



The Impact of Electronic Health Care Record on Physicians' Professional Authority

Aref Shayganmehr¹, Gholamreza Malekzadeh^{2*}, Mariusz Trojanowski³

¹Dual PhD candidate of Ferdowsi University of Mashhad, Iran and University of Warsaw, Poland

²Associate Professor, Department of Management, Faculty of Economic and Administrative Sciences, Ferdowsi University of Mashhad, Iran

³Associate Professor at Warsaw University, Warsaw, Poland

Abstract

Introduction: The purpose of the Electronic Healthcare Record is to improve the service quality by reducing medical errors, prevention, monitoring, diagnosis, prioritization, treatment, follow-up, provision of effective ways to communicate and share information between health care providers, and better health information. While benefiting EHCR, physicians just like to practice medicine. These changes have created a new level of complexity that makes physicians feel frustrated and dissatisfied with medical practice. Therefore, one of the factors that affect EHCR is the physician's authority, which affects the acceptance or non-acceptance of EHCR. The present study aimed to investigate the effect of using electronic health records on physicians' authority.

Methods: Qualitative data collection was performed by a semi-structured interview with eight physicians, three specialists and four psychologists. The data collected show the users' perceptions of the impact of EHCR on the physicians' careers. All participants experienced the use of EHR in the health care system.

Results: A total of three dimensions were identified to assess the impact of the perceived threat of professional independence on the physician's acceptance of EHCR, increased managers' control, loss of professional privacy and professional authority, data trust, and security. When technology negatively affects the job roles, professional status, and independence, resistance is more likely to occur.

Conclusion: The results of the study show that the design and implementation of EHCR should be in a way that does not threaten the autonomy of physicians. If the electronic health record system is designed and implemented without regard to the issue of autonomy, it will be nothing but a "cookbook" for doctors, and they will not welcome it.

Keyword: Electronic Health Records, Technology, Acceptance, Authority, Physician

Article History:

Received: 12 August 2020

Accepted: 19 September 2020

Please cite this paper as:

Shayganmehr A, Malekzadeh GR, Trojanowski M. The Impact of Electronic Health Care Record on Physicians' Professional Authority. J Health Man & Info. 2020; 7(3): 166-169.

*Correspondence to:

Gholamreza Malekzadeh, Associate Professor, Department of Management, Faculty of Economic and Administrative Sciences, Ferdowsi University of Mashhad, Iran
Tel: +98 51 38805374
Email: malekzadeh@um.ac.ir

Background

One of the criteria for evaluating the health system of any country, according to the World Health Organization, is the use of technology innovation in the field of health (1). Over the past decade, many governments have been pursuing incentive policies to implement EHCR (2). Nevertheless, there is still resistance from its users (3). Various factors are involved in the acceptance of electronic health records. Identifying these factors is an effective way to remove human-social barriers, especially employee resistance (4).

Based on many studies, managerial support, autonomy, physician participation, and patient-physician communication in organizational characteristics would influence the impact of physicians' acceptance and use of EHCR (5, 6). The

mental state of the need for innovation (awareness), ability to take on the transfer of technology (skills), as well as minimizing resistance and supporting efforts (attitudes) are essential in the successful implementation of new technology (7). Some research suggests that the use of EHCR is considered as an obstacle to the efficiency of the physician's workflow and neglect of patients (8-10).

However, in some other research results, it has been suggested that EHCR technology may improve the patient's relationship with the service provider, such as the physician (10, 11). One of the factors that affect EHCR is the doctor's authority, which affects accepting or not accepting the EHCR. However, a few types of research have been done in this area, and more research is needed on this issue. The purpose of this research is to investigate the role of the physicians'

professional authority in accepting EHCR.

Methods

In this study, qualitative method which involves collecting and analyzing non-numerical data to understand opinions, concepts, or experiences was used. It can be used to generate new ideas for research or gather in depth insights into a problem. These data are less capable of being converted to numbers, so they are analyzed in the same way as they were compiled. Semi-structured interviews for qualitative data collection and qualitative content analysis for analyzing data were used. Qualitative content analysis is a widely used in qualitative research technique and is a research tool used to determine the presence of certain words, concepts, or themes within some given qualitative data. Using content analysis, researchers can analyze and quantify the presence, meanings, and relationships of such certain words, concepts, or themes.

15 participants including eight physicians and four psychologists, and three specialists including pediatricians, gynecologists, and psychiatrists were purposefully selected (8 males and 7 females). All participants had at least 10 years' experience in healthcare system and about 5 years' experience in using EHR. Before starting the interview, informed consent was obtained, and they were assured of confidentiality and privacy. The location of the interviews was decided based on the participants' workplace or where they suggested. The interview lasted about 30 to 60 minutes. At the beginning of each meeting, the topic of the study was fully explained to the participants with an introduction. The first question was a general one about using technology in healthcare and then specific question were asked about electronic healthcare record to collect in-depth information on the physician's opinions, thoughts, feelings, and experiences at the end of each interview, the participants were asked about additional information or topics that were not discussed.

Discussion

Electronic health record makes fundamental changes in healthcare which can affect the positions or authority relations in medical procedures (12). The physician stated:

"When I work with a computer and record information, people think I do not have enough medical knowledge, and they spread rumors that he cannot visit the patient without a computer."

Similar research has shown that understanding

the impact of the EHCR on a physician's professional authority is one of the essential concerns that physicians have about using HER or EHCR. This concern was evident before the implementation of the EHCR and has increased since the establishment of the EHCR (13, 14). The other physicians stated:

"I studied medicine for many years, and now I have to follow the EHCR instructions."; *"The use of technology is part of the ministry's plans, and it was obligatory to implement it without our opinion and choice.";* *"Some services that are not a priority for the health care recipient are included in the system, such as mental health services or addiction or sexual problems, and other things that we only consider in patients with indications, but the system provides essentials for everyone."*

A perceived threat to physician's authority is a degree to which a person believes that the use of a particular system, such as health technology, reduces his/her control over working conditions, trends, stages, or content (15). Many studies have shown that the perceived threat to physician's authority has a significant negative impact on physicians' decision to accept electronic healthcare records (12, 15-18). Indeed, when technology negatively affects the job roles, professional status, and independence, resistance is likely to occur (12, 15). Moreover, the results of another doctor's interview indicated that he was satisfied with the use of the electronic health record and stated:

"The e-system has come up with good solutions for hypertension for hypertensive patients. I used to take a test from one arm. After studying the guidelines introduced in the EHCR for hypertension, I realized that it is better for it to be tested from both arms because if the difference in double pressure is significant, we have to advise the patient that for testing blood pressure, always test the arm that has the highest blood pressure than the other arm."

Therefore, doctors and other people with high computer skills welcome the implementation of EHCR. Awareness of the benefits and positive EHCR effects on the work process also reduces their resilience (19). Some doctors believed that using EHR could increase the risk of patients' confidentiality. Examples of Related Quotes:

"There is some information security in data storage, and someone might be able to access it."; *"It is somewhat secure, but it's still possible for others to access the data. Information security is very important, and access should be very limited.";* *"It's important to store the information.";* *"Most educated people are sensitive and curious about the security and confidentiality of*

information.”

Many studies have mentioned the confidentiality of patient information as one of the main barriers for physicians and other health care workers, EHR admissions, and e-health (20, 21). Physicians are concerned that patient data will be available in the EHCR for those who are not allowed to access it (20). Physicians who use EHCR believe that the risks of security and confidentiality in the EHCR are higher than the paper system (20).

A total of three dimensions have been proposed to assess the impact of the perceived threat of professional independence on the physicians' acceptance of EHCR: Increased managers control, Loss of professional privacy and professional authority, Data trust and security (21).

Conclusion

The results of these studies suggest that the design and implementation of EHCR should be in a style that does not threaten the physicians' autonomy. Therefore, physicians should be free to choose the stages of diagnosis and treatment of the patient, and the existing system could be considered as a support for them. If the electronic health record system is designed and implemented without regard to the issue of autonomy, it will be nothing but a “cookbook” for doctors and will not be welcomed.

Suggestions

Since doctors are reluctant to use the mouse and keyboard, the use of advanced data entry tools such as barcodes, light pens, optical character readers, and voice recognition technology by users can be a great alternative. Moreover, access to the patient's record should be taken into consideration.

Conflict of Interest: None declared.

References

1. Dorenfest S. The decade of the '90s. Poor use of IT investment contributes to the growing healthcare crisis. *Healthcare informatics: the business magazine for information and communication systems*. 2000;17(8):64-7.
2. Venkatraman S, Bala H, Venkatesh V, Bates J. Six strategies for electronic medical records systems. *Communications of the ACM*. 2008;51(11):140-4. doi: 10.1145/1400214.1400243.
3. Gupta V, Murtaza MB. Approaches to electronic health record implementation. *Review of Business Information Systems (RBIS)*. 2009;13(4). doi: 10.19030/rbis.v13i4.4309.
4. Wilkins MA. Factors influencing acceptance of electronic health records in hospitals. *Perspect Health Inf Manag*. 2009;6:1f.
5. Wu JH, Shen WS, Lin LM, Greenes RA, Bates DW. Testing the technology acceptance model for evaluating healthcare professionals' intention to use an adverse event reporting system. *Int J Qual Health Care*. 2008;20(2):123-9. doi: 10.1093/intqhc/mzm074.
6. Kowitlawakul Y. The technology acceptance model: predicting nurses' intention to use telemedicine technology (eICU). *Comput Inform Nurs*. 2011;29(7):411-8. doi: 10.1097/NCN.0b013e3181f9dd4a.
7. Backer TE, David SL, Soucy G. Reviewing the behavioral science knowledge base on technology transfer. Introduction. *NIDA Res Monogr*. 1995;155:1-20. doi: 10.1037/e495742006-001.
8. Hsu J, Huang J, Fung V, Robertson N, Jimison H, Frankel R. Health information technology and physician-patient interactions: impact of computers on communication during outpatient primary care visits. *J Am Med Inform Assoc*. 2005;12(4):474-80. doi: 10.1197/jamia.M1741.
9. Gadd CS, Penrod LE. Dichotomy between physicians' and patients' attitudes regarding EMR use during outpatient encounters. *Proc AMIA Symp*. 2000:275-9.
10. Huber J. Patient acceptance of computerized progress note documentation. *Information technology for the practicing physician*: Springer; 2001. p. 114-7.
11. Baron RJ, Fabens EL, Schiffman M, Wolf E. Electronic health records: just around the corner? Or over the cliff? *Ann Intern Med*. 2005;143(3):222-6. doi: 10.7326/0003-4819-143-3-200508020-00008.
12. Abdekhoda M, Ahmadi M, Gohari M, Noruzi A. The Effects of Organizational Contextual Factors on Physicians' Attitude toward Adoption of Electronic Medical Records, Based on Technology Acceptance Model. *Journal of Payavard Salamat*. 2016;10(2):181-93.
13. Gadd CS, Penrod LE, editors. Assessing physician attitudes regarding use of an outpatient EMR: a longitudinal, multi-practice study. Proceedings of the AMIA Symposium; 2001: American Medical Informatics Association.
14. Detmer WM, Friedman CP, editors. Academic physicians' assessment of the effects of computers on health care. Proceedings of the Annual Symposium on Computer Application in Medical Care; 1994: American Medical Informatics

- Association.
15. Walter Z, Lopez MS. Physician acceptance of information technologies: Role of perceived threat to professional autonomy. *Decision Support Systems*. 2008;46(1):206-15. doi: 10.1016/j.dss.2008.06.004.
 16. Morton ME. Use and acceptance of an electronic health record: factors affecting physician attitudes. 2008.
 17. Hamid F, editor Providers' acceptance factors and their perceived barriers to electronic health record adoption. 141st APHA Annual Meeting (November 2-November 6, 2013); 2013: APHA.
 18. Esmailzadeh P, Sambasivan M. Healthcare professionals' adoption of clinical IT in hospital: a view of relationship between healthcare professionals and hospital. *Management*. 2012;2(5):161-70. doi: 10.5923/j.mm.20120205.04.
 19. Terry AL, Thorpe CF, Giles G, Brown JB, Harris SB, Reid GJ, et al. Implementing electronic health records: Key factors in primary care. *Canadian Family Physician*. 2008;54(5):730-6.
 20. Boonstra A, Broekhuis M. Barriers to the acceptance of electronic medical records by physicians from systematic review to taxonomy and interventions. *BMC Health Serv Res*. 2010;10:231. doi: 10.1186/1472-6963-10-231.
 21. de Groot C, Raissi A, Kwon Y, Santana MJ. Adoption of e-health technology by physicians: a scoping review. *J Multidiscip Healthc*. 2016;9:335-44. doi: 10.2147/JMDH.S103881.