bertujuan untuk mengetahui prinsip komunikasi terbuka menggunakan screen sharing pada rekam medis elektronik. Rancangan penelitian yang digunakan dalam penyusunan artikel ini adalah metode literatue review terkait perinsip komunikasi terbuka menggunakan screen sharing pada rekam medis elektronik dengan menggunakan database seperti Google Schoolar, PUBMED Sciencedirect dan Researchgate selama periode 2012-2022. Hasil penelitian ini menyatakan bahwa prinsip komunikasi terbuka menggunakanscreen sharing pada rekam medis elektronik dapat mengoptimalkan pelayanan kesehatan. Pelayanan kesehatan yang optimal dapat dilihat dari kepuasan pelanggan yang ditunjukan dengan terjalinnya komunikasi yang positif antara dokter dan pasien.

INTRODUCTION

The development of digital technology in society has encouraged the transformation of digitalization of health services.(Koten et al., 2020, Adiwibowo, 2020) The use of electronic medical records (RME) is a form of health service innovation in the era of the industrial revolution 4.0.(Amin et al., 2021, Adiwibowo, 2020) *Institute of Medicine (2016)* describe RME as an information technology system that facilitates the storage of patient clinical data and information, data entry and management, decision support, electronic communication regarding effective patient conditions, supporting patient safety, facilitating data administration and reporting, so that RME can provide services to track patient data over time, patient identification for preventive and screening visits, monitor patients, and

improving health care.(Koten et al., 2020, Gunawan and Christianto, 2020)

The World Health Organization (2016) states that the use of RME has increased globally by 46% in the last five years.(Tiorentap, 2020) America has implemented RME in 2004, Japan has developed RME implementation in 2000, while Denmark has implemented since the mid-1990s. South Korea itself has a much higher level of RME usage compared to European Union countries. The development of RME in Indonesia has begun to be used in several hospitals since the late 2000s.(Octavia, 2022)

However, the implementation of RME has many very complex challenges including: high initial costs and treatment, resistance of RME users, patient privacy issues, lack of support from management or outside parties. Therefore, the implementation process needs to be prepared through careful planning so that the continuity of medical record data can be maintained.(Setiatin and Susanto, 2021)Regulation of the Minister of Health of the Republic of Indonesia number 24 of 2022 is the legal basis for the use of RME in Indonesia.

Other studies have reported that there are problems with the application of RME. Doctors devote more time to data entry than to making contact with patients. A study of doctors in the ER showed that doctors spend an average of 43% of their time doing data entry and only 28% of their time on direct patient contact. Doctors neglect physical examinations more, are less keen in conducting analysis of clinical considerations, and focus more on the results of electronic records.(Gunawan and Christianto, 2020)Recent research from ***the National Academy of Medicine (2019)*** explains that doctors and nurses spend 50% of their time on contact with computers, but not with patients. This circumstance reduces the doctor's empathy for the patient.(Honavar, 2020) The effect of the application of RME on the communication of doctors and patients has been widely studied.(Zaman and Chauhan, 2021, Ofri, 2019, Alkureishi et al., 2016)

The main complaint against the use of RME is the change of previously *dyadic* physician and patient communication to *triadic*. The application of RME facilities makes doctors have to document anamnesis, physical examination, diagnosis, and treatment plans that will be given to RME facilities in the practice room.(Asan et al., 2015b)***Abraham Verghese (2020)*** calling this condition the *phenomenon "iPatient".* This has transformed the doctor-patient relationship (*dyadic*) into the doctor, computer, and patient *(triadic) relationship.* Eye contact between doctor and patient becomes the most crucial part in the change in such interactions.(Assis-Hassid et al., 2012, Honavar, 2020)

Active sharing of information between doctors, computers, and patients is the most ideal communication. This makes the patient understand better and feel involved in the treatment of himself. Two-way communication between doctors and patients is becoming more desirable than more conventional one-way communication. Eye contact is a part of non-verbal communication that is as important as verbal communication in achieving patient satisfaction. Eye contact shows more attention and involvement in interacting with the patient.(Asan et al., 2015b, Montague and Asan, 2014, Asan et al., 2015a)

Several studies have examined ways to improve the quality of physician and patient communication in the application of RME.(Montague and Asan, 2014, Alkureishi et al., 2016, Weiner, 2012) Doctors can be taught how to improve effective communication, namely by sharing medical information ***(***screen *sharing)* through a computer screen with patients.(Asan et al., 2015b, Asan, 2017, Choudhury et al., 2020, Fletcher et al., 2017, Milne et al., 2016) Other researchers have conducted trials using touch screen propotypes on computer monitors, resulting in patients feeling more actively engaged and the information conveyed is easier to understand.(Milne et al., 2016) Some other advantages obtained by the *screen sharing* method are that the doctor gets more accurate information, the patient understands the treatment plan given, the patient feels empathy from the doctor, the patient feels actively involved, and the patient does not feel silenced when the doctor fills the RME. An ergonomic examination room is also needed to facilitate the application of RME with *the screen sharing* method. In other words, technology can also potentially improve physician and patient communication.(Asan et al., 2018, Milne et al., 2016, Asan et al., 2015b, Choudhury et al., 2020, Fletcher et al., 2017, Asan et al., 2015a) Further studies need to be conducted to assess the extent of the influence of *screen sharing* methods on the non-verbal communication of doctors and patients. Until now, there has been no research on the effect of the application of RME with the *screen sharing* method on the communication of doctors and patients in Indonesia.

Based on some of the results of the research above, it shows that the application of RME has complex challenges, one of which is the change in communication between doctors and patients. Therefore, it is necessary to review and review literature from various sources that support the Principle of Open Communication Using *Screen Sharing* in RME. The purpose of this *review* research is to find out the Principle of Open Communication Using *Screen Sharing* in RME. So that the formulation of the problem in this article is how the Principle of Open Communication Using *Screen Sharing* in Electronic Medical Records affects patient satisfaction.

RESEARCH METHODS

The research design used in the preparation of this article is a *literature review* method related to the Principle of Open Communication Using *Screen Sharing* on Electronic Medical Records using databases such as *Google Scholar, PUBMED, Sciencedirect,* and *Researchgate* during the period 2012-2022. In this study, researchers collected literature review materials whose thematic structure was based on thinking concepts that were compiled to answer scientific questions by grouping and discussing library sources according to the topic. The inclusion criteria used by researchers are research that explains the use and evaluation of RME implementation in health care facilities that use Indonesian or English literature, while the exclusion criteria is *gray literature*. Search based on the topics discussed by compiling discussion topics in the form of a mind map **(figure 1)** to facilitate the search for topics in each branch of the *mind map*, then keyword searches are determined based on the *PICO* strategy with outcomes: the influence of open communication using *screen sharing* on RME to physician-patient communication and physician-RME interactions that focus on the concept of patient *centred care*. Then it starts by entering the keywords "openness EMR OR EHR *to the* patient AND screen sharing OR screen mirroring", "doctor EMR OR EHR interaction ***and*** screen sharing OR *screen mirroring", "doctor patient communication **AND** EMR **OR** EHR **OR** screen sharing* OR screen mirroring"*, "patient centered care **AND** EMR* OR *EHR **OR** screen sharing **OR** screen mirroring".*

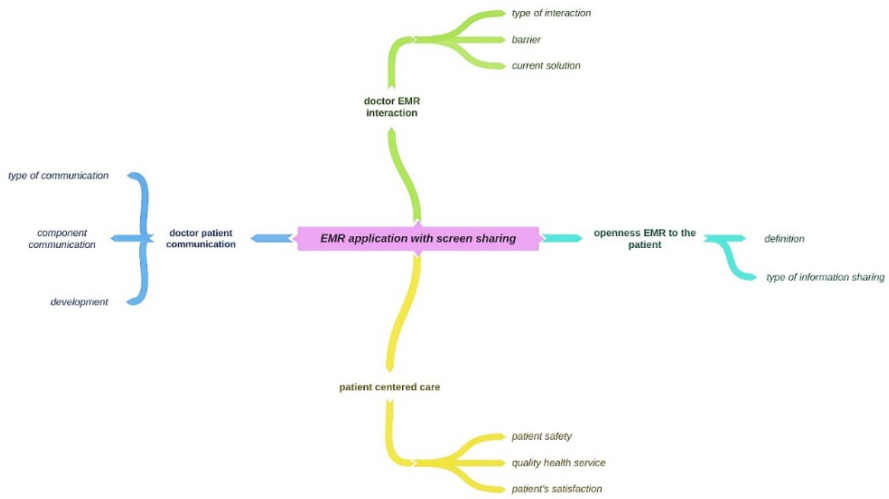

Figure 1. Mind Map Research

The picture above is a concept of thought compiled based on the topic of discussion of literature review to answer the formulation of problems related to the Principle of Open Communication Using *Screen Sharing* on Electronic Medical Records and includes 4 discussion topics, namely the openness of RME facilities in sharing clinical information with patients, interaction between doctors and RME facilities, doctor and patient communication, and the concept of patient *centered care*. The literature studied is adjusted to the subject matter contained in each branch of the *mind map*, books and journals that use *systematic review* research methods, quantitative studies and qualitative studies, taking into account the publication time of each decade.

Researchers conducted data analysis using *the critical appraisal* method with *PRISMA 2020* to analyze journals used as theoretical foundations related to differences, similarities, and shortcomings of selected journals (**figure 2**). Journals are reviewed to select appropriate journals so that they can answer research questions from each branch of *the mind map* that will be discussed in the concept of thinking above. After answering all the topics from each aspect of the *mind map* concept, the researcher synthesized and summarized the results of the literature review in a new article that provides an overview of the Principle of Open Communication Using *Screen Sharing* in Electronic Medical Records.

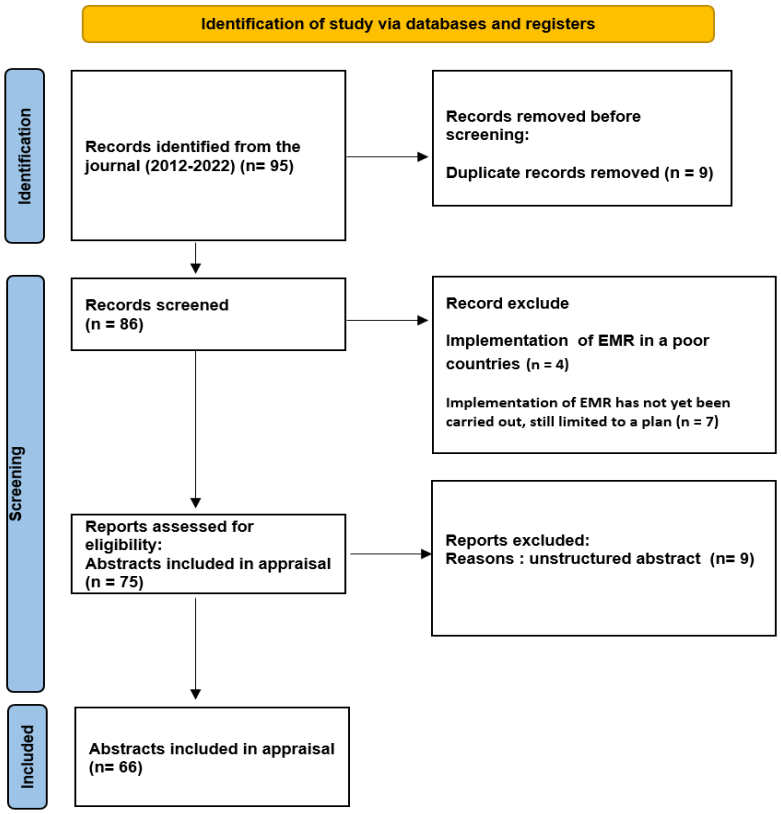

Figure 2. Journal Selection Diagram Flow.

RESULTS AND DISCUSSION

The openness of RME facilities in question is the disclosure of patient clinical information directly by doctors with RME facilities. RME facilities should be used as a means of communication and a means of educating patients through the method of sharing information directly *(screen sharing).* This method becomes one of the strategies to solve problems related to communication between doctors and patients and can facilitate patients to be actively involved in consulting with doctors. Patients can view clinical information directly on a computer screen and discuss directly with the doctor.(Milne et al., 2016, Asan et al., 2018, Asan et al., 2016) The patient's active involvement in the discussion will assist the doctor in completing the clinical information on the RME until the end of the consultation. Some other advantages obtained by *the screen sharing* method are that the doctor gets more accurate information, the patient understands the treatment plan given, and the patient does not feel silenced when the doctor fills in the RME. This transparency will make the patient better understand what the doctor is doing so that the patient does not feel that he has lost the empati.(Wali et al., 2020, Asan et al., 2018, Asan et al., 2016)

Different ways of sharing clinical information with RME tools

There are three ways to apply *the screen* sharing method, namely active information sharing, *passive information sharing,* and *technology withdrawal.* (Asan et al., 2015b)

1. *Active information sharing.*

The doctor will position the computer monitor screen in such a way that the doctor and the patient can see the monitor screen together or the patient is actively invited by the doctor to sit next to each other so that they can see the monitor screen together.

2. *Passive information sharing*

The doctor does not position the computer screen or invite the patient to sit together in sharing clinical information, but also does not close the computer screen. The patient can still see the computer screen if the patient really wants to.

3. *Technology withdrawal*

Doctors do not position the computer screen or invite the patient to sit together in sharing clinical information even the doctor keeps the computer screen at a distance from the patient so that the patient does not have the opportunity to see the computer screen.

The application of the *screen* sharing method with *active information sharing* is the best solution to improve effective communication between doctors and patients. *Active information sharing* can be done in three ways, namely convincing clinical information, translating clinical information seen on a computer screen (*translating),* and reassuring clinical information that has been provided *(verifying).* The position of the monitor screen, patient, and doctor will determine the screen *sharing* method to be used.(Asan et al., 2015b, Choudhury et al., 2020)

The interaction of doctors with the means of RME

Doctors play an important role in the use of RME means. Clinical information obtained from patients will simultaneously be stored and managed automatically by the system. The RME application will make it easier for doctors to track and dig up patient information if needed. RME facilities are expected to be able to increase the efficiency and effectiveness of doctors in providing health services (Asan and Montague, 2012, Street Jr et al., 2014)

1. Types of interaction of doctors and means of RME

There are three types of doctor interactions and RME facilities, namely *technology-centered, mixed, and human centered*. These types of interactions are grouped based on the doctor's activity while staring at a computer screen and typing on *a keyboard*. In the *technology-centered* group, doctors spend more time staring at computer screens while typing out the results of clinical information obtained from patients. The *mixed* group refers to the doctor's activities that do not focus too much on the computer screen and keyboard, so that the doctor can still communicate with the patient during the examination. *Human-centered* groups focus more on direct communication with patients. Doctors don't focus too much on computer screens and keyboards. It is this type of interaction that is considered the best type of interaction that can be carried out in the era of implementing RME. (Asan and Montague, 2012)

2. Inhibiting factors

From literature review and literature review, a number of obstacles to the application of RME were obtained. Here are the overall inhibiting factors (table 1).

Table 1. Inhibiting factors in the application of RME

Category	Obstacles
A Financial	1 High initial costs (Alpert, 2016, Park and Han, 2017)
	2 High maintenance costs (Park and Han, 2017)
	3 Uncertainty about return on investment
	4 Lack of financial resources
B Technical	1 Lack of computer skills from doctors and/or staff (Ajami and Bagheri-Tadi, 2013, O'Donnell et al., 2018)
	2 Lack of technical training and support (Ajami and Bagheri-Tadi, 2013, O'Donnell et al., 2018)
	3 System complexity (Bowman, 2013)
	4 Lack of adjustment (Ajami and Bagheri-Tadi, 2013, O'Donnell et al., 2018)
	5 Lack of reliability (Ajami and Bagheri-Tadi, 2013, O'Donnell et al., 2018)
	6 Interconnectivity/Standardization (Rimmerman and Colbert, 2014, Reis et al., 2017)
	7 Lack of computers/hardware (Ajami and Bagheri-Tadi, 2013)

C Time	1 When choosing, purchasing and implementing the system
	2 When studying systems (Bowman, 2013)
	3 When entering data (Ajami and Bagheri-Tadi, 2013)
	4 More time per patient (Bowman, 2013)
D Social	1 Uncertainty about vendors (Wu et al., 2022)
	2 Lack of support from external parties (Triantafillou, 2017)
	3 Disorders in the doctor-patient relationship (Babbott et al., 2014, Jabour, 2020)
	4 Lack of support from other colleagues (Reich, 2012)
	5 Lack of support from the management level (Rothman et al., 2012)
E Legality	1 Privacy or security concerns (O'Donnell et al., 2018)
F Changes	1 Lack of incentives (Gottlieb et al., 2015, Dranove et al., 2015)
	2 Lack of participation (Nguyen et al., 2014)

3. *Solution*

Overcoming barriers to the implementation of RME by doctors as users is a complex process that requires support from several parties such as the government, related insurance companies, vendors, directors, patients and especially the doctors themselves. Policymakers must understand the barriers that occur so that they can immediately determine the appropriate interventions to overcome these barriers. Barriers from users can be overcome by socialization and training to get used to using the means of RME. The RME system used should be an easier, simpler, and user-friendly RME system so that the adaptation process can be achieved immediately. Barriers regarding high costs, especially the cost of purchasing and maintaining devices related to RME, require different solutions, namely incentives from the government, such as low-interest loans or funding programs. Privacy and security concerns require direct government intervention. The government is expected to step in to help maintain the security and privacy of patient data by instructing parties involved in the implementation of RME to follow applicable laws and regulations.(Lau et al., 2012, Dutta and Hwang, 2020, Ajami and Bagheri-Tadi, 2013)

Communication between doctors and patients in the application of RME

The implementation of RME has changed the communication of doctors and patients that is *dyadic* to *triadic.* The existence of computers as a means of RME has transformed the relationship of doctors and patients into the relationship of doctors, computers, and patients. This alteration affects verbal and non-verbal communication between the doctor and the patient.(Jongerius et al., 2022, Yang and Asan, 2016, Asan et al., 2015b, Montague and Asan, 2014)

1. Types of RME-related physician and patient communication

There are 3 types of communication between doctors and patients related to the application of RME, namely *informational-ignoring style*, where doctors talk to patients while documenting the patient's clinical information; *controlling-managerial style*, in which the doctor gives pauses in talking to the patient and documenting the clinical information obtained; *interpersonal style*, where the doctor will only speak at the beginning of the patient's examination, then document the clinical information obtained.

2. Communication components between physicians and patients regarding RME

The application of RME affects verbal and non-verbal communication between doctors and patients. Focus and empathy become part of the components of verbal communication that occur between the doctor and the patient. The interaction of doctors with the means of RME will more or less have a negative effect on verbal communication. This interaction is strongly influenced by the doctor's proficiency and habits in using RME. Some doctors who are still unfamiliar with the use of RME, will devote more of their focus and attention to computer screens. This is what patients complain about in treatment in the era of applying RME. The patient feels that the doctor's attention and focus are reduced, so the patient does not feel empathy during treatment. Changes in the non-verbal component of communication also occur, namely eye contact. Minimal eye contact is the main culprit. Doctors look at computer screens more than they make eye contact with patients. (Choudhury et al., 2020, Esch et al., 2016, Asan et al., 2015b, Montague and Asan, 2014)

3. Development of communication between doctors and patients regarding RME

Previous research has suggested using *mneumonic* "LEVEL" in the implementation of good and correct means of RME. *Let,* let the patient see what the doctor wrote; *Eye* contact, maintain eye contact with the patient: *Value,* use computer means as a means of communication; *Explain,* explain to the patient what the doctor is doing; *Log off.* An ergonomic practice room is also needed to support the use of the *screen sharing* method. (Asan et al., 2018)

Konsep patient centered care (PCC)

The health information system has adopted RME to support the concept of *patient centered care* (PCC). Patient-focused care (PCC) is a form of collaboration between healthcare providers, patients and patients' families to ensure that medical decisions are made according to what patients need, so that patients are engaged in their own treatment. The implementation of PCC in hospitals must involve all aspects, namely from the board of directors, doctors, nurses, to non-medical personnel. Strategies that can be carried out in the implementation of PCC include: leadership training, awarding and training for quality improvement (Framptom, 2008). (Ernawati and Lusiani, 2019, Butler et al., 2020, Stanhope and Matthews, 2019)

1. Patient safety

Hospitals as health care providers are required to provide comprehensive services and refer to patient safety. Patients are entitled to health services with guaranteed safety. Patient safety system is a security system that includes risk identification, risk assessment, and solutions to ensure patient safety in the hospital. One of the hospital's efforts to ensure patient safety is the implementation of RME facilities. RME can be programmed to detect and report matters relating to data documentation, patient medical information and direct or indirect supervision of patient treatment. RME facilities are expected to be able to detect and prevent events that have the potential to threaten patient safety (WHO, 2008). (Firdaus, 2020, Tanner et al., 2015, Tubaishat, 2019, Meeks et al., 2014, Manca, 2015, Greiver, 2015, Aldosari, 2017)

2. Quality health services

Hospitals are a form of capital-intensive and technology-intensive health services. Hospitals must be able to run health services efficiently so that fast and accurate information is needed. Information is the most important pillar in hospital planning (Kemkes RI, 2011). RME as an information technology system in the form of health service innovation is a patient's medical record record in electronic format written by one or more health workers every time a meeting between a health care provider and a patient. RME can be accessed by computer means aimed at providing or improving efficient and integrated health services (Khasanah, 2020). The use of RME has the potential to provide benefits for basic service facilities and hospitals. One of the perceived benefits is the increased efficiency in the health care process. The use of RME has an impact on reducing operating costs and increasing revenue in hospitals. These recommendations can be considered in the subsequent development of RME. (Saputro, 2020, Andriani et al., 2022, Apriliyani, 2021, Erawantini, 2013)

3. Patient satisfaction

Patient satisfaction is a complex element that is influenced by multifactorial in healthcare. The application of RME alone cannot directly improve patient satisfaction. On the contrary, it affects the negative issue between doctor and patient communication. (Bloom & Huntington, 2010; Gaffey, 2009). The results of a literature review of the effect of RME on patient satisfaction vary widely. Some patients are satisfied with doctors who use RME as a means of communication. Patients find it easier to get clinical information from doctors. Several other patients reported dissatisfaction with the use of RME. Patients complain that doctors do not focus on the patient when filling out the means of RME. Several other factors that cause dissatisfaction with the means of RME, namely eye contact, direct disclosure of clinical information, and placement of computer monitor screens. (Lee et al., 2016, Kazley et al., 2012, Marmor et al., 2018, Wali et al., 2020, Liu et al., 2013).

CONCLUSIONS

Based on the study and literature review above, it was concluded that the Principle of Open Communication Using Screen Sharing in Electronic Medical Records can optimize health services. Optimal health services can be seen from patient satisfaction which is shown by the establishment of positive communication between doctors and patients.

Support from various parties, namely the government, management, vendors, users, and patients in the Principle of Open Communication Using Screen Sharing on Electronic Medical Records is able to increase the effectiveness and efficiency of data storage, data privacy and security, allocation of better service times, and end up optimizing patient satisfaction.

Acknowledgment

The author would like to thank the leadership for providing support and enthusiasm in completing this research. A word of gratitude is also conveyed to hospitals that have provided the opportunity to conduct research and to all parties involved both morally and materially so that research can be useful and become a useful reading for the improvement of science, especially in the field of medical records and health information

ETHICAL CONSIDERATIONS

Funding Statement.

The authors did not receive support from any organization for the submitted work.

REFERENCES

Adiwibowo, H. 2020. *Persepsi Dan Harapan Pengguna Mengenai Rekam Medis Elektronik: Studi Kasus.* Universitas Muhammadiyah Yogyakarta.

Ajami, S. & Bagheri-Tadi, T. 2013. Barriers For Adopting Electronic Health Records (Ehrs) By Physicians. *Acta Informatica Medica,* 21**,** 129.

Aldosari, B. 2017. Patients' Safety In The Era Of Emr/Ehr Automation. *Informatics In Medicine Unlocked,* 9**,** 230-233.

Alkureishi, M. A., Lee, W. W., Lyons, M., Press, V. G., Imam, S., Nkansah-Amankra, A., Werner, D. & Arora, V. M. 2016. Impact Of Electronic Medical Record Use On The Patient–Doctor Relationship And Communication: A Systematic Review. *Journal Of General Internal Medicine,* 31**,** 548-560.

Alpert, J. S. 2016. The Electronic Medical Record In 2016: Advantages And Disadvantages. *Digital Medicine,* 2**,** 48.

Amin, M., Setyonugroho, W. & Hidayah, N. 2021. Implementasi Rekam Medik Elektronik: Sebuah Studi Kualitatif. *Jatisi (Jurnal Teknik Informatika Dan Sistem Informasi),* 8**,** 430-442.

Andriani, R., Wulandari, D. S. & Margianti, R. S. 2022. Rekam Medis Elektronik Sebagai Pendukung Manajemen Pelayanan Pasien Di Rs Universitas Gadjah Mada. *Jurnal Ilmiah Perekam Dan Informasi Kesehatan Imelda,* 7**,** 96-107.

Apriliyani, S. 2021. Penggunaan Rekam Medis Elektronik Guna Menunjang Efektivitas Pendaftaran Pasien Rawat Jalan Di Klinik Dr. Ranny. *Cerdika: Jurnal Ilmiah Indonesia,* 1**,** 1399-1410.

Asan, O. 2017. Providers′ Perceived Facilitators And Barriers To Ehr Screen Sharing In Outpatient Settings. *Applied Ergonomics,* 58**,** 301-307.

Asan, O., Carayon, P., Beasley, J. W. & Montague, E. 2015a. Work System Factors Influencing Physicians' Screen Sharing Behaviors In Primary Care Encounters. *International Journal Of Medical Informatics,* 84**,** 791-798.

Asan, O. & Montague, E. 2012. Physician Interactions With Electronic Health Records In Primary Care. *Health Systems,* 1**,** 96-103.

Asan, O., Tyszka, J. & Crotty, B. 2018. The Electronic Health Record As A Patient Engagement Tool: Mirroring Clinicians' Screen To Create A Shared Mental Model. *Jamia Open,* 1**,** 42-48.

Asan, O., Tyszka, J. & Fletcher, K. E. 2016. Capturing The Patients' Voices: Planning For Patient-Centered Electronic Health Record Use. *International Journal Of Medical Informatics,* 95**,** 1-7.

Asan, O., Young, H. N., Chewning, B. & Montague, E. 2015b. How Physician Electronic Health Record Screen Sharing Affects Patient And Doctor Non-Verbal Communication In Primary Care. *Patient Education And Counseling,* 98**,** 310-316.

Assis-Hassid, S., Reychav, I., Pliskin, J. S., Heart, T. & Reis, S. Simulated Medical Encounters To Analyze Patient-Physician Communication During Electronic Medical Records' Use In Primary Care. Mcis (Short Papers), 2012. 19.

Babbott, S., Manwell, L. B., Brown, R., Montague, E., Williams, E., Schwartz, M., Hess, E. & Linzer, M. 2014. Electronic Medical Records And Physician Stress In Primary Care: Results From The Memo Study. *Journal Of The American Medical Informatics Association,* 21**,** E100-E106.

Bowman, S. 2013. Impact Of Electronic Health Record Systems On Information Integrity: Quality And Safety Implications. *Perspectives In Health Information Management,* 10.

Butler, J. M., Gibson, B., Lewis, L., Reiber, G., Kramer, H., Rupper, R., Herout, J., Long, B., Massaro, D. & Nebeker, J. 2020. Patient-Centered Care And The Electronic Health Record: Exploring Functionality And Gaps. *Jamia Open,* 3**,** 360-368.

Choudhury, A., Crotty, B. & Asan, O. 2020. Comparing The Impact Of Double And Single Screen Electronic Health Records On Doctor-Patient Non-Verbal Communication. *Iise Transactions On Occupational Ergonomics And Human Factors,* 8**,** 42-49.

Dranove, D., Garthwaite, C., Li, B. & Ody, C. 2015. Investment Subsidies And The Adoption Of Electronic Medical Records In Hospitals. *Journal Of Health Economics,* 44**,** 309-319.

Dutta, B. & Hwang, H.-G. 2020. The Adoption Of Electronic Medical Record By Physicians: A Prisma-Compliant Systematic Review. *Medicine,* 99.

Erawantini, F. 2013. Rekam Medis Elektronik: Telaah Manfaat Dalam Konteks Pelayanan Kesehatan Dasar. *Fiki 2013,* 1.

Ernawati, E. & Lusiani, M. 2019. Studi Fenomenologi: Pelaksanaan Patient Center Care Perspektif Pasien Dan Perawat Di Rs Dr. Dradjat Prawiranegara Serang. *Faletehan Health Journal,* 6**,** 83-90.

Esch, T., Mejilla, R., Anselmo, M., Podtschaske, B., Delbanco, T. & Walker, J. 2016. Engaging Patients Through Open Notes: An Evaluation Using Mixed Methods. *Bmj Open,* 6**,** E010034.

Firdaus, M. 2020. Improving Patient Safety And Hospital Service Quality Through Electronic Medical Record: A Systematic Review. *Jurnal Administrasi Rumah Sakit Indonesia,* 6.

Fletcher, K. E., Asan, O. & Tyszka, J. 2017. Residents' Insights And Ideas About Screen-Sharing In Primary Care Clinics. *Applied Clinical Informatics,* 8**,** 1153-1158.

Gottlieb, L. M., Tirozzi, K. J., Manchanda, R., Burns, A. R. & Sandel, M. T. 2015. Moving Electronic Medical Records Upstream: Incorporating Social Determinants Of Health. *American Journal Of Preventive Medicine,* 48**,** 215-218.

Greiver, M. 2015. Do Electronic Medical Records Improve Quality Of Care?: No. *Canadian Family Physician,* 61**,** 847-849.

Gunawan, T. S. & Christianto, G. M. 2020. Rekam Medis/Kesehatan Elektronik (Rmke): Integrasi Sistem Kesehatan. *Jurnal Etika Kedokteran Indonesia,* 4**,** 27-31.

Honavar, S. G. 2020. Electronic Medical Records - The Good, The Bad And The Ugly. *Indian J Ophthalmol,* 68**,** 417-418.

Jabour, A. M. 2020. The Impact Of Electronic Health Records On The Duration Of Patients' Visits: Time And Motion Study. *Jmir Medical Informatics,* 8**,** E16502.

Jongerius, C., Hillen, M. A., Romijn, J. A., Smets, E. M. & Koole, T. 2022. Physician Gaze Shifts In Patient-Physician Interactions: Functions, Accounts And Responses. *Patient Education And Counseling*.

Kalayou, M. H., Endehabtu, B. F., Guadie, H. A., Abebaw, Z., Dessie, K., Awol, S. M., Mengestie, N. D., Yeneneh, A. & Tilahun, B. 2021. Physicians' Attitude Towards Electronic Medical Record Systems: An Input For Future Implementers. *Biomed Research International,* 2021.

Kazley, A. S., Diana, M. L., Ford, E. W. & Menachemi, N. 2012. Is Electronic Health Record Use Associated With Patient Satisfaction In Hospitals? *Health Care Management Review,* 37**,** 23-30.

Koten, E. H. B., Ningrum, B. S. & Hariyati, R. T. S. 2020. Implementasi Electronic Medical Record (Emr) Dalam Pelayanan Kesehatan Di Rumah Sakit: Studi Literatur. *Carolus Journal Of Nursing,* 2**,** 95-110.

Lau, F., Price, M., Boyd, J., Partridge, C., Bell, H. & Raworth, R. 2012. Impact Of Electronic Medical Record On Physician Practice In Office Settings: A Systematic Review. *Bmc Medical Informatics And Decision Making,* 12**,** 1-10.

Lee, W. W., Alkureishi, M. A., Ukabiala, O., Venable, L. R., Ngooi, S. S., Staisiunas, D. D., Wroblewski, K. E. & Arora, V. M. 2016. Patient Perceptions Of Electronic Medical Record Use By Faculty And Resident Physicians: A Mixed Methods Study. *Journal Of General Internal Medicine,* 31**,** 1315-1322.

Liu, J., Luo, L., Zhang, R. & Huang, T. 2013. Patient Satisfaction With Electronic Medical/Health Record: A Systematic Review. *Scandinavian Journal Of Caring Sciences,* 27**,** 785-791.

Manca, D. P. 2015. Do Electronic Medical Records Improve Quality Of Care?: Yes. *Canadian Family Physician,* 61**,** 846-847.

Marmor, R. A., Clay, B., Millen, M., Savides, T. J. & Longhurst, C. A. 2018. The Impact Of Physician Ehr Usage On Patient Satisfaction. *Applied Clinical Informatics,* 9**,** 011-014.

Meeks, D. W., Smith, M. W., Taylor, L., Sittig, D. F., Scott, J. M. & Singh, H. 2014. An Analysis Of Electronic Health Record-Related Patient Safety Concerns. *Journal Of The American Medical Informatics Association,* 21**,** 1053-1059.

Milne, H., Huby, G., Buckingham, S., Hayward, J., Sheikh, A., Cresswell, K. & Pinnock, H. 2016. Does Sharing The Electronic Health Record In The Consultation Enhance Patient Involvement? A Mixed-Methods Study Using Multichannel Video Recording And In-Depth Interviews In Primary Care. *Health Expectations,* 19**,** 602-616.

Montague, E. & Asan, O. 2014. Dynamic Modeling Of Patient And Physician Eye Gaze To Understand The Effects Of Electronic

Health Records On Doctor–Patient Communication And Attention. *International Journal Of Medical Informatics,* 83**,** 225-234.

Nguyen, L., Bellucci, E. & Nguyen, L. T. 2014. Electronic Health Records Implementation: An Evaluation Of Information System Impact And Contingency Factors. *International Journal Of Medical Informatics,* 83**,** 779-796.

O′donnell, A., Kaner, E., Shaw, C. & Haighton, C. 2018. Primary Care Physicians′ Attitudes To The Adoption Of Electronic Medical Records: A Systematic Review And Evidence Synthesis Using The Clinical Adoption Framework. *Bmc Medical Informatics And Decision Making,* 18**,** 1-16.

Octavia, R. 2022. *Studi Literatur Manfaat Dan Tantangan Penerapan Rekam Medis Elektronik Di Rumah Sakit.* Universitas Jambi.

Ofri, D. 2019. Empathy In The Age Of The Electronic Medical Record. *Lancet,* 394**,** 822-823.

Park, Y.-T. & Han, D. 2017. Current Status Of Electronic Medical Record Systems In Hospitals And Clinics In Korea. *Healthcare Informatics Research,* 23**,** 189-198.

Reich, A. 2012. Disciplined Doctors: The Electronic Medical Record And Physicians' Changing Relationship To Medical Knowledge. *Social Science & Medicine,* 74**,** 1021-1028.

Reis, Z. S. N., Maia, T. A., Marcolino, M. S., Becerra-Posada, F., Novillo-Ortiz, D. & Ribeiro, A. L. P. 2017. Is There Evidence Of Cost Benefits Of Electronic Medical Records, Standards, Or Interoperability In Hospital Information Systems? Overview Of Systematic Reviews. *Jmir Medical Informatics,* 5**,** E7400.

Rimmerman, C. M. & Colbert, A. 2014. Standardizing Electronic Medical Record Documentation. *Physician Executive,* 40**,** 44.

Roter, D. L. 2015. In The Digital World Of The Emr, Open Notes Change Everything. *Israel Journal Of Health Policy Research,* 4**,** 1-3.

Rothman, B., Leonard, J. C. & Vigoda, M. M. 2012. Future Of Electronic Health Records: Implications For Decision Support. *Mount Sinai Journal Of Medicine: A Journal Of Translational And Personalized Medicine,* 79**,** 757-768.

Saputro, A. D. 2020. Peningkatan Mutu & Efisiensi Pelayanan Melalui Implementasi Rekam Medis Elektronik Di Rs Bethesda Yogyakarta. *Prosiding" Standar Akreditasi Rumah Sakit (Snars) Edisi 1 Terkait Rekam Medis" Yogyakarta Tahun 2018*.

Setiatin, S. S. & Susanto, A. S. 2021. Evaluasi Penerapan Rekam Medis Elektronik Rawat Jalan Di Rumah Sakit Umum X Bandung Tahun 2021. *Cerdika: Jurnal Ilmiah Indonesia,* 1**,** 1045-1056.

Stanhope, V. & Matthews, E. B. 2019. Delivering Person-Centered Care With An Electronic Health Record. *Bmc Medical Informatics And Decision Making,* 19**,** 1-9.

Street Jr, R. L., Liu, L., Farber, N. J., Chen, Y., Calvitti, A., Zuest, D., Gabuzda, M. T., Bell, K., Gray, B. & Rick, S. 2014. Provider Interaction With The Electronic Health Record: The Effects On Patient-Centered Communication In Medical Encounters. *Patient Education And Counseling,* 96**,** 315-319.

Tanner, C., Gans, D., White, J., Nath, R. & Pohl, J. 2015. Electronic Health Records And Patient Safety. *Applied Clinical Informatics,* 6**,** 136-147.

Tiorentap, D. R. A. 2020. Evaluasi Manfaat Penerapan Rekam Medis Elektronik Di Negara Berkembang: Systematic Literature Review. *Indonesian Of Health Information Management Journal (Inohim),* 8**,** 69-79.

Triantafillou, P. 2017. Making Electronic Health Records Support Quality Management: A Narrative Review. *International Journal Of Medical Informatics,* 104**,** 105-119.

Tubaishat, A. 2019. The Effect Of Electronic Health Records On Patient Safety: A Qualitative Exploratory Study. *Informatics For Health And Social Care,* 44**,** 79-91.

Wali, R., Alqahtani, R., Alharazi, S., Bukhari, S. & Quqandi, S. 2020. Patient Satisfaction With The Implementation Of Electronic Medical Records In The Western Region, Saudi Arabia, 2018. *Bmc Family Practice,* 21**,** 1-6.

Weiner, J. P. 2012. Doctor-Patient Communication In The E-Health Era. *Israel Journal Of Health Policy Research,* 1**,** 1-7.

Wu, Z., Xuan, S., Xie, J., Lin, C. & Lu, C. 2022. How To Ensure The Confidentiality Of Electronic Medical Records On The Cloud: A Technical Perspective. *Computers In Biology And Medicine,* 147**,** 105726.

Yang, Y. & Asan, O. 2016. Designing Patient-Facing Health Information Technologies For The Outpatient Settings: A Literature Review. *Journal Of Innovation In Health Informatics,* 23**,** 185.

Zaman, I. & Chauhan, I. 2021. Effect Of Electronic Medical Records On Improving Patient Care. *Diversity And Equality In Health And Care,* 18.