Knowledge and Utilization of Electronic Medical Records among Healthcare Professionals in Federal Medical Centre, Yenagoa, Bayelsa State

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ABSTRACT

Background: Electronic Medical Records (EMRs) are increasingly replacing paper-based health record systems in healthcare institutions, offering improved efficiency, accessibility, and quality of care. However, the extent to which healthcare professionals understand and actually use EMRs in practice varies considerably across settings. This article examines the knowledge and utilisation of EMRs among healthcare professionals at the Federal Medical Centre (FMC), Yenagoa, Bayelsa State. **Method**: A descriptive research design and a purposive sampling technique were adopted. From the established sample table determination at a 95% confidence level with a 1% margin of error, a sample size of 475 was determined from the population of 527 healthcare professionals at FMC, Yenagoa. Data were collected using a structured questionnaire and analysed using frequency counts and simple percentages via SPSS. **Results**: Of the respondents, 58% were female, the largest age group (45.4%) fell within 31-40 years, and 52% had over five years of work experience. Regarding knowledge, only 25% of respondents rated their understanding of EMR as a very high level or high level, while 75% rated it as a low level or very low level. Despite this, 58.4% reported being able to use a computer, 56% reported their facility currently uses EMR to a high extent, and 63% reported preferring EMR over paper-based records, primarily because it makes data more easily accessible (44%) and saves time (22%). A majority (67%) reported having received EMR-related training. **Conclusion**: A notable knowledge-utilisation gap exists among healthcare professionals at FMC, Yenagoa: a majority report limited theoretical understanding of EMR, yet a substantial proportion nonetheless use the system regularly and prefer it to paper-based alternatives. This suggests that practical, hands-on exposure to EMR may be outpacing formal conceptual understanding, underscoring a need for structured, knowledge-focused training to complement existing practical familiarity.

Keywords: Electronic Medical Records; knowledge; utilization; healthcare professionals; Federal Medical Centre; Bayelsa State

INTRODUCTION

The medical record of patients was traditionally archived on paper for research, clinical, administrative, and financial purposes. Currently, paper-based health record systems are increasingly transitioning toward electronic formats, as Electronic Medical Record (EMR) systems provide efficient, real-time services to patients and create

improvements in quality, flexibility, and patient safety (Kusriyanti et al., 2021). An EMR is a digital version of a patient's paper chart, containing medical history, diagnoses, medications, immunisation status, allergies, laboratory results, and other clinically relevant information, accessible instantly and securely to authorised users (Aikens & Turney, 2015).

Despite the well-documented benefits of EMR adoption, including reduced medical errors, improved efficiency, and enhanced data confidentiality (Afolaranmi et al., 2020), the successful implementation of EMR systems depends substantially on the knowledge and actual utilisation patterns of the healthcare professionals who operate them daily. This article examines these two foundational dimensions, knowledge and utilisation, among healthcare professionals at the Federal Medical Centre (FMC), Yenagoa, Bayelsa State.

Objectives of the Study

This article addresses two specific objectives drawn from the broader study:

1. To assess the knowledge level of Electronic Medical Records among healthcare professionals in Federal Medical Centre, Yenagoa, Bayelsa State.

2. To assess the extent of utilisation of Electronic Medical Records among healthcare professionals in Federal Medical Centre, Yenagoa, Bayelsa State.

Research Questions

1. What is the knowledge level of healthcare professionals on Electronic Medical Records in Federal Medical Centre, Yenagoa, Bayelsa State?

2. What is the extent of Electronic Medical Records utilisation among healthcare professionals in Federal Medical Centre, Yenagoa, Bayelsa State?

LITERATURE REVIEW

Overview of Electronic Medical Records

An EMR is a digital version of all the information typically found in a provider's paper chart: medical history, diagnoses, medications, immunization dates, allergies, lab results, and clinical notes (Usfhealthonline, 2017). Paxera Health (2021) described the EMR as a digital record of a patient's medical information that can be accessed instantly, in contrast to the time-consuming process of physically copying and transmitting paper files between providers. Mijn and Choi (2017) emphasised that EMR helps manage patient information more easily and streamlines provider operations, ultimately increasing patient satisfaction.

Knowledge and Skill as Determinants of EMR Utilization

A substantial body of literature identifies inadequate knowledge and computer skills as central barriers to EMR utilisation. O'Donnell et al. (2018) and Pantaleoni et al. (2015) noted that EMR systems demand a level of computer proficiency that some health specialists lack, complicating accurate data entry. Ajami and Bagheri-Tadi (2013), Msiska et al. (2017), and Tsai et al. (2019) similarly found that insufficient knowledge and computer skills are major contributors to physician resistance to EMR adoption, a pattern Barteit et al. (2019) attributed to inadequate integration of ICT into medical curricula.

Essuman et al. (2020) investigated factors influencing Electronic Medical Records (EMR) utilisation among healthcare professionals in public hospitals in Ghana's Eastern Region. Using a survey of 396 respondents, the study found that approximately 59% reported low EMR usage, with lack of computer competence showing a significant negative relationship with EMR utilisation ($p < 0.001$). Other barriers included poor user communication, high costs, insufficient technical personnel, and absence of requisite software. The authors recommended that the Ghana Health Service provide targeted training and resources to enhance EMR adoption, alongside sustained government support for facilities facing infrastructural challenges. They further suggested

that future research adopt a mixed-methods approach across both public and private healthcare sectors to deepen understanding of EMR implementation dynamics.

Birhanu et al. (2020) similarly observed that despite EMR systems being increasingly automated to improve healthcare effectiveness, implementation often faces user confrontation even in technically equipped settings. Afolaranmi et al. (2020) evaluates the knowledge of Electronic Medical Records (EMRs) among frontline healthcare workers at a tertiary institution in Jos, Nigeria, highlighting its potential to enhance healthcare through cost savings, error reduction, and improved patient safety. A cross-sectional analysis involving 228 workers was conducted from April to August 2019. Results indicated a mean age of 35 years; 71.5% of participants demonstrated good knowledge of EMRs, with pharmacists significantly displaying a higher knowledge level (OR=1.37, p=0.045).

Kusriyanti et al. (2021) examined the electronic medical record (EMR) system, known in Indonesia as Rekam Medis Elektronik (RME), which integrates patient health histories and medical data. Dinda Tangerang Hospital, aiming to be a quality healthcare provider, currently relies on paper-based medical records and is analysing its readiness to transition to EMR. Using a quantitative correlational research method, the study evaluated readiness across various departments, revealing a strong correlation (R = 0.632) between organisational factors and readiness. The hospital is categorised as ready to implement the EMR system.

METHODOLOGY

A descriptive survey research design was adopted for this study. The study was conducted at the Federal Medical Centre, Yenagoa, a tertiary healthcare institution located in Ovom, Yenagoa Local Government Area of Bayelsa State. The population of the study comprised 527 healthcare professionals, including doctors, nurses, health records practitioners, pharmacists, and medical laboratory scientists. A purposive sampling technique was employed to select participants for the study. Based on published sample size determination tables by Adam (2020), Awunor (2022), and Ogbonna (2014), and using a 95% confidence level with a 1% margin of error, a sample size of 475 was determined from the population of 527 healthcare professionals targeted for the study.

Data were collected using a structured questionnaire comprising sections on demographic information and items addressing research questions on electronic medical record (EMR) knowledge and utilisation. The instrument was vetted and scrutinised by experts in research, measurement and evaluation in education and statistics to establish face and content validity. Thereafter, 10% of the sample size (48 copies) was used for a pre-test, which yielded a Cronbach's alpha (α) coefficient of 0.89, indicating high internal consistency reliability. Cronbach's alpha was adopted in line with Taber (2018), who described it as one of the most important and pervasive statistics in research involving test construction and use. Data were analysed using frequency counts and simple percentages via SPSS. Ethical approval was obtained from the Research Ethics Committee of the Bayelsa State College of Health Technology and the medical centre, and there was no conflict of interest.

RESULTS

Of the 475 questionnaires randomly administered to respondents, 23 were lost and 452 were retrieved fully completed and error-free, representing a 95% response rate. The 452 valid responses constituted the dataset used for analysis and interpretation of the field survey results.

Table 1: Demographic Information of Respondents

Survey Item	Classification	Frequency	Percentage
Gender	Male	192	42%
	Female	260	58%
Age (years)	20–30	120	26.5%

	31–40	205	45.4%
	41–50	98	21.7%
	51 and above	29	6.4%
Academic Qualification	OND	85	19%
	HND	145	32%
	MBBS/BSc	180	40%
	MSc/MPA	31	7%
	Others	11	2%
Work Experience	0–2 years	175	39%
	3–5 years	42	9%
	Above 5 years	235	52%

Table 1: Demographic information of respondents (N=452) (Source: Field Survey, 2026)

Table 1 shows that the majority of the respondents were female, accounting for 58% of the sample. In terms of age, respondents aged 31–40 years formed the largest group, with 205 respondents (45.4%), while those aged 51 years and above constituted the least represented group, with 29 respondents (6.45%). With respect to work experience, respondents with more than five years of experience recorded the highest response, 235 respondents (52%). Regarding academic qualification, MBBS/BSc holders constituted the largest group (40%), followed by HND holders (32%).

Table 2: Knowledge and Utilization of EMR

Item	**Frequency**	**Percentage**
Understanding of EMR: Very low level	135	30%
Understanding of EMR: low level	204	45%
Understanding of EMR: Very high level	95	21%
Understanding of EMR: high level	18	4%
Able to use a computer: high extent	264	58.4%
Able to use a computer: low extent	188	41.6%
Facility currently uses EMR: high extent	252	56%
Facility currently uses EMR: low extent	200	44%
Prefers EMR over paper-based: Yes	285	63%
Prefers EMR over paper-based: No	167	37%

Has taken EMR-related training: Yes	305	67%
Has taken EMR-related training: No	147	33%

Table 2: Knowledge and utilization of EMR among respondents (N=452) (Source: Field Survey, 2026)

As shown in Table 2, 75% of respondents rated their understanding of electronic medical records (EMR) as either very low or low, compared with only 25% who rated it as high or very high. Despite this limited self-reported knowledge, a majority indicated substantial computer proficiency (58.4% reported using a computer to a high extent) and exposure to EMR in practice (56% indicated that their facility uses EMR to a high extent). Furthermore, 67% reported having received EMR-related training, and 63% expressed a preference for EMR over paper-based records. Among respondents who preferred EMR, the most frequently cited reasons were improved data accessibility (44% of those providing a reason) and time savings (22%). Regarding specific activities performed using EMR, respondents reported: collecting patients' information (22%), keeping laboratory records (16%), data retrieval and analysis (17%), medication administration (15%), billing (17%), and documentation and registration (12%).

DISCUSSION

The findings reveal a notable knowledge-utilisation gap among healthcare professionals at FMC, Yenagoa. While 75% of respondents rated their conceptual understanding of EMR as very low or low, the majority nonetheless reported using EMR in their facility (56%), being able to use a computer (58.4%) to a high extent, and actively preferring EMR over paper-based records (63%). This pattern suggests that practical, task-specific familiarity with EMR systems may be developing ahead of formal conceptual or theoretical understanding among this respondent population, a distinction with direct implications for how training interventions should be designed.

This study's outcomes differ somewhat from a cross-sectional analysis involving 228 workers conducted from April to August 2019 by Afolaranmi et al. (2020) on the knowledge of Electronic Medical Records (EMRs) among frontline healthcare workers at a tertiary institution in Jos, Nigeria, which resulted in a mean age of 35 years; 71.5% of participants demonstrated good knowledge of EMRs, with pharmacists significantly displaying a higher knowledge level (OR=1.37, p=0.045).

On the aspect of extent of EMR utilisation, the result indicated a majority of substantial computer proficiency (58.4% reported using a computer to a high extent) and exposure to EMR in practice (56% indicated that their facility uses EMR to a high extent). However, this study's outcomes are somehow not in agreement with a study in Ghana by Essuman et al. (2020) that established that about 59% reported low EMR usage, with key factors negatively impacting utilisation including lack of computer skills, poor user communication, high costs, insufficient technical personnel, and absence of software. The comparatively higher utilisation rates observed in the present study, despite similarly low self-rated knowledge, may reflect the role of the 67% of respondents who reported having received some EMR-related training, even if that training has not yet translated into confident self-assessed understanding of the system's full functionality.

The preference for EMR over paper-based records among 63% of respondents, primarily on the basis of accessibility and time savings, is consistent with Afolaranmi et al. (2020), who confirmed that EMR systems have the potential to save time and improve data confidentiality and sharing, even among users who may not yet consider themselves highly knowledgeable about the system's underlying functionality.

CONCLUSION

Healthcare professionals at FMC, Yenagoa, demonstrate a clear knowledge-utilisation gap: the majority rate their conceptual understanding of EMR as poor, yet a majority also report regular use of, and a clear preference for, EMR over paper-based records. This suggests that exposure-based familiarity with EMR systems is outpacing structured knowledge development, a pattern with direct implications for how future training should be designed and targeted.

RECOMMENDATIONS

1. Structured, knowledge-focused EMR training, distinct from purely task-based on-the-job exposure, should be prioritised to close the gap between practical familiarity and conceptual understanding identified in this study.

2. Training content should specifically address the functions and capabilities of EMR systems beyond the specific tasks (such as billing or documentation) that staff currently perform, to build a more comprehensive understanding of the system's full potential.

3. Given that a majority of respondents already prefer EMR to paper-based records, this existing positive disposition should be leveraged as a foundation for further training uptake, rather than treating EMR adoption itself as the primary barrier to be overcome.

4. Future research should examine whether the knowledge-utilisation gap identified here is consistent across professional cadres (doctors, nurses, and records officers) within the facility or other regions to allow for more targeted, cadre-specific interventions.

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