

# Interrelationship among Personal Characteristics, Perceptions, and Self-Efficacy on Electronic Medical Record System (ERNRS) Use among Health Professionals

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## ABSTRACT

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Improvements in the quality and safety of patient treatment are enhanced with the use of electronic medical records (EMRs). Despite the use of EMR, no established data existed on perceptions and self-efficacy and their relationship at the local level. The study assessed the interrelationships among personal characteristics, perceptions, and self-efficacy on EMR system use among 306 health professionals of a tertiary private hospital in Pasig, Metro Manila, Philippines, for the second quarter of 2023 who were chosen utilizing a proportionate stratified



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random sampling. This quantitative research used the descriptive, correlational design. Findings revealed that most respondents were young adults, females, had bachelor's degrees, had good typing ability, and had training in EMR systems. Most belonged to the medical department, used the system moderately, and served for 1-3 years. Overall, perceptions of EMR and self-efficacy were good. All the personal characteristics had a relationship with perceptions of EMR. All personal characteristics, except gender, were correlated with self-efficacy. However, gender was not. Lastly, perceptions of EMR had a relationship with self-efficacy. To address the findings, an action plan for telehealth utilization was created. In conclusion, perceptions of EMR and self-efficacy are influenced by personal characteristics, while perceptions of EMR influence self-efficacy.

## INTRODUCTION

The shift is happening, and hospitals are adopting electronic medical records systems (EMRS). Densymour (2022) states that Philippine doctors were advised to use electronic medical records (EMR) years ago. EMRs were utilized by certain clinicians, but awareness was poor. More than five years later, people still ask, "What is an EMR?" and "How does it work?" Many doctors have realized the need to become digital during the COVID-19 epidemic, but as the pandemic winds down, there is still a disconnect in the clinic. EMRs are digital health records. It can handle patients' health records, notes, and medications, transfer information across doctors, and communicate with patients and families about their health. Physicians can electronically record and save medical data with EMR software. The program simplifies patient data management for clinicians, including diagnoses, treatments, and results. Philippine doctors benefit from EMR accessibility, processability, durability, and security (Densymour, 2022).

From the patients' perspectives in the study of Lee et al. (2016), two major themes were found (a) EMR's clinical functions and (b) EMR's communication functions; and also six subthemes: (1a) clinical care, (1b) documentation, (1c) information access, (1d) educational resource, (2a) Engagement of patients and (2b) physical focus. Most patients in the "clinical care" subtheme had positive EMR perceptions. Most negative perceptions were related to the "communication functions" and the "physical focus" subtheme. Most patients were satisfied with physician EMR use. Most said the computer improved their relationship, and few said the EMR made interacting with doctors harder. EMRS use is viewed differently. Some conservative doctors prefer paper patient records. They seem at ease here. New nurses utilizing the EMRS without proper training due to nurse turnover learn the system independently.

Training is crucial to learning the system. It is important to examine attitudes first so health providers can adapt. Determine self-efficacy to design EMRS skill-building trainings. In the study of Vuk et al. (2015), physicians and nurses felt more confident using EMRs after simulation training. Physicians and nurses' views of EMRs' importance to patients and safety after simulation training were similar to those before. Participants also liked simulation training since it allowed them to use EMRs in a simulated clinical scenario with a simulated patient.

The hospital is currently utilizing an electronic medical record system and is in transition to adopting the said system. The system is a single unified platform with comprehensive modules that integrate patient administration and departmental functions with an advanced clinical information system to address challenges in the healthcare system. In the hospital, the system is mainly used on the patient charts in all wards, including records in the outpatient departments and laboratory use. However, consultations still need to be part of the system. As noted by one of the researchers, the use of EMR greatly influences the conversion of patient records in the wards; this would greatly help make the work of the doctors more efficient and effective. It will smoothen the follow-up of work aided by technology. In preparation for adopting the technology, industrial technology infrastructures had been slowly established in the hospital to ensure this transition would be smooth sailing. Embarking on a study about perceptions of EMRS is very timely as this system is relatively new in the hospital. It matters most in terms of how they perceive the system as users.

Further, to proceed with self-efficacy on EMRS use, it is as important as determining the perceptions of EMRS as this is the execution of the system. Knowing if the health professionals are doing the right thing is essential. In both instances, there is a practical gap in the professional behavior or practices that may deviate from research findings not covered by research. There is a methodological gap as the study proceeds with the interrelationship among personal characteristics, perceptions, and self-efficacy. There have yet to be local studies to this extent where the interrelationship is being assessed, which means there will be a generation of new knowledge. There is also a population gap as this study is new, including doctors, nurses, and those belonging to the ancillary group that directly use the system.

Thus, the study aims to assess the interrelationship between demographic profile, perceptions, and self-efficacy regarding electronic medical records system use among health professionals. The study will lead to developing a training plan that will benefit the EMRS's end users.

## FRAMEWORK

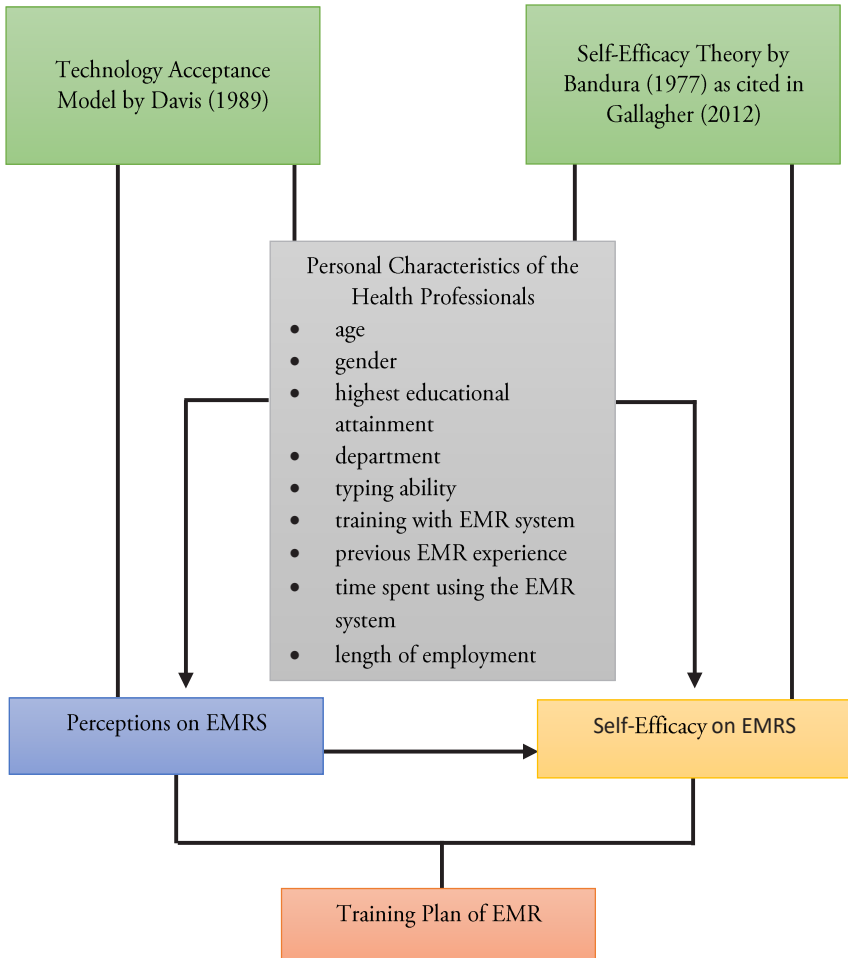
This study is anchored on two theories: the Technology Acceptance Model by Davis (1989) for the perceptions of the EMRS variable and the Self-Efficacy Theory by Bandura (1977), as cited in Gallagher (2012) for the self-efficacy variable.

The Technology Acceptance Model (TAM) by Davis (1989) is a theoretical model used to predict and explain user behavior, IT usage, and perceived usefulness, and ease of use impact whether potential users would embrace a computer system. The potential user's impressions are crucial to this model. Therefore, while the inventor of a technological product may believe it is valuable and user-friendly, potential users will only accept it if they agree. TAM's main goal was to illuminate technology acceptance processes to forecast and explain technology's success. TAM informed practitioners about pre-system implementation measures. Several steps were used to achieve theory goals (Marikyan & Papagiannidis, 2022). As applied in the study, the three-stage process by which external factors (system design characteristics) trigger cognitive responses (perceived usefulness and perceived ease of use) as embodied in the perception of the EMRS, in turn, forms self-efficacy (behavior). The perceptions about the health professional's understanding of the EMRS include being generally satisfied, easy to use, providing information to improve writing, enhancing comprehensiveness of treatment, computers being crucial for practicing, and being comfortable inputting data instead of writing.

Further, the study is anchored on the Self-efficacy Theory by Bandura (1977), as cited in Gallagher (2012), which emphasizes the individual and his/her self-perception as vital factors in success. Thus, self-efficacy and social cognitive theories reinforce the democratic ideal that everyone can succeed if given the chance and self-efficacy. Self-efficacy theory empowers people and communities to succeed. This is significant because self-efficacy theory does not presume success is superior to failure. Self-efficacy theory suggests that struggling people may not have had enough mastery experiences or modeling to acquire high self-efficacy. Self-efficacy theory suggests that the government and society should provide everyone with enough mastery experiences, positive social persuasion, and positively reinforcing models to boost self-efficacy. The study applies the theory of self-efficacy to EMRS use. Self-efficacy: health professionals' views of their abilities as key to success. Self-efficacy in EMRS means the health professional can always solve difficult EMRS problems, get what they want, stick to their goals, and handle unexpected scenarios utilizing EMRS. Most EMRS difficulties can be handled by health workers who remain calm. This also means health professionals finding many EMRS options, being flexible, and being ready for anything.

**Figure 1**

*Schematic diagram of the study utilizing the Technology Acceptance Model by Davis (1989) and the Self-Efficacy Theory by Bandura (1977), as cited in Gallagher (2012).*



The diagram shows that the study variable of perceptions on EMRS is anchored on the Technology Acceptance Model by Davis (1989), while the variable of self-efficacy on EMRS is anchored on the Self-Efficacy Theory by Bandura (1977) as cited in Gallagher (2012). The study initially starts with determining the personal

characteristics of the health professionals according to age, gender, highest educational attainment, department, typing ability, training with the EMR system, previous EMR experience, time spent using the EMR system, and length of employment. This will be followed by the descriptive determination of the perceptions on EMRS and self-efficacy on EMRS. Significant interrelationships among personal characteristics, perceptions of EMRs, and self-efficacy will then be assessed. As an output of the study, a training plan on EMR will be created.

## **OBJECTIVES OF THE STUDY**

The main purpose of the study was to assess the interrelationship among personal characteristics, perceptions, and self-efficacy on electronic medical records system among health professionals of a tertiary private hospital in Pasig, Metro Manila, Philippines for the second quarter of 2023. Specifically, this study aimed to (1) determine the personal characteristics among health professionals in terms of age, gender, highest educational attainment, department, typing ability, training with EMR system, previous EMR experience, time spent using the EMR system, and length of employment, (2) assess the perceptions on EMRS of the health professionals, (3) evaluate the level of self-efficacy on EMRS among health professionals, (4) analyze the significant relationship between personal characteristics and perceptions on EMRS; personal characteristics and self-efficacy on EMRS; and perceptions on EMRS and self-efficacy on EMRS, and (5) develop a training plan on EMR was proposed based on the findings of the study.

## **METHODOLOGY**

### **Research Design**

This quantitative research used a descriptive and correlational research design. The descriptive design was used to determine the personal characteristics, perceptions, and self-efficacy of health professionals on EMRS, while the correlational design was used to assess the interrelationship among these characteristics, perceptions, and self-efficacy.

### **Research Site**

The study was conducted in a private hospital situated in Ortigas Avenue, Pasig, Metro Manila, Philippines.

### **Participants**

Respondents of the study were the health professionals in the hospital. There were 1,500 health professionals in the hospital, with 700 (46.67%) doctors, 500

(33.33%) nurses, and 300 (20.00%) ancillary staff. Based on the population and using the Krejcie and Morgan (1970) sampling table, a sample size of 306 was taken, a proportionate sample size of 143 from the doctors, 102 from the nurses, and 61 from the ancillary.

### **Sampling Design**

A proportionate stratified random sampling was utilized in the study. In order to become a respondent, he or she must comply with the following inclusion and exclusion criteria to ensure that the respondents were the most reliable sample to answer the problems of the study. He or she must be: (a) of legal age regardless of gender, religion, economic status, and educational attainment; (b) a regular employee who has direct contact with patients and at the same time is making use of the electronic medical records system for at least three months already; (c) he must be able to read and write; and (d) must be willing to give voluntary consent to participate in the study. The study excludes health professionals who do not have direct patient care, regardless of whether they are using the EMRS. Health professionals holding management positions, such as department heads, chief nurses, nurse managers, and consultants, are excluded from the study. Also excluded are those who hold administrative positions, such as the department heads. Lastly, those who had submitted their resignation or retirement intent were excluded.

### **Instrumentation**

The study used a three-part instrument. Part one of the instrument measures the personal characteristics of the respondents. It determines the age, gender, highest educational attainment, department, typing ability, training with the EMR system, previous EMR experience, and time spent using the EMR system, and length of employment.

Part two of the instrument is an adopted questionnaire that talks about perceptions of EMRS from the study of Shaker et al. (2015). It comprises 15 closed-ended questions/stems with five points Likert scaling starting from strongly disagree to strongly agree as 1–5, reflecting the perceptions about EMRS. In the study, the General Directorate of Health Affairs, Makkah region experts in Medical IT verified the content and face validity of the questionnaire, and the overall Cronbach alpha was 0.86 while the Guttman split-half coefficient was 0.76. Parametric scores and interpretation for the essential features required in EMR are as follows: A score of 1.00 – 1.80 is very poor, 1.81 – 2.60 is poor, 2.61 – 3.40 is moderate, 3.41 – 4.20 is good, and 4.21 – 5.00 is very good.

Part three of the instrument is an adopted standard questionnaire—The

Generalized Self-Efficacy Scale (GSES) by Schwarzer (1993). For each item, there are four choices from “Not at all true” (1 point) to “Exactly true” (4 points). The total score is the sum of the ten-item scores. This scale measures a person’s generalized self-efficacy. Thus, higher scores indicate stronger generalized self-efficacy. All psychometric and normative data have been analyzed. Each of the five samples has high internal consistency with Cronbach alphas between 0.82 and 0.93. A single-factor solution was obtained for the GSES, indicating that it measures a unitary concept. It was again tested for reliability among 10 health professionals, revealing a Cronbach alpha of 0.968. Parametric scores and interpretation are as follows: 10 to 17.5 is poor, 17.6 to 25 is fair, 25.1 to 32.5 is good, and 32.6 to 40 is very good. To make sure that the questionnaire applies to the self-efficacy on the use of EMRS, the items were specified to mean the use of EMRS.

### **Research Ethics Protocol**

The study underwent an ethical review before recruiting the respondents, and ethical approval was sought.

### **Data Collection**

Permissions were sought from the Dean of the College of Allied Health Science and the Medical Chief of the hospital. After complying with the suggestions and recommendations, the study was submitted to a panel of experts for a design hearing. The manuscript was submitted to the ethics committee for ethical approval. Recruitment begins as soon as the notice to proceed was issued. The recruitment of respondents was done through a face-to-face intercept. Respondents were recruited while they are at work, which was facilitated during their break period or, if not, before or after their shifts. A list was obtained from the Human Resource Department, and using the table of random numbers, the respondents was chosen. With the presence of the COVID-19 pandemic, strict protocols were observed during the recruitment process. This was done until the sample size is achieved. All data were collated in excel file. They were treated with the appropriate statistical treatment. Data were presented in tables with their respective interpretations, implications, and supporting literature and studies. After the study, the answered questionnaires were shredded.

### **Statistical Techniques**

The following statistical treatments were utilized: (a) Frequency and Simple Percentage; (b) Chi Square; (c) Cramer’s V; and (d) Pearson r.



## RESULTS AND DISCUSSION

**Table 1**

*Personal Characteristics among Health Professionals*

Profile	<i>f</i>	%
<b>Age</b>		
18 – 35 years old	176	57.50
36 – 55 years old	124	40.50
56 years old and above	6	2.00
<b>Gender</b>		
Male	46	15.00
Female	260	85.00
<b>Highest education attainment</b>		
Bachelor's Degree	172	56.20
Master's Degree	11	3.60
Doctorate Level	12	3.90
Doctorate Degree	111	36.30
<b>Department</b>		
Medical	143	46.70
Nursing	102	33.30
Ancillary	61	19.90
<b>Typing ability</b>		
Poor	4	1.30
Moderate	94	30.70
Good	208	68.00
<b>Training with EMR system</b>		
Yes	243	79.40
No	63	20.60
<b>Previous EMR experience</b>		
Yes	167	54.60
No	139	45.40
<b>Time spent using the EMR system</b>		
Little	40	13.10

Moderate	138	45.10
Much	128	41.80
<hr/>		
Length of employment		
Below 1 year	20	6.50
1 to 3 years	99	32.40
4 to 6 years	59	19.30
7 to 10 years	57	18.60
More than 10 years	71	23.20

Note:  $n=306$ .

Based on the data, the Majority of the respondents were young adults or between 18 and 35 years old, and the majority of the respondents were females. The majority of the respondents had a bachelor's degree, and most of the respondents belonged to the medical department. The majority of the respondents had good typing ability, and the majority of the respondents had training with the EMR system. Most of the respondents spent moderate time using the EMR system, and most of the respondents had been in the organization for 1 to 3 years.

**Table 2**

*Perceptions on EMRs of the Health Professionals*

Perceptions	Mean score	SD	Interpretation
Overall Perceptions on EMRS	3.94	.557	Good

Note:  $n=306$ . Legend: A score of 1.00 – 1.80 is very poor, 1.81 – 2.60 is poor, 2.61 – 3.40 is moderate, 3.41 – 4.20 is good, and 4.21 – 5.00 is very good.

Overall, the perceptions of EMR were good. Their high agreement that computers are essential for professional practice supports this finding. However, they only agree that EMRS is generally satisfactory, easy to use, provides information that improves writing, and boosts care comprehensiveness. They also agree that EMRS is comfortable inputting data instead of writing, improves practice quality (work life), increases practice productivity (patients per day), and reduces workload. They also agree that EMRS does not disturb workflow, its benefits outweigh its drawbacks, does not diminish user communication, and allows remote access and ordering. Finally, they agree that EMRS can handle all orders in one spot and that typed orders are easy to understand, reducing errors. Positive perceptions imply support for EMRS implementation in the organization. This shows they understand its benefits to their employers. Another

interpretation is that they like EMR. The healthcare system is not criticized as proof.

Supporting the findings, the results in the study of Pera et al. (2014) showed that most survey participants are comfortable using electronic medical records. They stressed the need for patient records, including diagnosis, prescriptions, and allergies. They thought electronic medical records improved patient care by immediately providing disease history. According to the report, nurses' biggest issues are record dispersion, form kinds taking up time, and doctors' notes being hard to comprehend.

It is good that the respondents had a good perception of EMR. Placing a good perception indicates that they clearly understood the use of EMR in their organization. This also influences their self-efficacy, as reflected in the following table.

**Table 3**  
*Level of Self-efficacy on EMRs among Health Professionals*

Level of self-efficacy	Average Score	<i>f</i>	%
Poor	0	0	0
Fair	21.89	28	9.15
Good	29.46	189	61.76
Very Good	36.47	89	29.08
Average Score	30.80		Good

Note:  $n=306$ .

Legend: A score of 10 to 17.5 is poor, 17.6 to 25 is fair, 25.1 to 32.5 is good, and 32.6 to 40 is very good.

The majority of the respondents had good self-efficacy. Respondents agree they can always solve complex EMRS problems if they try hard enough. They also agree that EMRS can be used to achieve their goals if someone opposes them. Further, they agreed that it was easy to stick to and execute their EMRS goals, and they were sure they could handle unexpected situations efficiently. They also agree that they thank their resourcefulness, know how to handle unexpected EMRS situations, can solve most EMRS problems if they put in the effort, and can stay calm when facing EMRS problems because they can rely on their coping abilities. Finally, they agree that when they face an EMRS problem, they can usually find several solutions, that if they are in a bind, they can usually think of something to do, and that no matter what hits them, they can usually handle it.

In the study of Min-Fang and Chen (2019), most developed nations use

electronic medical records (EMR) as a key healthcare policy tool. EMR can lessen the issues of handling paper medical records, improve physician decision-making, and boost patient safety. As physicians are the key users of EMR, their desire to use it is crucial for hospital EMR implementation. Results show that perceived service level affects perceived usefulness. Healthcare technology self-efficacy, risk, and service level also affect perceived ease of use. The findings of this study affect academics, hospital managers, governments, and medical information service providers.

Based on the personal characteristics of the respondents, the majority had previous training and previous experience with EMR. These factors combined indeed aided the respondents to develop self-efficacy in EMR.

**Table 4**  
*Relationship between Personal Characteristics and Perceptions on EMRs*

Perceptions on EMRs (Dependent variable)	Chi value	P value	Cramer's V	Decision	Interpretation
Age	1.037E2	.001	.412	Reject Ho	Significant
Gender	76.809	.000	.501	Reject Ho	Significant
Highest educational attainment	2.829E2	.000	.555	Reject Ho	Significant
Department	1.668E2	.000	.522	Reject Ho	Significant
Typing ability	1.672E2	.000	.523	Reject Ho	Significant
Training with EMR system	85.519	.000	.529	Reject Ho	Significant
Previous EMR experience	66.555	.000	.466	Reject Ho	Significant
Time spent using the EMR system	1.472E2	.000	.490	Reject Ho	Significant
Length of employment	2.581E2	.000	.459	Reject Ho	Significant

Legend: Significant if p-value is  $\leq .05$ .  $ES \leq 0.2$  - The result is weak. Although the result is statistically significant, the fields are only weakly associated.  $0.2 < ES \leq 0.6$  - The result is moderate. The fields are moderately associated.  $ES > 0.6$  - The result is strong. The fields are strongly associated.

Based on the table, the p values for the personal characteristics of age, gender, highest educational attainment, department, typing ability, training with the EMR system, previous EMR experience, time spent using the EMR system, and length of employment were lesser than the significant value of .05. These values were interpreted as significant which led to the decision of rejecting the hypothesis. Thus, all the personal characteristics had a significant relationship

with perceptions of EMR. Based on Cramer's V values, the association was moderate for all the personal characteristics. Meaning the higher the age, as the gender goes into the direction of being female, the higher the educational attainment; as the person becomes a member of the medical department, the better the typing ability, if with training with EMR system, if with previous EMR experience, the longer the time spent using the EMR system, and the longer the length of employment, all these leads to better perceptions on EMR.

As people age, they learn more, which impacts perceptions. His or her EMR perception can improve with extra schooling. Females were more prevalent, which may explain the association. Females outnumber males almost six times, and data is concentrated on them, which may explain the association. Higher education implies more study and wisdom. He or she is more knowledgeable and has superior judgment with that premise. Therefore, he or she can improve EMR perceptions. The medical department had more respondents, which may have altered the result. However, since they use the EMR more, they perceive it better.

Typing is required for EMR knowledge. To use the EMR, you must type. Thus, stronger typing skills improve EMR perceptions. If the person has taken EMR training, they can use the system. He or she understands EMR's organizational benefits and improves its perception. Previous EMR experience indicates one knows how to use the system. He understands how the system works and how it benefits the organization by using it. They can form better opinions. The longer someone uses the EMR system, the more exposed they are. Longer EMR exposure leads to more learning and better perceptions. Finally, prolonged tenure improves perception. A long-term employee witnesses the organization's developments. Longer time in the company equals more EMR experience, which improves EMR perception.

Contrary to the findings, demographic characteristics were less strongly connected with EMR system views. However, good views of EMRs in general linked strongly with MSU's EMR system. Health organizations should prioritize EMR teaching and training since results show that perceptions of EMR consequences are more commonly connected with specific EMR implementations than demographic characteristics (Whitten et al., 2007).

It is important to consider these personal characteristics in making the training plan to ensure that they are addressed. The findings reveal that personal characteristics need to be considered when developing perceptions.

**Table 5***Relationship between Personal Characteristics and Self-efficacy on EMRs*

Self-efficacy on EMRs (Dependent variable)	Chi value	P value	Cramer's V	Decision	Interpretation
Age	69.994	.021	.338	Reject Ho	Significant
Gender	34.146	.082	--	Failed to reject Ho	Not significant
Highest educational attainment	1.469E2	.000	.400	Reject Ho	Significant
Department	1.011E2	.000	.407	Reject Ho	Significant
Typing ability	1.417E2	.000	.481	Reject Ho	Significant
Training with EMR system	54.381	.000	.422	Reject Ho	Significant
Previous EMR experience	43.465	.009	.377	Reject Ho	Significant
Time spent using the EMR system	1.210E2	.000	.445	Reject Ho	Significant
Length of employment	1.522E2	.000	.353	Reject Ho	Significant

Legend: Significant if the p-value is  $\leq .05$ .  $ES \leq 0.2$  - The result is weak. Although the result is statistically significant, the fields are only weakly associated.  $0.2 < ES \leq 0.6$  - The result is moderate. The fields are moderately associated.  $ES > 0.6$  - The result is strong. The fields are strongly associated.

Based on the table, the  $p$  values for the personal characteristics of age, highest educational attainment, department, typing ability, training with the EMR system, previous EMR experience, time spent using the EMR system, and length of employment were lesser than the significant value of .05. These values were interpreted as significant which led to the decision of rejecting the hypothesis. Thus, the personal characteristics of age, highest educational attainment, department, typing ability, training with the EMR system, previous EMR experience, time spent using the EMR system, and length of employment had a significant relationship with self-efficacy on EMR.

Based on Cramer's V values, the association was moderate for all the personal characteristics. This means the higher the age, the higher the educational attainment; as the person becomes a member of the medical department, the better the typing ability. If training with the EMR system with previous EMR experience, the longer time spent using the EMR system and the longer the employment, all these lead to better self-efficacy in EMR.

Age influences views, and as people age, they gain more knowledge. EMR self-efficacy can be enhanced with more learning. Higher education led to more learning and information. Making such assumptions helps one assess the issue and understand it better. He or she gains EMR self-efficacy. There were more medical department respondents, which may have affected the outcome. Another reason they have better EMR self-efficacy is because they use the EMR more.

Typing is required to understand computerized medical records. To use an EMR, you must type. If people can type better, they will be more self-confident with electronic medical records. If the person has taken EMR training, they can use the system. The person is more self-efficacious since they understand how electronic medical records (EMR) benefit the company. Having experience with electronic medical records (EMR) means knowing how to use them. He knows how the system works and helps the company succeed since he can utilize it. Thus, people are more self-confident in it. Long-term users of the electronic medical record system are more exposed to it. Longer EMR exposure leads to more learning and higher self-efficacy. Finally, staff tenure improves perception. Long-term employees can attest to the organization's changes. A longer tenure with the company means greater expertise in the electronic medical record (EMR), which increases EMR self-efficacy.

Turkish university students had modest self-efficacy for self-regulated learning, supporting the study's conclusions. The self-efficacy of women was significantly higher than that of men. However, mean differences were below medium. During the academic year, participants' self-efficacy did not vary by grade level or living situation (alone, with parents, in a shared room/apartment, or a dormitory). The self-efficacy ratings of the group with initial intrinsic motivation and an initial extrinsic drive to enter a university were not significantly different. This study can inform educational psychology (Valizadeh, 2021).

However, the p-value for the personal characteristics of gender was greater than the significant value of .05. This value was interpreted as not significant, which led to the decision of failing to reject the hypothesis. Thus, the personal characteristics of gender were not significantly correlated with self-efficacy on EMR. No matter what gender, there can still be a high level of self-efficacy in EMR. Also, in the study of McNeill (2016), none of the characteristics predicted self-efficacy, while nursing education, pediatric life support certification, and clinical experience were strongly associated with knowledge.

The findings reveal that the majority of personal characteristics influenced self-efficacy in EMR. All these personal characteristics should be considered to ensure that all individuals can achieve high levels of self-efficacy.

**Table 6***Relationship between Perceptions on EMRs and Self-efficacy on EMRs*

Variable	r value	p-value	Decision	Interpretation
Perceptions on EMRs vs. Self-efficacy on EMRs	.263	.000	Reject Ho	Significant

Legend: Significant if p-value is  $\leq .05$ . Pearson r: A values of .90 – 1.00 (-.90 to -1.00) is very high positive (negative) correlation; .70 - .90 (-.70 to -.90) is high positive (negative) correlation; .50 - .70 (-.50 to -.70) is moderate positive (negative) correlation; .30 - .50 (-.30 to -.50) is low positive (negative) correlation; and .00 - .30 (.00 to -.30) is negligible correlation.

The table shows that the p-value for variables was less than the significant value of .05. This value was interpreted as significant, leading to the decision to reject the hypothesis. Thus, perceptions of EMR had a significant relationship with self-efficacy of EMR. Based on the r-value, the association was positive. This means that the higher or better the perception of EMR, the higher the self-efficacy of EMR. However, the correlation was negligible.

Better perceptions about EMR only presuppose that the person better understands what EMR is all about, including the benefits that can be derived from using it. Believing the system can benefit the organization also affects putting it into action. By analogy, knowledge of something allows a person to put it into practice. Just like the KAP theory, which breaks down human behavior change into three steps: getting information or knowledge, bringing in attitudes/beliefs, and putting into practice/behaviors, which can also influence health behaviors (Xie et al., 2017). In the study by Devkota et al. (2021), positive but weak linear correlations were observed between knowledge practice and attitude practice. The relationship between knowledge and education was fairly strong. According to the study of Alaryani et al. (2021), there was a significant positive relationship between knowledge and self-efficacy.

The findings of the study are something that the researcher was expecting. Self-efficacy in EMR results from the person gaining positive perceptions about EMR.

## CONCLUSION

In conclusion, perceptions of EMR are influenced by personal characteristics. Meaning, that the higher the age, the gender direction of being female, the higher



the educational attainment as the person becomes a member of the medical department, the better the typing ability if with training with the EMR system, if with previous EMR experience, the longer the time spent using the EMR system, and the longer the length of employment, all these leads to better perceptions on EMR. Further, self-efficacy is influenced by the personal characteristics of age, highest educational attainment, department, typing ability, training with the EMR system, previous EMR experience, time spent using the EMR system, and length of employment had a significant relationship with self-efficacy on EMR. This means the higher the age, the higher the educational attainment; as the person becomes a member of the medical department, the better the typing ability, if with training with EMR system, if with previous EMR experience, the longer the time spent using the EMR system, and the longer the length of employment, all these leads to higher self-efficacy on EMR. Lastly, self-efficacy is influenced by the perceptions of EMR. This means that the higher the perceptions of EMR, the higher the self-efficacy of EMR. The findings of the study affirm the Technology Acceptance Model (TAM), where good perception and self-efficacy are reflections of acceptance of the EMR system because of its perceived usefulness and perceived ease of use. A training plan on EMR was created to address the study findings.

## TRANSLATIONAL RESEARCH

The findings of the study served as a basis for the development of an EMR training plan. The plan will improve healthcare professionals' perceptions and self-efficacy regarding EMR, which will impact patients or clients, hospital administrators, the hospital IT department, policymakers, and future researchers.

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