READINESS TO UTILIZE ARTIFICIAL INTELLIGENCE IN PRIMARY HEALTH CARE DELIVERY BY COMMUNITY HEALTH PRACTITIONERS IN SOUTH-SOUTH NIGERIA

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Abstracts
The application of artificial intelligence in health care has been widely recommended as a fundamental strategy that have the capacity to transform and enhance the efficiency of primary health care delivery globally. The population for this study comprised all community health practitioners in the south-south region of Nigeria, which is 7,868.A sample of 366 community health practitioners was involved for the study, which was obtained using Cochran's formula. The multi-stage sampling procedure was employed to select the desired sample size of respondents for the study. Three research questions and one hypothesis guided the study. A 31-item self-administered questionnaire specifically developed by the researchers was used for data collection. The face and content validity of the instrument was determined by three public health experts specialized in health education and promotion. A reliability coefficient of 0.86 was established using Cronbach Alpha. Participation was through an online survey portal using a cloud-based online survey platform. The data were analyzed using frequency tables, percentages, mean and standard deviation for the research questions, while ANOVA statistical tool was used to test the null hypothesis set at 0.05 level of significance. The results revealed that, respondents level of knowledge of basic AI-based applications for healthcare was fair, extent of willingness to adopt AI was low and level of utilization of AI-based applications in health was equally very low. It was recommended that, government should create platforms through policy framework that will make integration of AI-based applications in primary health care easier for community health practitioners.

Keywords: Artificial intelligence, Community health, Community health practitioners, Machine learning, Primary health care

Introduction

Artificial intelligence (AI) is simply described as the use of computers and machine processes to kindle human intelligence and achieve automated tasks in all fields of human endeavour. Artificial intelligence does not only seek to reflect the abilities of the human mind, but also exceed that in a number of ways, particularly by efficiently sifting through large volumes of big data to identify patterns, anomalies and trends of occurrence of events in the human environment (Aanuolowapo, et al., 2025). Theemergence of artificial intelligence has transformed the manner in which human activities are routinely carried out with unlimited potentials and results that could sustain the overall economic and social development involving all aspects of society including the health care sector. Artificial

intelligence is indeed a game-changing force in all sectors of the national economy offering great prospects for noteworthy development (Otaigbe, 2022). According to Jha et al., (2022), perhaps, the most impactful and personal ways, artificial intelligence is transforming the world around us are within the healthcare system, where its use is prominent in diseases diagnosis and creating appropriate and personalized plan of treatment with often prediction that may be accurate to ascertain the survival rates of patients. It presents a great wealth opportunities in the healthcare sector. Artificial intelligence technologies have great impact in combating and addressing healthcare problems that occur prevalently in society (Civaner et al., 2022). Adopting ai-driven applications in healthcare has recorded significant growth globally over the past few decades with key technological trend like machine learning and deep learning in different domains like cardiology and congenital heart defects, promoting maternal and child health and other key areas in the health care delivery system.

Artificial intelligence can be used to enhance various routinely adopted medical processes, such as diagnosing diseases to establish the best treatment options for patients facing critical illnesses like cancer (Onsongo et al., 2023). With robotic surgical equipment, artificial intelligence can assist surgeons to perform surgeries with better outcomes by reducing their physical fluctuations and provide updated information during major surgeries in the operation theater. According to Wang, et al., (2024), AI is beneficial to both the healthcare professionals working with it and the patients that daily interacts with them. Health care practitioners can expect lower operational costs due to improved decision-making and more efficient automated services. Healthcare professionals providing healthcare services have the opportunity to leverage the AI technology to establish prompt and accurate diagnose and design appropriate treatment course for the patients (Secinaro et al., 2021). Patients and consumers of health care services provided by the health system can expect improved health outcomes and lower cost from more efficient and reliable health care services.

There are several ways artificial intelligence can be applied to enhance the provision of health care services to meet the various health care needs of the individuals and families in the community (Owoyemi et al., (2020). Although artificial intelligence is widely adopted across the health industry, but should not be made to replace the skillful healthcare professionals. As suggested by Sorte, et al., (2019), instead, it should be seen as a support that could significantly improve the work of the health care providers trained to provide health care services to address the basic health needs of the population. Affirmed by Wahl et al., (2018), the following are some routinely applied AI applications in the health care field that could significantly improve face of health care delivery today.

Healthcare analytics are machine learning algorithms that are programmed to use historical data to produce insights, improve decision-making and optimize health care outcomes. Artificial intelligence can be routinely used to produce personalized treatment plans for patients and equally consider their medical history, environmental factors, lifestyles/behaviours and genetic makeup as possible determinants of the health the individual.Using AI fitted predictive models, health care workers can ascertain the possibility that an individual might develop a particular diseases condition in the

community. Also, A I impregnated machine learning models can be used for common medical scans such as MRIs, X-rays, and interpret and diagnose critical conditions like cancerous lesions in the human body system.

Like other key aspect of the health sector, the use of artificial intelligence in the delivery of primary health care services has also been recommended widely (Davenport &Kalakola, 2019). AI is increasingly used to improve health care service delivery, especially in primary health care, which is a grass-root oriented health care delivery system that places emphasis on making essential health care services available to all individuals and families in the community(Okanlawon et al). According to Okuga et al., (2015), it utilizes appropriate technology that is locally available through their full participation and at a price that is affordable to all segments of the population. Effective implementation of Primary Health Care interventions will guarantee a minimum level of basic health care for all individuals in a given population.

The Primary Health Care approach was birthed in an international conference organized by two United Nations specialized agencies, World Health Organization (WHO) and United Nations Children Fund (UNICEF) in collaboration with the then Russian government to an international conference in Alma-Ata in 1978. The resolutions of this international conference are globally referred to as Alma-Ata Declaration. Article six of the Alma-Ata Declaration defined Primary Health Care as essential care based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community and country can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination (World Health Organization and United Nations Children Fund, 1978).

The Alma-Ata Conference highlighted the eight areas that guide the implementation the concept of primary health care globally (National Primary Health Care Development Agency, 2010). Eight essential elements of Primary Health Care, also known as Basic Components of Primary Health Care were identified at the Alma-Ata International Conference on Primary Health Care and they include; education concerning prevailing health problems and methods of preventing and controlling them, promotion of food supply and proper nutrition, adequate supply of safe water and basic sanitation, maternal and child health care including family planning, immunization against the major infectious diseases, prevention and control of locally endemic diseases, appropriate treatment of common diseases and injuries and provision of essential drugs.

Primary Health Care programmes are implemented basically at the Local Government Areas through services offered by health personnel at the various categories of PHC facilities and other times through home visits (Basavanthappa, 2008). The various services provided at these health centers are specifically related to the components of primary Health care. The primary health care concept was established on a platform that heavily rely on a well-trained and suitable community-based health workers that are named as community health practitioners. According to Walker, (2018), they are technically work together as a health team to meet the health needs of the entire community. The community health practitioner is a trusted and respected member of the

community who is trained with medical competence and could work for pay or as a volunteer. More than 90% of the various facility-based healthful primary health care are services are carried out by the community health practitioners. The community health practitioner is a member of a community who is carefully chosen and given requisite training in a conventional college of health technology to provide basic health care services to members of the community as part of the primary health care system. Community health practice is a major aspect primary health care that is basically concerned with the prevention of diseases, promotion of health and wellness through adequate community participation, which will lead to improved quality of life (Dhaar&Robbani, 2008).

In Nigeria, community health practitioners are salaried health care providers in the primary health care system, providing health care services based on the Ward Minimum Health Care Package at the health post, primary health clinic and primary health care centers (National Primary Health Care Development Agency, 2009). As affirmed by Walker, (2024), the three cadres of community health practitioners in Nigeria, include, Junior Community Health Extension Workers, Community Health Extension Workers and the Community Health Officers.

The Nigerian primary health care system is structured in a manner that gives the community health practitioners the responsibility to successfully implement more than 90% of its components in accordance with guidelines stipulated in the national health policy (Smisha, 2019). According to Walker, (2024), considering its wide range of responsibilities, community health through primary health care forms the backbone of the national health care delivery system. Given the growing role of community health practitioners in primary health care implementation in the community, it is important to develop strategies that could comprehensively address the various limitations of the existing primary health care system with the view to enhancing the overall quality of healthcare services delivered for positive health outcomes (Akinsola, 2006). One key strategy that can improve significantly in variety of ways is the integration of Artificial intelligence into the implementation process of primary health care especially the clinical based-services at the health care facilities (Amisha et al. ,2019). Several studies have reported early successes of AI based technologies and systems facilitating diagnosis and management of diverse critical health conditions including cancers (Park et al., (2020).

Artificial intelligence can significantly transform the implementation of primary health care by improving access, efficiency, diagnosis, and patient care outcomes (Chilunjika et al., 2022). Artificial intelligence in primary health care refers to the use of intelligent computer systems that can analyze data, learn from it, and assist primary healthcare practitioners in decision-making, diagnosis, treatment and management of patients. The key areas of AI application in primary health care include; health care decision support, health education and promotion, tele-health (virtual consultations) and remote care, health data management including predictive analytics for epidemics, and workforce support (Raparthi, 2020; Peprah et al., 2019).

According to Behara et al., (2022), although challenges like data privacy and security concerns, integration issues, limited digital facilities in low resource locations, high

cost of implementation and maintenance, training needs of healthcare personnel and patient trust, there are several benefits the application of AI to primary health care will bring to the overall healthcare delivery system of any nation. Some of these benefits include, improved diagnostic accuracy and early detection, reduced health care worker workload, enhanced patient engagement and self-care, better disease surveillance and prevention, cost-saving through preventive and efficient care, and better access to health care in remote areas (Ellanhham, 2022). The integration of AI in Nigeria, especially in the rural settings of south-south region where the study is carried out, will significantly strengthen primary health care implementation in the following ways; supporting community health practitioners, improving maternal and child care services, enhancing epidermic detection and expanding telehealth services in riverine and hard-to-reach communities.

Several empirical studies have explored the challenges and benefits of artificial intelligence in primary health implementation. While these studies highlighted the transformative implications artificial intelligence and its consequential challenges, they lack a comprehensive framework for assessing the issues associated with its integration and the preparedness and readiness of primary health professionals to embrace an AI driven primary health care system. It was the foregoing that necessitated the researchers to investigate the readiness to utilize artificial intelligence in primary health care delivery among community health practitioners in south-south Nigeria.

Methodology

The cross-sectional survey was adopted for this study and was conducted online in the south-south region of Nigeria between July 7th and September 29th 2025. This design was utilized because, it gives the researchers the opportunity to collect data from a large sample drawn from a given population and describes certain features of the sample as they occur naturally at the time of the study. This design is principally employed to document, organize, present and analyze data for the purpose of describing the occurrence of an event and the findings from the sample can be generalized for the population from which the sample was drawn.The population for this study comprised all the primary health care workers in the south-south region, which according to Yisa et al., (2024) is 7,868. The breakdown includes; Cross Rivers-826, Rivers State-2,194, Delta State-1,456, Akwa-Ibom State-888, Bayelsa State-727 and Edo State-1,777A. The sample size for the study was 366 primary health care workers, which was derived using Cochran's formula at 95% confidence level, 5% margin of error and 50% response distribution.

The multi-stage sampling procedure was employed to select the desired sample size of respondents for the study. In the first phase, simple random sampling technique was used to select the 3 states that were involved in the study in the south-south region. In the second phase, the stratified sampling technique was used, and each state was divided into three strata. Two strata (senatorial district) through simple random sampling were selected to be part of the study. In the third phase, simple random sampling technique with replacement was used to select the number of Local Government Areas

that were involved in the study in each senatorial district. The fourth stage involved the use of quota sampling to pick the number of community health practitioners to be involved in the study in each selected Local Government Area. Finally, accidental sampling technique was utilized to pick the community health practitioners that responded to the questionnaire in their various WhatsApp platforms of Association of Community Health Practitioners of Nigeria in the selected Local Government Areas.

A 31-item self-administered questionnaire specifically developed by the researchers, titled "Readiness to Utilize Artificial Intelligence in Primary Health Care Delivery among Community Health Practitioners Questionnaire(RUAIPHCDCHPQ)" was used for the collection of data for the study. The instrument was divided into sections A and B. Section A deals with respondents' socio-demographic characteristics while section B contained questionnaire items based on the variables under study. The questionnaire was structured with response options such as Yes, undecided, No. Twelve questions were constructed to assess community health practitioners' knowledge on specific applications of AI in healthcare, while 7 items with Likert scale response options of strongly agree, agree, disagree and strongly disagree were provided to assess their willingness to adopt specific applications of AI in healthcare. Questionnaire item with correct responses were assigned one point while incorrect responses including undecided were assigned zero for knowledge options. To systematically establish community health practitioners' level of knowledge on AI in healthcare, the researchers adopted a convenient grading scale such as poor level (0-4), fair level (5-8) and good level (9-12). The section on utilization of artificial intelligence-based technologies was also structured in the same way as knowledge and had 12 questionnaire items. The face and content validity of the instrument was determined by three public health experts specialized in health education and promotion. The reliability of the instrument was established using Cronbach Alpha, which tests the internal consistency of the instrument. Twenty copies of the instrument were administered online to 20 community health practitioners that were located outside the study area, and the scores retrieved and computed to establish a reliability coefficient value of 0.86, which was high enough to consider the instrument consistent for the study.

A total of 366 community health practitioners were recruited to participate in the study through an online survey portal using a cloud-based online survey platform. Participants were invited to participate in the study through the social messaging mobile application WhatsApp. A special link was provided through the various platforms of the state chapters of the Association of Community Health Practitioners of Nigeria (ACHPN). Respondents were instructed to clink the link and were directed to the online survey portal and completed the self-developed questionnaire online. Forty-eight respondents were excluded from the analysis due to inappropriate data on more than 20% of the questionnaire items, while 318 were included resulting to 94.1% complexion rate. The data generated from this study were analyzed using frequency and percent for research 1 and 3, while research question 2 was analyzed with mean and standard deviation. ANOVA statistical tool was used to test the null hypothesis set at 0.05 level of significance. All statistical analyses were performed using IBM SPSS V.25.0. The benchmark for acceptance of research question 2 on extent of willingness to adopt

artificial intelligence in primary health care by community health practitioners is the mean of 2.5 and above as interpreted as high extent, while any mean score below 2.50 was interpreted as low extent.

Results

Research Question 1: What is the level of knowledge of community health practitioners on artificial intelligence in primary health care in South-south Nigeria?

Table 1: Level of knowledge of community health practitioners on artificial intelligence in primary health care in South-south Nigeria (N=318)

Knowledge level of respondents	**Responses**	
	Frequency	**Percentage**
Good level	108	34.0
Fair level	154	48.4
Poor level	56	17.6
	318	**100.0**

Table 1 shows the level of knowledge of community health practitioners on specific application of artificial intelligence in primary health care in south-south Nigeria. The table revealed that, (108) 34 % of the respondents had good level of knowledge on the specific applications of AI in healthcare that are studied, (154) 48.4% of respondents had fair level of knowledge, while (56) 17% of respondents had poor level of knowledge. A close look at the table further revealed that majority of the respondents (community health practitioners) had a fair level (48%) of knowledge on the specific application of artificial intelligence in primary health care in the south-south region of Nigeria.

Research Question 2: To what extent do community health practitioners demonstrate willingness to adopt artificial intelligence in primary health care in South-south?

Table 2: Extent of willingness to adopt artificial intelligence in primary health care by community health practitioners in South-south (N=318)

S/N	**Item**	**SA 4**	**A 3**	**D 2**	**SD 1**	**X**	**SD**	**Decision**
1	I am willing to take training course to learn about applications of AI healthcare	30 (120)	99 (297)	100 (200)	89 (89)	2.22	0.89	Low Extent
2	I believe AI in healthcare will make workload more efficient.	85 (340)	89 (267)	120 (240)	24 (24)	2.73	1.03	High Extent
3	I am confident AI integration will help improve health outcomes and increase	40 (160)	30 (90)	89 (178)	159 (159)	1.84	1.00	Low Extent

	professional proficiency							
4	I have no doubt on the availability of infrastructure to maintain the facilities if introduced	43 (172)	54 (162)	101 (202)	120 (120)	2.06	0.94	Low Extent
5	I have no privacy and ethical concerns about AI adoption	54 (216)	49 (147)	116 (232)	99 (99)	2.18	0.85	Low Extent
6	I trust AI as it is designed to improve human capacity and it will increase employment.	40 (160)	43 (129)	94 (188)	141 (141)	1.94	0.94	Low Extent
7	Have no concern on sustainability, especially the internet connectivity situation, if introduced	62 (248)	27 (81)	68 (136)	161 (136)	1.88	0.91	Low Extent
	Grand mean					**2.12**	**0.82**	**Low Extent**

Table 2 presents extent of willingness to adopt artificial intelligence in primary health care by community health practitioners in south-south Nigeria. A holistic look at the revealed respondents' mean score on willing to take training course to learn about applications of AI healthcare (X =2.22 SD=0.89), I believe AI in healthcare will make workload more efficient (X =2.73 SD=1.03), confident AI integration will help improve health outcomes and increase professional proficiency (X =1.84, SD=1.00), I have no doubt on the availability of infrastructure to maintain the facilities if introduced (X =2.06, SD=0.94), I have no privacy and ethical concerns about AI adoption (X =2.18, SD=0.85), I trust AI as it is designed to improve human capacity and it will increase employment. (X =1.94, SD=0.94), and have no concern on sustainability, especially the internet connectivity situation, if introduced ((X =1.94, SD=0.94). With a grand mean and SD (X =2.12, SD=0.82), the researchers concluded that the extent of willingness to adopt artificial intelligence in primary health care by community health practitioners in south-south Nigeria was low,

Research 3: What is the level of utilization of artificial intelligence-based technologies in primary health care implementation in South-south, Nigeria?

Table 3: Level of utilization artificial intelligence-based technologies in primary health care implementation in South-south (N=318)

Level of Utilization	**Responses**	
	Frequency	**Percentage**
High level	67	20.9
Average level	63	19.9
Low level	188	59.2
	318	**100.0**

Table 3 presents the level of utilization of artificial intelligence-based technologies in primary health care implementation in South-south. The data in the table revealed that, 20.9% of respondents had high level of utilization of artificial intelligence-based applications in primary health care implementation in South-south, 19.9% of respondents recorded average level of utilization of artificial intelligence-based application in primary health care implementation in South-south while 59.2% of respondents recorded low level of utilization of artificial intelligence-based application in primary health care implementation in South-south Nigeria.

Hypothesis 1: There is no significant difference in community health practitioners' willingness to adopt artificial intelligence in primary health care in South-south based on cadre.

Table 4: Summary ANOVA analysis on community health practitioners' willingness to adopt artificial intelligence in primary health care in South-south based on cadre (N=318)

Source of Variation	**Sum of Square**	**df**	**Mean Square**	***F-value***	***P-value***	**Decision**
Between Group	124.30	2	68.59	7.53	0.0442	Not Significant
Within Groups	335.00	315	15.57			
Total	460.3	317				

p< 0.05= Significant

Table 4 shows the summary ANOVA analysis on community health practitioners' willingness to adopt artificial intelligence in primary health care in South-south with respect to cadre. The table shows that, the calculated *f-value* of 7.53 with corresponding *p-value* of 0.0442 which is less than 0.05 level of significance, at degree of freedom of 2 and 315. The null hypothesis of no significant difference in community health practitioners' willingness to adopt artificial intelligence in primary health care in South-south based on cadre was therefore rejected. This implies that, the community health practitioners' willingness to adopt artificial intelligence in primary health care in South-south differs among the various cadres. To establish the direction of difference, a post hoc comparison was conducted using Turkey HSD test and the result is given as thus.

Table 5: Summary of Post Hoc Comparison using Turkey HSD test

Comparison	**Mean Difference**	***p-value***	**Interpretation**
CHO and CHEW	6.10	0.023	Significant
CHO and JCHEW	3.20	0.150	Not significant
CHEW and JCHEW	4.15	0.039	Significant

Table 5 shows a post hoc comparison using Turkey HSD test. The results indicated that CHO differed significantly from CHEW (p= 0.023), while no significant difference was

found between CHO and JCHEW (p=0.150). This suggests that the significant difference is not uniform across all groups.

Discussion of Findings

Integrating artificial intelligence in primary health care delivery is very fundamental in achieving its ultimate goal of making essential health care services available, accessible, affordable and acceptable by all individuals and families in the community. The findings of the current study revealed that, the level of knowledge of the basic AI-based applications for healthcare delivery was fair among community health practitioners in the south-south region of Nigeria. This fact was consciously affirmed in table 1 as majority of respondents (community health practitioners) had a fair level (154) 48.4% of knowledge on the specific application of artificial intelligence in primary health care in the south-south region of Nigeria. This result was expected and not surprising, because a greater number of community health practitioners engaged in Nigeria upon graduation, provide basic health care services at the hard-to-reach underserved grass-root communities that that has limited access to basic amenities, including internet connectivity and electricity. Their lifestyles and desires may be unconsciously modified in tandem with the rural way of living. This might greatly affect their perception and knowledge of modern technologies and applications designed for efficient healthcare delivery.

This finding is in consonant with the findings of Raparthi, (2020), who established that focused application of artificial intelligence in community based primary health care and also concluded that the knowledge of AI applications among community health workers were poor. However, the findings of Wahl et al., (2018) and Jha et al., (2022) were not in accordance with this finding. In their separate studies, they revealed that the primary health care workers studied, had a high level of knowledge on artificial intelligence application. The variations in these findings may be attributed to the fact that these studies were carried out at different locations and periods in time. As averred by Onsongo et al., (2023), the location of practice of community health workers may influence their knowledge on technological innovations in the healthcare delivery system, hence the difference in findings.

The findings also revealed that, the extent of willingness to adopt artificial intelligence in primary health care by community health practitioners in South-south, Nigeria was low. This is confirmed by the grand mean of 2.12, and SD=0.82 in table 3.0. This result was not expected and was surprising, because it is not a hiding fact that AI is currently changing the global healthcare landscape with its capacity to transform healthcare delivery in developing countries being widely recommended and pronounced. AI has the potentials to help develop and augment the capacity of healthcare professionals in all aspects of the health system by enhancing the efficiency of the healthcare system, making it smarter and faster in providing care millions of people that need basic care. Expectedly community health practitioners, as frontline public health personnel should portray a strong willingness to adopt AI in primary health care delivery in the community. This finding is supported by the findings of Park et al., (2020); Peprah et al., (2019), who in their studies revealed a low level of interest in adopting AI in healthcare

delivery among their respondents. This low extent willingness, the researchers believe may not be unconnected to the low level of awareness and knowledge of AI-based technologies in the healthcare industry that have significantly revolutionized healthcare delivery. Contracting this finding, were the findings of Behara et al., (2022); Chilunjika et al., (2022), who in their separate study results revealed a high level of willingness to integrate AI in healthcare among health care professionals. Their willingness according Amisha et al., (2019) and Ellanhham (2022), was attributed the high level of knowledge and their understanding about the significant of artificial intelligence in health care.

The level of utilization of artificial intelligence-based technologies in primary health care implementation by community health practitioners in South-south of Nigeria was very low as revealed in the findings of this study. This is affirmed in table 3 as 188 community health practitioners representing 59.2% of respondents recorded low level of utilization of artificial intelligence-based application in primary health care implementation in South-south Nigeria. This finding was in consistent with the researches carried out by Owoyemi et al., (2020); Otaigbe. (2022), who in their studies that were focused on application of artificial intelligence in health care recorded a low usage among respondents, who were health care professionals. This finding is not surprising and was expected, because community health practice is basically focused on meeting the health needs of individuals at the rural underserved population, making a vast majority of community health practitioners domiciling in those rural areas, thereby having difficulty in accessing the AI-based technological innovations in the health care industry.

The finding is in agreement with the finding of Davenport and Kalakola (2019). He carried out research study on knowledge, attitude and use of artificial intelligence among health students in a university in Ghana. However, the findings in the studies carried out by Sorte, et al., (2019); Secinaro et al., (2021) were in contradiction with this finding. In their study, it was revealed that, the level of exposure health care workers to artificial intelligence-based applications in health care was high. These results, may not be unconnected to the fact that, these studies were carried out in a population that have the awareness and high understanding about AI in health care delivery, hence became very conscious of the importance and utilize the AI applications within their disposal.

The results from the testing of the null hypothesis in table 4 revealed that, the null hypothesis of no significant difference in community health practitioners' willingness to adopt artificial intelligence in primary health care in South-south with respect to cadre was rejected. This result implies that, the level of the willingness to adopt artificial intelligence in primary by community health practitioners' willingness in South-south differs among the various cadre of community health practitioners. This finding is in consistent with the findings of Civaner et al., (2022) and Wang, et al., (2024), who also had a result that there was significant difference in the level of willingness to adopt artificial intelligence technologies in clinical practice among various healthcare professionals. The finding of Aanuolowapo, et al., (2025) was inconsistent with this finding. Their findings revealed that there was no significant difference in the readiness to adopt AI in health among healthcare students in Nigeria.

Conclusion

From the study findings, it was concluded that, the level of knowledge of basic AI-based applications for healthcare among community health practitioner in the South-south region of Nigeria was fair. The level of willingness to adopt the integration of AI-based technology was very poor and extent of utilization to AI-based applications in health care delivery was equally very low. Based on the conclusion above, the following recommendations were made;

i. Government having jurisdiction over primary health care should enact policy framework that will make integration of AI-based applications in primary health care easier for community health practitioners.
ii. Capacity building training and workshops on AI applications in health care delivery should be organized for community health practitioners.
iii. The training curriculum for the community health practitioners should be redesigned in line with the trending AI-based technological innovations in modern health care delivery.

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