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Factors Associated with Readiness to Adopt Electronic Health Record in Professional Health Workers: A Meta-Analysis

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ABSTRACT

Background: The application of an electronic health record (HER) at a health service center need to be prepared so it can be implemented successfully. This study aimed to determine the factors that influence the readiness of EHR adoption among health professionals.
Subject and Method: This systematic review and meta-analysis was carried out using the PRISMA guidelines and the PICO model: Population: professional health workers, intervention: computer literate, computer access, high perceived benefit, high self-efficacy, EHR training, technical assistance, comparison: no computer literacy, no computer access, no perceived benefit, low self-efficacy, no EHR training, no technical assistance, outcome: readiness to adopt EHR. Articles are collected from databases like PubMed, Google Scholar, Science Direct. The keywords used are "electronic health record" OR “EHR” OR “electronic medical record” OR “EMR” OR “electronic patient record” OR “EPR” AND “adoption” OR “readiness” AND “EHR implementation” AND “healthcare professionals “AND “Multivariate analysis”. A total of 13 articles met the inclusion criteria, namely full text articles with a cross-sectional study design, with a relationship size adjusted odds ratio (aOR). Data were analyzed using RevMan 5.3.
Results: This meta-analysis included studies from Myanmar, Saudi Arabia, Ghana, Ethiopia, the Netherlands, and the United States. Computer literacy (aOR= 1.67; CI 95%= 1.29 to 2.16; p< 0.001), computer access (aOR= 1.93; CI 95%= 1.41 to 2.64; p< 0.001), perceived benefit (aOR= 3.21; CI 95%= 2.27 to 4.56; p< 0.001), self-efficacy (aOR= 1.94; CI 95%= 1.37 to 2.75; p< 0.001), EHR training (aOR= 2.20; CI 95%= 1.58 to 3.06; p< 0.001), and technical assistance (aOR= 2.34; CI 95%= 1.26 to 4.35; p= 0.007) influenced in the readiness of EHR adoption in health professionals.
Conclusion: Good computer literacy, computer access, high perceived benefits, high self-efficacy, EHR training, and technical support increase the readiness of EHR adoption in professional health workers.

Keywords: electronic health record, medical record, health service, professional health workers.

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BACKGROUND

Health is a condition of a healthy body both mentally and physically, can make everyone live productively economically and socially (Ministry of Health RI, 2009). The world of health is currently experiencing rapid development and has good prospects, a health service that plays an important role in providing services is a hospital (Christasani and Satibi, 2016).

Hospital is a health facility that can provide complete health services. It is important for hospitals to improve the quality of service for the better, because it can improve the health status of the community. Quality hospital services refer to professional and medical codes of ethics (Molla et al., 2022).

The laboratory is a medical support service that aims to assist doctors in diagnosing a disease, so that doctors can carry out treatment quickly, precisely and accurately. Laboratory test services are said to be of high quality, if the laboratory test results can satisfy the patient.

The key to patient satisfaction with laboratory test services is when patients get services that exceed expectations. In order to achieve good service quality, all methods must comply with the applicable Standard Operating Procedure (SOP), starting from sample preparation, sampling, sample examination to reporting laboratory test results to patients (Junjungsari et al, 2018).

According to Ekosiswoyo and Sutarto (2015) factors that can affect the quality of laboratory test services are human resources (laboratory staff), because the experience and ability of officers in examining samples affects the accuracy and speed of laboratory test results. Pharmacy installation is a service in a hospital that is used for pharmaceutical activities, under the leadership of a pharmacist and assisted by several pharmacist assistants who are responsible for their work and provide direct services to patients, both inpatients and outpatients.

Quality Hospital Pharmacy Installation (IFRS) is a service that can provide satisfaction to patients, if the services provided are in accordance with ethical standards. The pharmaceutical installation is a unit that is responsible for procuring pharmaceutical goods management, information on ready to use drugs and is responsible for pharmaceutical goods circulating in the hospital (Novaryatin et al., 2018).

In Indonesia, people are expected to get quality health services, these services are services that can meet the needs of the community which are organized according to standards. In the globalization era, what has become a success in hospital services is the level of patient satisfaction (Stefan, 2014).

Satisfaction is a feeling that arises when someone gets a service, this feeling can be in the form of pleasure or disappointment. Patients can be said to feel happy or satisfied, if the expectations with what they get are the same (Ofosu-Boateng and Acquaye, 2020). Service satisfaction at the hospital is very dependent on the patient, if the patient receives poor service then the patient tends to be dissatisfied with the service he gets, so that the hospital can lose trust and can affect patient satisfaction with the quality of the hospital. Patient satisfaction can shape perceptions and can later promote these health services to other patients. (Gong and Yi, 2018).

The completeness of laboratory tests and the availability of drugs at the hospital have an important role in the optimal service that will be given to patients. The completeness of laboratory tests and the availability of drugs can have an impact on patient satisfaction, patients feel satisfied if the laboratory tests are complete and the drugs needed are available (Santoso et al., 2021).

The purpose of this study was to analyze the effect of the completeness of laboratory tests and the availability of drugs on the level of patient satisfaction at the hospital.

SUBJECTS AND METHOD

1. Study Design

This study used systematic review and meta-analysis methods. The articles used were obtained from several electronic databases including PubMed, Google Scholar, Science Direct with a cross-sectional study design whose publications were from 2013 to 2023. The keywords used in the search were "electronic health record" OR “EHR” OR “electronic medical record” OR “EMR” OR “electronic patient record” OR “EPR” AND "adoption" OR “readiness” AND “EHR implementtation” AND “healthcare professionals “AND “Multivariate analysis”.

2. Meta-Analysis Steps

Meta analysis was carried out in 5 steps as follows:

1) Determine research questions in the form of PICO
2) Search for main review articles from various electronic databases such as PubMed, Google Scholar, Springerlink, and Sciencedirect.
3) Perform screening and critical assessment of main research articles.
4) Perform data extraction and effect estimation synthesis into RevMan 5.3.
5) Interpret and draw the conclusions.

3. Inclusion Criteria

The inclusion criteria in this study were full text articles with a cross-sectional research design method from 2014 to 2022 with interventions on computer literacy, computer access, perceived benefits, high self-efficacy, EHR training, technical assistance and the outcome analyzed was EHR adoption readiness among health professionals reported with an adjusted odds ratio (aOR) and a complete 95% CI.

4. Exclusion Criteria

The exclusion criteria in this study were that the results of the study were not fully and clearly explained, the population and the interventions carried out were different.

5. Definition of Operational Variable

The study was conducted by considering the eligibility criteria defined using the PICO model (Population: professional health workers, intervention: there is computer literacy, there is computer access, high perceived benefit, high self-efficacy, there is EHR $_{\text{training}}$, there is technical assistance, comparison: No computer literacy, no access to computers, no perceived benefit, low self-efficacy, no EHR training, no technical assistance, outcome: readiness to adopt EHR).

Computer Literacy is the ability and knowledge to use computers and related technologies effectively.

Perceived Benefit is an assessment that is formed in a person due to the benefits that can be obtained when deciding to use a product brand or can also be interpreted as a belief in the benefits felt by the individual.

Self-efficacy is the trust in one's own ability to succeed in certain situations or goals.

EHR training is a planned process to modify attitudes or behavior knowledge, skills through learning experiences about electronic medical records (EMR or EHR).

Technical support is a service provided by a company to solve problems in the implementation, use, and configuration of the hardware or software used.

6. Data Analysis

Data analysis was performed using Review Manager software version 5.3. The Forest Plot was used to describe effect sizes and the Funnel Plot to describe publication bias. The analysis was carried out by looking for the heterogeneity consistency value (I^2) of the research results used.

RESULTS

The process of searching for articles in this meta-analysis was carried out by searching through journal databases, namely PubMed, Google Scholar, SpringerLink, and Science-Direct with a time span between 2013-2023. Keywords used were "electronic health record" OR “EHR” OR “electronic medical record” OR “EMR” OR “electronic patient record” OR “EPR” AND "adoption" OR “readiness” AND “EHR implementation” AND “healthcare professionals “AND “Multi-variate analysis”. Search for articles according to the PRISMA flowchart which can be seen in Figure 1.

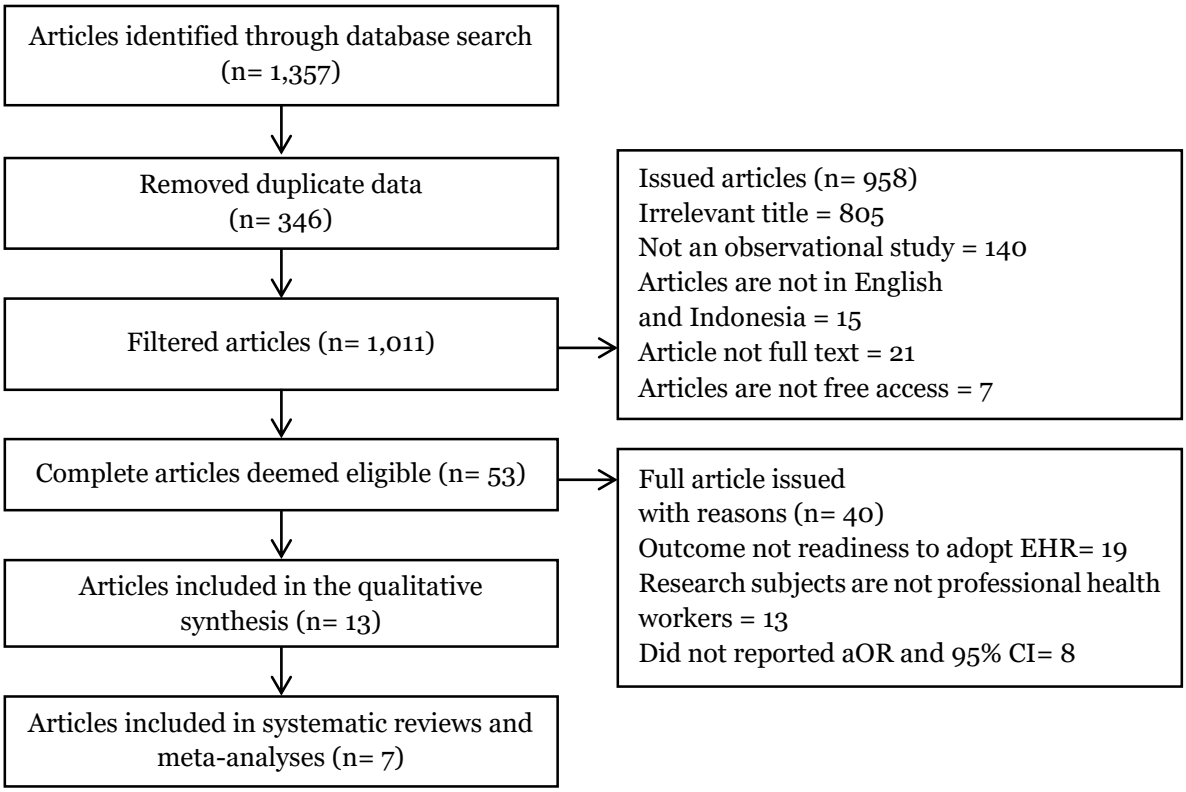

Figure 1. Results from Prisma Flow Diagrams

Figure 1 shows the initial search process which displays a total of 1,250 articles, after eliminating duplicate articles in more than one journal, a total of 442 articles were obtained and 80 of them were eligible for further full text review. A total of 7 articles that fulfill the requirements for full text review. Figure 2 shows a map of the primary study areas used in this meta-analysis spread over 4 continents, namely Asia, Africa, Europe and America. There were 13 articles at the end of the review process that met the quantitative requirements. All articles used a cross-sectional study.

Figure 2. Research area map

Table 1. Assessment of the quality of a cross-sectional research study on factors influencing readiness for EHR adoption in professional health workers.

Author (year)	Criteria							
	1	2	3	4	5	6	7	Total
Abdulai *et al.* (2020)	2	2	2	2	2	2	2	14
Ngusie et al. (2022)	2	2	2	2	2	2	2	14
Biruk et al. (2014)	2	2	2	2	2	2	2	14
Awol et al. (2020)	2	1	2	2	2	2	2	14
Berihun et al. (2020)	2	2	2	2	2	2	2	14
Tolera et al. (20220	2	2	2	2	2	2	2	14
Yehualashet et al. (2015)	2	2	2	2	2	2	2	14
Yilma et al. (2022)	2	2	2	2	2	2	2	14
Oo et al. (2021)	2	2	2	2	2	2	2	14
Thapa et al. (2021)	2	2	2	2	2	2	2	14
Thit et al. (2020)	2	2	2	2	2	2	2	14
Hoogenbosch et al. (2018)	2	2	2	2	2	2	2	14
Kim et al. (2016)	2	2	2	2	2	2	2	14

Description of the question criteria:

1. Are the population, intervention, comparison and outcome in the primary study the same as the population in the PICO meta-analysis?
2. Methods for selecting research subjects:
   - Descriptive cross-sectional (prevalence) study: Is the sample randomly selected?
   - Analytic cross-sectional study: Is the sample chosen randomly or purposively?
3. Methods for measuring comparisons (intervention) and outcome variables:
   - Are exposure/intervention and outcome variables measured by the same instrument (measuring instrument) in all primary studies?
   - If variables are measured on a categorical scale, are the cutoffs or categories used the same between the primary studies?
4. Design related bias:
   - What is the response rate?

- Is non-response related to outcome?

5. Methods to control confounding:
   - Is there any confusion in the results/conclusions of the primary study?
   - Does the primary study investigator use appropriate methods to control for the effects of ambiguity?
6. Statistical analysis method:
   - In which cross-sectional study is a multivariate analysis performed? Multivariate analysis includes multiple linear regression analysis, multiple logistic regression analysis, Cox regression analysis.
   - Whether the primary study reports effect sizes or relationships on multivariate analysis (eg, adjusted OR, adjusted regression coefficient)
7. Conflict of interest: Is there a conflict of interest with the research sponsor?

Description of the answer score:

0= No

1= Uncertain

2= Yes

Table 2. Summary of the primary study article (summary source) with a cross-sectional design on the factors influencing the adoption of electronic health records among professional health workers.

Author (year)	Country	Sample	P	I	C	O
Abdulai *et al.* (2020)	Ghana	350	Health workers	Get computer literacy, computer access, good knowledge	No computer literacy, computer access, poor knowledge.	EHR adoption readiness
Ngusie *et al.* (2022)	Ethiopia	423	Health workers in the Hospital	There are computer literacy, computer access, perceived benefits, high self-efficacy, EHR training and technical support.	No computer literacy, computer access, perceived benefits, high self-efficacy, received EHR training and technical support.	EHR adoption readiness level
Biruk *et al.* (2014)	Ethiopia	606	Health professionals	There is computer literacy, computer skills, good attitude towards EHR	No computer literacy, computer skills, negative attitude towards EHR	EHR adoption readiness
Awol *et al.* (2020)	Ethiopia	414	Professional health workers	Positive attitude towards EHR, has the	Negative attitude towards EHR, lack of computer skills and	EHR adoption readiness

Author (year)	Country	Sample	P	I	C	O
				ability and computer literacy, has attended EHR training	literacy, never attended EHR training	
Berihun *et al.* (2020)	Ethiopia	636	Professional health workers	Receive training and support for EHR, have adequate computer skills	Do not receive training and support for EHR, do not have adequate computer skills	EHR readiness
Tolera *et al.* (20220	Ethiopia	629	Professional health workers	Adequate computer skills, positive attitude towards EMR, high perceived benefit	Poor computer skills, negative attitude towards EMR, low perceived benefit	The use of EMR
Yehualashet *et al.* (2015)	Ethiopia	501	Professional health workers	Have computer access and support the use of EHR	Do not have computer access and do not support the use of EHR	Utilization of EMR
Yilma *et al.* (2022)	Ethiopia	1520	Professional health workers	Have computer access, computer training, and a positive attitude towards EHR	Do not have computer access, do not receive computer training, and have a negative attitude towards EHR	EHR readiness
Oo *et al.* (2021)	Myanmar	118	Health professionals	Have good computer literacy	Do not have good computer literacy	EHR readiness
Thapa *et al.* (2021)	Saudi Arabia	181	Professional health workers	Good perceived benefit, high self-efficacy.	Poor perceived benefit, low self-efficacy.	EHR readiness
Thit *et al.* (2020)	Myanmar	112	Health professionals working	High perceived benefits.	Low perceived benefits.	EHR implementation
Hoogenbosch *et al.* (2018)	Holland	398	Professional health workers	Good computer literacy, high perceived benefits.	Poor computer literacy, low perceived benefits.	EHR implementation
Kim *et al.* (2016)	USA	5467	Health professionals	Get technical support	No technical support	EHR implementation

Table 3. Data adjusted odd ratio (aOR) and CI 95% the relationship between computer literacy and EHR adoption among professional health workers.

Author (year)	aOR	95% CI	
		Lower Limit	Upper Limit
Abdulai *et al.* (2020)	0.17	0.06	0.98
Ngusie *et al.* (2022)	7.32	4.67	11.48
Hoogenbosch *et al.* (2018)	1.12	1.07	1.18
Biruk *et al.* (2014)	1.64	1.09	2.68
Oo *et al.* (2021)	0.95	0.89	1.01
Awol *et al.* (2020)	3.30	2.05	5.31
Berihun *et al.* (2020)	2.50	1.30	4.60
Tolera *et al.* (2022)	1.32	0.68	2.56
Thit *et al.* (2020)	2.19	0.97	4.94

a. Forest Plot

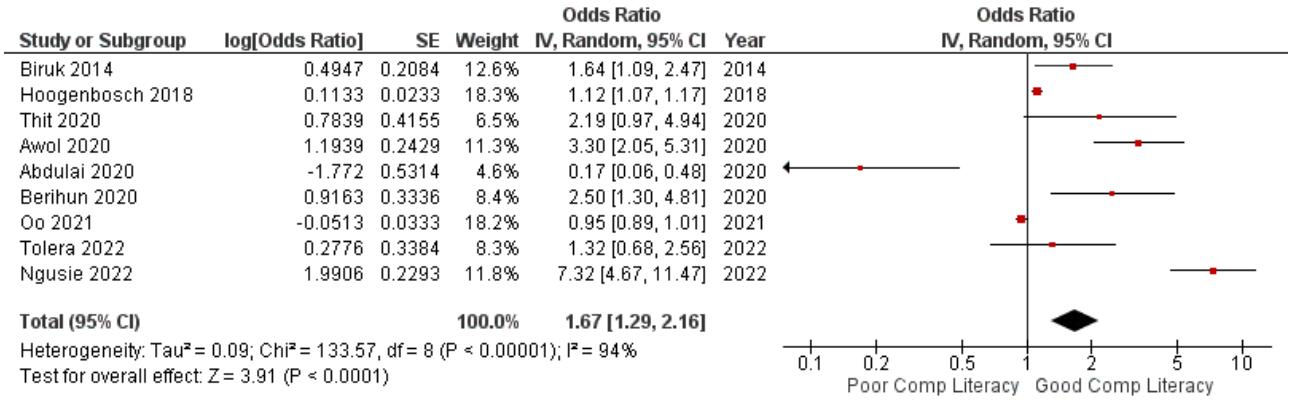

Figure 3. Forest plot of the relationship between computer literacy and readiness for EHR adoption among health professionals

b. Funnel Plot

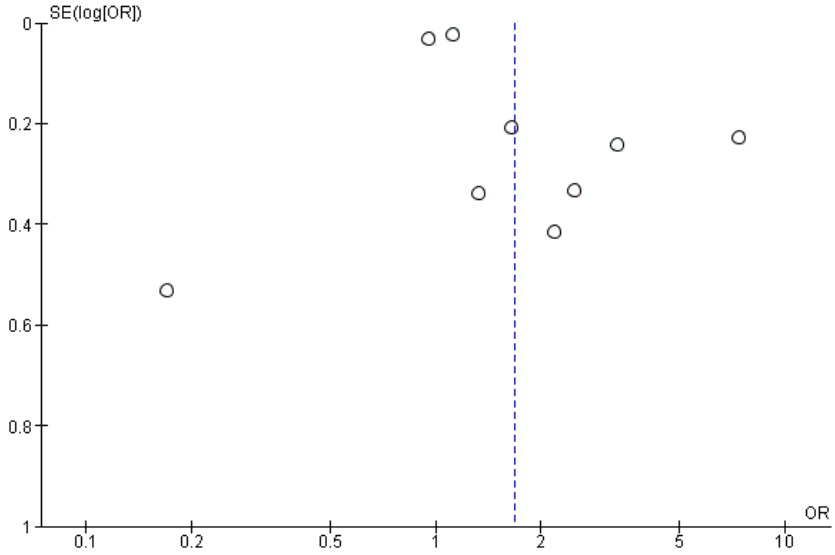

Figure 4. Funnel plot of the relationship between computer literacy and readiness for EHR adoption among health professionals

The results of the analysis in a cross-sectional study showed that health professionals who had good computer literacy increased the likelihood of EHR adoption readiness by 1.67 times compared to health professionals who had poor computer literacy, and this was statistically significant (aOR= 1.67; 95% CI= 1.29 to 2.16; p<0.001). The heterogeneity of the research data showed (I^2= 61%; p <0.001), so the analysis uses a random effect model (Figure 3).

Figure 4 is the result of a funnel plot cross-sectional study showing that the distribution of effect estimates from the primary study meta-analysis lies more to the left of the estimated mean vertical line than to the right, which indicates publication bias. Because the publication bias tends to be to the left of the average vertical line in a different direction from the location of the diamond shape in the forest plot, the publiccation bias tends to reduce the effect of actual computer literacy on EHR adoption readiness among health professionals (underestimated).

Table 4. Adjusted odds ratio (aOR) data and 95% CI relate computer literacy to EHR adoption among health professionals.

Author (year)	aOR	95% CI	
		Lower Limit	Upper Limit
Ngusie *et al.* (2022)	2.76	1.44	5.27
Biruk *et al.* (2014)	2.55	1.62	3.76
Awol *et al.* (2020)	2.34	1.34	4.07
Berihun *et al.* (2020)	2.46	1.31	4.61
Yehualashet *et al.* (2015)	1.32	1.04	2.36
Yilma *et al.* (2022)	1.30	0.78	2.18

a. Forest Plot

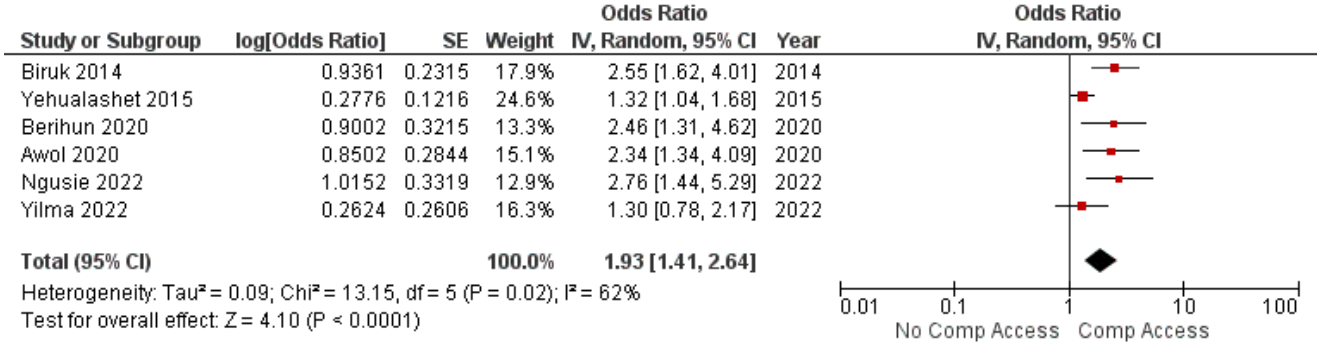

Figure 5. Forest plot of the relationship between computer access and readiness for EHR adoption among professional health workers

The results of the analysis in a cross-sectional study, showed that health professionals who have computer access increase the likelihood of EHR adoption readiness by 1.93 times compared to health professionals who do not have computer access, and it was statistically significant (aOR= 1.93; 95% CI= 1.41 to 2.64; p< 0.001). Heterogeneity of research data shows (I^2 = 62%; p <0.020), so the analysis used a random effect model.

The funnel plot showed that the distribution of effect estimates from the primary study meta-analysis lies more to the right of the estimated average vertical line than to the left, which indicates publication bias (overestimate).

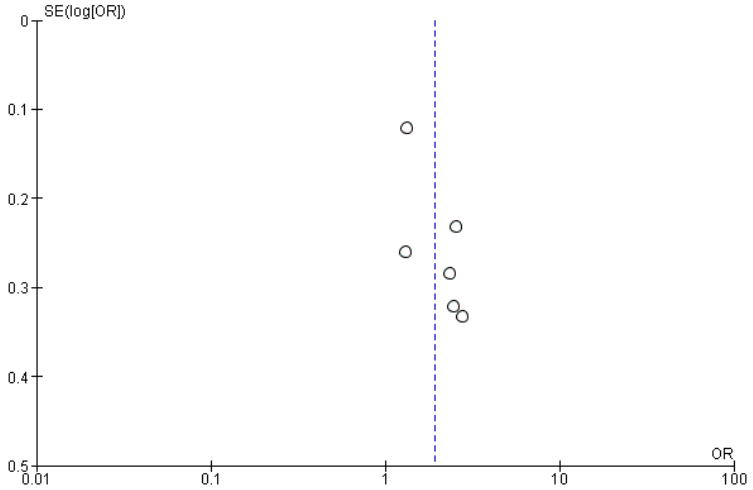

Figure 6. Funnel plot of the relationship between computer access and readiness for EHR adoption among health professionals

Table 5. adjusted Odds Ratio (aOR) data and 95% CI the relationship between perceived benefits and EHR adoption among professional health workers.

Author (year)	aOR	95% CI	
		Lower Limit	Upper Limit
Ngusie et al. (2022)	4.59	1.62	12.99
Thapa et al. (2021)	1.90	0.89	4.03
Thit et al. (2020)	5.05	2.38	10.68
Tolera et al. (2022)	5.51	1.10	27.67
Hoogenbosch et al. (2018)	2.84	1.65	4.90

a. Forest Plot

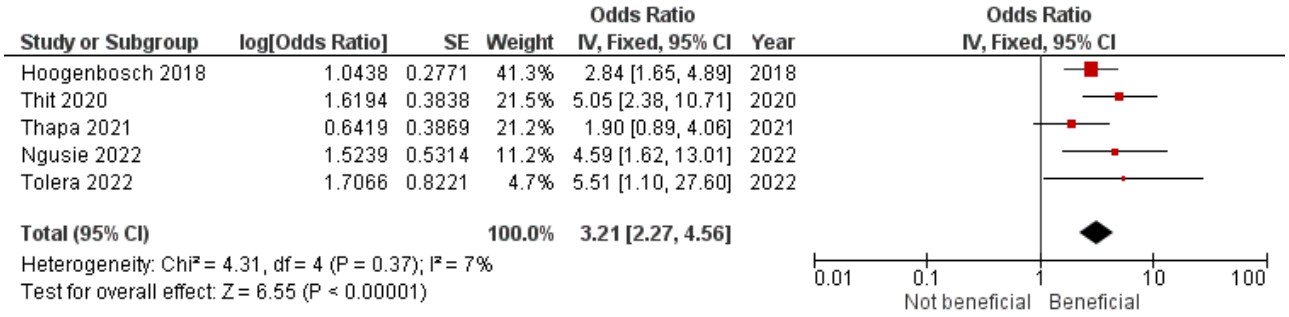

Figure 7. Forest plot of the relationship between perceived benefits and readiness for EHR adoption among professional health workers.

The results of the analysis in a cross-sectional study showed that health professionals who had a high perceived benefit increased the likelihood of EHR adoption readiness by 3.21 times compared to health professionals who did not have a perceived benefit, and this was statistically significant (aOR= 3.21; 95% CI= 2.27 to 4.56; $p < 0.001$). The heterogeneity of research data showed ($I^2 = 7\%$; $p = 0.370$), so the analysis used the fixed effect model.

The funnel plot showed that the distribution of effect estimates from the primary studies of this meta-analysis lies more to the right of the estimated mean vertical line than

to the left, indicating publication bias. Because the publication bias tend to be to the right of the average vertical line in the same direction as the location of the diamond shape in the forest plot, the publication bias tend to overestimate the effect of perceived true benefit on EHR adoption readiness among health professionals.

c. Funnel Plot

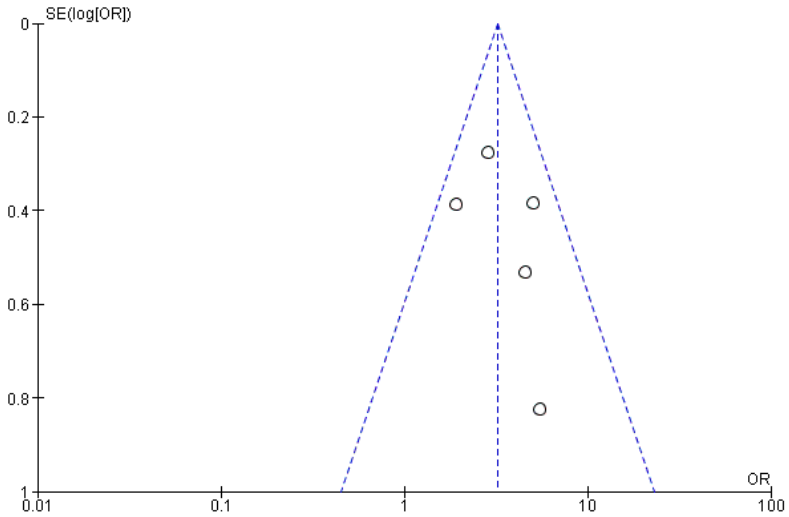

Figure 8. Funnel plot of the relationship between perceived benefits and readiness for EHR adoption among professional health workers.

Table 6. Adjusted odds ratio (aOR) data and 95% CI the relationship between self-efficacy and EHR adoption among health professionals

Author (year)	aOR	95% CI	
		Lower Limit	Upper Limit
Ngusie et al. (2022)	4.70	2.71	8.17
Thapa et al. (2021)	1.64	1.17	2.30
Yilma et al. (2022)	1.65	1.05	2.59
Biruk et al. (2014)	1.56	1.03	2.49
Awol et al. (2020)	1.63	1.01	2.63

a. Forest plot

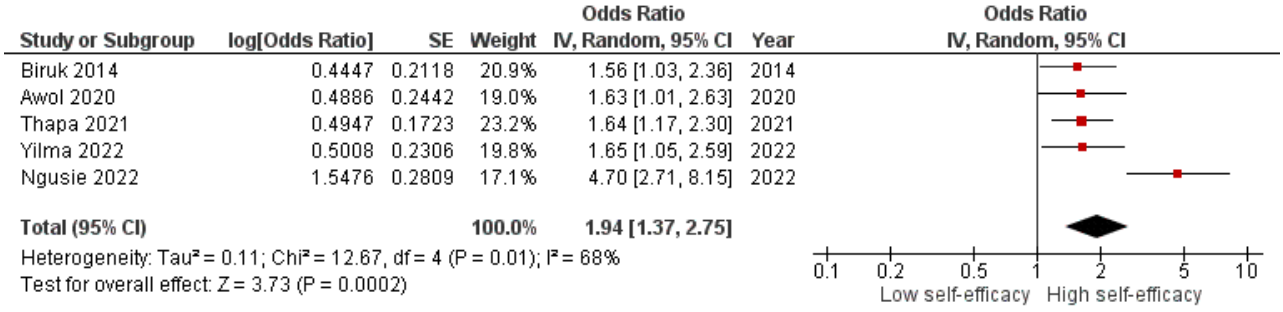

Figure 9. Forest plot of the relationship between self-efficacy and readiness for EHR adoption among health professionals

b. Funnel Plot

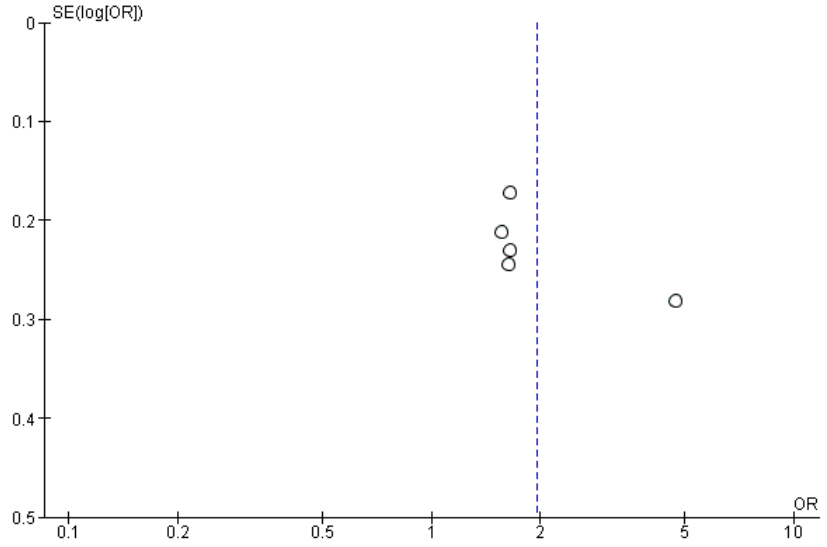

Figure 10. Funnel plot of the relationship between self-efficacy and readiness for EHR adoption among health professionals

The results of the analysis in a cross-sectional study showed that health professionals who have high self-efficacy increase the likelihood of being ready to adopt EHR by 1.94 times compared to health professionals who have low self-efficacy, and were statistically significant (aOR= 1.94; 95% CI= 1.37 to 2.75; p < 0.001). The heterogeneity of research data showed (I^2 = 68%; p = 0.010), so the analysis used a random effect model.

The funnel plots of cross-sectional studies showed that the distribution of effect estimates from the primary study meta-analysis lies more to the right of the estimated mean vertical line than to the left, indicating publication bias. Because the publication bias tend to be to the right of the mean vertical line in the same direction as the location of the diamond shape in the forest plot, the publication bias tend to overestimate the effect of actual self-efficacy on EHR adoption readiness among health professionals (overestimate).

Table 7. Adjusted odds ratio (aOR) data and 95% CI the relationship between EHR training and adoption among health professionals.

Author (year)	aOR	95% CI	
		Lower Limit	Upper Limit
Ngusie et al. (2022)	1.92	0.61	6.01
Awol et al. (2020)	3.63	1.69	7.82
Berihun et al. (2020)	3.75	1.73	8.12
Yilma et al. (2022)	1.59	1.02	2.46

The results of the analysis in a cross-sectional study showed that health professionals who received EHR training increased the likelyhood of readiness for EHR adoption by 2.20 times compared to health professionals who did not receive EHR training, and this was statistically significant (aOR= 2.20; 95% CI= 1.58 to 3.06; p<0.001). Heterogeneity of research data showed (I^2 = 46%; p = 0.130), so the analysis used a fixed effect model (Figure 11).

a. Forest Plot

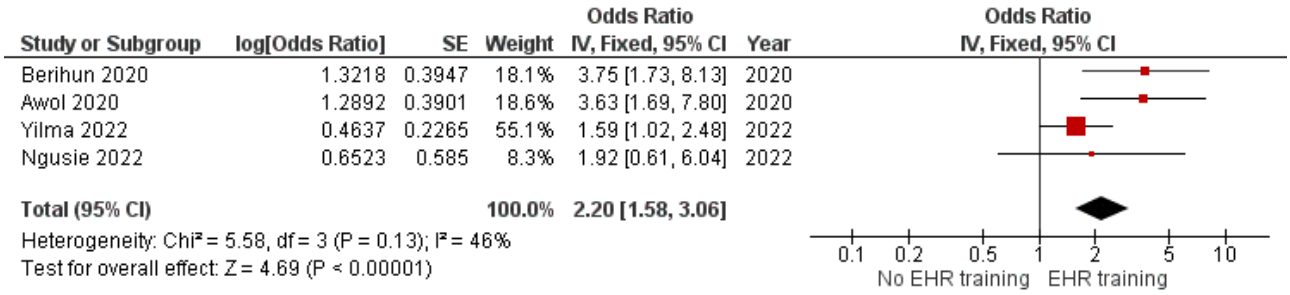

Figure 11. Forest plot of the relationship between EHR training and EHR adoption readiness among health professionals

c. Funnel Plot

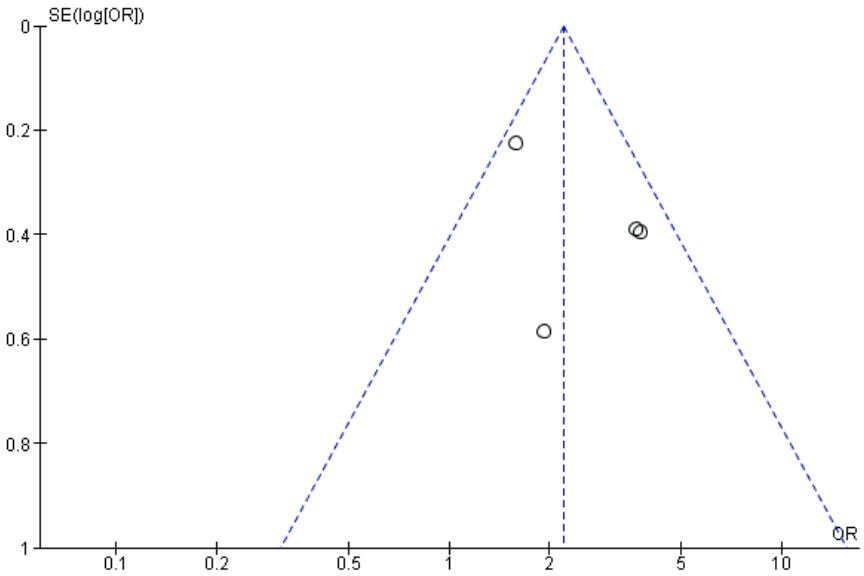

Figure 12. Funnel plot of the relationship between EHR training and EHR adoption readiness among health professionals

Figure 12 showed the result of the funnel plot of a cross-sectional study showing that the distribution of effect estimates from the primary study meta-analysis lies more to the left of the estimated average vertical line than to the right, indicating publication bias. Because the publication bias tends to be to the left of the average vertical line in a different direction from the location of the diamond shape in the forest plot, the publication bias tends to reduce the effect of actual training on EHR adoption readiness among health professionals (underestimated).

Table 8. Adjusted odds ratio (aOR) data and 95% CI the relationship between technical support and EHR adoption among health professionals.

Author (year)	aOR	95% CI	
		Lower Limit	Upper Limit
Ngusie *et al.* (2022)	1.87	0.95	3.68
Yehualashet *et al.* (2015)	1.21	1.01	2.13
Kim *et al.* (2016)	1.46	0.89	2.38
Berihun *et al.* (2020)	2.59	1.40	4.77
Tolera *et al.* (2022)	15.23	5.70	40.74

a. Forest Plot

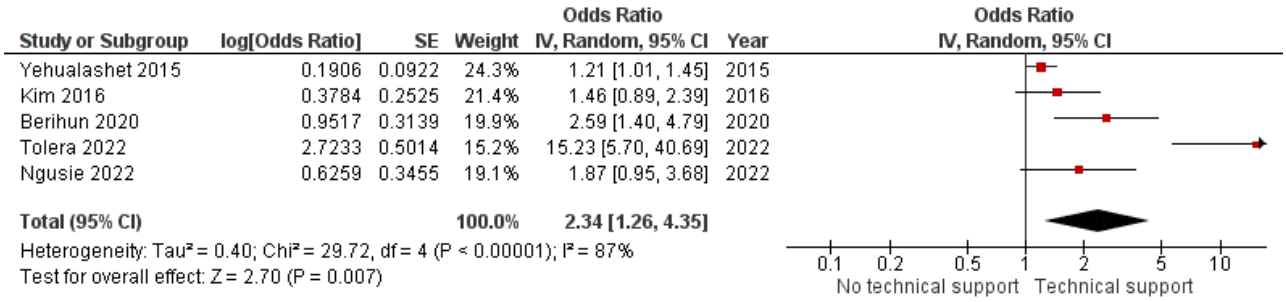

Figure 13. Forest plot of the relationship between technical support and readiness for EHR adoption among health professionals

b. Funnel Plot

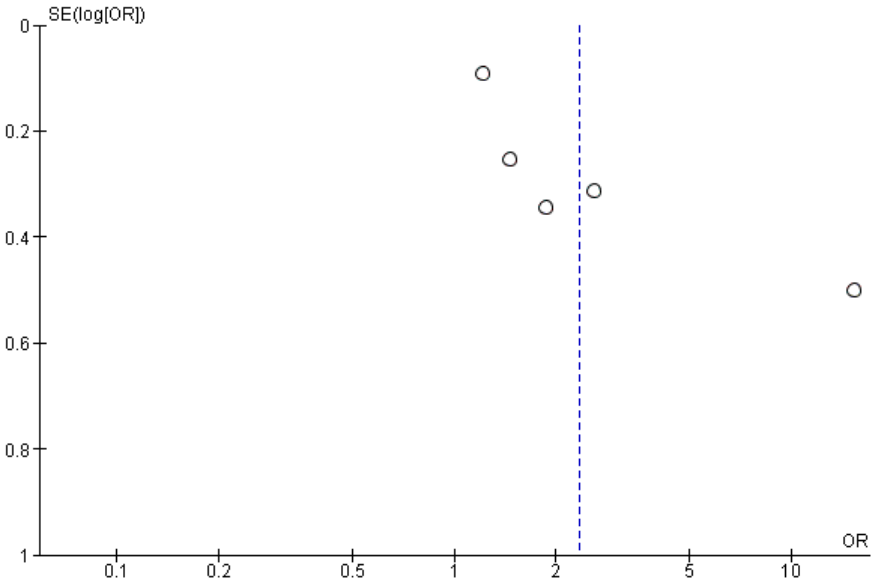

Figure 14. Funnel plot of the relationship between technical support and readiness for EHR adoption among health professionals

Figure 3 showed that professional health workers who receive technical support increase the likelihood of EHR adoption readiness by 2.34 times compared to health professionals who do not receive technical support, and were statistically significant (aOR= 2.34; 95% CI= 1.26 to 4.35; p= 0.007).

Figure 14 showed that the distribution of effect estimates from the primary study meta-analysis lies more to the right of the estimated average vertical line than to the left, which indicated publication bias. Because the publication bias tend to be to the left of the average vertical line in a different direction from the location of the diamond shape in the forest plot, the publication bias tend to overestimate).

DISCUSSION

1. The relationship between computer literacy and readiness for EHR adoption

Maryati et al. (2016) mentions that the effective implementation and use of Electronic Health Records (EHR) requires health professionals to have computer lite-

rate skills. Computer literacy among healthcare professionals is essential to ensure the successful implementation and utilization of EHR systems in their daily work.

Computer literacy plays an important role in readiness for electronic health record (EHR) adoption. Computer literate healthcare workers are more likely to embrace technological changes and adapt to new ways of working with electronic systems (Tolera et al., 2022). By having good computer literacy, healthcare professionals can effectively utilize EHR systems to improve patient care, improve efficiency, and contribute to better healthcare outcomes.

2. The relationship between computer access and readiness for EHR adoption

Computer access allows healthcare workers to adapt to EHR systems and perform essential tasks. Access to a computer allows them to log into EHR software, navigate the user interface, enter patient data, review medical records, and take advantage of various system functions. Lack of computer access will hinder their ability to actively engage with the EHR system. Having computer access will help to access patient information, update records in real-time, and collaborate with colleagues by accessing the EHR system from their workstation (Awol et al., 2020).

Healthcare workers need access to computers to participate in training programs and educational resources that help them learn and improve skills in using EHR (Ngusie et al., 2022).

3. The relationship between perceived benefit and readiness for EHR adoption

Perceived benefit refers to the subjective judgments or beliefs that individuals hold about the positive outcomes or benefits associated with a particular technology or innovation, such as the adoption of an electronic health record (EHR). Perceived benefit is closely related to readiness for EHR adoption as it influences individual attitudes, motivation, and willingness to embrace and utilize EHR systems effectively (Jawhari et al., 2016).

Positive perceptions of benefits can generate enthusiasm and readiness for EHR adoption, growing a receptive mindset among healthcare professionals. When individuals believe that adoption of an EHR can offer benefits that are consistent with professional goals, job satisfaction, and quality of patient care, they are more motivated to be actively involved in the adoption process (Kuo et al., 2013).

4. The relationship between self-efficacy and readiness for EHR adoption

Self-efficacy is closely related to readiness for EHR adoption because it influences attitudes, behavior, and individual readiness to adopt and utilize EHR systems effectively. Belief in self-efficacy plays a role in shaping individual attitudes and beliefs about EHR adoption. If healthcare professionals have high self-efficacy regarding their ability to learn and use EHR systems, they are likely to have positive attitudes and beliefs about the technology (Kim et al., 2017).

Individuals with high self-efficacy are more likely to perceive challenges as surmountable and have greater adaptability, see setbacks or adversity as opportunities for growth and are better equipped to manage change, thereby facilitating a smoother transition to EHR adoption (Biruk et al., 2014).

5. The relationship between EHR training and readiness for EHR adoption

EHR training is closely related to readiness for EHR adoption because it directly influences individual readiness and proficiency in operating EHR. EHR training will help acquire basic knowledge and understanding of EHR systems focusing on developing the practical skills needed to utilize the system effectively. Training also facilitates healthcare professionals to understand practices and workflows to enhance EHR benefits (Awol et al., 2020). Increased confidence fosters readiness by promoting a positive mindset and motivation to engage with the EHR system (Johnson, 2013).

6. The relationship between technical support and readiness for EHR adoption

Technical support is a service provided to assist users in resolving technical issues, troubleshooting, and ensuring hardware, software, or technology systems are functioning properly. It involves a series of activities such as problem diagnosis, error resolution, configuration assistance, and guidance in using technical tools or features (Yehualashet et al., 2015). Technical support can also assist in configuring and customizing the EHR system (Pradnyantara et al., 2022).

AUTHOR CONTRIBUTION

Purwa Adrianta Wibawa as the main researcher who determine the topic, find articles, and analyze data, Didik Tamtomo and Bhisma Murti as supervisors in writing publication articles.

CONFLICT OF INTEREST

There was no conflict of interest in the study.

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