

Perception of Benefits, Perception of Easy Used, Attitude and Social Influence on Intention to Use Electronic Medical Records

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Abstract

Background: This research is based on the Karawang Hospital management plan to implement electronic medical records as a whole by the end of 2023. **Objective:** The aim of this research is to describe perceived benefits, perceived convenience, attitudes and social influences on interest in using electronic medical records. **Method:** Descriptive studies are used in this research to explain the description of each research variable. The sample in this study was 210 potential users of electronic medical records. The sampling technique was carried out using a non-probability sampling technique, namely a purposive sampling technique. The data collection technique uses a questionnaire. **Result:** The results found that perceived convenience, attitudes and social influence contribute strongly to increasing interest in using RME. Perceived benefits and perceived convenience can influence attitudes. Perceived benefits, perceived convenience, and attitudes can influence interest in using RME, while social influence has no effect. Intervention attitudes positively influence perceived benefits and perceived convenience, as well as social influences positively interact with the influence of perceived benefits on interest in using RME, while on the influence of perceived convenience on interest in using RME, social influences interact negatively. **Conclusion:** The study underscores that fostering positive user attitudes and ensuring ease of use are pivotal determinants of successful electronic medical record (EMR) adoption, thereby highlighting the importance of user-centered strategies in EMR implementation. **Recommendation:** These findings suggest that enhancing positive user attitudes and simplifying EMR use are key drivers in supporting EMR implementation

Keywords: perception of benefits, perception of easy used, attitude, social, intention, electronic of medical record



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Background

The extensive implementation of electronic medical records (EMRs) in healthcare organizations has been motivated by the acknowledgment of their manifold advantages, such as enhanced patient care, improved communication, and heightened efficiency (1). However, the successful implementation and utilization of EMRs also depend on the perceptions and attitudes of healthcare professionals who are expected to use these systems (2).

The propensity of healthcare workers to accept and use electronic medical records (EMRs) is heavily influenced by their perceptions of the advantages associated with these systems. Research regularly demonstrates that healthcare workers view electronic medical records (EMRs) as offering substantial advantages, including expanded availability of clinical data, improved collaboration, and higher efficiency in workflow (3-4).

These advantages are frequently linked to enhanced patient care, less medical mistakes, and reduced healthcare expenses (5). Positive perception of electronic medical records (EMRs) can result in higher rates of acceptance and usage, as healthcare practitioners are more inclined to utilize systems that they regard as valuable and advantageous (6-7).

The usability of EMRs is a crucial determinant of healthcare workers' inclination to utilize these systems (8-9). Healthcare personnel who see electronic medical records (EMRs) as intuitive and straightforward to access are more inclined to embrace and utilize them proficiently. On the other hand, systems that are seen as intricate or challenging to operate might result in opposition and reduced acceptance (10). Healthcare professionals' perceptions of ease of use are influenced by factors such as their computer literacy, training, and experience with similar systems.

Healthcare professionals' attitudes towards EMRs also play a significant role in determining their intentions to use these systems (11). A positive attitude towards EMRs can be driven by factors such as the perceived benefits, ease of use, and the support of colleagues and supervisors (12). Healthcare professionals with a positive attitude are more likely to adopt and use EMRs, as they are more receptive to the benefits and less resistant to the

challenges associated with these systems (4,7,13).

Social influence, particularly from colleagues and supervisors, can also impact healthcare professionals' intentions to use EMRs. Healthcare professionals are more likely to adopt and use EMRs if they perceive that their peers and superiors are supportive of these systems and are using them effectively (4,7). Social influence can be a powerful motivator, as healthcare professionals often rely on the opinions and experiences of their colleagues to inform their own decisions about technology adoption (14-15).

Despite the numerous benefits associated with EMRs, there is a significant research gap in understanding how healthcare professionals perceive these benefits. Specifically, there is a need for studies that investigate the factors that influence healthcare professionals' perceptions of the benefits of EMRs such as healthcare professionals perceive these benefits, perceptions of the ease of use of EMRs, attitudes towards EMRs, and healthcare professionals' perceptions of social influence.

Given the upcoming plan of Karawang Hospital to fully implement EMRs by the end of 2023, it is urgent to thoroughly explore these factors, as failing to do so may lead to resistance, underutilization, and the inability to achieve the intended improvements in patient care and system efficiency.

OBJECTIVE

The study aimed to examine the effect of perception of benefits, perception of ease, attitude and social influence on intention of using the electronic medical records.

METHOD

Design

A cross-sectional study was carried out to examine the effect of perception of benefits, perception of ease, attitude and social influence on intention of using the electronic medical records. This study applied at General Hospital at Karawang, West Java province.

Sample, sample size, & sampling technique

The population in this study were prospective RME users at Karawang District

Hospital who had civil servant status. The population consists of nurses in outpatient installations, inpatient nurses, medical records officers, pharmacy staff, laboratory staff, radiologist staff, and doctors.

This study was conducted at Karawang District Hospital because the institution is in the critical phase of transitioning to a fully integrated electronic medical record (EMR) system by the end of 2023, in line with national e-health strategies. The hospital management has shown strong commitment to digitizing health services, making it an ideal setting for evaluating factors that influence the adoption of EMR systems

The sampling technique was carried out using a non-probability sampling technique such as purposive sampling technique where each population does not have the same opportunity to be sampled. Determination of the number of samples using the Slovin formula with an error rate of 5%.

$$n = \frac{N}{1 + N(e^2)}$$

$$n = \frac{311}{1 + 311(0,05^2)}$$

$$n = 174,72$$

To prevent patient dropout, the sample size in this study was increased by 20% so that the sample size was determined to be 210 respondents

Data collection process

The data collection technique uses a survey method directly to respondents in stages using a data collection tool in the form of a questionnaire.

The Researchers conducted this study within two months. The research assistant assisted the data collection process. During this process, the researcher give opportunity to all respondents to clarify the unclear instrument. All respondents received the information regarding the objective of this study and what should the respondents done for this study.

All the questionnaire had been tested for validity and reliability by distributing the questionnaire to the 30 respondents. The Cronbach alpha scores for instrument such as

Benefits Perception questionnaire (Cronbach alpha =.853), Perception of convenience (Cronbach alpha=.86), Attitude questionnaire (Cronbach alpha=.873) Social Influence questionnaire (Cronbach alpha =.855), and the questionnaire of intention to use the RME (Cronbach alpha =.85).

The questionnaire of intention to use the RME was used to measure the intention of health provider to use the electronic medical record. The questionnaire consisted of 4 dimensions such as 1) subjective norm; 2) objective norm, and; and 3) behavioral control. The 12 items questions with the Likert scale which is 1=strongly disagree, 2=disagree, 3=agree, and 4=strongly agree.

Perception of benefits toward EMR questionnaire was used to assess nurses' perceptions and satisfaction with the electronic medical record (EMR) system. The questionnaire consisted of 4 dimensions such as 1) makes work easier; 2) Increase productivity; 3) increase effectivity; and 4) improve the performance. The 16 items questions with the Likert scale which is 1=never, 2=sometimes, 3=often, and 4=always were applied in this study.

Perception of easy toward EMR questionnaire was used to measure the perception of respondents toward the easy of EMR. The instrument consisted of 4 dimensions such as 1) easy to learn; 2) easy to use; 3) easy to understand; and 4) become a skillful. Sixteen questions with the Likert scale which is 1=never, 2=sometimes, 3=often, and 4=always were applied in this study.

Health professional attitude questionnaire was used to determine how the attitude of professional to use EMR. The questionnaire consisted of 3 dimensions such as 1) cognitive; 2) affective; and 3) conative. Twelve item questions with the Likert scale which is 1=never, 2=sometimes, 3=often, and 4=always. were applied in this study.

Social influenced questionnaire was used to measure how the social aspect influence the EMR used. The instruments consisted of 3 dimensions such as 1) conformities; 2) fulfillment; and 3) obedience Twelve item questions with the Likert scale which is 1=never, 2=sometimes, 3=often, and 4=always. were applied in this study.

Ethical consideration

This study has been approved by the IRB Universitas Esa Unggul Jakarta, with number 0922-08.035/DPKE-KEP/FINAL EA/UEU/VII/2023. All respondents must sign the informed consent

Data analysis

Descriptive analysis is used to analyze data by describing demographic data variables, patient loyalty, motivation, quality of health services and perceptions. SEM (Structural Equation Modelling) with SmartPLS 3.0 application was applied in this study. R2 (R-Square) was used to predict models which explain the influence of certain exogenous latent variables on endogenous latent variables.

The final analysis in PLS is the analysis of the structural model or inner model. In structural model analysis, hypothesis testing can be carried out using the t statistical test (T Statistics). The test results can be seen from the output of the structural model on the significance of the loading factor which explains the influence of perceived benefits of BPJS, patient experience on patient loyalty through motivation to come back as an intervening

RESULT

Data Demographic

Table 1 shows the characteristics of the respondents. The majority of respondents based on gender are female (62%). Of respondents based on age, the highest is in the age range 31 - 35 years (42%). Of respondents based on last education, the highest is D3 (56%). Of respondents based on length of service, the highest range is 11 - 15 years (33%).

Table 2. characteristic of respondents

No	Variables	n	%
1	Gender		
	Men	79	38
	Women	131	62
2	Aged		
	<25 years	7	3
	26-30 years	67	32
	31-35 years	88	42
	>35 years	48	23
3	Education		
	Diploma of III	117	56
	Bachelor	78	37
	Master	15	7
4	Duration of working		
	1-5 year	26	12
	6-10 year	68	32

11-15 year	70	33
>15 year	46	22

Direct Effect

The analysis of sub structure 1 produces a direct influence equation function $Z=0.243(X1) + 0.639(X2)$ and the coefficient of determination value shows a value of 0.695. These results explain that if perceived benefits and perceived convenience are increased by one unit, attitudes will increase by 24.3% through perceived benefits and 63.9% through perceived convenience, and these two variables contribute 69.5% in creating attitudes. It can be seen that in structure 1, perceived convenience dominates its influence in improving attitudes compared to perceived usefulness.

The analysis of sub structure 2 produces a direct influence equation function $Y=0.181(X1)+0.289(X2)+0.530(Z)+0.016(M)$ and the coefficient of determination shows a value of 0.887. These results explain that if perceived benefits, perceived convenience, attitudes and social influence are increased by one unit, then interest in using RME will increase by 18.1% through perceived benefits, 28.9% through perceived convenience, 53% through attitudes, and 1.6% through social influence, and these four variables contributed 88.7% in creating interest in using RME. It can be seen that in structure 2, attitude dominates its influence on interest in using, while social influence is the lowest variable.

Table 2. Direct effect among variables

Structure	Direct effect	Coefficient	R ²
Structure 1	Effect of perception benefits to attitude	.243	.695
	Effect of perception of easy use to attitude	.639	
Structure 1	Effect of perception benefits to intention of using electronic medical record	.181	.887
	Effect of perception easy used to intention of using electronic medical record	.289	
	Effect of attitude to intention of using electronic medical record	.53	

DISCUSSION

Simultaneously, perceived benefits, perceived convenience, social influence and

attitudes towards interest in using EMR show an R square value of 0.887. This indicates that perceived usefulness, perceived convenience, social influence and attitude have an influence on interest in using electronic medical records.

Perceived benefits, perceived convenience, social influence and attitudes influence changes in interest in using RME by 88.7% and 11.3% can be influenced by other variables outside this research. The factor that most contributes to increasing interest in using electronic medical records is the attitude variable which is dominated by the conative aspect which describes the readiness of potential EMR users.

Attitudes would determine individual behavior and the direction of their interest in using (16). The positive attitude of health workers determines the direction of successful implementation of electronic medical records (17).

Perceived benefits in an effort to improve the attitudes of potential RME users. it was due to perceived usefulness which has the function of measuring the level of satisfaction or benefits felt by users regarding the technology used. Thus, users can play a role in providing assessments of technology based on their satisfaction and experience (18). Health workers' perceptions of the benefits of RME will determine their attitudes towards maximizing RME as a support for quality services (19).

Apart from that, the attitude of health workers towards RME as information technology supporting health services is largely determined by their perception of the ease of running the program (20), and when health workers feel the ease, they will act professionally to maximize the use of RME (21).

The results of this study analysis conclude that perceived benefits influence interest in using electronic medical records. With the belief that EMR has benefits in supporting the needs of EMR users in regional hospitals, interest in using RME can increase. This is proven to make the process of inputting patient medical record data faster, and reducing excessive physical documents.

Previous studies related to understanding the benefits of EMR increased users' interest in maximizing EMR functions (22). Another study shows that a good perception of the benefits of RME for the effectiveness of health service quality will direct users' interest in maximizing

the function of RME as a support for work activities related to patient medical records (23-24).

Another result found that There is a positive effect of perceived ease of use on intention of using EMR. This is proven by users feeling that the implemented EMR can reduce errors in patient logistics distribution and patient medical treatment. Therefore, it is committed to supporting the use of EMR in the workplace, and has clear instructions for operationalizing it.

A study states that perceived ease is the degree to which individuals believe that using information technology is easy and does not require much effort from the user (25). When it is believed that RME can be easily operationalized, health workers will professionally determine their interest in using RME (26). Another research also states that perceived convenience will encourage health workers to support the implementation of RME (27). It was due to build the self-confidence of health workers, so that their interest in optimizing the use of RME can increase (28).

The moderating role of social influence on the influence of perceived benefits on interest in using RME shows a positive relationship. With the interaction role of social influence, the perception of benefits is stronger in influencing the interest of potential RME users at RSUD Karawang.

Social influence that can influence individual behavior due to prevailing social norms such as personal reasons, pleasure and compulsion (29), and in ambiguous conditions, individuals tend to adapt to the conformity established by their peers or their more consistent social environment (30).

In addition, the moderating effect provided by social influence negatively moderates the influence of perceived ease of use on interest in using EMR. When management believes that it is easy to use the EMR that management will implement, individuals will be confident in determining their behavior (29). Social influence strengthens the influence of perceived ease of use on interest in using EMR (31).

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Conclusion

This study examined the interplay between perception of benefits, perception of ease of use, attitude, and social influence on the intention to use electronic medical records (EMRs). The findings suggest that all these factors significantly influence an individual's willingness to adopt EMRs. Specifically, the perception of benefits and ease of use are positively correlated with attitude, which in turn is positively correlated with the intention to use EMRs. Additionally, social influence plays a crucial role in shaping an individual's attitude towards EMRs, with positive social influence enhancing the positive relationship between attitude and intention.

Implication for Managerial

The implication of this study was explained as follows:

1. Designing EMRs for User-Friendly Experience: To increase the adoption of EMRs, healthcare providers should prioritize user-friendly design and ensure that the system is easy to navigate. This can be achieved by incorporating intuitive interfaces and providing comprehensive training to healthcare professionals.
2. Highlighting the Benefits of EMRs: Healthcare providers should emphasize the benefits of EMRs, such as improved patient care, enhanced collaboration, and increased efficiency, to foster a positive attitude towards their use.
3. Social Influence and Adoption: Healthcare providers should leverage social influence by promoting the adoption of EMRs among their peers and encouraging positive word-of-mouth. This can be achieved through workshops, training sessions, and peer-to-peer mentoring programs.
4. Addressing Concerns and Fears: Healthcare providers should address concerns and fears about EMRs by providing clear information and addressing potential issues. This can help alleviate anxiety and increase the willingness to adopt EMRs.
5. Continuous Feedback and Improvement: Healthcare providers should continuously gather feedback from healthcare

professionals and patients to identify areas for improvement and optimize the EMR system. This can help maintain a positive attitude and increase the intention to use EMRs.

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