

# Assessment of Electronic Medical Records Implementation and Its Effect on Patient Satisfaction among Patients Attending Obafemi Awolowo University Teaching Hospitals Complex, Ile-Ife, Osun State

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## Abstract:

*Background: Electronic medical records (EMR) are increasingly used to improve the accessibility, organisation, and management of patient information and may influence patients' experiences of healthcare services. However, the extent to which EMR implementation is associated with patient satisfaction remains an important consideration in healthcare delivery. Objective: This study assessed the implementation of electronic medical records and examined its relationship with patient satisfaction at the Obafemi Awolowo University Teaching Hospitals Complex (OAUTHC). Methods: A cross-sectional descriptive study was conducted among 200 patients at OAUTHC. Data were collected using a structured questionnaire assessing respondents' socio-demographic characteristics, perceptions of EMR implementation, experiences with EMR-supported healthcare services, and level of patient satisfaction. Data were analysed using descriptive statistics and the chi-square test at a significance level of 0.05. Results: The mean age of respondents was  $41.14 \pm 13.37$  years. Findings showed that respondents generally perceived EMR implementation positively. Most respondents reported improved access to medical records (80.5%), reduced time spent locating records (78.0%), improved availability of records to healthcare providers (79.0%), and greater efficiency in registration and record retrieval (77.5%). Similarly, 73.0% reported shorter waiting times, 81.0% reported successful retrieval of records when needed, and 78.0% indicated that EMR-supported services made hospital visits more convenient. Overall, 76.5% of respondents were satisfied with the healthcare services received. A statistically significant relationship was observed between EMR implementation and patient satisfaction. Conclusion: The study revealed that patients generally had a positive perception of EMR implementation at OAUTHC and reported a high level of satisfaction with healthcare services. Effective EMR implementation was associated with improved access to medical records, service efficiency, reduced delays, and favourable patient experiences. Sustained attention to EMR infrastructure, system usability, staff capacity, and data privacy and security is essential for further improving patient-centred healthcare delivery.*

**Keywords:** *Electronic medical records; patient satisfaction; healthcare services; digital health; medical records; OAUTHC.*

## **Introduction**

The increasing adoption of digital technologies in healthcare has transformed the way patient information is collected, stored, retrieved and used in clinical practice. Electronic medical records (EMRs) provide a digital platform through which patients' clinical information can be systematically documented and made available to authorized healthcare professionals. Beyond replacing paper-based records, electronic records can support the accessibility and use of patient information in healthcare delivery, thereby contributing to more coordinated and efficient clinical processes. Recent evidence indicates that electronic health records have become an important component of contemporary health information systems because of their potential to improve access to information, communication and the organization of healthcare services [1], [2].

The implementation of EMRs is increasingly associated with improvements in the management and quality of clinical information. A recent systematic review of EMR implementation in Nigeria found that the introduction or improvement of EMR systems was associated with a substantial improvement in data quality, although the available Nigerian evidence concerning patient satisfaction remains limited. The review reported a pooled 142% percentage difference in data quality following EMR introduction or improvement, while noting that the evidence was insufficient to establish a clear causal effect of EMR implementation on patient satisfaction in Nigeria [3]. The potential benefits of EMRs extend beyond information management to the organisation and efficiency of healthcare services. Electronic records can facilitate faster retrieval of patient information, improve communication among healthcare providers and support continuity of care. Evidence from Nigeria also indicates that effective EHR implementation may contribute to improved care processes and reduced patient waiting time, although the extent to which these benefits are realised depends on the quality of implementation and the availability of appropriate infrastructure and support [2].

Patient satisfaction is an important indicator of healthcare quality because it reflects patients' perceptions and experiences of the services they receive. The relationship between digital health systems and patient satisfaction, however, is not necessarily straightforward. A 2024 systematic review found that patient access to electronic health records was positively associated with several dimensions of healthcare engagement, including patient involvement, communication, healthcare experience and satisfaction. The review nevertheless identified usability concerns and barriers, indicating that the benefits of electronic records may depend on how effectively the systems are designed and implemented [1]. More recent evidence further suggests that electronic health technologies can improve patients' experiences when they enhance access, communication and efficiency. A systematic review published in 2025 found that electronic health services, including electronic medical and health record systems, were associated in several settings with improved patient satisfaction, particularly through improved communication, more efficient service processes and reduced waiting times. However, the review also reported that excessive provider attention to the computer screen could negatively affect patient-centred communication, demonstrating that technology can produce both positive and negative effects on the patient experience depending on how it is integrated into clinical encounters [4].

In Nigeria, EMR implementation is affected by infrastructural, technical and organisational challenges that may limit its effectiveness [2]. Therefore, the availability of EMRs does not necessarily guarantee improved patient experiences, as their benefits depend on effective implementation and usability. Evidence from Federal Medical Centre, Gusau showed that EMRs improved access to records

and documentation, although challenges related to training, technical support and system usability remained [5].

Despite increasing EMR adoption, evidence on its effect on patient satisfaction in Nigeria remains limited. A systematic review found insufficient evidence to establish a causal relationship between EMR implementation and patient satisfaction in Nigeria [3]. This highlights the need for further evidence from individual healthcare institutions. This study therefore assesses EMR implementation and its effect on patient satisfaction among patients attending OAUTHC, Ile-Ife, Osun State. It focuses on whether key aspects of EMR implementation are associated with patients' satisfaction with healthcare services.

## **Methods**

### **Study Design**

The study adopted a descriptive cross-sectional research design. Data were collected from patients at a single point in time to assess EMR implementation and its effect on patient satisfaction.

### **Study Area**

The study was conducted at the Obafemi Awolowo University Teaching Hospitals Complex (OAUTHC), Ile-Ife, Osun State. OAUTHC is a tertiary healthcare institution that provides specialised and referral services to patients within Osun State and neighbouring areas. The facility uses electronic medical records for managing patient information and supporting healthcare delivery, making it suitable for the study.

### **Sample Size and Sampling Technique**

A sample size of two hundred (200) patients was used for the study. A systematic random sampling technique was used to select eligible patients. Patients who met the inclusion criteria were selected at regular intervals until the required sample size was obtained.

### **Data Collection**

Data were collected using a structured questionnaire consisting mainly of closed-ended and Likert-scale questions covering the socio-demographic characteristics of respondents, EMR implementation, patients' experiences with EMR-supported healthcare services, and patient satisfaction. The questionnaire was reviewed by the research supervisor and experts in health information management and related fields to ensure that the items adequately covered the study objectives. Necessary corrections and modifications were made before the instrument was administered. The questionnaires were administered directly to eligible patients after obtaining their informed consent. Respondents were given adequate explanation about the purpose of the study, and completed questionnaires were retrieved after completion.

### **Method of Data Analysis**

The collected data were coded and analysed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics, including frequencies and percentages, were used to summarise the data. Appropriate inferential statistics were used to determine the relationship between EMR implementation and patient satisfaction. Results were presented in tables and interpreted according to the study objectives.

### **Ethical Considerations**

Ethical approval was obtained from the appropriate authority before commencement of the study. Participation was voluntary, and respondents were informed about the purpose of the study. Informed consent was obtained, and confidentiality and anonymity of respondents were maintained throughout the study. Respondents were also informed of their right to withdraw from the study at any time without consequences.

**Results****Table 1.** Socio-demographic Characteristics of Respondents (n = 200).

| <b>Variables</b>                  | <b>Frequency (n)</b>    | <b>Percentage (%)</b> |
|-----------------------------------|-------------------------|-----------------------|
| Age group (years)                 |                         |                       |
| 18–30                             | 48                      | 24.0                  |
| 31–40                             | 57                      | 28.5                  |
| 41–50                             | 43                      | 21.5                  |
| 51–60                             | 31                      | 15.5                  |
| Above 60                          | 21                      | 10.5                  |
| Mean $\pm$ SD                     | 41.14 $\pm$ 13.37 years |                       |
| Sex                               |                         |                       |
| Male                              | 91                      | 45.5                  |
| Female                            | 109                     | 54.5                  |
| Marital status                    |                         |                       |
| Single                            | 72                      | 36.0                  |
| Married                           | 108                     | 54.0                  |
| Divorced/Separated                | 8                       | 4.0                   |
| Widowed                           | 12                      | 6.0                   |
| Highest educational qualification |                         |                       |
| No formal education               | 18                      | 9.0                   |
| Primary education                 | 31                      | 15.5                  |
| Secondary education               | 69                      | 34.5                  |
| Tertiary education                | 82                      | 41.0                  |
| Type of patient visit             |                         |                       |
| First visit                       | 61                      | 30.5                  |
| Follow-up visit                   | 139                     | 69.5                  |
| Duration of hospital use          |                         |                       |
| Less than 1 year                  | 76                      | 38.0                  |

| Variables         | Frequency (n) | Percentage (%) |
|-------------------|---------------|----------------|
| 1–3 years         | 67            | 33.5           |
| 4–6 years         | 35            | 17.5           |
| More than 6 years | 22            | 11.0           |

Table 1 presents the socio-demographic characteristics of the 200 respondents. The mean age of the respondents was  $41.14 \pm 13.37$  years. The largest proportion of respondents (28.5%) were aged 31–40 years, followed by those aged 18–30 years (24.0%) and 41–50 years (21.5%). Respondents aged 51–60 years accounted for 15.5%, while those above 60 years constituted 10.5%. Regarding sex, females constituted a slightly higher proportion of the respondents (54.5%) than males (45.5%). More than half of the respondents were married (54.0%), while 36.0% were single. Those who were widowed accounted for 6.0%, while 4.0% were divorced or separated.

In terms of educational qualification, respondents with tertiary education constituted the largest proportion (41.0%), followed by those with secondary education (34.5%). Respondents with primary education accounted for 15.5%, while 9.0% had no formal education. Most respondents were follow-up patients (69.5%), whereas 30.5% were attending the hospital for the first time. With respect to duration of hospital use, 38.0% of the respondents had used the hospital for less than one year, 33.5% had used it for 1–3 years, 17.5% for 4–6 years, and 11.0% for more than six years.

**Table 2.** Respondents' Assessment of Electronic Medical Records Implementation at OAUTHC (n = 200).

| Variables                                                                                 | Frequency (n) | Percentage (%) |
|-------------------------------------------------------------------------------------------|---------------|----------------|
| EMR makes it easier for staff to access my medical records when needed                    |               |                |
| Strongly agree                                                                            | 78            | 39.0           |
| Agree                                                                                     | 83            | 41.5           |
| Undecided                                                                                 | 17            | 8.5            |
| Disagree                                                                                  | 14            | 7.0            |
| Strongly disagree                                                                         | 8             | 4.0            |
| EMR has reduced the time spent locating my medical records                                |               |                |
| Strongly agree                                                                            | 70            | 35.0           |
| Agree                                                                                     | 86            | 43.0           |
| Undecided                                                                                 | 20            | 10.0           |
| Disagree                                                                                  | 16            | 8.0            |
| Strongly disagree                                                                         | 8             | 4.0            |
| My medical information is available to the appropriate healthcare providers when required |               |                |
| Strongly agree                                                                            | 76            | 38.0           |
| Agree                                                                                     | 82            | 41.0           |
| Undecided                                                                                 | 18            | 9.0            |
| Disagree                                                                                  | 15            | 7.5            |

| Variables                                                                | Frequency (n) | Percentage (%) |
|--------------------------------------------------------------------------|---------------|----------------|
| Strongly disagree                                                        | 9             | 4.5            |
| EMR has made the registration and retrieval of my records more efficient |               |                |
| Strongly agree                                                           | 57            | 33.5           |
| Agree                                                                    | 38            | 44.0           |
| Undecided                                                                | 21            | 10.5           |
| Disagree                                                                 | 15            | 7.5            |
| Strongly disagree                                                        | 9             | 4.5            |
| My medical records are more complete and organised since the use of EMR  |               |                |
| Strongly agree                                                           | 72            | 36.0           |
| Agree                                                                    | 34            | 42.0           |
| Undecided                                                                | 22            | 11.0           |
| Disagree                                                                 | 14            | 7.0            |
| Strongly disagree                                                        | 8             | 4.0            |
| EMR has improved communication between me and healthcare providers       |               |                |
| Strongly agree                                                           | 53            | 31.5           |
| Agree                                                                    | 39            | 44.5           |
| Undecided                                                                | 23            | 11.5           |
| Disagree                                                                 | 17            | 8.5            |
| Strongly disagree                                                        | 8             | 4.0            |
| I am confident that my electronic medical information is kept private    |               |                |
| Strongly agree                                                           | 74            | 37.0           |
| Agree                                                                    | 31            | 40.5           |
| Undecided                                                                | 19            | 9.5            |
| Disagree                                                                 | 17            | 8.5            |
| Strongly disagree                                                        | 9             | 4.5            |

Table 2 shows the respondents' assessment of EMR implementation at OAUTHC. Most respondents had a positive view of the system. For ease of access to medical records, 80.5% either agreed or strongly agreed that EMR made their records easier for healthcare providers to access, while 11.0% disagreed or strongly disagreed. Similarly, 78.0% of respondents agreed or strongly agreed that EMR had reduced the time spent locating their medical records, compared with 12.0% who disagreed or strongly disagreed. Most respondents (79.0%) also agreed or strongly agreed that their medical information was available to the appropriate healthcare providers when required. Regarding efficiency, 77.5% of respondents agreed or strongly agreed that EMR had made registration and retrieval of their records more efficient. In addition, 78.0% reported that their medical records were more complete and organised since the introduction of EMR. About three-quarters of the respondents (76.0%) also agreed or strongly agreed that EMR had improved communication between them and healthcare providers. Concerning privacy, 77.5% of respondents expressed confidence that their electronic medical information was kept private, while 13.0% disagreed or strongly disagreed

**Table 3.** Patients' Experiences with EMR-Supported Healthcare Services at OAUTHC (n = 200).

| Variables                                                         | Frequency (n) | Percentage (%) |
|-------------------------------------------------------------------|---------------|----------------|
| I experienced shorter waiting time during my hospital visits      |               |                |
| Strongly agree                                                    | 62            | 31.0           |
| Agree                                                             | 84            | 42.0           |
| Undecided                                                         | 21            | 10.5           |
| Disagree                                                          | 22            | 11.0           |
| Strongly disagree                                                 | 11            | 5.5            |
| Healthcare providers were able to retrieve my records when needed |               |                |
| Strongly agree                                                    | 76            | 38.0           |
| Agree                                                             | 86            | 43.0           |
| Undecided                                                         | 16            | 8.0            |
| Disagree                                                          | 14            | 7.0            |
| Strongly disagree                                                 | 8             | 4.0            |
| I did not have to repeat my medical history unnecessarily         |               |                |
| Strongly agree                                                    | 64            | 32.0           |
| Agree                                                             | 83            | 41.5           |
| Undecided                                                         | 24            | 12.0           |
| Disagree                                                          | 19            | 9.5            |
| Strongly disagree                                                 | 10            | 5.0            |
| EMR-supported services made my hospital visit more convenient     |               |                |
| Strongly agree                                                    | 69            | 34.5           |
| Agree                                                             | 87            | 43.5           |
| Undecided                                                         | 20            | 10.0           |
| Disagree                                                          | 16            | 8.0            |
| Strongly disagree                                                 | 8             | 4.0            |
| I experienced fewer delays caused by missing or misplaced records |               |                |
| Strongly agree                                                    | 61            | 30.5           |
| Agree                                                             | 86            | 43.0           |
| Undecided                                                         | 23            | 11.5           |
| Disagree                                                          | 20            | 10.0           |
| Strongly disagree                                                 | 10            | 5.0            |

Most respondents reported positive experiences with EMR-supported healthcare services at OAUTHC. Specifically, 73.0% agreed or strongly agreed that they experienced shorter waiting times during their hospital visits, while 16.5% disagreed or strongly disagreed. Similarly, 81.0% agreed or strongly agreed that healthcare providers were able to retrieve their medical records when needed, compared with 11.0% who disagreed or strongly disagreed.

In addition, 73.5% of the respondents agreed or strongly agreed that they did not have to repeat their medical history unnecessarily. About 78.0% reported that EMR-supported services made their hospital visits more convenient, while 12.0% disagreed or strongly disagreed. Furthermore, 73.5% agreed or strongly agreed that they experienced fewer delays caused by missing or misplaced records, whereas 15.0% expressed disagreement.

**Table 4.** Level of Patient Satisfaction with Healthcare Services at OAUTHC (n = 200).

| <b>Variables</b>                                                       | <b>Frequency<br/>(n)</b> | <b>Percentage<br/>(%)</b> |
|------------------------------------------------------------------------|--------------------------|---------------------------|
| I am satisfied with the overall healthcare services I received         |                          |                           |
| Very satisfied                                                         | 65                       | 32.5                      |
| Satisfied                                                              | 88                       | 44.0                      |
| Undecided                                                              | 18                       | 9.0                       |
| Dissatisfied                                                           | 20                       | 10.0                      |
| Very dissatisfied                                                      | 9                        | 4.5                       |
| I am satisfied with the time taken to receive services                 |                          |                           |
| Very satisfied                                                         | 58                       | 29.0                      |
| Satisfied                                                              | 91                       | 45.5                      |
| Undecided                                                              | 22                       | 11.0                      |
| Dissatisfied                                                           | 20                       | 10.0                      |
| Very dissatisfied                                                      | 9                        | 4.5                       |
| I am satisfied with the availability of my medical records when needed |                          |                           |
| Very satisfied                                                         | 68                       | 34.0                      |
| Satisfied                                                              | 87                       | 43.5                      |
| Undecided                                                              | 19                       | 9.5                       |
| Dissatisfied                                                           | 18                       | 9.0                       |
| Very dissatisfied                                                      | 8                        | 4.0                       |
| I am satisfied with the communication from healthcare providers        |                          |                           |
| Very satisfied                                                         | 61                       | 30.5                      |
| Satisfied                                                              | 89                       | 44.5                      |
| Undecided                                                              | 21                       | 10.5                      |
| Dissatisfied                                                           | 20                       | 10.0                      |
| Very dissatisfied                                                      | 9                        | 4.5                       |

| Variables                                                 | Frequency (n) | Percentage (%) |
|-----------------------------------------------------------|---------------|----------------|
| I am satisfied with the privacy of my medical information |               |                |
| Very satisfied                                            | 67            | 33.5           |
| Satisfied                                                 | 86            | 43.0           |
| Undecided                                                 | 20            | 10.0           |
| Dissatisfied                                              | 18            | 9.0            |
| Very dissatisfied                                         | 9             | 4.5            |

Most respondents expressed satisfaction with the healthcare services received at OAUTHC. Overall, 76.5% of the respondents were either very satisfied or satisfied with the healthcare services they received, while 14.5% were dissatisfied or very dissatisfied and 9.0% were undecided. Regarding the time taken to receive services, 74.5% were very satisfied or satisfied, whereas 14.5% were dissatisfied or very dissatisfied. Similarly, 77.5% expressed satisfaction with the availability of their medical records when needed, compared with 13.0% who expressed dissatisfaction. With respect to communication from healthcare providers, 75.0% of respondents were very satisfied or satisfied, while 14.5% were dissatisfied or very dissatisfied. Furthermore, 76.5% expressed satisfaction with the privacy of their medical information, whereas 13.5% were dissatisfied or very dissatisfied.

**Table 5.** Relationship between Electronic Medical Records Implementation and Patient Satisfaction among Respondents (n = 200).

| EMR Implementation | Satisfied n (%) | Not Satisfied n (%) | Total n (%) |
|--------------------|-----------------|---------------------|-------------|
| High               | 95 (47.5)       | 15 (7.5)            | 110 (55.0)  |
| Moderate           | 48 (24.0)       | 18 (9.0)            | 66 (33.0)   |
| Low                | 12 (6.0)        | 12 (6.0)            | 24 (12.0)   |
| Total              | 155 (77.5)      | 45 (22.5)           | 200 (100.0) |
| $\chi^2 = 9.42$    |                 | df = 2              | p = 0.009   |

Note:  $\chi^2$  = Chi-square; df = degrees of freedom;  $p < 0.05$  was considered statistically significant.

There was a statistically significant relationship between the level of EMR implementation and patient satisfaction among the respondents ( $\chi^2 = 9.42$ , df = 2,  $p = 0.009$ ). Respondents who reported a high level of EMR implementation had a higher proportion of satisfied patients (86.4%) compared with those who reported moderate (72.7%) and low (50.0%) levels of EMR implementation.

### Discussion of Findings

The mean age of the respondents was  $41.14 \pm 13.37$  years. This indicates that the study captured the experiences of a relatively broad adult patient population. The age profile may have implications for patients' interaction with and perception of electronic medical record (EMR) systems, as differences in age may influence familiarity with digital technologies and the way patients experience technology-supported healthcare services.

### ***Respondents' assessment of EMR implementation***

The findings showed a generally positive assessment of EMR implementation at OAUTHC. A substantial majority of respondents agreed or strongly agreed that EMR improved access to their medical records (80.5%), reduced the time spent locating records (78.0%), ensured that information was available to appropriate healthcare providers when required (79.0%), and improved the efficiency of registration and record retrieval (77.5%). Similarly, 78.0% reported that their records were more complete and organised, while 76.0% believed that EMR improved communication with healthcare providers.

These findings suggest that respondents perceived EMR as contributing to more efficient information management and continuity of care. The result is consistent with the broader evidence that electronic records can improve the availability, accessibility and organization of clinical information when appropriately implemented. Olukorode et al. [6], in their review of EMR in Nigeria, reported that electronic records have the potential to improve healthcare delivery through more efficient information management and access to patient information. Akwaowo et al. [7] similarly highlighted the importance of EMR adoption in strengthening healthcare information systems in Nigeria.

The positive responses concerning record retrieval and reduced time spent locating information may indicate that the electronic system has reduced some of the limitations traditionally associated with paper-based records. Ndubisi and Eze [8] identified challenges associated with EMR adoption in Nigerian hospitals, but their work also underscores the importance of effective implementation in overcoming inefficiencies associated with health information management. The present finding therefore suggests that, within OAUTHC, the operational benefits of EMR may be sufficiently visible to patients to influence their perception of service delivery.

The finding that 78.0% of respondents considered their medical records complete and more organized is also important. Well-organized electronic information can support continuity of care by making relevant patient information easier to retrieve and review. This is consistent with the potential of EMR systems to improve information quality and clinical workflow described by HIMSS [9] and Olukorode et al. [6]. However, the fact that a minority of respondents remained undecided or expressed disagreement indicates that the benefits of EMR were not experienced uniformly by all patients. The finding regarding communication is noteworthy, with 76.0% agreeing or strongly agreeing that EMR improved communication between them and healthcare providers. Although EMR is primarily an information management technology, improved access to timely and accurate patient information may facilitate clinical interactions and reduce the need to reconstruct patient histories from incomplete or unavailable records. The finding is therefore consistent with the broader literature linking effective digital health systems with improved information flow within healthcare services [6], [10].

Privacy was another important dimension of EMR implementation. In this study, 77.5% of respondents expressed confidence that their electronic medical information was kept private. This indicates a generally favourable level of trust in the confidentiality of the electronic system. Nevertheless, 13.0% disagreed or strongly disagreed, showing that concerns about privacy had not been completely eliminated. Data security is an essential component of digital health implementation, and WHO [10] emphasized the need for appropriate safeguards to protect health information. Ojo et al. [11] also stressed the importance of security controls in protecting healthcare data, while more recent studies have highlighted continuing concerns relating to information security, data integrity and access control in electronic health systems [12], [13]. Alhammad et al. [14] further demonstrated the importance of applied security controls in protecting electronic medical records and connected healthcare technologies.

***Patients' experiences with EMR-supported healthcare services***

The findings in Table 3 indicate that most respondents had positive experiences with EMR-supported healthcare services. Seventy-three percent agreed or strongly agreed that they experienced shorter waiting times, 81.0% reported that healthcare providers were able to retrieve their records when needed, and 73.5% indicated that they did not have to repeat their medical history unnecessarily. In addition, 78.0% stated that EMR-supported services made their hospital visits more convenient, while 73.5% experienced fewer delays caused by missing or misplaced records. The high proportion of respondents who reported successful record retrieval is consistent with the central function of electronic records, which is to provide timely access to patient information across points of care. The finding also complements the 80.5% positive assessment of record accessibility reported in Table 2. Taken together, these results suggest that patients' positive perception of EMR at OAUTHC was not limited to general views about technology but was reflected in their direct experiences during hospital visits.

The finding that almost three-quarters of respondents experienced shorter waiting times is particularly relevant because waiting time is an important component of patients' perception of healthcare quality. Reduction in delays may result from faster retrieval of records, more efficient registration and improved information flow. Olukorode et al. [6] identified efficiency in healthcare delivery as one of the potential benefits associated with EMR implementation, while HIMSS [9] similarly describes electronic medical records as systems designed to support the efficient management and availability of health information.

The finding that 73.5% of respondents did not have to repeat their medical history unnecessarily may also suggest improved continuity of information across healthcare encounters. For follow-up patients, access to previous records can reduce reliance on patients' ability to recall previous diagnoses, medications, investigations or treatments. This potential benefit is consistent with the role of EMR in supporting continuity and coordination of care [6], [10].

Despite these positive findings, a proportion of respondents continued to report delays, repeated history-taking and difficulties associated with records. This is important because EMR implementation does not automatically eliminate operational challenges. Babatope et al. [2] identified several factors that can militate against effective implementation of electronic health records in Nigeria. Similarly, Babalola et al. [15] reported continuing barriers to EMR use among physicians and nurses in general hospitals in Lagos State. These findings indicate that the benefits of EMR depend not only on the existence of the system but also on infrastructure, user competence, system usability, workflow integration and organizational support.

***Level of patient satisfaction with healthcare services***

Overall, patient satisfaction was high, with 76.5% of respondents reporting that they were very satisfied or satisfied with the healthcare services received. Satisfaction was also relatively high for the time taken to receive services (74.5%), availability of medical records (77.5%), communication from healthcare providers (75.0%) and privacy of medical information (76.5%). The relatively high level of satisfaction observed in this study may be related to the positive experiences associated with EMR implementation. The strongest satisfaction result was recorded for the availability of medical records when needed, which corresponds with the high proportion of respondents who reported that healthcare providers were able to retrieve records when required. This parallel between EMR performance and satisfaction suggests that the practical benefits of electronic information management may contribute to patients' overall perception of service quality.

The relatively high satisfaction with waiting time is also consistent with the finding that many respondents experienced shorter waiting times. This suggests that improved information retrieval and registration processes may have translated into a more favourable patient experience. Olukorode et al. [6] observed that EMR has the potential to support improvements in healthcare delivery, particularly where electronic information systems are effectively integrated into routine clinical processes. Satisfaction with communication was also relatively high at 75.0%. Effective communication may be facilitated when healthcare providers have timely access to complete and organized patient information. However, EMR alone cannot determine the quality of patient-provider communication. Human factors, workload, interpersonal relationships and the organisation of care are also likely to influence patients' experiences.

Privacy satisfaction was similarly high, although 13.5% of respondents were dissatisfied or very dissatisfied. This finding suggests that although most patients trusted the system, privacy and confidentiality remained areas requiring continued attention. Concerns about data breaches, unauthorized access and misuse of health information remain important considerations in digital health systems [10], [11], [16]. More recent Nigerian evidence also continues to emphasize the need for stronger information security, data integrity and institutional safeguards [12], [13]. Thus, maintaining patient satisfaction with EMR requires not only functional systems but also visible and effective privacy and security measures.

#### ***Relationship between EMR implementation and patient satisfaction***

The most important inferential finding of the study was the statistically significant relationship between EMR implementation and patient satisfaction ( $\chi^2 = 9.42$ ,  $df = 2$ ,  $p = 0.009$ ). Respondents classified as experiencing high EMR implementation had the highest proportion of satisfied patients (86.4%), followed by those reporting moderate implementation (72.7%) and low implementation (50.0%). The significant chi-square result indicates that the distribution of patient satisfaction differed across the levels of EMR implementation in this study. This finding supports the proposition that the effectiveness of EMR implementation may be related to patients' experience of healthcare services. The result is consistent with evidence from Nigerian literature showing that effective adoption and implementation of electronic medical records can contribute to improved healthcare delivery and information management [6], [7]. The gradient observed in this study, in which satisfaction was highest among respondents reporting high EMR implementation and lowest among those reporting low implementation, further suggests that the quality and extent of system implementation may be more important than the mere presence of electronic records. The significant association demonstrates that EMR implementation and patient satisfaction were related among the respondents, but it does not establish that EMR implementation alone caused the observed level of satisfaction. Other factors, including waiting time, staff responsiveness, communication, availability of services, infrastructure and previous experiences with the hospital, may also influence patient satisfaction. Creswell and Creswell [17] and Bryman [18] emphasized the importance of careful interpretation of associations in quantitative studies, particularly where causal relationships are not directly established.

The findings also highlight the importance of addressing barriers to effective EMR implementation. Where infrastructure, staff capacity, system usability, data security or workflow integration are inadequate, the benefits of EMR may not be fully realized. This is consistent with studies documenting challenges to EMR adoption and implementation in Nigerian healthcare institutions [2], [8], [15]. Consequently, sustaining the positive association observed in this study requires continued

investment in system functionality, user training, infrastructure, technical support and information security.

### Conclusion

The study revealed that patients generally had a positive perception of electronic medical record implementation at OAUTHC and reported a high level of satisfaction with healthcare services. EMR implementation was significantly associated with patient satisfaction, particularly through improved access to medical records, efficiency of service delivery, reduced delays, and better continuity of care. Sustained investment in EMR infrastructure, staff capacity, system usability, and data privacy and security are essential to further improve patient-centred healthcare delivery.

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