Technology Acceptance Model to Implementation of Electronic Medical Record (EMR's) at Clinic of Rumah Sehat Keluarga Jember

by Atma Deharja

Submission date: 05-Jun-2023 05:04AM (UTC+0700)
Submission ID: 2108822960
File name: 1370-6066-1-PB_1.pdf (840.18K)
Word count: 7507
Character count: 40658

Jurnal Aisyah: Jurnal Ilmu Kesehatan

Volume 7, Issue 4, December 2022, p. 1215–1224
ISSN 2502-4825 (print), ISSN 2502-9495 (online)

Technology Acceptance Model to Implementation of Electronic Medical Record (EMR's) at Clinic of Rumah Sehat Keluarga Jember

Atma Deharja[1*)], Meiranda Normarisa Azis [2], Novita Nuraini [3], Angga Rahagiyanto[4], Maya Weka Santi [5], Muhammad Yunus [6]

[1,2,3,4] Health Department; Politeknik Negeri Jember

ARTICLE INFO

Article history:

Received 20 July 2022
Accepted 31 October 2022
Published 10 December 2022

Keyword:

Clinic
EMR
TAM

ABSTRACT

The Rumah Sehat Keluarga Clinic is one of the clinics in Jember that has just implemented electronic medical records (RME) at the end of October 2020. Based on observations made on January 4, 2021, at the Rumah Sehat Keluarga Clinic, it is known that there are several obstacles in implementing the electronic medical record system. outpatient treatment indicating that analysis is necessary. This study aims to analyze the application of outpatient electronic medical records at the Rumah Sehat Keluarga Clinic. Identification of problems using the TAM (Technology Acceptance Model) method by reviewing aspects of external variables, aspects of perceived usefulness, aspects of perceived ease of use, and aspects of behavioral intention to use. This type of research is qualitative with data collection methods, namely interviews, observation, documentation and brainstorming. The subjects of this study are the head of the clinic and the medical record officer. The results showed that based on aspects of external variables, several constraining factors were obtained including the absence of guidelines for using RME for new or old users and there was a diagnosis menu that had not been integrated with the ICD 10 database. Aspects of perceived usefulness, namely the use of electronic medical records in the clinic made the work of the officers faster and more efficient. The perceived ease of use aspect showed that receiving electronic medical records is considered easy to understand, flexible enough with the work of officers and easy to use to help work. Based on the aspect of behavioral intention to use, even though there are several obstacles in its application, outpatients show interest in RME and they will use it in the future.

Kata kunci:

RME
TAM
Klinik

*) corresponding author

Atma Deharja, S.KM, M.Kes

Health Department, Health Information Management Study Program, Politeknik Negeri Jember
Jl. Mastrip No. 164, Krajan Timur, Sumbersari, Jember, Jawa Timur, Indonesia 68121

Email: atma_deharja@polije.ac.id

DOI: 10.30604/jika.v7i4.1370

ABSTRAK

Klinik Rumah Sehat Keluarga baru menerapkan Rekam Medis Elektronik (RME) pada akhir Oktober 2020. Berdasarkan pengamatan terdapat kendala dalam penerapannya yang menunjukkan perlu dilakukan analisis. Tujuan penelitian ini untuk menganalisis penerapan rekam medis elektronik rawat jalan Klinik Rumah Sehat Keluarga. Identifikasi permasalahan menggunakan metode TAM (Technology Acceptance Model) dengan meninjau dari aspek variable luar (external variable), aspek kebermanfaatan (perceived usefulness), aspek kemudahan (perceived ease of use), dan aspek minat (behavioral intention to use). Jenis penelitian ini kualitatif dengan metode pengumpulan data yaitu wawancara, observasi, dokumentasi dan brainstorming. Subjek penelitian ini adalah kepala klinik dan petugas rekam medis. Hasil penelitian menunjukkan bahwa berdasarkan aspek variabel luar (external variable) diperoleh faktor kendala diantaranya tidak adanya panduan penggunaan RME bagi pengguna baru atau lama dan terdapat menu diagnosis yang belum terintegrasi dengan database ICD 10. Aspek kebermanfaatan (perceived usefulness) yaitu penggunaan rekam medis elektronik di klinik membuat pekerjaan petugas menjadi lebih cepat dan efisien. Aspek kemudahan (perceived ease of use)

menunjukkan dalam penerimaan rekam medis elektronik dinilai mudah dipahami, cukup fleksibel dengan pekerjaan petugas serta mudah digunakan untuk membantu pekerjaan. Berdasarkan aspek minat (behavioral intention to use) yaitu petugas rawat jalan menunjukkan minatnya terhadap RME serta berencana menggunakannya di masa yang akan datang

INTRODUCTION

The Health Information System (HIS) has played a very large role in meeting the needs of health services (Bachtiar & Sumaryana, 2018). According to the World Health Organization (WHO), HIS is one of the 6 building blocks or is the main component in a health system (Susanto, Kurniawan, & Christianto, 2017). HIS not only plays a role in ensuring data on health cases that will be reported, but also has the potential for efficiency and transparency of work processes. Currently, HIS processing in Indonesia is divided into 3 types, namely manual GIS processing, computerized HIS processing (offline) and computerized HIS processing (online) (Noor Alis Setiyadi, 2016). Health services that require a health information system can be in the form of hospitals, health centers, private clinics, joint doctor practices, even individual doctors and midwives, which are divided into 3 levels of primary, secondary and tertiary services. (Sanjaya, Rahmanti, Anggoro, & Rachmandani, 2013).

According to M. Caecar Febriansyah (2018), clinics are public health services that require the existence of an accurate and reliable health information system, and can improve health services to patients and other related environments. An important component in realizing a clinical information system is data of management. Based on the regulation of the Minister of Health of the Republic of Indonesia number 9 of 2014 concerning clinics, clinics are health service facilities that provide individual health services that provide basic and specialist medical services.

Clinics in carrying out health services in the form of medical services and non-medical services. One of the non-medical services that cannot be separated from the clinic is the medical record service. Based on the Indonesian Ministry of Health (2008) states that medical records must be made in writing, complete and clear or electronically. Electronic Medical Record (EMR) is a computerized health information system that contains demographic data, medical data, and can be equipped with a decision support system (Rohmah et al, 2020). The application of electronic medical records can help better management of patient health services and can be a solution to increase cost efficiency and increase access (Sudirahayu & Harjoko, 2016).

Health facilities in carrying out health services must document all actions and treatments given to patients into a document called medical record (Nissa, Erawantini, & Roziqin, 2020). These records are very important for patient care because complete data can provide information in determining decisions both for treatment, treatment, medical action and others (Farlinda, Nurul, & Rahmadani, 2017).

Rumah Sehat Keluarga Clinic is one of the clinics in Jember Regency that has just implemented EMR at the end of October 2020. Based on observations made on January 4, 2021 at the Rumah Sehat Keluarga Clinic, it is known that there are several obstacles in the implementation of the electronic medical record system. outpatients indicating that analysis is necessary. Among them, there is no menu for the patient's medical resume. This causes the work of officers to be less effective and efficient. Medical resume is part of the contents of the medical record that must be available. A medical resume (outcome summary) is a summary of medical service activities provided by health workers, especially doctors during the treatment period until the patient is discharged either alive or dead. Discharge summary or medical resume should at least contain: Patient identity, admission diagnosis and indication of patient being treated, summary of results, physical and supporting examinations. Final diagnosis, treatment and follow-up, name and signature of the doctor who provides health services (K. Sari, 2017).

In addition, some features in the electronic medical record have not been integrated with the database on ICD 10 such as the patient diagnosis feature because by integrating EMR with the ICD 10 database, it will increase the accuracy and speed of coding. Other obstacles include the absence of reporting features that are in accordance with clinical needs such as visit reports, reports on the index of the top 10 diseases, and financial reports. Not only that, but the use of electrical connections has also experienced disturbances for a long time so that officers cannot use the electronic medical record until the work time is over. In addition, the system used also often experiences application errors that are used suddenly closed or exit by itself, so the officer must open the application and have to log back in. This causes the coding officer to be hampered and not optimal in operating this electronic medical record. For new users, there is no manual for using the system. So that users feel a little difficult in its application.

Based on research found by Agustina (2015), the technology system applied needs to be carried out, especially at the level of how important a technology is, how much benefit and how much user acceptance of a technology system that is being used. F. S. Rahayu, Budiyanto, & Palyama (2017) explain that users will tend to have the intensity to continue to use the system if the information system meets their needs efficiently. Setyonugroho (2012) also stated that network constraints on the EMR system can interfere with user system performance, causing behavioral interest in using EMR to be less than optimal and expecting improvements to the system.

One of the methods that will be used in this research is the Technology Acceptance Model (TAM). According to Rahayu, Budiyanto, & Palyama (2017) where to find out how the perception of RME users, especially the coding unit can be seen from 3 aspects, namely the aspect of perceived usefulness, the aspect of convenience (Perceived to Use) and the aspect of behavioral interest in the use of EMR (Behavioral Intension to Use). The TAM method can be used to determine user responses to satisfaction services provided

by a data processing technology system. So that health services can improve their technology system services for the better. Venkatesh (2000) states that TAM is a concept that is considered the best in explaining user behavior towards new information technology systems. TAM is a model that is considered the most appropriate in explaining how users receive a system. Therefore, I took the title " Technology Acceptance Model to Implementation of Electronic Medical Record (EMR's) at Clinic of Rumah Sehat Keluarga".

METODE

This research uses a qualitative research type. In this study, researchers used qualitative methods. The qualitative research method is a research method used to examine natural objects, where the researcher is the key instrument, the data collection technique is done by triangulation (combined), the data analysis is inductive and the results emphasize meaning rather than generalization (Sandi, 2017).

This research takes place at the Clinic of Rumah Sehat Keluarga, which is located at Panji Environment, Tegalgede, Kec. Sumbersari, Jember Regency, East Java 68124, especially in the electronic medical record of the outpatient in the Clinic of Rumah Sehat Keluarga Sehat. This research was conducted on January 4, 2021 to January 1, 2022. The subjects in this study were the head of the clinic and the outpatient medical record officer at the Rumah Sehat Keluarga Clinic, totaling 4 informants, namely the head of the clinic and 3 medical record officers.

Research Instruments

Interview guidelines

The interview guide used is a list of questions that have been previously prepared by the researcher, but it will develop in line with the interview process to informants if deemed necessary. which uses a measuring instrument The term interview is all terms from External Variable, Perceived Usefulness, Perceived Ease of Use, and Behavioral Intention to Use.

Documentation Guidelines

Documentation Guidelines in the form of a checklist sheet of things that need to be recorded in accordance with the research objectives and support for data collection from interviews conducted. Those who use documentation measuring tools are External Variables (External Variables), Analysis of the Application of Electronic Medical Record Systems, and Behavioral Interest Aspects in the use of RME (behavioral intention to use).

Observation Guidelines

Observation guidelines are research guidelines in making observations about everything related to research subjects to explore as much information as possible that can provide additional information. This guideline is in the form information about the analysis of constraints or problems in the implementation of the electronic medical record of the coding unit at the Rumah Sehat Keluarga Clinic, Jember Regency. which uses a measuring instrument term interview is all terms from External Variable, Perceived Usefulness, Perceived Ease of Use, and Behavioral Intention to Use.

Brainstorming Guidelines

According to Irani (2017), brainstorming is a discussion technique to get a number of creative ideas from a group of people in a short time without any criticism. This technique is effectively used as a problem-solving step, namely to find out the problem, choose problem priorities, separate causes from effects and propose creative solutions. The brainstorming is arranged according to the variables of the Technology Acceptance Model method that is used to reveal the meaning of a group based on the results of group discussions on a particular problem on the variable (Kurniawati, 2018). Brainstorming was conducted to find out the opinions of officers who implemented EMR in the coding unit at the Rumah Sehat Keluarga Clinic regarding the results of the evaluation and implementation of EMR in the coding unit at the Rumah Sehat Keluarga Clinic. which uses a measuring instrument The term interview is the behavioral interest aspect in the use of EMR (behavioral intention to use).

Validity test

According to (Sandi, 2017) validity is the degree of accuracy between the data that occurs in the object of research and the power that can be reported by researchers. Therefore, valid data is that does not differ between data reported by researchers and data that actually occurs in the object of research. In the research process carried out by a researcher, not all of the data obtained are appropriate/valid with the problems to be discussed.

So testing the validity of the data is very necessary in obtaining valid/appropriate data. The process of testing the validity in this study uses a triangulation technique which means a way to get data that is really valid by using a multiple method approach. Triangulation is a technique of checking the validity of data by utilizing something other than the data itself to check or compare the data. triangulation used in this research is to use source and technique triangulation. Source triangulation is comparing data obtained through interviews between research subjects consisting of 1 clinic head and 3 medical record officers. While the triangulation technique by comparing the data obtained through interviews, observation, brainstorming and documentation. This is so that the data obtained can be trusted and recognized as true. Data collection techniques in this study by means of interviews, observation, documentation and brainstorming.

Data analysis

Analysis or data collection begins with conducting in-depth interviews with research subjects. After conducting interviews, data analysis began by making a transcript of the interview results. After the researcher wrote the results of the interview into a transcript, then the researcher had to read it carefully and then do data reduction. After doing data reduction, then presenting data in order to understand the phenomena that occur with the aim of making it easier to analyze and make it easier to draw conclusions. Then after making the final presentation is to draw conclusions from the data that has been processed.

RESULTS AND DISCUSSION

Analyzing problems in the use of electronic medical records in terms of external variables in the outpatient unit

The first external variable added by (Davis et al, 1992 in (Aljoza et al., 2012)) is the quality of output. To d more than 70 external variables have been proposed for perceived usefulness (PU) and perceived ease to use (PEOU) (A za et al., 2012). This external variable is thought to affect the use of electronic medical records, especially from the aspect of perceived usefulness, the aspect of convenience (perceived to use), the aspect of behavioral interest in use of RME (behavioral intention to use). Based on the results of interviews that have been conducte by researchers, it is known that there are obstacles in the application of electronic medical records in terms of external variables, including:

Functionality

The application of electronic medical records is known to be very helpful for officers in completing their work. Howev there are several things that affect its application, which can be seen from the functionality of the electronic medical record. In its application, the report features that are in accordance with the needs of the clinic, such as visit reports, reports of the top 10 diseases and financial reports are still not functioning. In line with Istiyana's research (2019) that damage to the internet network can be easily identified if notification or reporting is available.

Custom training and User Assistance

In addition, the lack of special training in using electronic dical records for users in using the system resulted in a lack of knowledge of officers in the use of electronic medical records. According to Bahraini researchers (2017) training is needed by an employee to develop specific knowledge, especially to improve the performance of officers. With additional assistance in studying this electronic medical record, users will more easily understand its use.

System Consistency and Integration

Not only that, in its application, seen from the consistency and integration in the system, there are several features in the electronic medical record that have not been integrated with the database on the ICD 10, such as the diagnosis and action features so that the user must input the diagnosis and action manually. Constraints caused by external variables can also be explained based on the following chart (figure 1).

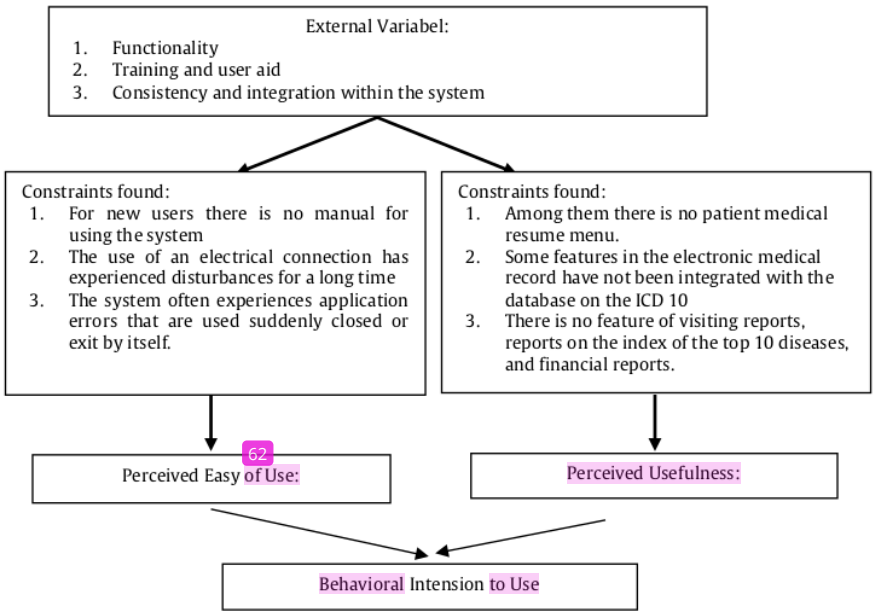

Figure 1. Table of External Variable

The application of HIS in a health service is very important to integrate all the information generated in the service process. HIS can encourage increased efficiency and effectiveness of services in health services along with the smooth flow of information originating from hospital operational activities (M. M. Sari, Sanjaya, & Meliala, 2016). This is in accordance with excerpts from interviews as follows:

"The system is in accordance with the needs, but there is no report feature yet and when entering the patient's diagnosis it is still manual. If you can immediately appear the ICD 10 code will be even better" **(Respondent 1, 2022)**

ISSN 2502-4825 (print), ISSN 2502-9495 (online)

"If there is no special training, at that time it was only taught directly and practiced directly" **(Respondent 2, 2022)**

The statement above explains that based on external variables in the application of RME there are user constraints in using EMR at the Rumah Sehat Keluarga Clinic. The external variable constraints can be seen based on the aspects contained in the TAM method. The grouping can analyze the problems that occur. That some external factors that the researcher uses are divided into 3 factors, namely Functionality, Training and user assistance (Training and user aid), Consistency and system integration (Consistency and integration within the system).

Analyzing obstacles or problems that have an impact on the perceived usefulness aspect of using electronic medical records in outpatients.

The results of interviews conducted showed that the application of electronic medical records greatly helped the work of road coding officers, because the work was completed more quickly and was useful for officers so that the existence of this system could facilitate the work of officers and the data produced was more accurate. Benefits or uses are one aspect of the TAM method. Perceived usefulness is defined as a measure where the use of information technology is believed by users to be useful (Saputra and Misfariyan in Rohmah et al 2020).

In addition, the benefits that are most felt by officers with the electronic medical record system that are currently used are that officers do not need to record the diagnosis code manually or without paper, making it easier for work, speeding up the completion of work and being able to read the doctor's writing clearly. Officers also feel other benefits, such as when observing in outpatients when coding the top 10 diseases, actions, drugs takes 2-3 minutes. Compared to before the EMR, officers need a longer time to do the work manually, especially when the doctor's writing is not legible, the doctor must confirm to the doctor concerned, this of course makes the work take longer time.

Utilization of a system / information technology aims to shorten the time needed to do a job so that it is more effective and efficient. The existence of these benefits certainly has a good impact on the officers themselves, such as improving performance and officers and increasing work. Based on interviews that have been conducted by researchers, it is known that the application of the system in outpatients certainly has a positive impact on his work, as quoted from this interview:

"Yes, this system can increase work productivity because if performance increases, the deck will also increase"
(Respondent 3, 2022)
"Not only will the performance increase, but it will also help and increase the productivity of the officers"
(Respondent 4, 2022)

The information system is expected to be able to help activity become more effective and efficient in order to achieve a certain goal. This is related to increased performance and officers certainly produce maximum work. Medical records are certainly very helpful for officers in carrying out work in large quantities and in a relatively short time, so it can be said that the application of the medical record medical system in outpatient worker productivity also increases. This is in line with the results of research (Putra et al 2015 in Rohmah et al 2020) which states that the implementation of information systems can be said to be successful if it can improve employee performance, which in turn is able to improve company performance.

EMR's in the outpatient clinic of the Family Healthy Home, there is no patient medical resume sheet. In (Permenkes No. 269, 2008) it is explained that the contents of the patient's medical record are in the form of a summary of the medical record. A summary of the medical record can be provided. recorded, or copied by the patient or authorized person or with the written consent of the patient or patient's family who is entitled to it. This is also part of the obstacles experienced in the outpatient clinic of the Family Healthy Home, such as the results of interviews with the clinic head and the following documentation results.

"The menu is quite complete but there is no feature for patient medical resumes, it would be better if added later by the development team"
(Respondent 1, 2022)

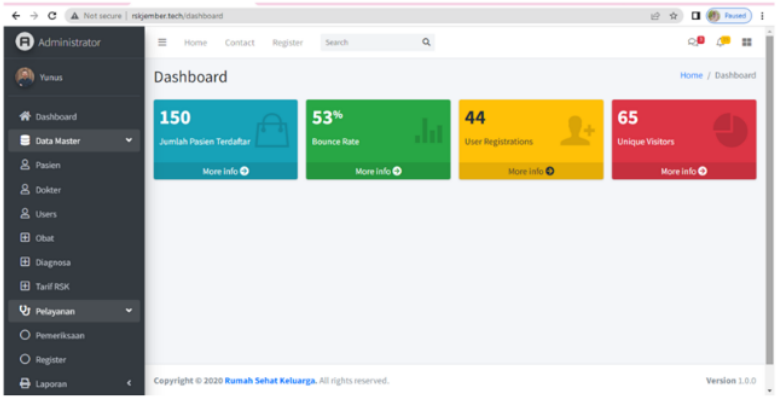

Figure 2. EMR's Dashboard Page at Rumah Sehat Keluarga Clinic

Duplicate removed (n= 51)

The explanation regarding Perceived usefulness or aspects of usefulness can be concluded that electronic medical records in outpatients at the Rumah Sehat Keluarga Clinic are currently very useful and can make the work of officers more effective, work faster and increase performance productivity and reliability. Perceived usefulness with positive perception results felt by officers will lead to behavioral interest in continuing to use electronic medical records, especially in outpatients. The future evaluation for this electronic medical record is to redevelop the required features according to user needs to be better in the future. Namely the need to add a patient medical resume feature.

Analyzing obstacles or problems that have an impact on the aspect of Perceived Ease of Use in the use of electronic medical records in outpatients.

Perceived ease of use describes a person's level of confidence that the use of information systems is easy and does not require hard effort from the wearer (Wahayu et al., 2017). Other researchers who were also conducted by (Febrianti et al, 2020) showed that the perceived ease of use aspect of users felt that it was easy to use the EMR's application and was able to make it easier to speed up the registration process at TPPGD and TPPRI.

Based on the results of interviews and observations that have been made by researchers on an outpatient basis based on the aspect of convenience, it is known that the system used by officers as users is easy to use and easy to understand, but for new users, the use of the system may be a little complicated because there is no manual for its operation. This is in accordance with excerpts from interviews as follows:

"There is no guide to the use of this electronic medical record system, in the future it is necessary to procure guidelines for use"
(Respondent 1, 2022)
"The EMR system that is used in my opinion is quite easy to use, but sometimes there are obstacles that suddenly occur"
(Respondent 2, 2022)

Syahidah's research (2020) in Dinata, Nomawati, and Muflihatin (2020) in her research states that perceived ease of use is a condition where a person believes that using certain technology does not require any effort. This is in accordance with the meaning of "ease" which is free from difficulties and heavy effort. Effort is a limited resource that a person will use for an activity as a form of responsibility. In other words, users do not want to experience high difficulties in learning the system. The easier the technology is to use, the higher the individual's interest to use it (Dinata et al., 2020).

The display on the system used in outpatients is fairly simple, not confusing the officers or users. However, in the system there are several menus that have not been integrated, such as the diagnosis and action features have not been integrated with the database on the ICD 10 so that the user must input the diagnosis and action manually. This is in accordance with the results of the following documentation.

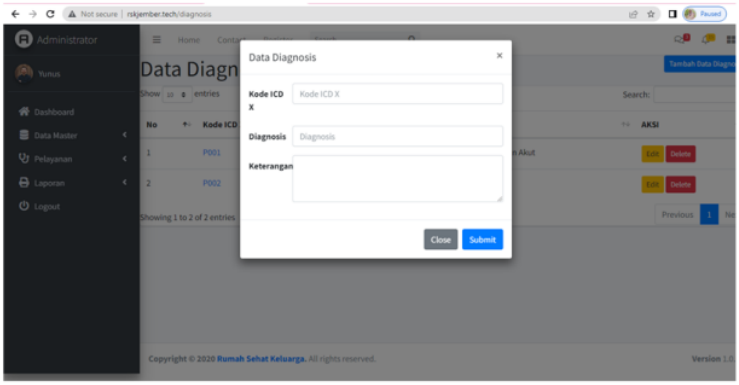

Figure 3. Patient Diagnosis Data Page

It is also known that the performance of the system that is used alone is also quite fast when operated except when the server has a problem or the system has an error, what officers usually do when the server experiences an error is to close the system again and then require the officer to log in again. For button functions such as add, delete, print, or edit, they are functioning properly, so the officers do not experience difficulties in operating them.

The use of electronic medical records in outpatients is also accompanied by a username and password owned by each user so as to facilitate officer access rights and to maintain the confidentiality of files in the system, so not just anyone can access the electronic medical record. This is in accordance with the theory put forward by IOM (1997) in Hatta (2003) in Rohmah et al (2020) that ease of access in the health information system means that data acquisition is available at any time for 24 hours and can only be opened by the authorized part

The description related to perceived ease of use, it can be concluded that the electronic medical record in outpatient Rumah Sehat Keluarga Clinic is currently easy to learn and understand by system users but it would be better if a manual on the operation of the electronic medical record system was used to facilitate users. new. Weaknesses related to aspects of perceived ease of use in outpatient electronic medical records, namely the unavailability of guidelines for the use of electronic medical records, both for new users and guidelines for dealing with errors that suddenly occur in the

ISSN 2502-4825 (print), ISSN 2502-9495 (online)

system. In addition, it needs more development such as integrating features with ICD 10 so that it is automatic in inputting patient diagnosis codes.

Analyze problems or problems that have an impact on aspects of behavioral interest in the use of EMR in outpatients.

Analyzing problems or problems that have an impact on behavioral intentions (Behavioral Intentions) is related to the degree to which a human being has formulated a plan to do or not to do a behavior in the future. According to (Rohmah et al, 2020) behavioral intention is a person's desire to perform a certain behavior or a person's tendency to continue using certain technologies. A person will perform a behavior (behavior) if he has the desire or interest to do so (Jogiyanto 2007 in Febrianti et al 2020). From the two aspects above, perceived usefulness and perceived ease of use both have an influence on aspects of behavioral intention to use. Because if the information system or technology can be useful and easy to use, then users of the information system or technology will have an interest in using it.

Based on the results of interviews and observations made by the researcher, the outpatient coding officer showed an interest in the system used today.

"I am interested, and of course other users are also very interested in using this information system because it is very helpful in doing their work"

(Respondent 3, 2020)

The implementation of an EMR system that is currently running can simplify and speed up the completion of work such as inputting diagnosis codes, actions, and patient medications, inputting data on the patient's medical resume through the system or printing reports. With the positive impact for users of electronic medical records to use information systems, it can be believed that they are able to move users to continuously use the information system. So there is a motivation for users to use and a desire to influence other users. This includes aspects of perspective with an interest in information systems, affective aspects with user statements to use information systems, as well as other components related to user behavior, namely the desire to continue using existing information systems.

Regarding the acceptance of electronic medical records based on aspects of interest and behavior (behavioral intention to use), most of them have described that this system has been well received in terms of the intensity and interest of users in the electronic medical record system. This is in line with research (Febrianti et al, 2020) based on the aspect of interest (behavioral intention to use) obtained, namely users of the EMR system really need the system currently in use, because it makes the work of officers easier and has been considered very relevant to support services. health registration officers at TPPGD and TPPRI intend to use EMR as long as it helps their work, registration officers at TPPGD and TPPRI plan to use EMR in the future and hope to continue to use RME in the future.

Behavioral interest from users is certainly influenced by how much benefit and level of convenience the information system is used. Based on the perception of the usefulness of the system, it can be considered useful and increase the productivity of officers so that they are interested in continuing to use EMR in the future and feel the need for electronic medical records to facilitate their work. This behavioral interest also leads to job satisfaction of the officers themselves. High employee job satisfaction tends to increase employee work productivity which will also have a positive impact on achieving company goals (Hamsinah, 2018).

This illustrates the interest of officers in the use of RME which is quite good. Good interest of course can also show the hope of using EMR quite well in the future. Based on the information obtained from the officer, the officer also has hope for the system that is currently implemented in outpatients, namely that the EMR system can be developed in the future with even better features and in the future it is hoped that it will be fully electronic at the district Rumah Sehat Keluarga Clinic.

Develop problem solving efforts related to the application of EMR's with the TAM Method at Rumah Sehat Keluarga Clinic.

Based on the results of brainstorming conducted by all respondents at the Rumah Sehat Keluarga Clinic, several obstacles or problems were obtained in the application of electronic medical records at the Rumah Sehat Keluarga Clinic based on 3 aspects, namely Aspects of usefulness (Perceived Usefulness), Aspects of convenience (Perceived To Use). and Aspects of behavioral interest in the use of EMR's (Behavioral Intention To Use), including the following:

Table 1. ***Brainstorming Result***

No.	Indicator	Recommendation
1.	Aspect *Perceived Usefulness*	One of the right solutions is the need to integrate the diagnosis system with ICD 10 so that the coding process is more accurate and efficient because there are menus that have not been integrated. Such as diagnosis and action features have not been integrated with the database on ICD 10.
2.	Aspect *Perceived To Use*	The convenience aspect needs to be improved by making guidelines in the form of guidelines for using the system for new officers and for officers regarding what steps to take if an error occurs in the system. This makes it easier for officers to understand the use of the system.
3.	Aspect *Behavioral Intension To Use*	Officers hope that the system that is currently being implemented in outpatients is that the electronic medical record system can be developed in the future with even better features such as adding report features such as visit reports, index reports of the top 10 diseases, and financial reports, electronic medical resume features. patients and integrate diagnosis and action features with the ICD 10 database. This is so that electronic medical records in the future are expected to be fully operational as needed at the Rumah Sehat Keluarga Clinic.

CONCLUSIONS AND SUGGESTIONS

Conclusions

a. The aspect of external variables (External Variables) in its application, the report feature is still not functioning. In addition, there is no special training for users in using the system, resulting in a lack of staff knowledge in the use of electronic medical devices. Not only that, in its application, seen from the consistency and integration in the system, there are several features in the electronic medical record that have not been integrated with the database on the ICD 10, such as the diagnosis and action features, the user must input the diagnosis and action manually.
b. The aspects of perceived usefulness, namely the use of EMR's in outpatients is very useful for outpatient coding officers and makes the work of officers complete faster, makes work easier and can improve performance and productivity. B
c. The aspect of ease (perceived ease of use) in electronic medical reception in outpatient, the Rumah Sehat Keluarga Clinic is considered easy to reach, flexible with the work of officers and easy to use to assist the work of officers. For the performance on the electronic medical record itself, it is considered fast enough except when a system error occurs it will hamper the work of the officer.
d. Based on the aspect of interest (behavioral intention to use) obtained, officers really need a system that when operated, because of the ease of work of officers. Outpatients also showed interest in the system and plan to use the system in the future. Officers also hope that in the future they can fully use electronics.
e. The solution based on brainstorming is that system developers need to add reporting features, disease reporting and financial reporting, patient medical resume features and need system development in the form of integrating diagnosis and action features with databases on ICD 10.

Suggestion

The clinic immediately made a guide to the use of medical records regarding outpatients, especially guidelines for new users and for old users how to overcome obstacles if they occur in the system at any time. To the system developer, it is necessary to add features of visit reports, reports of the top 10 diseases and financial reports. The variables used in the reporting feature contained in the appendix. The system developer also needs to add the patient's medical resume feature to the electronic medical record and integrate the diagnosis and action features with ICD 10 to make work faster and easier. The developer is expected to update or update electronic medical records in outpatients so that system errors do not often occur and to keep up with existing technological advances. For further researchers, it is necessary to evaluate by using or comparing with other models and or with several models so that the results obtained are more accurate and valid. And can be a guide for the next researcher so that it can be further developed in further research.

ETHICAL CONSIDERATIONS

Funding Statement.

The authors did not receive support from any organization for the submitted work. No funding was received to assist with the preparation of this manuscript. No funding was received for conducting this study. No funds, grants, or other support was received.

Conflict of Interest Statement

The authors declared that there is no potential conflict of interests to the authorship and publication of this article.

REFERENCES

Agustina, N. (2015). Penerimaan Teknologi Pengguna Terhadap Sistem Informasi Simpan Pinjam Dengan Metode Acceptace Model. *Jurnal Pilar Nusa Mandiri*, *Vol. XI*, *N*(1978–1946), 171–178. Retrieved from https://ejournal.nusamandiri.ac.id/index.php/pilar/article/view/426

Aljoza, M., Susanto, T. D., Herdiyanti, A., Informasi, J. S., Informasi, F. T., Teknologi, I., … Hakim, R. (2012). Analisis Faktor-Faktor Yang Berpengaruh Terhadap Tingkat Penerimaan Website Imigrasi Kota Surabaya Dengan Kerangka Technology Acceptance Model (TAM). *Teknik Pomits*, 1–6. Retrieved from http://digilib.its.ac.id/public/ITS-paper-34588-5209100101-Presentation.pdf

Bachtiar, R. I., & Sumaryana, Y. (2018). Sistem Pengolahan Rekam Medis. *Jumantaka*, *1*(1), 351–360. Retrieved from https://jurnal.stmik-dci.ac.id/index.php/jumantaka/article/view/298/392

Bahraini, N. S. (2017). Analisis Pengelolaan Dokumen Rekam Medis dari Prespektif Kinerja Petugas di Puskesmas Nangkaan Bondowoso. *PROGRAM STUDI REKAM MEDIS*, 111. Retrieved from https://e-library.polije.ac.id/js/pdfjs/web/viewer.html?file=../../../repository//G41130135 SKRIPSI LENGKAP.pdf

Dinata, F. H., Nurmawati, I., & Muflihatin, I. (2020). *Evaluasi Pendaftaran Online Dengan Technology Acceptance Model Di Rumah Sakit Wongsonegoro Semarang*. *1*(3), 226–233. Retrieved from https://publikasi.polije.ac.id/index.php/j-remi/article/view/2048

Farlinda, S., Nurul, R., & Rahmadani, S. A. (2017). Pembuatan Aplikasi Filling Rekam Medis Rumah Sakit ISSN : 2354-5852. *Kesehatan*, *5*(1), 8–13. Retrieved from https://jurkes.polije.ac.id/index.php/journal/article/view/47

Febrianti dkk, E. C. (2020). Evaluasi Rekam Medis Elektronik Di Tempat Pendaftaran Pasien Gawat Darurat Dan Rawat Inap Rsud K.R.M.T Wongsonegoro Kota Semarang. *Rekam Medik Dan Informasi Kesehatan*, *1*(3), 288–296. Retrieved from https://publikasi.polije.ac.id/index.php/j-remi/article/view/2145?articlesBySameAuthorPage=3

Irani, K. N. H. (2017). Evaluasi Penyelenggaraan Rekam Medis dalam Memenuhi Standar Akreditasi di Klinik Pratama Rawat Inap "Dokterku" Taman Gading Tahun 2017. *Rekam Medik Dan Informasi Kesehatan*, *4*, 9–15. Retrieved from https://e-library.polije.ac.id/js/pdfjs/web/viewer.html?file=../../../repository//G41131232 SKRIPSI LENGKAP.pdf

Istiyana, D. J. (2019). Sistem Informasi Pelaporan Dan Penjadwalan Monitoring Jaringan Internet Di Politeknik Negeri Jember. *Manajemen Informatika*. Retrieved from https://e-library.polije.ac.id/js/pdfjs/web/viewer.html?file=../../../repository//23. E31151806 LENGKAP.pdf

Kemenkes RI. (2008). *Peraturan Menteri Kesehatan Republik Indonesia Nomor 269/MENKES/PER/III/2008 Tentang Rekam Medis*. Jakarta: Kementerian Kesehatan Republik Indonesia.

Kurniawati, R. (2018). Evaluasi Sistem Informasi Manajemen Rumah Sakit (SIMRS) dengan Metode Technology Acceptance Model (TAM) di RSUD dr. H. Slamet Martodirdjo Pamekasan. *Rekam Medis*, 121. Retrieved from https://123dok.com/document/z157lx3y-evaluasi-sistem-informasi-manajemen-dengan-metode-technology-acceptance.html

M. Caecar Febriansyah. (2018). *Sistem informasi manajemen klinik harapan bunda bengkulu selatan*. Retrieved from https://dspace.uii.ac.id/bitstream/handle/123456789/7134/Bab-1-5---S.KOM-FIX-NIAN.pdf?sequence=1

Nissa, N. K., Erawantini, F., & Roziqin, M. C. (2020). Evaluasi Kariadi Information System pada Petugas Koding Rawat Jalan di RSUP dr. Kariadi Semarang. *J-REMI: Jurnal Rekam ...*, *1*(3), 120–128. Retrieved from https://publikasi.polije.ac.id/index.php/j-remi/article/view/1973

Noor Alis Setiyadi, F. H. (2016). Analisis Pelaksanaan Sistem Informasi Kesehatan Di Klinik Muhammadiyah Medical Center (MMC) Universitas Muhammadiyah Surakarta. *Prodi Kesmas FIK*, *4*(1), 64–75. Retrieved from https://jurnal.unej.ac.id/index.php/IKESMA/article/view/4346/3284

Permenkes No 269. (2008). permenkes ri 269/MENKES/PER/III/2008. *Permenkes Ri No 269/Menkes/Per/Iii/2008*, Vol. 2008, p. 7.

Rahayu, F. S., Budiyanto, D., & Palyama, D. (2017). Analisis Penerimaan E-Learning Menggunakan Technology Acceptance Model (Tam) (Studi Kasus: Universitas Atma Jaya Yogyakarta). *Jurnal Terapan Teknologi Informasi*, *1*(2), 87–98. https://doi.org/10.21460/jutei.2017.12.20

Rohmah dkk, A. N. (2020). *Analisis Penerapan RME Pada Unit Coding Rawat Jalan RSUD K.R.M.T Wongsonegoro Semarang*. *1*(4), 545–552. Retrieved from https://publikasi.polije.ac.id/index.php/j-remi/article/view/2137/1455

Sandi, I. M. (2017). Evaluasi Sistem Pelaporan Bulanan Pelayanan Kesehatan Klinik Dengan Pendekatan PDCA (Plan, Do, Check, Act) di Kabupaten Jember. *Rekam Medik Dan Informasi Kesehatan*, *53*(9), 139. Retrieved from https://e-library.polije.ac.id/js/pdfjs/web/viewer.html?file=../../../repository//G41130797 LENGKAP.pdf

Sanjaya, G. Y., Rahmanti, A. R., Anggoro, P., & Rachmandani, A. A. (2013). Sim Rs Kemana Arah Penggunaanya? *FIKI: Forum Informatika Kesehatan Indonesia*, *1*, 1–8. Retrieved from https://publikasi.dinus.ac.id/index.php/fiki2013/article/download/527/304

Sari, K. (2017). Analisis Faktor - Faktor Penyebab Ketidaklengkapan Pengisian Lembar Ringkasan Keluar (Resume) Medis Rawat Inap Di Rsd Balung Periode Januari – Maret Tahun 2017. *E-Library Polije*. Retrieved from https://stikespanakkukang.ac.id/assets/uploads/alumni/3b124d3cb22f50079cbc48b61d6be72a.pdf

Sari, M. M., Sanjaya, G. Y., & Meliala, A. (2016). Evaluasi sistem informasi manajemen rumah sakit (SIMRS) dengan kerangka HOT - FIT. *Program Studi Ilmu Kesehatan Masyarakat*, *1*(1), 204–207. Retrieved from https://is.its.ac.id/pubs/oajis/index.php/file/download_file/1665

Setyonugroho, I. D. P. F. F. P. W. (2012). Evaluasi penerimaan Penerapan Rekam Medis Elektronik di Unit Rawat jalan Rumah Sakit. *Program Studi Manajemen Rumah Sakit*, 1–14. Retrieved from http://repository.umy.ac.id/bitstream/handle/123456789/22062/12B. NASKAH PUBLIKASI INDONESIA.pdf?sequence=12&isAllowed=y

Sudirahayu, I., & Harjoko, A. (2016). Analisis Kesiapan Penerapan Rekam Medis Elektronik Menggunakan DOQ-IT di RSUD Dr. H. Abdul Moeloek Lampung. *Journal of Information Systems for Public Health*, *1*(2), 35–43. Retrieved from https://journal.ugm.ac.id/jisph/article/view/6536

Susanto, E. B., Kurniawan, F., & Christianto. (2017). Integrasi Informasi Kesehatan Pada Instansi Kesehatan Di Kota Pekalongan Melalui Sistem Informasi Layanan Kesehatan. *Jurnal Litbang Kota Pekalongan*, *13*(1), 31–39. Retrieved from https://jurnal.pekalongankota.go.id/index.php/litbang/article/download/52/50

Venkatesh, V. (2000). Determinants of Perceived Ease of Use: Integrating Control, Intrinsic Motivation, and Emotion into the Technology Acceptance Model. *Information Systems Research*, *11*(4), 342–365. https://doi.org/10.1287/isre.11.4.342.11872

 ISSN 2502-4825 (print), ISSN 2502-9495 (online)

Technology Acceptance Model to Implementation of Electronic Medical Record (EMR's) at Clinic of Rumah Sehat Keluarga Jember

ORIGINALITY REPORT

23%	18%	16%	8%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	repository.uhamka.ac.id Internet Source	3%
2	Gamasiano Alfiansyah, Alvira Nafisah Eky Mulia, Rossalina Adi Wijayanti, Sabran Sabran. "Incomplete Inpatient Medical Record Documents at Hospital", Jurnal Aisyah : Jurnal Ilmu Kesehatan, 2022 Publication	2%
3	repository.unusa.ac.id Internet Source	1%
4	eudl.eu Internet Source	1%
5	world.journal.or.id Internet Source	1%
6	www.researchsquare.com Internet Source	1%
7	repository.unair.ac.id Internet Source	1%

8	knepublishing.com Internet Source	1 %
9	repository.unjaya.ac.id Internet Source	1 %
10	Ummul Hairah, Edy Budiman, Rosmasari, Muhammad Bambang Firdaus, Andi Tejawati, Haviluddin. "Technology Acceptance Model in One Stop Service Systems during the Covid-19 Pandemic", 2021 3rd East Indonesia Conference on Computer and Information Technology (EIConCIT), 2021 Publication	1 %
11	Ni Putu Listiawati, Demsy Jura, Margaret Stevani, Mohammad Abdul Mukhyi. "Analysis of the Urgency of the Application of Social and Cultural Elements in the Early Childhood Education Sector", ijd-demos, 2022 Publication	1 %
12	aisel.aisnet.org Internet Source	<1 %
13	repository.uinsu.ac.id Internet Source	<1 %
14	repository.unib.ac.id Internet Source	<1 %
15	ojs.widyagamahusada.ac.id Internet Source	<1 %

16	Rossalina Adi Wijayanti, Hikmatus Surur, Novita Nuraini, Indah Muflihatin. "Analysis of Filling in the Inpatient Medical Record Files at Arjasa Health Center Jember", Jurnal Aisyah : Jurnal Ilmu Kesehatan, 2021 Publication	<1 %
17	Inri Takain, Katmini Katmini. "The Implementation of Computer-Based administrative Information Systems to Improve the Performance of Services Quality in Hospitals", Journal for Quality in Public Health, 2021 Publication	<1 %
18	jurnal.ahmar.id Internet Source	<1 %
19	Submitted to Universitas Dian Nuswantoro Student Paper	<1 %
20	Submitted to Universitas Islam Bandung Student Paper	<1 %
21	Submitted to Universitas Pamulang Student Paper	<1 %
22	pub.unj.ac.id Internet Source	<1 %
23	Submitted to Universitas Sembilanbelas November Kolaka Student Paper	<1 %

24	jos.unsoed.ac.id Internet Source	<1 %
25	Atma Deharja, Fatika Laily Novitasari, Ervina Rachmawati, Maya Weka Santi. "The Analysis of Predisposing and Reinforcing Factors on the Accuracy of Returning Inpatient Medical Records Documents", Jurnal Aisyah : Jurnal Ilmu Kesehatan, 2021 Publication	<1 %
26	Hetty Ismainar, Rika Melyanti, Yulisman, Suandi Daulay, Yuda Irawan, Rian Ordila. "Management Information System for Lancang Kuning Hospital Dompet Dhuafa Pekanbaru Using Codeigniter Framework", Journal of Physics: Conference Series, 2021 Publication	<1 %
27	annalsofrscb.ro Internet Source	<1 %
28	scifes.fkm.ui.ac.id Internet Source	<1 %
29	ojs.stmikpringsewu.ac.id Internet Source	<1 %
30	www.atlantis-press.com Internet Source	<1 %
31	ojs.unm.ac.id Internet Source	<1 %

32	www.seejph.com Internet Source	<1 %
33	Submitted to Universitas Hang Tuah Surabaya Student Paper	<1 %
34	bircu-journal.com Internet Source	<1 %
35	pdfs.semanticscholar.org Internet Source	<1 %
36	www.publikasi.aptirmik.or.id Internet Source	<1 %
37	amcapress.amca2012.org Internet Source	<1 %
38	Arief Setiyoargo, Nanta Sigit, Richard One Maxelly. "PENINGKATAN PENGETAHUAN MASYARAKAT DALAM PENGGUNAAN RESUME MEDIS PADA FASILITAS PELAYANAN KESEHATAN", SELAPARANG: Jurnal Pengabdian Masyarakat Berkemajuan, 2022 Publication	<1 %
39	ejournal.kresnamediapublisher.com Internet Source	<1 %
40	ppsfip.ppj.unp.ac.id Internet Source	<1 %
41	Linda Handayuni, Dewi Mardiawati, Ririn Afrima Yenni, Elda Nelfia. "Description Of	<1 %

	Factors Affecting Delay Return Of Hospitalization Medical Record", Proceeding International Conference on Medical Record, 2021 Publication	
42	iopscience.iop.org Internet Source	<1 %
43	knowledgecommons.lakeheadu.ca Internet Source	<1 %
44	sipora.polije.ac.id Internet Source	<1 %
45	Submitted to MAHSA University Student Paper	<1 %
46	Minda Septiani, Rizki Aulianita, Verra Sofica, Noor Hasan. "Sistem Informasi Penjualan Kayu Kusen Berbasis Website", Bianglala Informatika, 2021 Publication	<1 %
47	Nuryati, Dian Budi Santoso, Nur Rokhman. "Integration of ICPC in an Electronic Medical Records Prototype for Family Physician Clinic", Trans Tech Publications, Ltd., 2022 Publication	<1 %
48	repositori.uin-alauddin.ac.id Internet Source	<1 %
49	www.revistaespacios.com Internet Source	

<1%

50 Frendy Rocky Rumambi, Albertus Joko Santoso, Djoko Budyanto Setyohadi. "Identification of Factors Influencing the Success of Hospital Information System (SIRS) by Hot-Fit Model 2006: A Case Study of RSUD Dr Samratulangi Tondano, Minahasa Regency, North Sulawesi", 2017 International Conference on Soft Computing, Intelligent System and Information Technology (ICSIIT), 2017
Publication <1%

51 Ida Nurmawati, Sari Handayani. "Returning of Medical Record Documents Among Hospitalized Patients: Literature Review", Jurnal Aisyah : Jurnal Ilmu Kesehatan, 2021
Publication <1%

52 Mohamad Ali Sadikin, Rini Wisnu Wardhani. "Implementation of RSA 2048-bit and AES 256-bit with digital signature for secure electronic health record application", 2016 International Seminar on Intelligent Technology and Its Applications (ISITIA), 2016
Publication <1%

53 Nabila Clydea Harahap, Putu Wuri Handayani, Achmad Nizar Hidayanto. "The Challenges in Integrated Personal Health Record Adoption <1%

	in Indonesia: A Qualitative Analysis of Regulatory Perspectives", 2021 International Conference on Informatics, Multimedia, Cyber and Information System (ICIMCIS, 2021 Publication	
54	Nurrudin, Sentot Imam Suprapto. "Analysis of Factors Affecting the Completeness of Medical Record Filling in Public Health Center Gayam", Journal for Quality in Public Health, 2022 Publication	<1 %
55	Submitted to University of Birmingham Student Paper	<1 %
56	journal.unpacti.ac.id Internet Source	<1 %
57	journalpublicuho.uho.ac.id Internet Source	<1 %
58	www.cybersecurity.my Internet Source	<1 %
59	www.frontiersin.org Internet Source	<1 %
60	www.sciencegate.app Internet Source	<1 %
61	Agus Utomo, Yosephine Angelina Yulia, Yenni Khristiana. "Empowerment of employees in creative economic business: Case study of the	<1 %

developing economy.", Journal of Governance and Regulation, 2021
Publication

62	Iis Setiawan Mangku Negara, Fania Mutiara Savitri. "ANALISIS PENERIMAAN PENGGUNA SISTEM INFORMASI AKADEMIK, STUDI KASUS STIKES HARAPAN BANGSA", Solusi, 2019 Publication	<1 %
63	Lilis Masyfufah, Mrs. Sriwati, Amir Ali, Bambang Nudji. "Readiness of Application of Electronic Medical Records in Health Services (Literature Study)", Proceeding International Conference on Medical Record, 2022 Publication	<1 %
64	Ratnawati Ratnawati. "Analysis The Level of Compliance of Hospital Human Resources in Writing The Status of Inpatient Medical Record Dr Sayidiman Hospital and The Influences Factors", Journal for Quality in Public Health, 2020 Publication	<1 %
65	hdl.handle.net Internet Source	<1 %

Exclude quotes	On	Exclude matches	Off
Exclude bibliography	On		