International Journal of Medical Science and Clinical Invention 5(03): 3681-3688, 2018
DOI:10.18535/ijmsci/v5i3.22 **ICV 2016: 77.2**
e-ISSN:2348-991X, p-ISSN: 2454-9576

Research Article

The Behavior of Acceptance of the Electronic Prescription System

[1]Rapitos Sidiq, [2]Noni Zakiah, [3]Vonna Aulianshah, [4]Amelia Sari, [5]Rasidah, [6]Yanuarman

[1] Departement of Public Health, Aceh Health Polytechnic Ministry Of Health, Aceh Indonesia
[2,3,4,5] Departement of Pharmacy, Aceh Health Polytechnic Ministry Of Health, Aceh Indonesia
[6] Fakulty of Medicine, Syiah Kuala University, Aceh Indonesia

Abstract: Computerized Physician Order Entry (CPOE) is one of the health information systems that support the recording of medication from physicians based on computer technology. This system is used as Clinical Decision Support (CDS). The utilization of CPOE can decrease the rate of medication error so that its existence becomes one of health care quality indicator. In Indonesia, the application of this system is still rare, due to several constraints, ranging from the connectivity of the systems between units / between departments within a hospital. Regionalal General Hospital (RSUD) of Dr. Zainoel Abidin Banda Aceh is one of the hospitals that once applied this system, but in the course of this system could not run properly. This study was aimed to determine the acceptance behavior of electronic prescription information system. Informant of the research were doctors at specialist polyclinics counted 32 people. Data were collected on August 25th 2016 until September 9th, 2016. The data retrieval was done by two stages of questionnaire and detailed interview. Data were analyzed by content analysis and coding and data validity by triangulation. The results showed that the informant welcome the application of electronic prescribing system, however, there was still much have to be improved especially in terms of support of all levels of management, so that users would feel the new system really help simplify the service and improve the quality of service to the patients.

Keywords: Behavior, Acceptance, The Electronic Prescription System.

Introduction

The utilization of information technology in the health sector especially in hospitals in addition to offering great potential to improve the quality of services provided and efficiency, effectiveness of personnel, also to reduce organizational financing [1]. The existence of information technology should make the works simpler within an organization including hospital, however, it did not rule out the possibility that its existence leading to the attitude of rejection from the users. Thus, it raised the question how far the acceptance of hospital staff to the information technology. CPOE or Computerized Physician Order Entry is a command / order medication ordering system from physicians based on computer technology [2]. This is one form of Clinical Decision Support (CDS) system because the information and knowledge added by the physicians are useful to provide the best decision to treat patients [3]. In developed countries, the implementation of this system is an indicator of the quality of health services (clinics and hospitals), even the CPOE application has been one of the health care quality standards, the combination of CPOE with eMAR (electronic medication administration records) have become a very important component in the electronic medical record system [4] [5]. In Indonesia, CPOE applications are still rare due to some obstacles, ranging from inter-unit / inter-departmental system connections within a hospital to regulatory issues [4]. The purpose of this information system is in addition to reducing medication error as well as a system that provides consideration for physicians in provide treatments according to diseases indications. The use of this electronic prescribing systems has been shown to decrease the number of adverse drug events (ADE), such as mistaking the written names of the drugs, the determination of the dosage, and the appropriate use of drugs for patients with certain health conditions [6]. Further researches also have been proven that this system application can reduce patients' waiting time in pharmacies by 20.2% compared to manual system [7]. Regionalal General Hospital of Dr. Zainoel Abidin / RSUDZA Banda Aceh has been pioneered the use of this system in Aceh, however this system has not been working properly in its course of application. Based on the facts that the author got, this hospital still uses a paper-based prescription system, the patients whenever they get the drugs, still using a prescription handwritten by the doctors, furthermore, the activity of prescription entry into the system still run by nurses and doctors. Based on the fact, it was very important to identify the problems, user satisfaction, and obstacles in applying this system [8]. In applying information technology there are three main factors that influencing, they are the user's perception of easy of use, complexity, and perception of the usefulness of an information technology [9]. This study was aimed to determine the level of acceptance of users against electronic prescription system using UTAUT Framework with several constructs, namely; performance expectancy, effort expectancy, social influence, facilitating

condition and actual system usage [10].

Method

This research was a qualitative and descriptive research using explorative case study method. The subjects of this study were the doctors who served in specialist polyclinics in Regional General Hospital of Dr. Zainoel Abidin Banda Aceh as many as 32 informant. Data collection was conducted on 2^{5th} August to 9th September 2016 with two stages; namely questionnaires by licker skale; Strongly Agree (SA), Agree (A), Undecided (U), Disagree (D) Strongly Disagree (SD) and indept interviews of interesting information from informant using an interview guide consisting of; performance expectancy, effort expectancy, social influence, facilitating condition and actual system usage. The research instrument was modified by voice recorder and stationery. Data were analyzed by content analysis and coding and data validity with triangulation.

Results

The Characteristics of Informant

The characteristics of informant obtained in this study were; sex, age, specialization and length of service, detailed in the table 1. Based on the table it was found that the characteristics of informant by sex were mostly females (53.1%), in terms of age 59.4% of informant aged under 40 years old, while the most informant in this study were from eye specialist polyclinic numbered 5 people (15.6%), from the working period as much as 65.6% of informant ' working period was more than 3 years.

Table 1 The Characteristics of Informant

Characteristics	Frequency	%
1.Gender		
Male	15	46,9
Female	17	53,1
2.Age of The		
≥ 40 Years old	13	40,6
< 40 Years old	19	59,4
3. Specialist Doctors		
Pediatrician	2	6.3
Surgeon	3	9.4
Endokrinologist	3	9.4
Dentist	3	9.4
Cardiologist	1	3.1
Dermatovenereologist	2	6.3
Ophtalmologist	5	15.6
Obstetrigynecologist	2	6.3
Orthopedics	1	3.1
Pulmonologist	3	9.4
Internist	3	9.4
Neurologist	1	3.1
4. Length of Service		
≤ 1 Year	4	12.5
>1 - 2 Years	7	21.9
≥ 3 Years	21	65.6
Total	32	100

Performance Expectancy

Measurement of this variable was using 3 (three) statements, with the results can be seen in table 2.

Table 2 Performance Expectancy

	Performance Expectancy / PE	Opinions				
		SD	*D*	*U*	*A*	*SA*
1	Electronic prescription helps shortened the duration of patient care	0	9(28,1%)	2 (6,3%)	11(34,4%)	10 (31,3%)
2	Electronic prescription can increase the satisfaction of the patients	0	9(28,1%)	8 (25%)	6 (18,8%)	9 (28,1%)
3	Electronic prescription can improve service efficiency	0	8 (25%)	6 (18,8%)	6 (18,8%)	12 (37,5%)

Licker skale; Strongly Agree (SA), Agree (A), Undecided (U), Disagree (D) Strongly Disagree (S

Based on the table, it can be seen that from 32 informant, 34.4% were agree that the implementation of electronic prescription will help speed up services for the patients and even 31,3% were strongly agree. Very interesting that as much as 28.1% of informant did not agree, there were about 6.3% informant hesitate. This means that some doctors believed that the implementation of electronic prescriptions would not speed up service to the patients, but will slow down the service instead. Then 28.1% of informant did not agree that electronic prescription would increase patients' satisfaction, as did 25% of informant not agree that electronic prescription system could improve services efficiency.

To know more the reasons why the informants' statements contrary to the purpose of applying this electronic prescription, it had been revealed several reasons such as the following:

For the statement: Electronic prescription will not help speed up the service duration to patients, disclosed by informant number 10, saying:

"... if I have to type a prescription on the computer, it will take some time, not to mention I have to check the patient, if I have a prescription entry after I check the patient, then the next patient will be long waiting..."

The statement of the informant was also supported by the statement of informant number 5:

"... I did not have time to do an entry ... because I had many patients.."

Then to address patient satisfaction with the use of this electronic prescription, informant number 2 stated the following reasons:

"... I never asked about whether patients satisfied or diSAatisfied, but if we work so busy in front of computer, patient would feel being ignored while we do things related with the services to them .. for that I feel bad..."

About the effectiveness of services to patients with the use of this electronic prescription, informant number 6 provided the following reasons:

"... if you want to get the drugs .. it would be quick yes ... with an electronic prescription, but the service from the doctor would not be effective.."

Effort Expectancy

For measurement, this variable utilized 5 (five) statements with the results as in table 3.

Table 3 Effort Expectancy

	(Effort Expectancy)	Opinions				
		SD	***D***	***U***	***A***	***SA***
1	Electronic prescription can be used easily	0	5 (15,6%)	6 (18,8%)	11 (34,4%)	10 (31,3%)
2	Electronic prescription helps facilitate patient care	0	3 (9,4%)	11 (34,4%)	11 (34,4%)	7 (21,9%)
3	If there are errors in prescribing the drug electronically, it can be corrected easily	0	2 (6,3%)	7 (21,9%)	18 (56,3%)	5 (15,6%)
4	Electronic prescription can be used as a solution to overcome mistakes in prescribing drugs	0	3 (9,4%)	7 (21,9%)	5 (15,6%)	7 (21,9%)

Licker skale; Strongly Agree (SA), Agree (A), Undecided (U), Disagree (D) Strongly Disagree (SD)

Based on the table above, it can be seen that from 32 informant , for the statement "electronic prescription can be used easily", most informant who agreed consisted of strongly agree 31.3% and agree 34.4%. But there were still about 15.6% of informant who disagree, after explored thoroughly it was revealed several reasons. Informant number 7 the following reasons:

"... in the time of the previous hospital director's reign I regularly put the prescriptions data into the system, but today the internet network is so slow, it does not well connected ... so I began to stop to entry the data, the system should make things easier but this system sometimes become complicated instead..."

and for the construct "Electronic prescription helps to facilitate services to the patients" most informant approved the statement, but there were 34.4% who doubt it. This had been revealed from the statements of informant number 28 such as the following :

".... this system should indeed facilitate services to the patients, but the problem is we do not use electronic prescriptions, patients still use paper-based prescriptions to get medicine .. so it can not be said to have been facilitated, or you can ask pharmacies ... so what the data had been put into computer for?.."

a similar statement was also expressed by informant number 30 the following:

"... as far as I know .... electronic prescription system does not work here, it's still running manually. So, how can we see useful or not for the patients, but if you ask about my opinion if this system is in use it would be another thing ... so there is no electronic prescription here...(I.30)"

Social Influence

To measure this variable, authors used 8 (eight) pieces of construct, with the results as in table 4.

Table 4 Social Influence

	Social Influence	Opinions				
		SD	*D*	*U*	*A*	*SA*
1	Your work environment keeps you motivated by using an electronic prescription system for better service.	0	3 (9,4%)	7 (21,9%)	14 (43,8%)	8 (25%)
2	Your work environment encourages and expects to use electronic prescriptions for efficiency.	0	0	2 (6,3%)	21 (65,6%)	9 (28,1%)
3	The assistants are required to do data entry into this electronic prescription system	1 (3,2%)	5 (15,6%)	4 (12,5%)	12 (37,5%)	10 (31,3%)
4	Hospital authorities encourage you to use electronic prescription	0	0	3 (9,4%)	23 (71,9%)	6 (18,8%)

Licker skale; Strongly Agree (SA), Agree (A), Undecided (U), Disagree (D) Strongly Disagree (SD)

Based on table 4 above, it can be seen that most informant were approval with the statement "Work environment makes you motivated using electronic prescription system for better service", meaning although informant did not do data entry into the system personally, but they understand that the task of entering prescription data into the system is the work that all policlinics in this hospital have to do. From the observation of the authors found that the activity of putting the prescription data into the system was done by the head of the polyclinic, nurses, medical clinical students (coasisstant), or residents, only at certain polyclinics this activity was first-handedly done by the doctors, such as dentistry polyclinic, eye polyclinic and polyclinic of Ear Nose Throat-Neck Surgey. This was in accordance with the responses of informant as in the table 4 that more than 68% of informant approved the statement "required assistant to enter the prescription data into this electronic prescription system", ie 37.5% agreed and 31.3% strongly agreed. The reason why the informant asked an assistant or special personnel for data entry was did not have enough time because of numerous patients. However, among informant who did not have time to do prescription data entry there were some informant who realized their task and provided a special time for data entry. This was revealed from the following statement of a informant number 29 :

"... the authority has made a policy for the entry data of the prescriptions into the system yes ... we have to do it, it's our duty .. it is just an excuse if you say that many patients will make it impossible, I had time, it depends on the will ...."

Based on the statement above, it can be seen that more than 90% of informant tated that hospital leaders always encourage to use electronic prescription.

Facilitating conditions

To measure this variable authors used 6 (six) statements, with the results as in table 5 below. Based on the table below it can be seen that most informant stated that the hospital management provides a boost to the importance of services supported by information technology. The answers of the fundamental question that authors asked to the informant about the reason why the informant did not utilize or adding the data into the system as following:

a. Informant 28:
"....what's the use of these prescriptions data adding into the computer, if we still use paper?.. (R.28)"
b. Informant Chief of Ward X :
"... maybe if the paper-based prescription is not in use anymore ... the electronic prescription will be effective 100%, it is such a wasteful way if you run both systems simultaneously .., there was a plan to remove the paper-based prescription gradually..."
c. Informant 25 :
"... it's been said once that the paper-based prescription will be terminated .. but until now, both systems still in run, electronic prescription should be the one that in use, eliminate the paper-based prescription.."(.R25)
d. Informant Chief of Ward I :
"... the paper-based prescription is still in use for claim to BPJS (national health insurance), so it's still needed, while electronic prescription is utilized for reporting only "

Tabel 5 *Facilitating conditions*

	Facilitating condition	Opinions				
		SD	*D*	*U*	*A*	*SA*
1	The hospital management provides a boost to the importance of services supported by information technology.	0	0	4 (12,5%)	21 (65,6%)	7 (21,9%)
2	The hospital is always improving the quality of this ongoing electronic prescription system.	0	0	6 (18,8%)	20 (62,5%)	6 (18,8%)
3	The hospital already has a part / unit in the field of information technology (IT).	0	0	4 (12,5%)	22 (68,8%)	6 (18,8%)
4	The hospital provides training for employees	0	3	15	13	1

	whenever there is something important in the electronic prescription system.		(9,4%)	(46,8%)	(40,6%)	(3,1%)
5	The hospital is always updated on the development of new technologies in the field of health	0	0	5 (15,6%)	23 (71,9%)	4 (12,5%)
6	The hospital is always testing new technologies before making a decision to implement them.	0	2 (6,3%)	6 (18,8%)	22 (68,8%)	2 (6,3%)

Behavioral intention

To measure this variable, we used 3 (three) construct, with the results as in table 6 below.

Table 6 Behavioral intention

	Behavioral Intention (BI)	Opinions				
		SD	D	U	A	SA
1	You always use this electronic prescription system to serve patients	16 (50%)	3 (9,4%)	4 (12,5%)	7 (21,9%)	3 (9,4%)
2	You believe that with this electronic prescription system can improve the service to the patients.	0	3 (9,4%)	6 (18,8%)	12 (37,5%)	11 (34,4%)
3	You believe that with this electronic prescription system can improve your work efficiency (in terms of time, cost, and effort)	0	3 (9,4%)	11 (34,4%)	7 (21,9%)	11 (34,4%)

Based on table 6 above it can be seen that 50% of informant did not use this electronic prescription system to serve patients, with a number of reasons put forward by the informant in the previous section. Nevertheless, there were 34.4% of informant agree that with this electronic prescription system can improve services to the patients, although there were still about 27% who still disagree and doubting about the benefits of this electronic prescription system. It was also not too different from the responses of informant to their belief that the electronic prescription system could improve Your work efficiency (in the size of time, effort and cost). Basically most informant agreed that with electronic prescription the services will be more efficient. To support this statement there were some interesting opinions of informant to note, such as the following:

a. Informant 32 :

"... actually if we want the paperless system like in Java, like in Surabaya and Semarang, I'm sure that electronic prescription will improve efficiency, because all is well integrated cthere... including the results of additional medical examinations ... but if the system here still running as the way it has been..... I have not been able to assess its efficiency yet.."

b. Informant 24 :

"....the system is actually good ... but it depends on the people who run it, there are some constraints especially the will for running it.."

In connection with the planned implementation of electronic prescriptions in the future in the Regional General Hospital of Dr. Zaenoel Abidin, the informant also provided tips or written advices for system improvement, the suggestions can be seen in table 7. Based on table 7 below, it can be seen that actually the informant were aware about the existence of electronic prescriptions so far, informant also fully understand about the its problem, although most of the informant did not use it directly. From the table it can also be seen that informant basically could accept if one day this hospital apply a system of total and single electronic prescription although there were still many things that must be addressed first, such as internet network, connectivity of the list of available drugs and very important thing that the doctors need specialized personnel in charge of entering drugs data into the system so that medical services would not be interrupted and patients would not have to wait too long from getting the services of doctors including getting the medicine needed.

Table 7 Suggestions from Informant

Number Of Informant	Suggestions
R. 5 dan 9	In case of data entry into the system, special or expert personnel who understand IT well should be provided
R. 8	The number of drugs should always be updated so that its availability always be known. Writing drug names correctly, Internet network stable and strong. Doctor must provide medicine in accordance with indication not on the request of the patients
R. 7, 8, 5	Immediately put the electronic prescription into effect, not to write prescriptions in paper as it is today
R. 10	CPOE is very disturbing for service to the patients because doctors would be busy in front of the computer, so the services become slower, because the patients have to wait a long time, need to divide the work system so that patients waiting time become shorter

R.11	System updates periodically, no device jams while data entry
R.13	If using electronic prescription then paper system has to be abandoned, then the facilities have to support for electronic prescribing, such as computer with no interruption, power grid, and smooth and clear internet
R. 14	Optimizing information on the availability of prescribed medications should be informed to the physicians, so that the prescribing medications are according to the availability of drugs
R. 18	In order for an electronic prescription system that is simple and easy to use.
R. 17	There should be an assistant who do the data entry, so that the doctor's communication with the patient would not be interrupted and saving time.
R.19	It is desirable that the electronic prescription system be immediately online to the pharmacy.
R. 15	The synchronization of drug availability from pharmacies to those on the system (updated amount and availability of drugs) as it is still often inappropriate
R.14	The drugs listed on the computer should be in accordance with those listed in theGeneral Hospital of Dr. Zainoel Abidin pharmacy
R.13	The prescription information system has been excellent and needs to be maintained that way
R. 1	More detailed information needed on the points available in the electronic prescribing system, such as information on taking medication at night or during the day, how to take medication.
R. 2	The amount of drugs need to be raised especially syrup-formed drugs so that the pediatric patients would be easier to get therapy.
R. 15	There should be a specialized training in explaining the service in an educational hospital, especially the drugs which should be in revision that requiring special status.

Discussion

This study found an interesting phenomenon of performance expectancy, i.e. there were about 28.1% of informant stated that the application of electronic prescription would not help shortened the service duration, not effective for various reasons. Most of the informant who opinioned that way were the informant who served too many patients, meaning they did not have sufficient times to use electronic prescription applications. This was supported as well by the statement about Behavioral Intention (BI), that more than 50% of informant were not using this electronic prescription system to serve patients, or the informant admitted they did not add the prescriptions into the system. From what the authors found, this occured in the polyclinics of surgery, internal medicine and endocrine, and obstetrics that in fact always had a lot of patients, although there were also some informant from other polyclinics that admitted did not have sufficient time to utilize the system even though there were not many patients in attend. In the theory of Technology Acceptance Model (TAM) [11], stated that one of the factors that influencing the acceptance of technology is ease of use factor. Perceived ease of use is defined as the extent to which a person believes that using a technology will be free from effort. It stated "*as the extent to which a person believes that using a technology will be free effort*." It means that someone would use a technology, when they feel confident that the information system is easy to use and otherwise someone would not use the technology when they believe that the technology is not easy to use. The condition in informant who do not use this electronic prescription application because many patients become inhibiting factors that make it difficult for them to work. The study also proved that the factor of the user's belief in the effectiveness of electronic prescription was very low even as an inhibiting factor [12]. Furthermore, for the factor of expectancy, not all informant agree or had hope with this system will be able to facilitate service to patients. It was also found that electronic prescription at this hospital was not the only system for prescribing drugs to the patients because there was still a paper-based prescription system.

In this case, the management leaders must provide a decision at what the dualism of the system that run so far aimed, because many system failures in implementation due to the users did not understand the reasons for implementation ever since the beginning [13], so that system users have a confidence to the system that being used aimed to facilitate drug services to patients or not. If the system was intended as an electronic prescription it had to be equipped with a supportive facilities so as to facilitate the manufacturing of prescriptions to the patients [14]. The facilitating conditions in this case can also be computer networks, IT personnel including management policies to apply this prescription system. In a study conducted by Phichitchaisopa N and Naenna T (2013) found that the factors that significantly affect the acceptance behavior of health technology are performance expectancy, effort expectancy and facilitating conditions [15]. Thus, the actual purpose of electronic prescription or CPOE as an electronic application used by doctors to provide drug prescribing services can be realized [16], for that, it needs a special strategy or effort in encouraging officers to always to enter the prescriptions into the system. To achieve this, it is highly dependent on many aspects, especially the managerial aspect of the hospital, the commitment of the people involved (stakeholders) and the leaders' decisions to use electronic prescription system as decision support systems. The failure of information system implementation could be caused by the

inability to adopt organizational culture, the inability to estimate the complexity of management activities within an organization and the unequal perception between the information system producer and the person who will use it [13],[17]. Nevertheless, according to the observation of the researchers, General Hospital of Dr. Zainoel Abidin Banda Aceh has a great potential to realize the purpose of this electronic prescription system application, the results of this study found that most informants are experienced doctors with a working period of more than 3 years (65.6%), with still very productive age of more than 59.4 % (aged less than 40 years old), theoretically still have a high motivation in following the development of information technology, especially in the health field. It means that in improving the behavior of acceptance of an information system application we have to improve many aspects that affecting it. General Hospital of Dr. Zainoel Abidin Banda Aceh already has a system or application although not yet used, as the main choice in serving the medical prescriptions to the patients, the next step is how to maximize the existing management functions, ranging from lower-level management of transaction processing system, middle management i.e. management control system and top management as a decision support system [18]. Before CPOE will be applicated, the E-MAR should be prepared first [18],[19].

Conclusion

The acceptance of the informant to electronic prescribing was very good, yet, the application of this system needed support from all levels of the management, so that the users of this prescription system would experience that the new system really help to improve the quality of service to patients.

Recommendation

For the Regional General Hospital of Dr. Zainoel Abidin management to conduct a thorough study to figure out an appropriate formulation so that the application of electronic prescribing system can run effectively and efficiently.

References

[1] V. P. Aggelidis dan P. D. Chatzoglou, "Using a modified technology acceptance model in hospitals," vol. 8, hal. 115–126, 2008.

[2] S. Eslami, de K. NF, dan A.-H. AA., "The impact of computerized physician medication order entry in hospitalized patients-A systematic review.," *Int. J. Med. Inform.*, vol. 77, hal. 365–376, Nov 2007.

[3] F. North, D. D. Richards, K. A. Bremseth, M. R. Lee, D. L. Cox, P. Varkey, dan R. J. Stroebel, "Clinical decision support improves quality of telephone triage documentation--an analysis of triage documentation before and after computerized clinical decision support.," *BMC Med. Inform. Decis. Mak.*, vol. 14, no. 1, hal. 20, 2014.

[4] A. Asyary, H. Kusnanto, dan A. Fuad, "Sistem Peresapan Elektronik pada Keselamatan Pengobatan Pasien Computerized Physician Order Entry on Patient Medication Safety," *J. Kesehat. Masy. UI*, vol. 8, no. 3, hal. 125–132, 2013.

[5] A. Appari, E. K. Carian, M. E. Johnson, dan D. L. Anthony, "Medication administration quality and health information technology: a national study of US hospitals," *J. Am. Med. Informatics Assoc.*, vol. 19, hal. 360–367, 2012.

[6] K. Charles, M. Cannon, R. Hall, dan A. Coustasse, "Can utilizing a computerized provider order entry (CPOE) system prevent hospital medical errors and adverse drug events?," *Perspect. Health Inf. Manag.*, vol. 11, no. March 2012, 2014.

[7] R. Schreiber, K. Peters, dan S. H. Shaha, "Computerized provider order entry reduces length of stay in a community hospital.," *Appl. Clin. Inform.*, vol. 5, hal. 685–98, 2014.

[8] P. L. T. Hoonakker, P. Carayon, dan J. M. Walker, "Measurement of CPOE end-user satisfaction among ICU physicians and nurses.," *Appl. Clin. Inform.*, vol. 1, no. 3, hal. 268–285, 2010.

[9] C. Benmessaoud, H. Kharrazi, dan K. F. Macdorman, "Facilitators and Barriers to Adopting Robotic-Assisted Surgery : Contextualizing the Unified Theory of Acceptance and Use of Technology," vol. 6, no. 1, 2011.

[10] V. Venkatesh dan H. Bala, "Technology Acceptance Model 3 and a Research Agenda on Interventions," *Decis. Sci.*, vol. 39, no. 2, hal. 273–315, Mei 2008.

[11] F. Davis, R. Bagozzi, dan P. Warshaw, "User acceptance of computer technology: a comparison of two theoretical models," *Management science*, vol. 35, no. 8. hal. 982–1003, 1989.

[12] C. S. Kruse dan K. Goetz, "Summary and Frequency of Barriers to Adoption of CPOE in the U.S," *J. Med. Syst.*, vol. 39, no. 2, hal. 15, Feb 2015.

[13] P. Littlejohns, J. C. Wyatt, dan L. Garvican, "Information in practice; Evaluating computerised health information systems: hard lessons still to be learnt," *Br. Med. J.*, hal. 860–863, 2003.

[14] H. C. Triandis, "The self and social behavior in differing cultural contexts.," *Psychol. Rev.*, vol. 96, no. 3, hal. 506–520, 1989.

[15] N. Phichitchaisopa dan T. Naenna, "Original article : Factors Affecting The Adoption Of Healthcare," hal. 413–436, 2013.

[16] E. G. Poon, D. Blumenthal, T. Jaggi, M. M. Honour, D. W. Bates, dan R. Kaushal, "Overcoming Barriers To Adopting And Implementing Computerized Physician Order Entry Systems In U.S. Hospitals," *Health Aff.*, vol. 23, no. 4, hal. 184–190, Jul 2004.

[17] D. A. Ludwick dan J. Doucette, "Adopting electronic medical records in primary care: Lessons learned from health information systems implementation experience in seven countries," *Int. J. Med. Inform.*, vol. 78, no. 1, hal. 22–31, 2009.

[18] A. Sullins, A. Richard, K. Manasco, M. Phillips, dan A. Gomez, "Which Comes First, CPOE or eMAR? A Retrospective Analysis of Health Information Technology Implementation," *Hosp. Pharm.*, vol. 47, no. 11, hal. 863–870, 2012.

[19] K. Fiumara, T. Moniz, W. W. Churchill, A. Bane, C. J. Luppi, D. W. Bates, dan T. K. Gandhi, "Case study on the use of health care technology to improve medication safety," *Medicat. Use A Syst. Approach to Reducing Errors, Second Ed.*, hal. 103–114, 2007.