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THE RELATIONSHIP BETWEEN FACILITY CONDITIONS AND HEALTH WORKERS' WILLINGNESS TO USE ELECTRONIC MEDICAL RECORDS: A CROSS-SECTIONAL STUDY

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ABSTRACT
Information technology systems have a significant impact on digitalization of health services, to accelerate it the Minister of Health Regulation No. 24/2022 on medical records has been launched. One of the factors for this regulation to work is the availability of human resources who have the intention to switch from conventional medical records to the electronic one. Objective: To determine the relationship between facility conditions and willingness to use electronic medical records at health centers. Methods: A cross-sectional study was conducted on health workers at the Sidomulyo Health Center, Samarinda City, who are tasked with filling out medical records, with a sample size of 48 people taken using the Slovin formula and stratified random sampling technique. The analysis was bivariate analysis with the Chi-Square statistical test and a 95 percent confidence level. Results: respondents who do not have a willingness to use electronic medical records were dominant (58.3%). Bivariat analysis showed that asymp.sig value (0.011). Conclusion: There is a relationship between facility conditions and willingness to use electronic medical records, therefore it suggested to improve required facilities to form willingness of using electronic medical records.

Keywords: electronic medical record; facility condition; willingness

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INTRODUCTION

The development of information systems technology, including in the health sector, is very rapid (Yani, 2018). This technology has a positive impact, because it makes work easier compared to manual systems (Widyastuti et al., 2020). In management, information is a basic need that is very important in decision making (Sudjiman, 2018). Institutions that store a lot of data, such as health facilities, must prioritize data accuracy so that it can be used in making the right reports (Hidayat, 2020). (Hidayat, 2020).Puskesmas, as an element of technical health service providers at the district/city level, has an obligation to carry out health development in its working area. (Anandhita & Somantri, 2019). By utilizing technology, Puskesmas can provide health service innovations that are comprehensive, integrated, equitable, and affordable. These services can be financed by the wider community and the government without reducing the quality of individual services (Widianti et al., 2019). (Widianti et al., 2018).

The Ministry of Health has issued regulation No. 24/2022 requiring healthcare facilities to implement an electronic medical record system. This implementation deadline is set at December 31, 2023 as part of the health technology transformation pillar. This transformation demands secure, confidential, and technology-appropriate medical record storage to replace conventional methods. (Ministry of Health, 2022). Electronic medical records are considered more efficient than paper-based methods. In addition to making it easier for health workers to

manage data, electronic medical records also speed up the transfer of information between health facilities, thereby improving service quality and patient satisfaction. (Pribadi et al., 2021; Suprayogy, 2021). Although it requires considerable investment, the use of electronic medical records provides long-term benefits in terms of cost and energy efficiency (Khasanah, 2020).

In Samarinda, the implementation of telemedicine has begun in several health centers, including Sidomulyo Health Center. Although telemedicine services have been implemented, the use of electronic medical records (EMR) is still not optimal. In Sidomulyo Health Center, there are obstacles in the full utilization of EMR, which is caused by inadequate facility conditions. This study aims to evaluate the relationship between facility conditions and the willingness of health workers in Sidomulyo Health Center to switch to the EMR system. The willingness of health workers to adopt EMR is the key to success in the full implementation of this system.

METHOD

This study was a correlational study conducted using a cross sectional approach (independent and dependent variables were measured/observed only once at a time). The research was conducted at Sidomulyo Health Center, Samarinda City in October 2022 - January 2023. The research sample was taken using the Slovin formula, and there were 48 people who were health workers from 23 units / fields at Sidomulyo Health Center. The inclusion criteria for research subjects were health workers who could fill in patient medical records at the Sidomulyo Health Center, Samarinda City, and health workers who were willing to fill out the questionnaire. The exclusion criteria were health workers who were on leave and sick leave when the study was conducted and health center employees who did not have the authority to fill out electronic medical records. Primary data collection in this study was obtained using statements in a questionnaire and secondary data from a preliminary survey. The willingness questionnaire was adopted from Akram Hossain's (2019) questionnaire. The validity of the willingness questionnaire obtained a correlation coefficient between 0.641 to 0.989. The reliability test of the willingness questionnaire had a Cronbach's Alpha value of 0.71.

RESULT

Based on table 1. The frequency distribution of respondents can be seen that there are 39 female respondents (81.3%) and 9 male respondents (18.8%), indicating that the majority of health workers involved are women. The highest age group was 45-55 years with 18 respondents (37.5%), while the lowest age group was 17-25 years with only 1 respondent (2.1%). The most represented medical specialty was MCH-KB Services with 5 respondents (10.4%), while some specialties, such as Health Nutrition and Public Health Nursing, were only represented by 1 respondent (2.1%). The majority of respondents had more than 10 years of medical experience, with 29 respondents (60.4%). Whereas 1-3 years and 7-9 years of experience were each only represented by 5 respondents (10.4%). While the most widely used IT application is P-Care, which is used by 21 respondents (43.8%), while the application with the lowest usage is Selena, used by only 1respondent (2.1%).

Table 1.
Frequency distribution of respondents (n=48)

Variables		f	%
Age	17-25 years old	1	2,1
	26-35 years old	16	33,3
	36-45 years old	9	18,8
	46-55 years	18	37,5
	56-65 years	4	8,3
Gender	Male	9	18,8
	Female	39	81,2
Unit	Health Promotion	3	6,3
	Environmental Health Promotion	2	4,2
	Maternal and Child Health - Family Planning	5	10,4
	Community Nutrition Health	1	2,1
	Disease Prevention and Control	4	8,3
	Immunization	3	6,3
	Public Health Nursing	1	2,1
	Mental Health	1	2,1
	Nutrition Health	3	6,3
	Dental Health	3	6,3
	Sports Health	1	2,1
	Sensory Health	1	2,1
	Elderly Health	1	2,1
	Occupational Health	1	2,1
	Adolescent Health	1	2,1
	General Inspection	2	4,2
	Action Service	1	2,1
	Pharmacy	4	8,3
	Laboratory	3	6,3
	Tuberculosis and Leprosy	2	4,2
	VCT, STD, and Lass Services	2	4,2
	Medical Records	1	2,1
	Registration	2	4,2
Medical experience	1-3 years	5	10,4
	4-6 years	9	18,8
	7-9 years	5	10,4
	≥ 10 years	29	60,4
Apps that have been used	P-Care	21	43,8
	E-PPGBM	3	6,3
	SIKDA	16	33,3
	E-Cohort	2	4,2
	ASIK	3	6,3
	Selena	1	2,1
	SIGA	2	4,2

Table 2.
Overview of Sidomulyo Health Center Facility Condition (n=48)

Facility Condition	f	%	Facility Condition
Good	22	45,8	Good
Not good	26	54,2	Not good

Table 2, it can be seen that the condition of the facilities at Sidomulyo Health Center with

good facility conditions is 45.8% and bad conditions are 54.2%.

Table 3.
Frequency Distribution of Respondents Based on Willingness to Use Electronic Medical Records (n=48)

Willingness	f	%	Willingness
Willing	20	41,7	Willing
Not willing	28	58,3	Not willing

Table 3, it can be seen that respondents who have a willingness to use electronic medical records are 41.7% and respondents who do not have a willingness to use electronic medical records are 58.3%.

Table 4.
Relationship between facility conditions and willingness to use electronic medical records

Facility condition	Willingness				Total		*p.value*
	Not willing		willing				
	f	%	f	%	f	%	
Not good	20	71,4	6	30,0	26	100	0,011
Good	8	28,6	14	70,0	22	100	

DISCUSSION

Based on table 4.9, the Chi-Square test results show an asymp.sig value (0.011) <0.05, therefore it could be concluded that there is a relationship between the condition of the facilities and the willingness to use electronic medical records at the Sidomulyo Health Center in Samarinda City. In the 4.0 era, the use of electronic devices has become an integral part of everyday life, including in health services. (Lubis & Nasution, 2023). Electronic medical records are expected to speed up the work process and have a positive impact on health services. (Baumann et al., 2018). Facility conditions, such as hardware and software infrastructure, technical support, and online tutorials, are critical in supporting the implementation of electronic medical records. (Dwijosusilo & Sarni, 2018).The willingness of health workers to use the electronic medical record system is a manifestation of their readiness to utilize this technology. Based on the results of the study, 58.3% of respondents were not willing to use electronic medical records, while 41.7% of respondents stated that they were willing.

Several factors influence this willingness, including the presence of technical administrators and organizational support that assists health workers in using the system. Electronic medical record systems are replacing conventional paper-based methods, so this change requires health workers to adapt to computerized technology. Other factors of interest in this study were age, length of medical experience, and experience using information technology (IT) applications in the healthcare sector. This study shows that the willingness of men is higher (55%) than women (45%). This result is in line with the findings of Hermawati (2018) which states that men tend to be more active in technological advancement. In terms of age, respondents aged 17-25 years had 100% willingness to use electronic medical records, while respondents aged 56-65 years were not willing (0%). In the study Yulida et al., (2021) showed that age affects acceptance and interest in using RME, where the young age group is more dominant in technology adoption compared to the older age group. The older a person is, the lower their willingness to learn and use new technologies such as electronic medical records.

Work experience also plays a role in the willingness to use electronic medical records. Respondents with 1-3 years of work experience showed a willingness of 60%, 4-6 years of experience reached 100%, 7-9 years of experience amounted to 80%, and experience> 10 years was only 13.8%. Research by Sukriani et al., (2018) and Muryani et al., (2016)) support these findings, where longer work experience tends to make health workers feel more comfortable with conventional methods, so the willingness to use new technology decreases. In addition, the more frequently health workers are exposed to technological applications, the higher their willingness to use electronic medical records. In study of Yani (2018) emphasized that the use of the senses in interacting with technology increases comfort and the desire to use the technology. In Sidomulyo Health Center, the results showed that supporting facilities were unevenly distributed in each unit, which led to a low willingness of health workers to use electronic medical records, with 58.3% not willing. Obstacles faced included limited knowledge about electronic medical records, as well as the perception that the system was not compatible with existing systems. Some health workers also felt there was no support if they faced technical difficulties.

This study found a significant relationship between facility conditions and the willingness of health workers to use electronic medical records, with an asymp.sig value = 0.011. Adequate facilities are very important to increase the willingness of health workers and must be maintained and continuously improved. In the research of Kurniawati & Chalimah (2024) it was found that digital competence and commitment have a significant influence on the implementation of electronic medical records (EMR). This shows that mastery of technology and commitment of health workers are important factors in the success of EMR implementation. Meanwhile, research conducted by Almarzouqi et al., (2022) shows that the implementation of EMR is also directly influenced by anxiety, innovation, self-efficacy, and trust. These factors reflect the psychological aspects and readiness of individuals that influence the acceptance and use of EMR in the health environment. This research is in line with the findings of Gu et al., (2021) which states that facility conditions directly affect the willingness to use electronic medical records. The study of Faida & Ali, (2021) also emphasized the importance of strong IT infrastructure support. This supported by study of Boontarig et al (2012) which showed that availability of supportive facilities have a positive impact on the use of health technology. The study from Bhattacherjee & Hikmet (2008) stated that infrastructure support plays a key role in facilitating the use of health information systems, whereas Ajzen (1991) explained that facility conditions are an important factor in technology adoption behavior. In the research of Muchlis dan Sulistiadi, (2023) and Imran et al., (2023) it was stated that user intention to adopt EMR increased with adequate facility conditions. Meanwhile, Khasanah and Budiyanti (2023) added that adequate information technology (IT) infrastructure also plays an important role in encouraging the adoption of EMR by users.

CONCLUSION

The results of the study indicate that the condition of facilities at the Sidomulyo Health Center is inadequate, the willingness of health workers to use electronic medical records is still low, and there is a relationship between the condition of facilities and the willingness to use electronic medical records. This study complements the knowledge gap regarding facilities in the readiness of health workers to adopt EMR technology. The practical implication is that health center managers need to improve facilities or provide training to improve the readiness of health workers in using EMR. Further research can explore other factors that influence interest in using EMR.

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