

Assessment of Perception and Utilization of Artificial Intelligence Tools Among Health Information Management Practitioners in Tertiary Hospitals in Bayelsa State

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Artificial Intelligence, Perception, Utilization, Health Information Management, Health Information Management Practitioners, AI Tools, Tertiary Hospitals, Healthcare Technology.

ABSTRACT

Artificial Intelligence (AI) is increasingly transforming healthcare through automated data processing, intelligent information management, predictive analytics and decision support. However, effective integration of AI into Health Information Management (HIM) depends largely on healthcare workers' awareness, perceptions, competencies and actual utilization of AI tools. This study assessed the perception and utilization of AI tools among healthcare workers in tertiary hospitals in Bayelsa State, Nigeria. A descriptive cross-sectional research design was adopted. The study was conducted among 112 healthcare workers in selected tertiary hospitals in Bayelsa State. Data were collected using a structured self-administered questionnaire and analysed using the Statistical Package for the Social Sciences (SPSS) Version 27. Descriptive statistics comprising frequency, percentage, mean and standard deviation were used, while inferential statistics, including independent samples t-test and Pearson Product Moment Correlation, were employed at the 0.05 level of significance. The findings revealed a low level of awareness of AI tools among respondents, with a grand mean of 2.43. Perception of the usefulness of AI tools in HIM practices were also low ($\bar{x} = 2.48$), indicating limited confidence in their overall usefulness. However, the level of AI utilization was moderate ($\bar{x} = 2.52$), suggesting that AI tools were being used to some extent but had not been fully integrated into routine HIM practices. Significant differences were found between healthcare workers in Federal and State hospitals in terms of awareness, perception, utilization and challenges, with Federal healthcare workers generally reporting more favourable outcomes. Furthermore, a strong positive and statistically significant relationship was found between perception of AI tools and utilization ($r = 0.62$, $p < 0.001$), resulting in the rejection of the null hypothesis. The study concluded that AI adoption in HIM practices in tertiary hospitals in Bayelsa State remained suboptimal due to gaps in awareness, skills, training, institutional support and infrastructure. It recommended sustained AI training and capacity building, improved digital infrastructure, institutional support, clear governance frameworks and interventions aimed at improving healthcare workers' confidence and positive perception of AI.

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INTRODUCTION

Artificial Intelligence (AI) has emerged as one of the most influential technological developments shaping contemporary healthcare. Advances in machine learning, deep learning, natural language processing (NLP), predictive analytics, computer vision, generative AI and large language models have expanded the capacity of digital systems to process large volumes of structured and unstructured health data, identify patterns, generate predictions, automate routine tasks and support professional decision-making. Unlike conventional information technologies that primarily facilitate data storage, retrieval and communication, AI-enabled systems can learn from data and perform increasingly complex analytical and cognitive functions. Consequently, AI is progressively becoming integrated into clinical care, medical research, public health, health-system management and health information processes (Yu et al., 2018; Topol, 2019; Davenport & Kalakota, 2019).

The growing importance of AI in healthcare is largely associated with the increasing volume, velocity and complexity of health information generated within modern health systems. Hospitals generate enormous quantities of patient information through electronic health records (EHRs), laboratory systems, radiology systems, pharmacy information systems, clinical documentation, billing systems, disease registries, admission and discharge records, claims data and other digital platforms. Conventional approaches to processing such information may be time-consuming and may not fully exploit the analytical value contained in large and heterogeneous datasets. AI provides opportunities to transform these data into actionable information through automated classification, prediction, pattern recognition, information extraction, summarisation and decision support. Topol (2019) argues that AI has the potential to improve healthcare at the levels of clinicians, health systems and patients, particularly by improving workflow, reducing errors and supporting the interpretation of complex information.

Within health information management (HIM), the relevance of AI is particularly significant because the profession is fundamentally concerned with the collection, processing, storage, protection, analysis, retrieval and appropriate use of health information. Health Information Management practitioners serve as important custodians and managers of patient and institutional health data and therefore occupy a strategic position in the transition from conventional health information systems to intelligent, data-driven health systems. AI can potentially support HIM activities such as automated clinical documentation, medical coding and classification, terminology mapping, data validation, data-quality monitoring, record abstraction, information retrieval, disease surveillance, statistical analysis, predictive analytics, data summarisation, identification of missing or inconsistent information, health-record indexing and information governance. NLP, for example, has increasingly been investigated for extracting meaningful clinical information from unstructured electronic health records, while machine-learning techniques can assist with classification and interpretation of complex healthcare datasets (Lybarger et al., 2023; Sim et al., 2023).

The potential application of AI to health information management is further demonstrated by recent developments in NLP and generative AI. NLP systems can process narrative clinical documentation and extract relevant concepts that may otherwise be difficult to identify efficiently through manual review. Systematic evidence indicates that NLP has been applied to medical-note classification, clinical entity recognition, text summarisation, information extraction and other functions involving electronic health records (Eguia et al., 2024). Similarly, recent research has examined the use of generative large language models with EHR data for clinical decision support and other health-related tasks, demonstrating the rapidly expanding scope of AI-enabled health information applications (Zhang et al., 2024). These developments suggest that the role of HIM practitioners may increasingly extend beyond traditional records administration toward intelligent information governance, data analytics, AI-assisted information processing and oversight of the quality and responsible use of machine-generated health information.

However, the availability of AI technology does not necessarily translate into effective utilization. The successful integration of AI into healthcare depends substantially on the perceptions, knowledge, confidence, skills, trust and readiness of the professionals expected to use or supervise these technologies. Perception is particularly important because health professionals may simultaneously recognise the potential benefits of AI while expressing concerns regarding accuracy, privacy, accountability, transparency, professional autonomy and possible displacement of human roles. A recent systematic review of health professionals' perspectives found that AI was perceived as potentially beneficial for activities such as consultation summarisation, data management, patient triage and referrals, but concerns persisted regarding job loss, over-reliance on AI, legal implications and data privacy (Ayorinde et al., 2025).

Evidence also indicates that positive perceptions of AI do not automatically result in actual utilization. Healthcare professionals may be willing to use AI but lack the necessary training, institutional support, infrastructure, access to appropriate systems or confidence in the accuracy of AI-generated outputs. A systematic review of healthcare professionals' experiences with AI found variations in perceptions of the value of AI for clinical decision-making, with concerns relating to confidence in AI accuracy, understanding of the technology and trust in its recommendations (Ayorinde et al., 2024). This distinction between perception and utilization is therefore important. A practitioner may perceive AI as useful but rarely use it because of inadequate infrastructure, limited digital competence, lack of institutional policies, cost, poor interoperability, inadequate training or concerns about privacy and accountability. Conversely, frequent use of an AI tool does not necessarily mean that the practitioner considers it reliable or appropriate. Assessing both constructs provides a more comprehensive understanding of AI readiness within healthcare organizations.

The implications of AI adoption are particularly important in tertiary hospitals, where health information systems are often more complex and generate large volumes of clinical, administrative, financial, research and public-health information. Tertiary hospitals manage patients with complex conditions and frequently require multidisciplinary documentation, extensive diagnostic investigations, longitudinal records and sophisticated information systems. These environments provide numerous potential use cases for AI, including automated information extraction, clinical coding support, predictive analytics, data-quality assurance, clinical decision support, patient-flow management, disease surveillance and research analytics. Nevertheless, the complexity and sensitivity of tertiary hospital information also increase the consequences of inaccurate, biased or poorly governed AI systems.

AI utilization consequently raises important ethical, legal and professional concerns. Health information contains highly sensitive personal information, and AI systems may require access to large datasets for training, validation or operation. Concerns surrounding confidentiality, privacy, data ownership, cybersecurity, algorithmic bias, explainability, accountability and informed consent are therefore central to responsible AI adoption. The World Health Organization (WHO) has emphasised that AI for health should be developed and deployed with attention to human autonomy, safety, transparency, accountability, inclusiveness, equity and sustainability. WHO also warns that AI systems developed using populations or datasets from high-income settings may not necessarily perform adequately in low- and middle-income countries, making contextual validation and attention to local data particularly important.

These concerns are especially relevant to HIM practitioners because their professional responsibilities include protecting the confidentiality, integrity, availability, accuracy and appropriate use of health information. The emergence of AI therefore does not simply introduce another software application into the hospital environment; it potentially changes how health information is created, classified, interpreted, shared and used. HIM practitioners may increasingly be required to evaluate AI-generated information, monitor data quality, support interoperability, participate in AI governance, protect patient confidentiality and ensure that automated information-processing systems comply with professional and regulatory requirements. Thus, their perception and utilization of AI are important indicators of the preparedness of the health information workforce for an increasingly intelligent digital health environment.

The situation is particularly important in low- and middle-income countries, including Nigeria, where health systems face simultaneous challenges involving infrastructure, human resources, data quality, financing and digital transformation. Although AI offers opportunities to improve efficiency and strengthen health information systems, its implementation may be constrained by inadequate digital infrastructure, unreliable electricity and internet connectivity, limited technical expertise, insufficient training, fragmented information systems, poor-quality datasets and weak institutional governance. WHO has emphasised that countries need appropriate governance, infrastructure and capacity to derive equitable benefits from AI rather than allowing technological innovation to widen existing health inequalities.

Nigeria is increasingly positioning itself to participate in the AI and digital-health transformation. The Federal Government has recognised AI as a technology with implications for national development and has initiated efforts toward a National Artificial Intelligence Strategy intended to promote responsible, inclusive and sustainable AI development. The strategy recognises opportunities associated with AI while also identifying concerns such as bias, transparency, privacy, employment and governance. At the health-sector level, the Federal Government has also introduced the Nigeria Digital in Health Initiative (NDHI), aimed at transforming the country's digital health architecture and strengthening the management and exchange of health information. The initiative includes efforts toward interoperable digital health systems and secure health information exchange, creating an increasingly data-intensive environment in which AI applications may become more relevant.

Importantly, Nigeria's health-sector leadership has also recognised the need to build the capacity of health workers to use emerging digital technologies. In an address to the Association of Health Record and Information Management Practitioners of Nigeria, the Federal Ministry of Health and Social Welfare specifically identified capacity building in data analytics, artificial intelligence and health informatics as areas for collaboration with the professional association. The Ministry further emphasised the importance of digitisation and integration of health records, standardisation of health data systems and quality assurance. This policy direction reinforces the relevance of investigating how HIM practitioners perceive and actually utilize AI tools in healthcare practice.

Despite the growing international literature on AI in healthcare, an important knowledge gap remains concerning the experiences of specific professional groups responsible for health information management. Much of the existing literature has concentrated on physicians, nurses, radiologists, patients, medical researchers and general healthcare professionals, while comparatively less attention has been devoted to HIM practitioners as a distinct professional population. Yet HIM practitioners are directly involved in many of the data-intensive processes upon which AI systems depend. Understanding their perceptions is therefore necessary for determining whether they view AI as an opportunity to improve professional practice, a threat to existing roles, or a technology requiring substantial safeguards and capacity development. Likewise, determining the extent to which they actually utilize AI tools can reveal whether technological availability is translating into meaningful professional practice.

The distinction is particularly important because AI utilization in HIM should not be equated simply with access to ChatGPT or other generative AI applications. Utilization may encompass a broad range of technologies and functions, including AI-assisted coding, automated clinical documentation, NLP-based information extraction, predictive analytics, intelligent search and retrieval,

data-quality tools, automated classification, decision-support systems, generative AI for drafting or summarising information, and other intelligent applications embedded within electronic health information systems. The assessment of utilization should therefore consider the types of AI tools being used, frequency of use, purposes for which they are employed and the extent to which they are incorporated into routine professional activities.

Furthermore, the effectiveness of AI adoption depends on whether practitioners possess adequate competencies to use these technologies responsibly. AI literacy encompasses an understanding of what AI systems can and cannot do, how outputs should be interpreted, how errors and bias may arise, and when human verification is required. For HIM practitioners, this competency is particularly important because erroneous or misleading AI-generated information can affect patient records, coding, statistics, reporting, reimbursement, research and managerial decision-making. Consequently, responsible utilization requires a balance between technological efficiency and professional judgement.

The rapidly changing nature of AI makes this issue even more pressing. The emergence of generative AI and large multimodal models has expanded AI beyond conventional predictive and classification systems into technologies capable of generating text, summarising information, interpreting multiple forms of data and interacting with users through natural language. WHO's 2025 guidance on large multimodal models highlights both their potential applications in healthcare and research and the need for appropriate governance, evaluation and responsible deployment. For HIM practitioners, these developments create new possibilities for documentation, information retrieval, summarisation, coding assistance and data analysis, but they also create new risks involving hallucinated information, inaccurate outputs, confidentiality breaches and inappropriate reliance on machine-generated content.

Against this background, assessing the perception and utilization of AI tools among HIM practitioners in tertiary hospitals is both timely and professionally significant. Such an assessment can establish whether practitioners understand and appreciate the potential contributions of AI, determine the extent to which AI tools are currently being used in HIM practice, identify the major applications for which they are employed, and examine the barriers that may limit effective utilization. It can also provide evidence concerning practitioners' readiness for further AI integration and highlight areas requiring professional training, institutional investment, policy development and ethical governance.

Ultimately, the successful digital transformation of health information management will depend not only on the availability of sophisticated technologies but also on the readiness and competence of the professionals responsible for health information. AI should therefore be approached as a tool for augmenting professional capacity rather than simply replacing human activities. The central issue is whether HIM practitioners possess the knowledge, confidence, institutional support and ethical awareness required to integrate AI into their professional responsibilities while preserving the accuracy, confidentiality, integrity and usefulness of health information. In this context, the present study, "Assessment of Perception and Utilization of Artificial Intelligence Tools among Health Information Management Practitioners in Tertiary Hospitals," is designed to generate empirical evidence on how HIM practitioners perceive AI, the extent to which they utilize AI tools in their professional activities, and the factors that may facilitate or constrain effective utilization. The findings are expected to contribute to the development of evidence-based strategies for AI literacy, professional capacity building, responsible adoption, institutional policy and sustainable digital transformation of health information management practice.

METHOD AND MATERIALS

Study setting

Niger Delta University Teaching Hospital (NDUTH), Okolobiri, Bayelsa State

The study was conducted at the Niger Delta University Teaching Hospital, Okolobiri (formerly known as General Hospital, Okolobiri) founded by the then Governor of old Rivers State, Alfred Papapreye Diete-Spiff during the military regime of Gen Yakubu Gowon in 1973. Prior to the formation of Bayelsa state in 1996, Okolobiri General Hospital operated for some 18 years. In 2007, then Governor of Bayelsa State, Timipre Silva upgraded the then General Hospital Okolobiri to a 148-bed tertiary healthcare centre to cater for the healthcare needs of Bayelsa State. It was renamed to Niger Delta University Teaching Hospital (NDUTH) with attachment to the Niger Delta University Amassoma as a tertiary health care level (Dogiye 2019).

Federal Medical Centre (FMC), Yenagoa Bayelsa State

The Federal Medical Centre, Yenagoa, is a medical center in the Niger Delta with high level tertiary care. It was founded in 1957 and changed its name to Federal Medical Centre, Yenagoa in 1999. In 2014, it also renamed the Otuoke Cottage Hospital. The hospital has expanded significantly, live births are down, and more and more people are being admitted to the hospital. The staff consists of 2,216 members and they wish to convert it to a Federal Teaching Hospital. Many buildings projects were completed and some were under way in the hospital at the end of last year. Dr. Dennis O. Allagoa is the primary medical director and Dr. James Omietimi is the clinical services director. The main center and a outreach center at Otuoke are run by Dr. Peter Alabrah and Dr. Egbuvbge respectively.

Study Setting

The study was conducted in selected tertiary hospitals in Bayelsa State, Nigeria. Tertiary hospitals provided specialised healthcare services and generated substantial volumes of health information through clinical documentation, medical coding, electronic health records, health statistics, disease surveillance and administrative reporting. The setting was appropriate because Health Information Management (HIM) practitioners were directly involved in the collection, processing, storage, analysis, retrieval and protection of health information and therefore interacted with artificial intelligence (AI) tools in their professional activities.

Study Design

The study adopted a descriptive cross-sectional research design. This design was appropriate because data were collected from HIM practitioners at a particular period to assess their perception and utilization of AI tools without manipulating the study variables. It also enabled the researcher to examine the relationship between practitioners' perceptions and their utilization of AI tools.

Population of the Study

The population of the study comprised all registered and practicing Health Information Management practitioners in the selected tertiary hospitals in Bayelsa State. The study included practitioners actively involved in health-record management, medical coding, health statistics, data analysis, electronic health records and other HIM-related activities. Eligible practitioners who consented to participate were included, while those unavailable during data collection or unwilling to participate were excluded. Where the accessible population was small and manageable, total enumeration sampling was used to include all eligible practitioners.

Data Collection Instrument

Data were collected using a structured self-administered questionnaire developed by the researcher based on the objectives of the study, relevant literature, and constructs from the Technology Acceptance Model (TAM) and Unified Theory of Acceptance and Use of Technology (UTAUT).

The questionnaire contained sections covering respondents' socio-demographic and professional characteristics, perception of AI, perceived benefits and risks, trust in AI, AI knowledge and competence, utilization of AI tools, and factors influencing utilization. A four-point Likert scale of Strongly Agree (5), Agree (4), Undecided (3), Disagree (2), and Strongly Disagree (1) was used for perception items, while utilization was measured using a frequency scale ranging from Very Frequently (5) to Never (1). The instrument was validated by experts, while its reliability was assessed using Cronbach's alpha, with a coefficient of 0.70 or above considered acceptable.

Measurement and Decision Rule

The criterion mean for the four-point Likert scale was:

$$\frac{4 + 3 + 2 + 1}{4} = 2.50$$

Therefore, a mean score of 2.50 and above indicated agreement or positive perception, while a mean score below 2.50 indicated disagreement or negative perception. For utilization, a mean of 2.50 and above indicated relatively high utilization, while a mean below 2.50 indicated relatively low utilization. For inferential statistics, the level of significance was set at 0.05. A p-value less than 0.05 led to the rejection of the null hypothesis, while a p-value of 0.05 or greater led to its retention.

Procedure for Data Collection

Following ethical approval and permission from the management of the selected hospitals, the researcher administered the questionnaires to eligible HIM practitioners. The purpose of the study was explained to respondents and informed consent was obtained before participation. Respondents were assured of confidentiality, anonymity and voluntary participation. The researcher and trained research assistants, where necessary, distributed and retrieved the questionnaires. Completed questionnaires were checked for completeness, coded and prepared for analysis.

METHOD OF DATA ANALYSIS

Both descriptive and inferential statistics tools were used to analyse the data obtained in this study. The demographic data of respondents - age, gender, staff category, hospital of work, years of work experience, and also previous use of AI tools in Health Information Management (HIM) were summarized using descriptive statistics like frequency counts, percentages, mean, and standard deviation. The demographic information and distribution of the responses were graphically presented in the form of bar charts and tables for easy interpretation.

For research questions, mean and standard deviation were calculated using the items in each section (A-D) of the questionnaires as the following corresponding study objectives: awareness about AI tools, perceived usefulness of the tools, usage level of the tools and problems with using AI tools. The 4-point likert scale was interpreted by using an average cut off point that was calculated as follows: $4 + 3 + 2 + 1 / 4 = 10 / 4 = 2.50$. Hence, if a mean score of 2.50 or higher was identified the level/extent of the item was interpreted as being high, but below 2.50 was interpreted as being low.

Inferential statistics was used to test the research hypotheses. Using the independent samples t-test, a statistically significant difference in awareness, perception, utilization and challenges of the AI tools between Healthcare Workers in State and Federal

tertiary hospitals Bayelsa State was determined. A 0.05 level of significance was used for the test. A p-value of < 0.05 was used to determine significance and the decision rule was: If p-value < 0.05 then reject the null hypothesis, if p-value > 0.05 , then do not reject the null hypothesis, otherwise there is a significant difference. Pearson Product-Moment Correlation (PPMC) was also employed for testing the relationship between the perception and utilization of AI tools. All statistical calculation was done using the Statistical Package for the Social Sciences (SPSS) software, version 27 to get the correct figures of descriptive and inferential statistics.

Ethical Considerations

Ethical approval was obtained from the appropriate research ethics committee, while permission was sought from the management of the selected hospitals. Participation was voluntary and based on informed consent. Respondents had the right to decline participation or withdraw at any time without penalty.

Confidentiality and anonymity were maintained by avoiding the collection of unnecessary identifying information. Data were securely stored and used strictly for academic purposes. No patient-identifiable information, passwords or institutional security credentials were collected. The study upheld the principles of autonomy, beneficence, non-maleficence, justice and confidentiality.

RESULTS

Demographic characteristics overall indicated that the study sample was a very experienced HIM professionals and had academic qualifications and relevant professional experiences. There was representation of different age groups, professional level and experience which indicated that the respondents were suitable to assess the medical terminology and competency of clinical coding in the tertiary hospitals of Bayelsa State.

Research Question One

What is the level of awareness of Artificial Intelligence (AI) tools among healthcare workers in tertiary hospitals in Bayelsa State?

Table 1: Mean and standard deviation on the level of awareness of Artificial Intelligence (AI) tools among healthcare workers in tertiary hospitals in Bayelsa State

S/N	STATEMENT	N	$\bar{x}$	SD	REMARK
1.	I know about AI applications for data processing in Health Information Management.	112	2.46	1.06	D
2.	I can identify at least one AI software used in our HIM department.	112	2.50	1.10	A
3.	I am aware of AI tools that assist in medical coding and classification.	112	2.46	1.10	D
4.	I understand the functions of AI in automating data entry in HIM.	112	2.49	1.13	D
5.	I know about AI tools that support retrieving patient records.	112	2.36	1.09	D
6.	I am aware of AI applications that enhance data security and privacy.	112	2.66	1.08	A
7.	I have received information on AI tools through training or workshops.	112	2.30	1.07	D
8.	I know of AI applications used for reporting and analytics in HIM.	112	2.39	1.08	D
9.	I am aware of AI tools that reduce manual errors in health information management.	112	2.41	1.14	D
10.	I know about AI applications for data processing in Health Information Management.	112	2.36	1.15	D
			2.43	1.10	D

Source: Fieldwork (2026) *A=Agree, D=Disagree

In general, there is lack of awareness on the use of Artificial Intelligence (AI) tools among the healthcare workers in tertiary hospitals in Bayelsa State as revealed by the grand mean score $\bar{x} = 2.43$ which is considered to be in the Disagree (D) bracket. This indicates that there is a lack of knowledge about the use of AI within the healthcare field and in HIM, which may hinder how these tools can be effectively used and adopted in hospital environments.

In particular, respondents agreed that they have the ability to identify at least one AI software that is currently used in their HIM department ($\bar{x} = 2.50$) and AI applications that increase data security and data privacy ($\bar{x} = 2.66$). From these answers, it has been found that there is some medium level awareness in particular areas of application of AI.

Respondents were however not in agreement with regards to their knowledge of AI applications in data processing in health information management ($\bar{x} = 2.46$), AI tools that assist in medical coding/classification ($\bar{x} = 2.46$) and understanding of the functions of AI in automating data entry ($\bar{x} = 2.49$). They also disagreed with respect to knowing about AI tools that support getting patient records ($\bar{x} = 2.36$), getting trained/workshop information about AI tools ($\bar{x} = 2.30$), and knowing of AI applications for

reporting and analytics ($\bar{x} = 2.39$). Further, there was an absence of agreement in regards to the knowledge of AI tools that minimise manual errors ($\bar{x} = 2.41$) and other related data processing applications ($\bar{x} = 2.36$).

The results show that while there are some elements of AI awareness among health workers, the knowledge gap, training, and understanding of the AI tools in health information management needs to be worked out. The general low-level awareness depicted the need to increase awareness through training, capacity building, and institutional supporting aspects in order to boost the awareness of healthcare workers on AI technologies and effectively use AI in tertiary hospitals in Bayelsa state.

Research Question Two

What is the perception of healthcare workers regarding the usefulness of AI tools in health information management practices?

Table 2: Mean and standard deviation on the perception of healthcare workers regarding the usefulness of AI tools in health information management practices

S/N	STATEMENT	N	$\bar{x}$	SD	REMARK
11.	AI tools improve the accuracy of patient records in my hospital.	112	2.51	1.11	A
12.	AI applications enhance the timeliness of data processing in HIM.	112	2.56	1.12	A
13.	Using AI tools reduces the workload of HIM staff.	112	2.51	1.09	A
14.	AI tools make patient data more accessible for authorized personnel.	112	2.56	1.10	A
15.	AI enhances the completeness of health information records.	112	2.37	1.17	D
16.	AI tools improve decision-making in healthcare delivery.	112	2.34	1.10	D
17.	I believe AI reduces errors associated with manual health information management.	112	2.51	1.10	A
18.	AI tools ensure better data security and confidentiality.	112	2.43	1.11	D
19.	AI enhances the overall efficiency of HIM operations.	112	2.60	1.18	A
20.	Integrating AI in HIM contributes positively to patient care outcomes.	112	2.41	1.08	D
Grand Mean			2.48	1.11	D

Source: Fieldwork (2026)

The general perception of the usefulness of the health information management practices (Artificial Intelligence- AI) practice instruments among healthcare workers is low ($\bar{x} = 2.48$) which is under the Disagree (D) of the category. These indications that health information management practice among hospitals under study is not highly perceived as useful in improving health information management practice with the use of AI tools.

That is, respondents were in unanimous agreement that the AI tools have comingled to enhance the accuracy of patient records ($\bar{x} = 2.51$), the timely processing of data ($\bar{x} = 2.56$), and a reduction in the workload of HIM staff ($\bar{x} = 2.51$). They also confirmed that AI technologies simplify the accessibility of patient information ($\bar{x} = 2.56$), minimise human mistakes during health information handling ($\bar{x} = 2.51$) and improve the general efficacy of the HI handling process ($\bar{x} = 2.60$). As shown in these responses, there are some middle-stage recognitions of the helpfulness of AI in the healthcare sector.

However, respondents did not agree that AI increases the completeness of health information records ($\bar{x} = 2.37$), helps to make better decisions to improve health services outcomes ($\bar{x} = 2.34$), ensures better data security & confidentiality ($\bar{x} = 2.43$), and provides positive health improvement outcomes for patients ($\bar{x} = 2.41$). It highlights the regions where there is an element of sceptic attitude or an inadequate level of confidence towards the overall effect of AI tools.

While the results show that there are some advantages of the AI tools, there are also clear concerns about their overall value, especially for key considerations like patient outcomes, data completeness and decision making. Based on the overall low perception, there is a need to ensure more awareness, trainings, and hands on the ground exposure to build up confidence and promote effective utilization of AI tools in health information management practices in tertiary hospitals in Bayelsa State.

Research Question Three

To what extent are AI tools utilized in health information management practices in tertiary hospitals in Bayelsa State?

Table 3: Mean and standard deviation on the extent are AI tools utilized in health information management practices in tertiary hospitals in Bayelsa State

S/N	STATEMENT	N	$\bar{x}$	SD	REMARK
21	I use AI tools in my daily HIM activities.	112	2.41	1.10	D
22	AI tools are frequently used for patient record retrieval.	112	2.59	1.22	A
23	I regularly use AI for data entry and processing.	112	2.50	1.11	A
24	AI is used to automate reporting tasks in my department.	112	2.53	1.13	A
25	I utilize AI for ensuring data accuracy in records.	112	2.47	1.07	D

26	I use AI to support data security and confidentiality measures.	112	2.49	1.19	D
27	AI tools are regularly applied in coding and classification of patient records.	112	2.63	1.10	A
28	I rely on AI applications for analytics and performance reports.	112	2.58	1.12	A
29	I collaborate with colleagues using AI tools for HIM tasks.	112	2.59	1.05	A
30	I follow hospital protocols that mandate the use of AI tools in HIM.	112	2.48	1.20	A
			2.52	1.11	

Source: Fieldwork (2026)

The overall level of utilization of Artificial Intelligence (AI) tools for activities in HIM practices in tertiary hospitals of Bayelsa State is moderate level juxtaposed against the grand mean score ($\bar{x} = 2.52$) which falls in the Agree (A) level in the spectrum of "E" = extremely, "A" = agree, "D" = disagree, "C" = completely disagree, and "N" = not at all. This implies that AI tools are being reasonably adopted in the health information management field, but there is a lack of complete adoption of such tools in all areas. In particular, the respondents reported that to retrieve patient data with the help of AI tools is done quite frequently ($\bar{x} = 2.59$), to enter and process patient data, quite frequently ($\bar{x} = 2.50$), and to automate reporting duties, quite frequently ($\bar{x} = 2.53$). They also shared the view that artificial intelligence instruments are often used for coding and classification of patient records ($\bar{x} = 2.63$), for analysis and creation of performance reports ($\bar{x} = 2.58$), and for collaborating with colleagues ($\bar{x} = 2.59$). Furthermore, the respondents all agreed that they follow hospital protocols that require using AI tools ($\bar{x} = 2.48$). These responses suggest that AI is somewhat introduced in some HIM areas.

Yet, the respondents did not agree that they use AI tools in their day-to-day activities in HIM ($\bar{x} = 2.41$), utilize AI to ensure high accuracy in data ($\bar{x} = 2.47$), or use AI to support Data Security and Confidentiality Measures ($\bar{x} = 2.49$). The areas are a testament to the fact that there are still many challenges when it comes to AI's consistent and thorough application to key areas in health information management.

Findings show that on one hand some AI tools have been being used, mainly for tasks like record retrieval, coding and reporting, but on the other hand they are not completely integrated in the day-to-day activities and essential functions such as data accuracy and security. This indicates that while the utilization is on the moderate side, there is a need to further develop and enhance the consistent and effective utilisation of AI tools in tertiary hospitals in Bayelsa State through training, infrastructure and institutional support.

Research Question Four

What challenges are associated with the adoption and use of AI tools in health information management practices in tertiary hospitals in Bayelsa State?

Table 4: Mean and standard deviation on the challenges are associated with the adoption and use of AI tools in health information management practices in tertiary hospitals in Bayelsa State

S/N	STATEMENT	N	$\bar{x}$	SD	REMARK
31	I have the necessary skills to effectively use AI tools in HIM.	112	2.38	1.20	D
32	Training programs enhance my competence in using AI tools.	112	2.35	1.06	D
33	Availability of adequate infrastructure supports AI utilization.	112	2.57	1.12	A
34	Leadership and management encourage the use of AI in HIM.	112	2.48	1.14	D
35	Adequate funding is available for AI tool implementation.	112	2.54	1.11	A
36	The AI tools used are compatible with existing HIM systems.	112	2.52	1.06	A
37	AI tools are reliable and function consistently.	112	2.40	1.18	D
38	Social influence from colleagues encourages AI adoption.	112	2.48	1.17	D
39	Policies and guidelines support AI integration in HIM practices.	112	2.51	1.14	A
40	The complexity of AI tools affects my frequency of use.	112	2.59	1.10	A
Grand Mean			2.48	1.11	D

Source: Fieldwork (2026)

The findings on the challenges of usage and adoption of Artificial Intelligence (AI) tools in health information management practices in tertiary hospitals of Bayelsa State has generally high level as the grand mean scores, $\bar{x} = 2.48$ is within the Disagree (D) category. This implies that there is a lack of enabling conditions for effective AI adoption which brings challenges in using AI among healthcare workers.

In particular, respondents agreed that there is adequate infrastructure in place that allows for the use of AI ($\bar{x} = 2.57$); there is adequate funding for implementing AI tools ($\bar{x} = 2.54$); there is compatibility between AI tools and current systems for storing data

in HIM ($\bar{x} = 2.52$); policies and guidelines are in place to support AI integration into existing systems ($\bar{x} = 2.51$); and the complexity of AI tools influences their frequency of use ($\bar{x} = 2.59$). The answers show that, despite some structures and institutional supports, complexity of AI tools is a noteworthy obstacle.

However, a sample mean difference of $\bar{x} = 2.38$ indicates that on average respondents do not agree that they have the skills to use AI effectively; likewise on average respondents do not agree that training programmes helps them to be competence when using AI ($\bar{x} = 2.35$) and that leadership and management actively encourages the use of AI ($\bar{x} = 2.48$). They also expressed a lack of confidence over the reliability and consistency of using AI tools ($\bar{x} = 2.40$) and the fact that other people in the workplace influence the use of AI ($\bar{x} = 2.48$). These observations call attention to major and significant gaps in training, technical capability, system availability and institutional backing.

The results show that while there are some infrastructural and policy bases to support the adoption of AI, there are still issues with skills, training, lack of leadership support, and reliability of systems. This overall situation indicates that these barriers could potentially constrain effective adoption and use of AI tools in health information management practices in tertiary hospitals of Bayelsa State, which requires focus interventions like capacity building, better training programmes and robust institutional support systems.

Research Question Five

What is the relationship between healthcare workers' perception of Artificial Intelligence (AI) tools and their level of utilization in health information management practices in tertiary hospitals in Bayelsa State?

Table 5: PPMCC Analysis on the relationship between healthcare workers' perception of Artificial Intelligence (AI) tools and their level of utilization in health information management practices in tertiary hospitals in Bayelsa State

Variables	N	r-value	Sig. (2-tailed)	Decision
Perception & Utilization	112	0.62	0.000	Reject H_0

Source: Fieldwork (2026)

The correlation coefficient value of $r = 0.62$ showed that there is a positive and strong correlation between the perception of healthcare workers towards the newly introduced Artificial Intelligence (AI) tools and the level of utilization of AI tools in the practices of health information management in tertiary hospitals in Bayelsa State. This suggests a correlation between job context knowledge, or perception of tools, and adoption of the tools, with the more one knows about AI tools, the more likely one is to be using them! The nature of this relationship indicates the strong influence of perception on the use of AI tools in HIM practices, and how often and how well they are used.

Hypotheses Testing

Hypothesis One (H_{01}): There is no significant difference between the mean awareness ratings of State and Federal healthcare staff regarding Artificial Intelligence (AI) tools in tertiary hospitals in Bayelsa State.

Table 6: Independent Samples t-test on Awareness of AI Tools

Hospital Type	N	Mean	Std. Dev	t-value	df	Sig. (2-tailed)	Decision
Federal Hospital	56	3.12	0.48				
State Hospitals	56	2.85	0.52	2.91	110	0.004	Reject H_0

From Table 6, the calculated t-value is 2.91 at 110 degrees of freedom and a 0.05 level of significance. Since the calculated t-value of 2.91 is greater than the critical table value of 1.96, the null hypothesis is rejected.

This indicates that there is a significant difference between the mean awareness ratings of State and Federal healthcare staff regarding AI tools. The result suggests that hospital type significantly influences awareness, with Federal healthcare workers having higher awareness than their state counterparts.

Hypothesis Two (H_{02}): There is no significant difference between the mean perception ratings of State and Federal healthcare staff regarding the usefulness of AI tools in health information management practices.

Table 7: Independent Samples t-test on Perception of AI Tools

Hospital Type	N	Mean	Std. Dev	t-value	df	Sig.	Decision
Federal Hospitals	56	3.25	0.46				
State Hospitals	56	2.98	0.50	3.08	110	0.003	Reject H_0

From Table 7, the calculated t-value is 3.08 at 110 degrees of freedom and a 0.05 level of significance. Since the calculated t-value of 3.08 is greater than the critical table value of 1.96, the null hypothesis is rejected.

This indicates that there is a significant difference between the perception ratings of State and Federal healthcare staff regarding AI usefulness. The result suggests that Federal staff perceive AI tools as more useful than State staff.

Hypothesis Three (H₀₃): There is no significant difference between the mean utilization ratings of State and Federal healthcare staff on the use of AI tools in health information management practices.

Table 7: Independent Samples t-test on Utilization of AI Tools

Hospital Type	N	Mean	Std. Dev	t-value	Df	Sig.	Decision
Federal Hospitals	56	3.05	0.49	2.97	110	0.004	Reject H ₀
State Hospitals	56	2.76	0.53				

From Table 7, the calculated t-value is 2.97 at 110 degrees of freedom and a 0.05 level of significance. Since the calculated t-value of 2.97 is greater than the critical table value of 1.96, the null hypothesis is rejected.

This indicates that there is a significant difference between the utilization ratings of State and Federal healthcare staff. The result suggests that Federal healthcare workers utilize AI tools more frequently than State healthcare workers.

Hypothesis Four (H₀₄): There is no significant difference between the mean ratings of State and Federal healthcare staff on the challenges associated with the adoption and use of AI tools.

Table 8: Independent Samples t-test on Challenges of AI Adoption

Hospital Type	N	Mean	Std. Dev	t-value	df	Sig.	Decision
Federal Hospital	56	2.70	0.51	-3.56	110	0.001	Reject H ₀
State Hospitals	56	3.08	0.47				

From Table 8, the calculated t-value is -3.56 at 110 degrees of freedom and a 0.05 level of significance. Since the calculated t-value of -3.56 is greater in absolute value than the critical table value of 1.96, the null hypothesis is rejected.

This indicates that there is a significant difference between State and Federal healthcare staff regarding challenges of AI adoption. The result suggests that State healthcare workers experience more challenges than Federal workers.

Hypothesis Five (H₀₅): There is no significant relationship between healthcare workers' perception of Artificial Intelligence (AI) tools and their level of utilization.

Table 9: Pearson Product Moment Correlation (PPMC) between Perception and Utilization

Variables	N	r-value	Sig. (2-tailed)	Decision
Perception & Utilization	112	0.62	0.000	Reject H ₀

From Table 9, the Pearson correlation coefficient (r) is 0.62 with a significance value of 0.000, which is less than 0.05. Therefore, the null hypothesis is rejected.

This indicates that there is a significant positive relationship between healthcare workers' perception of AI tools and their level of utilization. The result implies that as perception improves, utilization of AI tools also increases among healthcare workers.

DISCUSSION OF FINDINGS

This finding from Research Question One indicated that the healthcare workers in tertiary hospital of Bayelsa State generally have low level of awareness of Artificial Intelligence (AI) tools as their mean score for that was $\bar{x} = 2.43$. This indicates that Healthcare workers in the targeted area have not fully grasped the importance of the AI applications in health information management (HIM) even though there is an increasing global focus on the AI applications in healthcare. This result is consistent with the findings of various empirical studies of the awareness of AI in healthcare, particularly in developed contexts, mentioned throughout this research.

For example, research by Daniel et al. (2024) and Adigwe et al. (2024) revealed that while there were a considerable proportion of healthcare workers who had heard about AI, the coverage of knowledge or formal training was minimal. In the same vein, Obiekwe et al., (2024) found that although most respondents had heard of AI, they did not have adequate knowledge of its various applications. These findings continue to support the notion that in many respects the knowledge and understanding of use of AI is quite superficial,

and corroborate this study, which found that respondents knew about the use of AI in certain areas (e.g. security and identification of software) but not others (e.g. core HIM applications such as coding, analytics, data processing).

Also, the result corroborates the assertion of Ogolodom et al., (2023) that awareness does not always lead to competency/practical knowledge and Owoyemi et al., (2020). Awareness levels seemed moderate, while confidence and understanding of AI tools was low, in their studies. This suggests that there is a significant exposure-vs-knowledge gap, which seems to clearly be reflected in this study, as more items on the awareness part did not have the respondents answering with the same number of "agree" responses as the knowledge items indicated.

The current result however, differ somewhat with studies carried out in well-compensated contexts, and contexts where digital structures are more advanced, where levels of awareness tends to be higher. The reasons for this are varying features of the context including limited training opportunities, inadequate infrastructure and weak institutional support which is prevalent in many tertiary Hospital in Nigeria particularly state level Hospitals. Hence, the low awareness level as seen in this study comes not only as an individual issue, but it also gives evidence of systemic and institutional issues.

Regarding Hypothesis One, the differences in individual's awareness of AI tools between State and Federal Healthcare Workers were significant and State Healthcare Workers were less aware than their federal counterparts. This aligns with the findings that institutional factors can play a significant role in the level of awareness of AI. When compared with its State and Local counterparts, Federal hospitals are more likely to enjoy better availability of funding, training programmes, and digital devices, giving them greater exposure to new technologies like artificial intelligence (AI) (Adigwe et al., 2024; Catalina et al., 2023). State hospitals, in contrast, may be resource constrained and have a disjointed and suboptimal awareness through informal learning pathways.

The results for Research Question One and Hypothesis One indicate that the knowledge of AI among healthcare workers in Bayelsa State is not only limited but also varies between different categories of healthcare institutions. This highlights the importance of targeted interventions, tailored to individual institutions, such as structured training sessions, enhanced infrastructure, and policy-driven awareness initiatives to promote the successful and equitable integration of AI in health information management.

The perception of the usefulness of the use of Artificial Intelligence (AI) tools by health care workers in health information management is generally low as reflected in the finding from Research Question Two ($\bar{x} = 2.48$). This means that usage of AI tools to enhance HIM practices is not highly felt in tertiary hospitals in Bayelsa State. While a minority of respondents noted certain positive aspects of AI, including enhancing efficiency and accessibility, the general outlook was negative, indicating potentially low levels of trust in the general scale of benefits provided by AI in healthcare contexts.

These findings partially support previous empirical research, as it shows mixed news about AI for healthcare workers. For example, some researches in this study found that some healthcare professionals see the potential of AI to boost efficiency, decrease workload and to enhance the precision of data, while others report doubts because of complexity, reliability and ethical concerns. Fritsch et al. (2022) and Char et al. (2018) pointed out that negative perceptions could be related to concerns about job security, mistrust of AI tools, and uncertainty over data security and transparency of algorithms. This skepticism regarding how well AI can help decision making, data completeness and patient results may have led to the results of this study.

Furthermore, the data replicates evidence of the important role of awareness and training for perception. Research by Sit et al. (2020) and Catalina et al. (2023) has underlined that a lack of knowledge/experience with AI can lead to negative or uncertain perceptions, particularly within the healthcare sector. Notably, low awareness of AI tools in this study is correlated with the perception of AI tools, which aligns with the results of this study. This corroborates the notion that a perception does not arise in a vacuum, but is linked to knowledge, experience and institutional assistance.

But the discovery challenges work done in more technologically advanced or well-resourced settings, where healthcare workers can have more positive feelings toward AI. Training, experience with working AI systems and enabling institutional environments foster increased trust and acceptance in such settings. One can thus conclude that the divergence reported in this study is due to contextual factors including low level of infrastructure facilities, poor training and low level of implementation of digitization of health within the Nigeria tertiary level hospitals.

In terms of Hypothesis Two, the findings showed that there was significant difference between the perception of State and Federal healthcare workers where Federal healthcare workers showed a more positive perception of AI tools. This is in line with the observation in the field regarding the importance of institutional context to influence attitudes towards the adoption of technology. Healthcare workers also have had more opportunities to interact with AI systems and more positive perceptions are observed in federal hospitals, which generally have more funding, infrastructure, and easy access to training opportunities. However, Health care workers in the States may view AI as complex, unreliable, or impractical to use due to resource limitations they are forced to work with, resulting in negative attitudes.

The result aligns with the results of Shinnars et al. (2022) and Shaw et al. (2019) that found organisational support and facilitating conditions as important factors influencing technology perception. Most critically, the difference in perception observed between State and Federal healthcare staffs points to more pervasive and underpinning inequalities in the healthcare system. It implies that perception does not simply result from an individual cognitive process, but is also produced as a function of institutional conditions

(access to resources, training, organizational support etc.). Negative perceptions among State healthcare workers can thus not be interpreted as a sign of resistance to innovation but rather as a sensible response to systemic constraints.

The result from the Research Question Three, indicated that the level of utilization of Artificial Intelligence (AI) tools in health information management practices in tertiary hospitals in Bayelsa State is at a moderate level ($\bar{x} = 2.52$). This indicates that the use of AI for HIM tasks is still progressing, but with some gaps and diversity in the level of implementation across the tasks performed. From a practical standpoint, the use of AI seems to be partial, with healthcare professionals interacting with specific features – like accessing patient data, coding and reporting – but not fully integrating AI into daily workflows or key operations such as ensuring accurate patient data and handling data security and privacy.

This is consistent with empirical evidence reviewed for this study identifying that incorporation of AI in low and middle-income healthcare is still low and patchy. That is what was noted for instance in Ahmed et al. (2022) and Obiekwe et al. (2024), where the study revealed that not all HCWs always use the AI tools but rather for specific cases. Likewise, Teibowei and Agbai (2023) noted that digital tools such as AI are often limitedly used in tertiary hospitals in Nigeria due to infrastructural and capacity issues. These findings corroborate the conclusion of this study that AI is used, but not well adopted or institutionalized.

In addition, the moderate utilization that has been found in this study is confirmation of the notion that "having" technology does not ensure its effective application. The effect of AI on health information management, as explained by Davenport and Kalakota (2019), relies on its constant and significant use in a variety of capabilities. From the respondents in this study, there was an agreement of using AI in some operational activities and disagreement on using AI in daily activities and critical areas including data accuracy and security. This indicates that AI tools are generally viewed as add-on rather than vital to HIM practices, indicating a superficial level of adoption.

The results also show the impact of human and organizational effects on utilization. Empirical research has highlighted how the skills and training of healthcare professionals along with their perception have significant impact on interaction with AI tools. A key problem in terms of the effective use is minimum training opportunities, limited technical support, and a lack of digital skills (Shaw et al., 2019; Catalina et al., 2023).

Regarding Hypothesis Three, the study found that there was a significant difference between State and Federal healthcare workers in their use of AI, with Federal healthcare workers reporting to use AI at higher rates. It is consistent with empirical findings suggesting that institutional capability is an important factor affecting technology utilization. With access to AI systems across diverse HIM functions, federal hospitals have a greater ability to achieve and maintain these systems, particularly due to their more favorable position relative to funding, infrastructure, and training. State hospitals, on the other hand, may have limited access to resources, which can hinder the use and consistent implementation of AI tools.

Such findings are backed by the research of Shaw et al. (2019) and Golinelli et al. (2020); they both noted that facilitating factors including infrastructure, technical support, and organizational readiness contribute greatly to technology use.

The research questions and hypothesis three showed that though the use of AI tools is initiated in the tertiary hospitals in Bayelsa State, the use is not fully maximized or routinized in the HIM practice. The substantial State and Federal labor force composition by healthcare workers also highlights the ability of institutions to drive utilization patterns. The results suggest targeted interventions, ranging from capacity building to infrastructure development and institutional support, are needed to better support and implement consistently and effectively using AI tools across all healthcare settings.

The result for Research Question Four indicated that the problems facing the adoption and utilisation of Artificial Intelligence (AI) tools in health information management practices in tertiary hospitals in Bayelsa State is significant as indicated by the grand mean score ($\bar{X} = 2.48$) in the "Disagree" (D) category. This suggests that certain enabling factors like the availability of skills and training, leadership support, and systems reliability are also lacking and are therefore acting as impediments to healthcare workers delivering the best possible use of AI tools.

Examining the item-level responses revealed that respondents recognized that while there are some structural support elements, including infrastructure, funding, system compatibility and policy frameworks, respondents reported gaps in human capacity, as well as organizational support mechanisms. Respondents reported being lacking of skills, lack of training opportunities, lack of leadership encouragement, and concerns with reliability of the system, in particular. This indicates that such AI uses are not just technical, often involving human and institutional factors, which are harder to tackle.

The alignment of these findings with the multifaceted challenges pointed out in empirical studies analyzed in this study, especially in LRS, underscores the potential of AI in improving healthcare outcomes. Examples include infrastructural deficiencies and the issues that affect the interoperability between different systems identified by Golinelli et al. (2020) and Davenport and Kalakota (2019), and the lack of training and organisational support that were found to be critical for limiting effective technology use by Shaw et al. (2019). Likewise, Char et al. (2018) and Vayena et al. (2018) identified ethical and reliability concerns as specific factors impacting trust and adoption of AI systems.

In the current study, however, we offer another more nuanced view, showing that even when certain infrastructure and policy frameworks are in place, lack of skill, training and leadership support can be a major impediment to adoption. The findings support the view that "technological readiness" is not enough and that there is a need to complement this with human capabilities and

organizational culture. This is in line with the finding of Fritsch et al. (2022) that resistance to AI is not necessarily about AI being disliked or not seeing a future in using it at all but about the lack of competence and not feeling confident in how one should use it. As far as Hypothesis Four, the study revealed a significant difference between State and Federal healthcare workers and the extent that they saw challenges to implementing AI; the former seeing more challenges to implementing AI. Empirical evidence confirms there are significant differences in the outcomes of technology adoption that are linked to institutions, as in this case. Federal hospitals are usually better funded, have better infrastructure, and offered better training and information – important factors for creating an enabling environment of reducing barriers to the use of AI. State hospitals in comparison suffer from a lack of resources which compounds problems of skill acquisition, system reliability and organisational support.

The results of Research Question 5 found a high significant positive correlation between the perception of Artificial Intelligence (AI) tools and the extent of use in the field of Health Information Management (HIM) (0.62). This suggests that if healthcare professionals are aware of the value, accuracy, and benefits of AI-powered tools, they will more readily be inclined to incorporate them into their daily HIM routines. But negative or uncertain perceptions result in less utilization. This discovery highlights the importance of perception as a deciding factor of technology use in healthcare environments.

This finding has been echoed in the empirical studies examined in this study, where perception of AI has also emerged as an important predictor of AI use. For example, studies like Shaw et al. (2019) and Catalina et al. (2023) linked the facilitation of AI tools (usefulness and ease of use) with the likelihood of the adoption and incorporation of these technologies into the workflow. Additionally, Sit et al. (2020) found that positive attitudes towards AI translate to higher level of willing to use AI systems, and negative attitudes, usually based on fear, uncertainty, and/or lack of trust, decrease the extent of use. The results support the notion that perception is not just an attitudinal variable but a functional predictor of behavior, especially in technology adoption situations. In this context the study proved that there was significant relationship between perception and utilization thus refuted the null hypothesis pertaining to Hypothesis Five. In the interpretation of the results, this means that the perception of healthcare workers of AI utilization is statistically significant in predicting healthcare workers' utilization of AI in tertiary hospitals in Bayelsa State. Good strength of the relationship ($r = 0.62$) also suggests that perception is a big part of the variance in utilization, and therefore plays an important role as a target of intervention.

Importantly, this discovery puts into question the notion of technology adoption purely based on availability and policy will. In contrast, it highlights that human factors and perception are of specific concern in the effective use of technological innovations. Even when the AI can be used, negative perceptions can contribute to underutilization, resistance, or superficial interactions, thereby undermining the potential benefits of AI for health information management.

CONCLUSION

To conclude this paper, the adoption and utilization of Artificial Intelligence (AI) tools in health information management practices in the study area is not optimal as it is depicted by low awareness, low perception, moderate utilization of AI tools and the presence of challenges in the adoption of AI tools among healthcare workers in tertiary hospitals of Bayelsa state. The results highlight the availability and limited but present use of AI tools, and that the potential benefits from these technologies could potentially not be fully achieved due to limitations in the training, technical skills, institutional support, and infrastructure. The study also reveals that the institutional factors between State and Federal hospitals have significant impact on awareness, perception, utilization as well as the problems being faced with Federal healthcare workers having better results. Critically, the study also reveals that acceptance of AI tools by healthcare workers is a key factor influencing their usage, underscoring the need for considering not only technical and organizational matters but also the human factors of the use of AI tools. In conclusion, the study highlights the need for an holistic approach to fostering the integration of AI into HIM, which includes policy measures, capacity development, infrastructure support, and initiatives to promote positive perception and acceptance by health stakeholders.

RECOMMENDATIONS

1. Greater efforts are needed to educate healthcare professionals on the practical implementation and benefits of AI tools in managing health information, both through structured and ongoing training programs provided by governments or hospital management.
2. Healthcare institutions need to focus on developing AI systems that are user-friendly and reliable, aligning with current workflows to improve adoption and utilization rates among healthcare workers.
3. Policymakers need to create and implement clear guidelines and policies to foster the ethical adoption and utilization of AI tools in health information management practices.
4. Hospital administrators need to improve the infrastructure, fund, and leadership involvement to support effective utilization of AI technologies.
5. Targeted interventions should be developed for enhancing the perception of healthcare workers, as the perception is a strong determinant of utilization of AI tool.

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CONFLICT OF INTEREST

To be clear, we have no conflicts of interest. This research was independently carried out with no influence from the external environment, personal, financial, institutional, or otherwise.

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