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Factors Affecting the Utilization of Electronic Medical Records (EMRs) in the Selected Rural Health Units in Camarines Sur

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ABSTRACT

This study explores the factors affecting the utilization of Electronic Medical Records (EMRs) in selected Rural Health Units (RHUs) in Camarines Sur, Philippines. Using a quantitative correlational design, 118 healthcare workers—physicians, nurses, and encoders—were surveyed to assess their computer literacy, EMR satisfaction, and perception. Findings show that all respondents had basic computer skills and access to EMR systems. However, while satisfaction and perception of EMRs were generally positive, internet connectivity varied and impacted usage. No significant associations were found between demographic factors and EMR-related variables, though computer literacy showed a modest correlation with internet upload speed and perception. The study highlights the importance of strengthening digital infrastructure and enhancing user perception to improve EMR adoption in rural settings. These insights can guide policymakers and health administrators in developing targeted interventions for more effective EMR implementation.

Keywords: EMR, Rural Health Units, computer literacy, demographic factors, adoption, intervention

INTRODUCTION

The advancement of digital health technologies has led to significant improvements in healthcare systems worldwide. Among these technologies, Electronic Medical Records (EMRs) are critical tools for streamlining patient information, enhancing care coordination, and improving clinical outcomes. EMRs allow for the secure storage, quick retrieval, and efficient updating of patient health data, reducing medical errors and supporting evidence-based decision-making (World Health Organization, 2016).

In the Philippines, the Department of Health (DOH) has actively promoted the use of EMRs to modernize both public and private healthcare systems. Despite this initiative, rural health units (RHUs), especially in provinces like Camarines Sur, face persistent challenges in adopting and sustaining EMR use. Common barriers include inadequate internet infrastructure, limited computer literacy among staff, lack of technical support, and reluctance to shift from traditional paper-based systems (Bekele et al., 2024; Tolera et al., 2022; Essuman et al., 2020).

To understand these barriers, this study is anchored on the Unified Theory of Acceptance and Use of Technology (UTAUT) by Venkatesh et al. (2003). This model posits that technology adoption is influenced by four key constructs: Performance Expectancy – belief that the system will improve job performance, Effort Expectancy – perceived ease of use, Social Influence – the degree to which others influence the user's decision & Facilitating Conditions – organizational and technical infrastructure support.

The model also considers moderating variables such as age, gender, experience, and voluntariness of use, making it appropriate for analyzing behavior across diverse user groups.

Using a quantitative correlational design, this study surveyed 118 RHU personnel—physicians, nurses, and EMR encoders—from 12 municipalities in Camarines Sur. Results revealed that while all respondents had access to computers and demonstrated basic proficiency, challenges such as varying internet speeds and limited training remained. Most respondents expressed satisfaction with EMR usability and functionality, yet no significant correlations were found between demographic factors and EMR satisfaction or perception. However, computer literacy showed a weak but significant correlation with internet upload speed and EMR perception.

These findings suggest that although rural health workers are digitally capable, EMR adoption is hindered by infrastructural and organizational constraints. By applying the UTAUT framework, this study provides actionable insights for policymakers and health administrators to address technical gaps, enhance user training, and improve overall EMR integration in rural healthcare settings (Ngugi et al., 2021; Dubale et al., 2023).

METHODOLOGY

This research employed a quantitative correlational design to examine the relationships between demographic factors, technological elements, and the use of Electronic Medical Records (EMRs) in rural health units (RHUs). A correlational research design was utilized to explore potential statistical relationships among variables such as computer literacy, internet connectivity, user satisfaction, and perceptions of electronic medical records (EMRs).

The study was conducted in 12 selected Rural Health Units (RHUs) within Camarines Sur, Philippines, specifically in the municipalities of Milaor, Canaman, Magarao, Bombon, Calabanga, Pili, Ocampo, Tigaon, Sagñay, and Buhi, representing four districts of the province.

A total of 118 healthcare professionals participated, including Municipal Health Officers (physicians), Public Health Nurses, and EMR encoders. Participants were chosen through purposive sampling, targeting individuals directly engaged in EMR use and administration.

Data were collected using a researcher-designed structured questionnaire divided into three main parts: (1) demographic details (e.g., age, gender, education level, job role); (2) technological factors (e.g., computer skills, internet availability, prior computer experience); and (3) user satisfaction and EMR perceptions, measured with Likert-scale items.

To ensure validity and reliability, the questionnaire was reviewed by two EMR experts and a faculty member specializing in health informatics. The instrument consisted of 50 items, designed to gather both factual and perceptual information.

Data collection occurred between May 4 and May 18, 2025. Questionnaires were distributed to the participants in their respective RHUs and retrieved after one week for data consolidation.

The data were analyzed using both descriptive and inferential statistical methods. These included: (1) descriptive statistics (mean, standard deviation, frequency, and percentage) to summarize demographic and EMR-related data; (2) Frequency and simple percentage to describe the distribution of patients in terms of different variables; (3) Spearman's Rank Correlation Coefficient to identify relationships between ordinal and continuous variables; (4) the Mann-Whitney U test to compare two independent groups (e.g., male vs. female, trained vs. untrained); and (5) the Kruskal-Wallis H test for comparing three or more groups (e.g., physicians, nurses, encoders). A significance level of $p < .05$ and a 95% confidence interval were applied throughout. Data encoding was done in Microsoft Excel, and statistical analysis was conducted using Minitab version 21.1 on a Mac Mojave operating system.

RESULTS AND DISCUSSION

A total of 118 participants took part in the survey, comprising personnel from different rural health units (RHUs) across Camarines Sur, ensuring a varied representation. The breakdown of respondents is shown in Table 1.1. Among the municipalities, Ocampo recorded the highest number of participants with 23, accounting for 19.49% of the total. This was followed by Calabanga and Pili, each contributing 15 respondents or 12.71%. Tigaon ranked third, with 13 participants representing 11.02% of the sample.

The study also examined the respondents' demographic characteristics, levels of computer proficiency, and their satisfaction with and perceptions of the electronic medical records (EMRs) system. The following sections detail these findings.

Table 1.1

Respondents per municipality

Municipality	**N=118**	
BOMBON	6	5.08
BUHI	10	8.47
CALABANGA	15	12.71
CAMALIGAN	6	5.08
CANAMAN	10	8.47
GAINZA	4	3.39
MAGARAO	7	5.93
MILAOR	4	3.39
OCAMPO	23	19.49
PILI	15	12.71

Municipality	**N=118**	
SAGÑAY	5	4.24
TIGAON	13	11.02

Table 1.2

Demographic profile characteristics of respondents

Characteristics	**N=118**	
Age *in years, mean (SD) and Median (Q1-Q3)*	39.81 (11.05)	37 (32-48.25)
Age groups	**no**	**%**
twenties	22	18.64
thirties	49	41.53
forties	21	17.80
fifties	18	15.25
sixties	8	6.78
Sex	**no**	**%**
female	89	75.42
male	29	24.58
Education	**no**	**%**
Vocational High School	4	3.39
College	95	80.51
Post Graduate	19	16.10
Current Position	**no**	**%**
Encoder	55	46.61
Nurse	47	39.83
Physician	16	13.56
EMR seminar and training	**no**	**%**
without	60	50.85
with	58	49.15
iCLINICSYS	58	
with adequate power supply	118	100.00

Table 1.2 outlines the demographic characteristics of the RHU employees who participated in the survey. The participants had an average age of 39.81 years, with a standard deviation of 11.05, reflecting a broad age range from 21 to 64 years. The most represented age group was those in their thirties (41.53%), followed by individuals in their twenties (18.64%), forties (17.80%), fifties (15.25%), and sixties (6.78%).

Females made up the majority of the respondents, comprising 75.42% (n=89), resulting in an approximate female-to-male ratio of 3:1. Most participants had attained a college degree (80.51%; n=95), while 16% (n=19) held graduate or postgraduate qualifications. A small portion (3.39%; n=4) had vocational high school as their highest level of education.

In terms of job roles, encoders were the largest group, accounting for 46.61% (n=55) of respondents. Nurses followed at 39.83% (n=47), while physicians made up 13.56% (n=16) of the sample. Regarding training, 49.15% (n=58) reported having attended EMR-related seminars or workshops (e.g., iCLINICSys), while 50.85% (n=60) had not received such training. All respondents confirmed the availability of a reliable power supply in their respective municipalities.

Table 2.1

Computer experiences and skills of respondents

Variables	**N=118**	
COMPUTER EXPERIENCES	**no**	**%**
Access to computer and/or similar devices	118	100.00
INTERNET CONNECTIVITY		
Internet Speed-Download *in mbps,* *mean (SD) and Median (Q1-Q3)*	46.85 (36.88)	30 (10-89)
Internet Speed-Upload *in mbps,* *mean (SD) and Median (Q1-Q3)*	29.53 (29.21)	16.98 (10-50.43)
COMPUTER SKILLS	**no**	**%**
Able to turn on and off the computer properly	118	100.00
Able to start and exit a program properly	118	100.00
Able to minimize, maximize and move windows on the desktop	118	100.00
Able to perform file management including deleting and renaming files, etc.	118	100.00
Able to use a ‘search’ command to locate a file	118	100.00
Able to print a document using a printer	118	100.00
Able to create a basic Word document.	118	100.00
Able to copy, cut and paste text in a document	118	100.00
Able to change font style and size in a document	118	100.00
Able to search for information online using a web search engine or internet	118	100.00
COMPUTER LITERACY SCORE,	12.44	13

Variables	**N=118**	
mean (SD) and Median (Q1-Q3)	(1.88)	(12-14)

Table 2.1 presents known factors that influence the utilization of EMR in rural health units. Respondents in this study are characterized in terms of their computer experiences, computer skills and their RHU's internet connectivity, and also assessed in terms of computer literacy.

All respondents have access to computers and/or similar devices. Mean internet download speed is 46.85 mbps (SD=36.88), with a median of 30 mbps (10-89) while mean internet upload speed is 29.53 mbps (29.21), with a median of 16.98 (10-50.43). The wide standard deviations for both suggest immense variability in download speeds among participants, with speeds as low as 0.00 and as high as 100 mbps.

All those included in this study can perform basic computer skills such as safely turning on and off computers, starting and exiting programs, minimizing and maximizing windows on a desktop, file management, the use of search command to locate files, printing documents, utilizing search engines, and creating word documents involving basic tasks such as copy, cut, paste and changing of font style and size. The mean Computer Literacy Score is 12.44, with a standard deviation of 1.88, suggesting relatively minimal variability in the scores among respondents when compared to preceding numerical entries. The perfect score for this assessment is 15 points. The first quartile (Q1) for Computer Literacy Score is 12, the median is 13, and the third quartile (Q3) is 14, suggesting that 50% of respondents scored between 12.00 and 14.00 points. Furthermore, the majority of respondents scored above the median in Computer Literacy, with a huge portion achieving scores in the upper quartile (Q3).

Table 2.2.1

EMR User Satisfaction, response distribution

SATISFACTION Items on the use of Electronic Medical Records	**Response Distribution N=118**				
	Very dissatisfied no (%)	**Dissatisfied no (%)**	**Neutral no (%)**	**Satisfied no (%)**	**Very satisfied no (%)**
1. Satisfaction on the easy usage and navigation on electronic medical record	—	—	31 (26.50)	**62 (52.99)**	24 (20.51)
2. Satisfaction on user-friendly interface of the EMR system	—	—	32 (27.12)	**64 (54.24)**	22 (18.64)
3. Satisfaction on the efficiency of the EMR system in accessing patient information	—	—	27 (22.88)	**70 (59.32)**	21 (17.80)
4. Satisfaction on EMR system that meets the need for documenting the patient	—	—	28 (23.73)	**65 (55.08)**	21 (21.19)
5. Satisfaction on the effectivity of the EMR system to support respondents' workflow	—	1 (0.85)	36 (30.51)	**59 (50.00)**	22 (18.64)

SATISFACTION Items on the use of Electronic Medical Records	**Response Distribution N=118**				
6. Satisfaction on the reports generated by the EMR system	—	2 (1.69)	37 (31.36)	**60 (50.85)**	19 (16.10)

A majority of respondents expressed satisfaction with various aspects of EMR use. Specifically, 52.99% reported satisfaction with system navigation, 54.24% with the user-friendly interface, 59.32% with the ease of accessing patient records, and 55.08% with the system's ability to meet documentation needs. However, only half of the participants found the system effective in supporting their workflow. Notably, 37 respondents (30.51%) selected neutral, and one respondent (0.85%) indicated dissatisfaction in this area.

Similarly, just over half (50.85%; n=60) expressed satisfaction with the quality of reports generated by the EMR system, while 37 respondents (31.36%) gave neutral responses and 2 (1.69%) reported dissatisfaction.

Overall, users across the surveyed RHUs reported a favorable level of satisfaction with the EMR system. To further analyze this, satisfaction scores for each item were summed to create a composite EMR Satisfaction Score. With a maximum possible score of 30, the average score among respondents was 23.42 (SD = 3.72), indicating a generally positive experience. The first quartile (Q1) score was 21.00, the median was 24.00, and the third quartile (Q3) also stood at 24.00, suggesting that at least half of the participants scored 24 or higher. The range of scores spanned from a low of 15.00 to a high of 30.00.

Table 2.3.1

EMR Perception, response distribution

PERCEPTION Items on the use of Electronic Medical Records	**Response Distribution N=118**				
	Strongly disagree no (%)	**Disagree no (%)**	**Neither no (%)**	**Agree no (%)**	**Strongly Agree no (%)**
1. The EMR system has been often used for specific tasks (ordering tests, prescribing medicines, etc.).	4 (3.39)	3 (2.54)	39 (33.05)	**63 (53.39)**	9 (7.63)
2. The EMR system is easy to navigate and a user-friendly System.	—	1 (0.85)	32 (27.12)	**65 (55.08)**	20 (16.95)
3. The EMR system has improved your efficiency and productivity.	—	3 (2.54)	36 (30.51)	**65 (55.08)**	14 (11.86)
4. The EMR system improved the quality of patient care.	—	3 (2.54)	38 (32.20)	**61 (51.69)**	16 (13.56)

PERCEPTION Items on the use of Electronic Medical Records	**Response Distribution N=118**				
5. The EMR system easily collaborate with other healthcare professionals.	1 (0.85)	4 (3.39)	31 (26.27)	**62 (52.54)**	20 (16.95)
6. Technical issues are resolved immediately.	2 (1.69)	5 (4.24)	40 (33.90)	**60 (50.85)**	11 (9.32)

Over half of the respondents (53.39%; n=63) agreed that the EMR system is frequently used for tasks such as ordering laboratory tests and prescribing medications, while only 5.93% (n=7) disagreed. Similarly, the majority found the EMR system easy to navigate (55.08%; n=65), believed it enhanced their efficiency and productivity (55.08%; n=65), and agreed that it contributed to improved patient care (51.69%; n=61), with fewer than 3% expressing disagreement in each of these areas.

In terms of collaboration, 52.54% (n=62) agreed that the system facilitates effective communication with other healthcare professionals, while only 4.24% (n=5) disagreed. Furthermore, 50.85% (n=60) agreed that technical issues related to the system are addressed promptly.

On the whole, respondents demonstrated a generally positive perception of the EMR system. As with the satisfaction measure, perception scores were totaled to generate an overall Perception Score, used for comparison and correlation analysis. With 30 as the maximum possible score, the mean perception score was 22.43 (SD = 3.98), reflecting a favorable, though slightly lower, perception compared to the satisfaction score.

Table 2.3.2

EMR Perception, averages and interpretation

PERCEPTION Items on the use of	**Response Scores and Interpretation N=118**			
Electronic Medical Records	**Median (Q1-Q3)**	**Mode**	**N for Mode and %**	**Interpretation based on Median**
1. The EMR system has been often used for specific tasks (ordering tests, prescribing medicines, etc.).	4 (3-4)	4	63 (53.39)	**Agree**
2. The EMR system is easy to navigate and a user-friendly System.	4 (3-4)	4	65 (55.08)	**Agree**
3. The EMR system has improved your efficiency and productivity.	4 (3-4)	4	65 (55.08)	**Agree**
4. The EMR system improved the quality of patient care.	4 (3-4)	4	61 (51.69)	**Agree**

PERCEPTION Items on the use of	**Response Scores and Interpretation N=118**			
5. The EMR system easily collaborate with other healthcare professionals.	4 (3-4)	4	62 (52.54)	**Agree**
6. Technical issues are resolved immediately.	4 (3-4)	4	60 (50.85)	**Agree**
	Mean (SD)	**Median (Q1-Q3)**		**Minimum to Maximum**
TOTAL EMR PERCEPTION SCORE	22.43 (3.98)	24 (18-24)		13-30

The median is 24.00 (Q1 is 18 and Q3 is 24), indicating that 50% of respondents scored 24 or higher, just like satisfaction. The EMR Perception Score ranged from a minimum of 13 to a maximum of 30.

Table 3.1

Demographic profile characteristics of respondents and factors affecting utilization of EMR

Variables	**Computed Values**	**p-value**	**Interpretation**
Computer Literacy Score and			
Age	0.056 (-0.126 to 0.235)	0.547	NO significant relationship
Sex	Female η_1=13 (12-14); Male η_2=12 (11.5-14) [b]	0.413	NO significant difference
Educational attainment	0.177 (-0.005 to 0.348)	0.055	NO significant relationship
Work position	Encoder η_1=12 (12-14); Nurse η_2=13 (11-14); Male η_3=12.5 (12-14) [b]	0.533	NO significant difference
EMR Seminars or Trainings	With η_1=13 (11-14); Without η_2=13 (12-14) [b]	0.694	NO significant difference
Computer Experience Score and			
Age	*	*	*
Sex	*	*	*

Variables	Computed Values	p-value	Interpretation
Educational attainment	*	*	*
Work position	*	*	*
EMR Seminars or Trainings	*	*	*

Since all p-values exceed the significance threshold of 0.05, there is insufficient statistical evidence to suggest a relationship between respondents' computer literacy scores and their age (p = 0.547) or educational attainment (p = 0.055). Likewise, no significant difference in computer literacy scores was observed between male and female respondents (p = 0.413), between those who had attended EMR-related seminars or training and those who had not (p = 0.694), or among different job positions within RHUs (p = 0.533). These findings suggest that the computer literacy levels of RHU employees in Camarines Sur are not influenced by their age, educational background, gender, EMR training, or job designation.

Additionally, computer experience could not be statistically analyzed in relation to profile characteristics, as all respondents reported the maximum possible score, resulting in no variability to assess.

Concerning EMR user satisfaction, no significant associations were found with age (p = 0.581) or educational attainment (p = 0.785). Median satisfaction scores also did not significantly differ between male and female respondents (p = 0.907), those with or without EMR-related training (p = 0.157), or across job categories (p = 0.358).

Similarly, EMR perception scores showed no significant associations with age (p = 0.875) or educational attainment (p = 0.690). No notable differences were found between male and female respondents (p = 0.712), between trained and untrained individuals (p = 0.661), or across different professional roles (p = 0.111).

Overall, these findings suggest that demographic and training-related factors do not appear to significantly influence the computer literacy, satisfaction, or perception of EMR systems among RHU personnel.

Table 3.1

Demographic profile characteristics of respondents and factors affecting utilization of EMR, continued

Variables	Computed Values	p-value	Interpretation
EMR User Satisfaction and			
Age	-0.051 (-0.230 to 0.131)	0.581	NO significant relationship
Sex	Female η_1=24 (21-24); Male η_2=24 (18-26.5) [b]	0.907	NO significant difference
Educational attainment	-0.025 (-0.205 to 0.156)	0.785	NO significant relationship
Work position	Encoder η_1=24 (23-26); Nurse η_2=24 (19-24); Male η_3=24 (21-26.25) [b]	0.358	NO significant difference
EMR Seminars or Trainings	With η_1=24 (22-24);	0.157	NO significant difference

Variables	Computed Values	p-value	Interpretation
	Without η_2=24 (18-24) [b]		
EMR Perception and			
Age	-0.015 (-0.195 to 0.167)	0.875	NO significant relationship
Sex	Female η_1=24 (18-24); Male η_2=24 (18-24.5) [b]	0.712	NO significant difference
Educational attainment	-0.037 (-0.216 to 0.145)	0.690	NO significant relationship
Work position	Encoder η_1=24 (20-24); Nurse η_2=23 (18-24); Male η_3=24 (20-25.5) [b]	0.111	NO significant difference
EMR Seminars or Trainings	With η_1=24 (20-24); Without η_2=24 (18-24) [b]	0.661	NO significant difference

Pairwise correlation analyses were conducted to examine relationships among the various factors (see Table 3.2). Results showed no significant association between computer literacy and EMR user satisfaction (p = 0.405). However, there is sufficient statistical evidence to support a significant correlation between computer literacy and internet upload speed (p = 0.042). The calculated Spearman's Rho of 0.187 indicates a weak but positive monotonic relationship, suggesting that higher levels of computer literacy tend to be associated with faster internet upload speeds. It is important to emphasize that while a correlation exists, this does not establish a cause-and-effect relationship between the two variables.

Table 3.2

Relationship of Factors affecting utilization of EMR

Pairwise Correlations	Computed Values [a]	p-value	Interpretation
Computer Literacy and Computer Experience	*	*	*
Computer Literacy and Internet Speed-Download	**-0.222 (-0.389 to -0.041)**	**0.016**	**Significant relationship**
Computer Literacy and Internet Speed-Upload	**0.187 (0.005 to 0.357)**	**0.042**	**Significant relationship**

Pairwise Correlations	**Computed Values [a]**	**p-value**	**Interpretation**
Computer Literacy and EMR User Satisfaction	-0.077 (-0.255 to 0.105)	0.405	NO significant relationship
Computer Literacy and EMR Perception	**-0.271 (-0.433 to -0.092)**	**0.003**	**Significant relationship**
Computer Experience and Internet Speed-Download	*	*	*
Computer Experience and Internet Speed-Upload	*	*	*
Computer Experience and EMR User Satisfaction	*	*	*
Computer Experience and EMR Perception	*	*	*

Significant correlations were also found between computer literacy scores and two additional variables: internet download speed and EMR perception, with p-values of 0.016 and 0.003, respectively. However, in contrast to the previously discussed positive correlation, both of these relationships are negative monotonic, as indicated by the computed Spearman's Rho values. Specifically, lower computer literacy scores are linked to faster internet download speeds (Spearman's Rho = -0.222), while higher computer literacy scores are associated with less favorable perceptions of the EMR system (Spearman's Rho = -0.271) (see Figure 2).

As with earlier tests, pairwise correlation analyses involving computer experience could not be conducted due to the lack of variability—all respondents achieved a perfect score, making statistical comparisons unfeasible.

Table 3.2

Relationship of Factors affecting utilization of EMR

Pairwise Correlations	**Computed Values [a]**	**p-value**	**Interpretation**
Internet Speed-Download and EMR User Satisfaction	0.167 (-0.015 to 0.339)	0.070	NO significant relationship
Internet Speed-Upload and EMR User Satisfaction	0.157 (-0.026 to 0.329)	0.090	NO significant relationship
Internet Speed-Download and EMR Perception	**0.310 (0.133 to 0.468)**	**0.001**	**Significant relationship**

Pairwise Correlations	**Computed Values [a]**	**p-value**	**Interpretation**
Internet Speed-Upload and EMR Perception	0.099 (-0.083 to 0.276)	0.284	NO significant relationship
EMR User Satisfaction And EMR Perception	**0.732 (0.621 to 0.814)**	**<0.001**	**Significant relationship**

No statistically significant association was found between EMR user satisfaction and internet download speed ($p = 0.070$) or upload speed ($p = 0.090$). Similarly, EMR perception did not show a significant relationship with upload speed ($p = 0.284$). However, a statistically significant correlation was observed between internet download speed and EMR perception ($p = 0.001$), with a Spearman's Rho of 0.310. This indicates a positive monotonic relationship, suggesting that faster internet download speeds are associated with more favorable perceptions of the EMR system.

Additionally, a strong and significant positive correlation was found between EMR user satisfaction and EMR perception ($p < 0.001$), with a Spearman's Rho of 0.187. This implies that higher satisfaction levels correspond with more positive perceptions. As with all correlations, it is important to note that these findings do not establish causal relationships.

Findings. This study explored factors influencing the utilization, satisfaction, and perception of Electronic Medical Records (EMRs) among healthcare professionals and encoders in 12 selected Rural Health Units (RHUs) across Camarines Sur, Bicol Region. From May 4–18, 2025, survey data were collected from 118 respondents, including municipal health officers, rural health physicians, nurses, and EMR encoders. Participants were predominantly female (75.42%), with a mean age of 39.81 years, most held college degrees (80.51%), and nearly half (49.15%) had prior EMR training. All RHUs had stable power supply, and respondents demonstrated high basic computer literacy (mean score = 12.44/15), though internet speeds varied (download: 46.85 Mbps; upload: 29.53 Mbps).

Findings revealed high EMR satisfaction (mean = 23.42/30) and positive perception (mean = 22.43/30), particularly regarding system ease of use, patient data access, workflow efficiency, and collaboration. Satisfaction was slightly higher than perception scores. Statistical analysis showed no significant relationships between computer literacy, satisfaction, perception, and demographic factors. However, notable correlations emerged: higher computer literacy was positively associated with faster upload speeds but negatively with download speeds and EMR perception; faster download speeds were significantly linked to higher EMR perception; and satisfaction and perception had a strong positive correlation.

Conclusion. This study provides insights into the utilization of Electronic Medical Records (EMRs) in selected Rural Health Units (RHUs) within Camarines Sur, Bicol Region, and examines the factors influencing their adoption and user perception. Data were gathered via survey questionnaires from 118 healthcare professionals and EMR encoders—including municipal health officers, rural physicians, public health nurses, and encoders—from 12 municipalities across Districts 2 to 5. Data collection was conducted between May 4 and May 18, 2025.

The respondents had a mean age of 39.81 years (SD = 11.05), with ages ranging from 21 to 64. The largest proportion belonged to the 30s age group (41.53%), followed by those in their 20s (18.64%), 40s (17.80%), 50s (15.25%), and 60s (6.78%).

While RHU employees generally demonstrated commendable levels of computer literacy, the results showed no significant relationship between this skill and demographic factors such as age, gender, educational attainment, or work position. Notably, internet upload speed was positively associated with computer literacy, whereas internet download speed and EMR perception were negatively associated with computer literacy—suggesting some complex dynamics that merit further investigation.

In terms of EMR user satisfaction and perception, the findings suggest that neither is influenced by demographic factors or EMR training. However, EMR perception was positively associated with faster internet download speeds, highlighting the importance of reliable internet infrastructure in RHUs.

A significant positive correlation between satisfaction and perception suggests that improving user experience with EMRs—particularly in areas such as workflow support and report generation—could enhance overall attitudes toward the system.

In summary, a deeper understanding of EMR use, its users, and the factors influencing adoption can contribute to improved healthcare delivery in underserved and rural settings. Strengthening internet connectivity, addressing functional limitations of EMRs, and implementing targeted user support initiatives may help optimize EMR utilization and healthcare outcomes across rural health facilities.

Recommendations. Based on survey results from 118 RHU personnel in Camarines Sur, several measures are recommended to enhance Electronic Medical Records (EMRs) utilization and perception. Although no significant correlations were found between demographic factors and EMR satisfaction or perception, continuous education and training are essential. These programs should focus on system updates, best practices in data management, troubleshooting, and demonstrating the EMR's benefits to encourage frequent and effective use.

Despite high basic computer literacy among respondents, variations in internet speed highlight the need for improved infrastructure. RHUs should invest in reliable high-speed connections, establish partnerships with internet providers, and ensure regular maintenance and technical support to enhance EMR performance and workflow efficiency.

Addressing areas of neutral or low satisfaction is also critical. Regular surveys, user consultations, and feedback sessions can help identify and resolve issues, leading to more user-friendly, efficient, and well-accepted systems. Implementing these strategies can foster greater satisfaction, improve perceptions, and promote optimal EMR adoption across rural health units.

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