Original

Knowledge, Attitudes, and Practices of AI-Assisted Diagnostics Among Students of Master of Public Health in Ahmadu Bello University, Zaria, Nigeria

[1]Danladi Sam Samuel, [2] Japhet Haruna Jonah, [3]Gabriel Samuel, [4]Ijuptil Amos, [1]Regina Chimsom Eche, [5] Ali Kime Makinta, [6]Hadiza Musa

[1]Department of Public Health, Ahmadu Bello University, Zaria, Nigeria.
[2]Department of Nursing, Family Health International (FHI 360), Nigeria, Borno State, Nigeria.
[3]Institute for International Law of Peace and Armed Conflict (IFHV), Department of International humanitarian action (NOHA), Ruhr University Bochum (RUB), Germany.
[4]Department of Nursing Science, University of Maiduguri, Borno State, Maiduguri.
[5]Department of Public Health Science, National Open University of Nigeria, Nigeria.
[6]Department: Nursing Science, Federal Teaching Hospital, Katsina, Nigeria.

Corresponding author: Jonah Japhet Haruna, F Family Health International (FHI 360), Maiduguri, Borno State, Nigeria. Nigeria.japhetjonah06@gmail.com: +2347034828476

Article history: Received 17 August 2025, Reviewed 31 August 2025, Accepted for publication 14 September 2025

ABSTRACT

Background: Integrating artificial intelligence (AI) into healthcare has transformed disease diagnostics, offering opportunities to enhance accuracy, efficiency, and accessibility. However, adopting AI-assisted diagnostics depends significantly on future public health professionals' knowledge, attitudes, and practices (KAP). This study assessed the KAP of students of Master of Public Health (MPH) at Ahmadu Bello University (ABU), Nigeria, regarding AI-assisted diagnostics in healthcare, including the gaps in the current MPH curriculum concerning AI literacy.

Methods: The study adopted a quantitative cross-sectional descriptive survey design. Data from 205 ABU MPH students recruited via simple random sampling were collected using researcher-constructed 16-item questionnaires, organized into four sections, and sent via email on Google Form. KAP were measured on 3-point Likert scale. The collected data were analyzed in descriptive statistics using SPSS version 28.

Results: The response rate was 99%. The findings revealed moderate levels of knowledge about AI tools (73.3%), positive attitudes toward their use (73.8%), but limited practical experience and dissatisfaction (29.5%) with the current level of AI training in the MPH curriculum. Students supported incorporating AI-related courses and experiential learning opportunities into MPH program (72.5%).

Conclusion: These results highlight the need for targeted interventions to enhance AI literacy among MPH students and prepare them for the ethical and practical integration of AI technologies in healthcare. The study contributes to the discourse on modernizing public health education and provides actionable recommendations for policymakers, educators, and healthcare institutions. Future research should explore longitudinal trends and cross-cultural perspectives to inform AI adoption strategies in public health practice.

Keywords: Artificial Intelligence, Attitudes, Health Knowledge, Practice; Public Health; Zaria, Nigeria.

How to cite this article

Samuel DS, Jonah JH, Samuel G, Amos I, Eche RC, Makinta AK, Musa H. Knowledge, Attitudes, and Practices of AI-Assisted Diagnostics Among Students of Master of Public Health in Ahmadu Bello University, Zaria, Nigeria. The Nigerian Health Journal 2025; 25(3): 1268 – 1275. https://doi.org/10.71637/tnhj.v25i3.1187

INTRODUCTION

The integration of artificial intelligence (AI) in healthcare has gained significant attention over the past few years, with advancements in machine learning and data analytics driving transformative changes in diagnostics, treatment planning, and patient care.[1] Master of Public Health (MPH) students, play a critical role in shaping the adoption and ethical use of such innovations in the healthcare setting. AI-assisted diagnostics, in particular, have emerged as a promising tool for improving accuracy and efficiency in disease detection and management.[2] Their understanding of AI tools and their attitudes toward integrating these systems into healthcare practices can significantly influence the broader acceptance and implementation of AI-assisted diagnostics.[3]

Recent research has highlighted concerning trends regarding public health students' knowledge, attitudes, and practices (KAP) toward AI. For example, a study by Fritsch et al. found that 76% of surveyed public health students lacked good or expert knowledge of how AI-assisted diagnostic tools function or their potential applications in healthcare.[4] Similarly, Laupichler et al. reported that many students expressed skepticism about the reliability of AI systems, citing concerns about algorithmic bias and the potential for errors in clinical decision-making and low level of practice.[5]

Martinez et al. noted that while MPH programs emphasize traditional public health competencies, such as epidemiology and biostatistics, they often fail to incorporate emerging topics like AI and digital health.[6] This omission leaves students ill-prepared to engage with AI-driven tools in their future careers, potentially limiting their ability to advocate for or implement these innovations in healthcare systems.[7] In the context of ABU, where the MPH program serves as a critical pipeline for public health professionals in northern Nigeria, anecdotal evidence reveals that lack of AI-related training represents a significant gap that needs to be addressed. In Nigeria, where healthcare systems often grapple with limited resources, inadequate infrastructure, and workforce shortages, the potential of AI-assisted diagnostics to alleviate some of these challenges cannot be overstated.[8] Therefore, this study aims to assess the knowledge, attitude, and practice of AI-assisted diagnostics in healthcare among ABU MPH students. Additionally, it will evaluate the gaps in the current MPH curriculum at ABU concerning AI literacy. Identifying these gaps will pave the way for developing targeted interventions and curriculum enhancements that can better equip students to navigate the complexities of AI in healthcare .[5] Furthermore, understanding MPH students' knowledge, attitudes and practices toward AI technologies is crucial, as these will often shape their willingness to adopt and advocate for such innovations in their future careers.[9]

SUBJECTS AND METHODS

Research Design and Approach

The study adopts a descriptive cross-sectional research design, which is well-suited for examining the knowledge, attitudes, and practices (KAP) of Master of Public Health (MPH) students at Ahmadu Bello University (ABU) regarding AI-assisted diagnostics in healthcare. This design is particularly appropriate given the study's objectives, which include evaluating levels of knowledge, assessing attitudes, and exploring practices related to AI technologies.[10]

Study Area

The study was conducted in Nigeria, among students of the Master of Public Health, Ahmadu Bello University, Zaria. The Ahmadu Bello University, established in October 1962, currently enrolls approximately 30,000 undergraduate and 10,000 postgraduate students from across Africa and beyond. The Distance Learning Centre was created to provide high-quality, accessible, and timely academic programs to students regardless of their location, race, gender, religion, or other affiliations. The registered students of the Master of Public Health are dispersed across various regions of Nigeria, with examination centres in various states through the Distance learning program.[11]

Population of the Study

The population for this study comprises all registered Master of Public Health (MPH) students at Ahmadu Bello University (ABU), Zaria, Nigeria, during the 2023/2024 academic session. According to records from the ABU Postgraduate School, approximately 375 MPH students are enrolled across various specializations, including Epidemiology, Occupational Health, and Health Promotion and Prevention.[12] This diverse group, with varied academic and professional backgrounds, provides an ideal population for examining perspectives on AI-assisted diagnostics in healthcare.

Print ISSN: 0189-9287 Online ISSN: 2992-345X

Sample Size

To ensure the reliability and generalizability of the study findings, a sample size of 208 participants was determined using the Taro Yamane formula for finite populations.[13] This formula calculates the appropriate sample size based on the total population, a 95% confidence level, and a 5% margin of error.

$$n = \frac{N}{1+Ne^2}$$

where n represents the sample size, N is the population size, and e is the margin of error. With a population size (N) of 375 and a margin of error (e) of 0.05, the calculation yielded an approximate sample size of 187 respondents. To compensate for non-response, 10% of the calculated sample size was added using the adjustment formula: $n_s = n_f/0.9$

Where:

n_s= sample size to compensate for attrition

n_f = original calculated sample size

187/0.9

Sample size = 207.7 ≈ **208 respondents** was used for the final sample size.

Sampling Technique

A simple random sampling technique using the lottery method was employed to ensure representation across different cohorts and specializations within the MPH program. The ID numbers of all 350 students were written on slips of paper, folded, and mixed thoroughly. Random selections were made, and students whose ID numbers were drawn participated in the study. This approach minimized bias and ensured the sample reflected the diversity of the population.[6]

Instrument and procedure for Data Collection

Data was collected using an electronic researcher-constructed questionnaire structured on Google Forms. The Questionnaire was designed based on relevant literature and study objectives to address the research questions. A Likert-type scale with response options of "Agree," "Neutral," and "Disagree" was used in the questionnaire. The questionnaire consisted of four sections, each aligned with a specific research question, comprising a total of sixteen questions, four per section. Each respondent's email address was requested with their consent, and the questionnaire was administered electronically via email using Google Forms to ensure accessibility and convenience.

The test-retest pilot test was conducted on 21 respondents (10% of the total sample size) to assess its clarity, completeness and consistency. After the pilot study, items were modified accordingly. Internal consistency reliability indices were calculated using Cronbach's Alpha. The result was 0.9, which is excellent based on research standards. The Content Validity Index (CVI) was calculated at 0.91, indicating excellent content validity. Additionally, a qualified professor with expertise in the subject assessed the face validity and confirmed its adequacy.

Data Management and Analysis

The responses obtained from the questionnaires were downloaded in Microsoft Excel format (.xlsx). The dataset was thoroughly reviewed, cleaned, and reformatted to ensure accuracy and compatibility with the Statistical Package for the Social Sciences (SPSS). This process included checking for missing values, inconsistencies, and ensuring proper coding of variables before importation. The cleaned dataset was imported into SPSS version 28 for analysis. Descriptive statistical methods, including frequencies, percentages, means, and standard deviations, were employed to summarize the data and present the distribution of key variables. Tables and charts were generated where appropriate to aid in the interpretation and presentation of findings.

Ethical consideration

Ethical clearance was obtained from Ahmadu Bello University through the Distance Learning Program. All participants were clearly informed about the purpose of the study, and verbal consent was obtained prior to administering the individual survey questionnaire. Respondents were further assured of anonymity and confidentiality, and their wishes and rights were respected throughout the data collection, including the right to withdraw from the study at any time they wished.

Print ISSN: 0189-9287 Online ISSN: 2992-345X

RESULTS

Of the 208 questionnaires distributed, 205 were completed and returned (response rate = 98.6%). The results of the analyzed data collected from 205 MPH students at ABU regarding their knowledge, attitudes, practices, and perceptions of gaps in AI-related training concerning AI-assisted diagnostics in healthcare are presented in frequency, percentages and mean scores. The KAP responses were measured on a 3-point Likert-type scale (Agree = 3, Neutral = 2, Disagree = 1), with higher scores indicating more favourable knowledge, attitudes, or practices toward AI use in healthcare. Both frequency distributions and mean scores were computed for each item.

Table 1: Demographic Characteristics of Respondents n=205

Variable	Category	Frequency (n)	Percentage (%)
Age Group	20–25 years	169	45
	26–30 years	131	35
	31–35 years	56	15
	Above 35 years	19	5
Gender	Male	150	40
	Female	225	60
Year of Study	First Year	188	50
	Second Year	187	50
Professional Background	Doctors	75	20
	Nurses	113	30
	Pharmacists	56	15
	Other Healthcare Professionals	75	20
	Non-Healthcare Professionals	56	15

Online Survey, 2025.

Table 1 above shows that the majority of the respondents were female, comprising 135 (60%), most of whom are between the ages of 20 and 25 (45%). Half were in the first year, while the other half were in the second year. The majority, 113 (30%), were nurses.

Table 2: Knowledge, Attitudes, Practices, and Training Needs on AI-Assisted Diagnostics among MPH Students (n=205)

Domain	Statement	Agree F(%)	Neutral F(%)	Disagree F(%)	Mean Score
Knowledge	I understand how AI-assisted diagnostics are used in healthcare.	92 (45%)	62 (30%)	51 (25%)	2.15
	I am familiar with the types of AI tools used for disease detection.	78 (38%)	72 (35%)	55 (27%)	2.03
	I can explain the benefits of using AI in healthcare diagnostics.	82 (40%)	68 (33%)	55 (27%)	2.06
	I know the limitations of AI-assisted diagnostic tools in healthcare.	66 (32%)	82 (40%)	57 (28%)	1.92
Attitudes	I believe AI-assisted diagnostics can improve healthcare outcomes.	123 (60%)	51 (25%)	31 (15%)	2.45
	I trust AI tools to make accurate diagnostic decisions in healthcare.	82 (40%)	72 (35%)	51 (25%)	2.15
	I feel comfortable working alongside AI tools in a healthcare setting.	92 (45%)	62 (30%)	51 (25%)	2.20
	I think AI-assisted diagnostics will replace human clinicians in future.	41 (20%)	82 (40%)	82 (40%)	1.80
Practices	I have used AI tools or technologies during my academic studies.	51 (25%)	82 (40%)	72 (35%)	1.90

Print ISSN: 0189-9287 Online ISSN: 2992-345X

Domain	Statement	Agree F(%)	Neutral F(%)	Disagree F(%)	Mean Score
	I have observed AI-assisted diagnostics being used in a healthcare setting.	62 (30%)	72 (35%)	72 (35%)	1.95
	I actively seek opportunities to learn about AI tools in healthcare.	72 (35%)	62 (30%)	72 (35%)	2.00
	I have participated in discussions or training sessions about AI in healthcare.	57 (28%)	78 (38%)	70 (34%)	1.98
Curriculum & Training Needs	My MPH program provides sufficient training on AI-assisted diagnostics.	41 (20%)	72 (35%)	92 (45%)	1.75
	I feel confident in my ability to use AI tools after completing my MPH program.	45 (22%)	68 (33%)	92 (45%)	1.78
	The MPH curriculum should include more courses on AI and digital health.	144 (70%)	41 (20%)	21 (10%)	2.60
	I believe additional workshops on AI would benefit MPH students.	133 (65%)	51 (25%)	21 (10%)	2.55

Source: Online Survey, 2025.

The mean scores for knowledge domain indicate moderate levels of knowledge about AI-assisted diagnostics among MPH students. While a significant proportion of respondents agreed that they understand how AI tools are used (45%) and can explain their benefits (40%), fewer participants reported familiarity with specific AI tools (38%) or awareness of their limitations (32%). The relatively high percentage of neutral responses suggests that many students have limited exposure to AI technologies, highlighting a need for more comprehensive training in this area.

Attitudes domain reveals generally positive attitudes toward AI-assisted diagnostics, with 60% of respondents agreeing that these tools can improve healthcare outcomes. However, trust in AI tools remains mixed, as evidenced by the 35% neutral responses and a mean score of 2.15. Similarly, comfort levels in working with AI tools are moderate, with 45% expressing agreement. Notably, a large proportion of participants (40%) disagreed that AI will replace human clinicians, reflecting skepticism about the extent of AI's role in healthcare. These findings underscore the importance of addressing misconceptions and building trust through education and hands-on experience.

The practice domain results indicate limited practical engagement with AI tools among MPH students. Only 25% reported using AI technologies during their studies, and 30% had observed their use in healthcare settings. Similarly, active efforts to learn about AI tools were reported by just 35% of participants. The low mean scores across all items (below 2.0) suggest that students lack hands-on experience with AI technologies. This gap underscores the need for experiential learning opportunities, such as workshops, internships, or simulation-based training, to bridge the divide between theory and practice.

The gaps domain findings highlight significant dissatisfaction with the current level of AI-related training in the MPH program. Only 20% of respondents agreed that the program provides sufficient training, and even fewer (22%) felt confident in their ability to use AI tools. In contrast, there was strong support for expanding AI-related content, with 70% agreeing that the curriculum should include more courses on AI and digital health. Additionally, 65% believed that workshops would be beneficial. These results emphasize the urgent need to integrate AI literacy into public health education to prepare students for the evolving demands of healthcare systems.

Print ISSN: 0189-9287 Online ISSN: 2992-345X

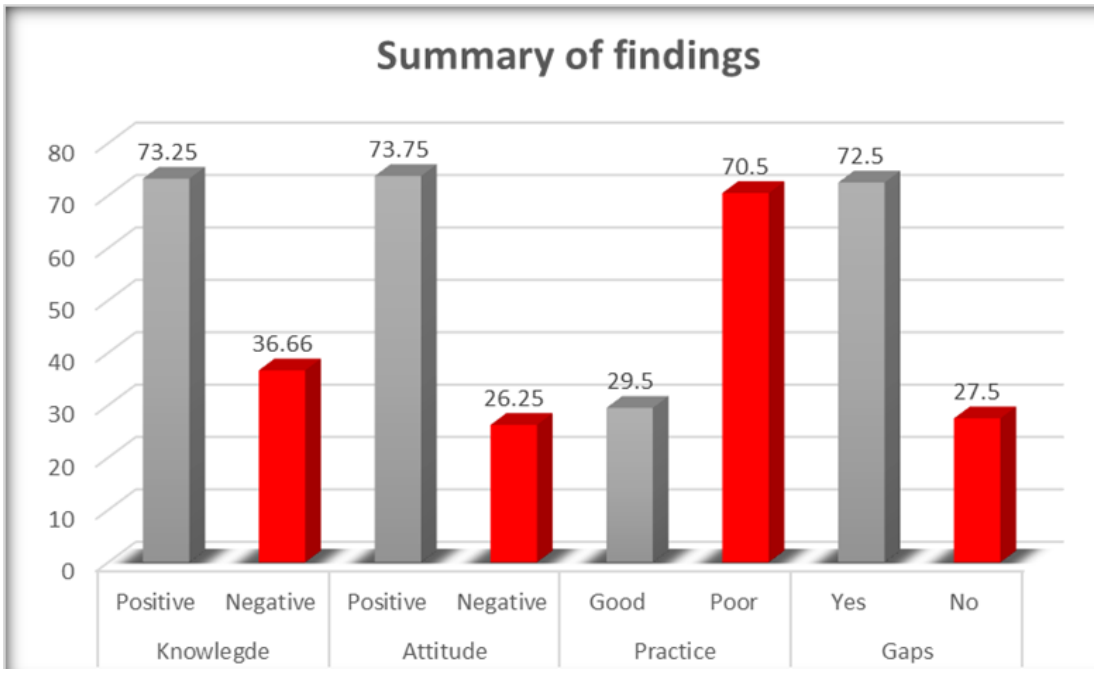

Figure 1: presentation of the research results summary

Figure 1 above reveals the overall summary of the results. The majority (73.25%) of the respondents had good knowledge, 73.755 had a positive attitude, the majority (70.5%) had a bad practice. In comparison, the majority (72.5%) agreed that there are gaps in MPH curriculum regarding AI-assisted technologies in MPH programs.

DISCUSSION

This study assessed ABU MPH students' Knowledge, attitudes, and practices regarding the use of AI-assisted diagnostics in healthcare. The majority of the respondents were female nurses between the ages of 20 and 25. The results revealed a good level of knowledge, a positive attitude, a limited practice level, and gaps in AI-related training among the students.

The study revealed a generally moderate level of knowledge on AI-assisted diagnostic technology, aligning with the results of previous studies.[9,14] The participants understood how AI-assisted diagnostics are used in healthcare, were familiar with the types of AI tools used for disease detection and could explain the benefits of using AI in healthcare diagnostics. However, most do not know the limitations of AI-assisted diagnostic tools in healthcare, which is concerning, as knowing the limitations, such as the reliability issues, lack of empathy, and potential cybersecurity risk, helps in the ethical usage of the AI technology.[15] This also shows the need to improve education about AI-assisted technologies among medical students.

The attitudes toward AI were generally positive, with most students agreeing that AI can improve healthcare outcomes, which is encouraging and reflects an openness to innovation, an idea supported by Gala et al.[16] However, trust in AI tools and comfort levels in working alongside them were mixed, reflecting scepticism and uncertainty about their reliability, a finding supported by Daly et al.[17] Interestingly, a majority of respondents rejected the idea that AI would replace human clinicians in the future, indicating a recognition of the complementary rather than substitutive role of AI in healthcare, a notion supported by Sezgin and ShiftMed.[15,18] They all noted that there is a human aspect in patient care that is irreplaceable by AI technologies, such as human intuition, complex medical decisions and emotional and psychological aspects of care that AI cannot address. An earlier study revealed that physician-machine collaborations will outperform physicians or AI technology alone.[19]

The study highlighted limited practical engagement with AI technologies, as evidenced by low response rates for

Print ISSN: 0189-9287 Online ISSN: 2992-345X

items related to hands-on experience or observed the use of AI technologies. This aligns with several studies that show low practical knowledge of AI technology in LMICS.[20,21] The Technology Acceptance Model (TAM) explains the low practice of AI technologies, which explains that scepticism about the reliability or effectiveness of AI tools may lead to resistance or reluctance to integrate them into practice, which was earlier shown in the attitude result of the study.[9] This calls for deeper teaching methods for AI-assisted technologies to encourage usage.

Finally, there was widespread dissatisfaction with the current AI-related training in the MPH curriculum, with strong support for incorporating more courses and workshops on AI and digital health. These findings underscore the need for targeted interventions to enhance AI literacy among MPH students and prepare them for the evolving demands of healthcare systems.[5] These results highlight the importance of addressing gaps in AI literacy and building confidence among future public health professionals to integrate AI technologies into healthcare practice effectively.

Limitations of the Study: One major limitation of the study was using self-reported data to measure KAP. There is a chance of recall bias, as students may understate or overstate their knowledge. More so, the practice was not determined by hands-on practical, so the results might not represent the actual fact. Additionally, despite the study using a good sample size, using a single institution might limit the generalizability of the results.

Implications of the Findings

Policy Implication

The findings highlight the need for policymakers in higher education and health to recognize the importance of digital health integration in postgraduate training. Educational regulators and curriculum development bodies should mandate the inclusion of AI and digital health modules in MPH programs. Policies should also support funding for capacity-building initiatives, ensuring equitable access to AI training resources and infrastructure across universities. At the health systems level, policies that promote AI literacy among healthcare professionals would help prepare the workforce for the digital transformation of healthcare delivery.

Practice Implication

From a practical standpoint, universities should design hands-on learning opportunities such as workshops, internships, simulation exercises, and collaborations with healthcare institutions using AI technologies. This would ensure students not only understand theoretical concepts but also develop the confidence to apply AI tools in real-world settings. Continuous professional development programs, short courses, and professional certifications in AI and digital health should also be established to help bridge gaps for in-service professionals. Additionally, health facilities and teaching hospitals should foster environments where AI tools can be demonstrated and critically evaluated, allowing students and professionals to appreciate their strengths and limitations.

Research Implications

Future studies should focus on longitudinal research to assess changes in knowledge, attitudes, and practices over time as AI technologies become more integrated into healthcare systems. Comparative analysis should also explore differences in KAP across various demographic groups, such as gender, specialization, or year of study, to identify specific needs and challenges.

CONCLUSION

The study concludes that MPH students at ABU have moderate knowledge and generally positive attitudes toward AI-assisted diagnostics but lack practical experience and adequate training. While they recognize the potential benefits of AI in healthcare, skepticism and mistrust remain barriers to its adoption. Addressing these gaps through curriculum enhancements and experiential learning opportunities is essential to prepare students for the transformative role of AI in healthcare. Public health education can advance the ethical and practical use of AI technologies in healthcare systems by equipping MPH students with the necessary skills and confidence.

REFERENCE

1. Smith J, Brown R, Green L. Ensuring fairness in AI-driven healthcare: A review of current practices. Equity Health. 2022;8(2):78-92.
2.Adams J, Brown R, Clark M. Artificial intelligence in healthcare: Attitudes and perceptions among public health professionals. Healthc Technol Rev. 2022;14(3):112-126.
3.Alowais SA, Alghamdi SS, Alsuhebany N, Alqahtani T, Alshaya AI, Almohareb SN, et al. Revolutionizing healthcare: the role of artificial intelligence in clinical

Print ISSN: 0189-9287 Online ISSN: 2992-345X

practice. BMC Medical Education [Internet]. 2023;23(1). Available from: https://bmcmededuc.biomedcentral.com/articles/10.1186/s12909-023-04698-z
4.Fritsch SJ, Blankenheim A, Wahl A, Hetfeld P, Maassen O, Deffge S, et al. Attitudes and perception of artificial intelligence in healthcare: A cross-sectional survey among patients. Digital Health [Internet]. 2022; 1; 8:205520762211167. Available from: https://pmc.ncbi.nlm.nih.gov/articles/PMC9380417/.
5.Laupichler MC, Aster A, Meyerheim M, Raupach T, Mergen M. Medical students' AI literacy and attitudes towards AI: a cross-sectional two-center study using pre-validated assessment instruments. BMC Medical Education [Internet]. 2024; 24(1). Available from: https://pmc.ncbi.nlm.nih.gov/articles/PMC11007897/#Sec1.
6.Martinez R, Thompson G, White D. Knowledge gaps in AI among public health students: Implications for training programs. Public Health Learn. 2022;5(2):89-102.
7.Chen L, Wang H, Liu X. Digital health literacy: A critical competency for public health education in the 21st century. Int J Public Health Educ. 2022;7(1):78-92.
8.Okafor E, Nwankwo U, Obi A. Leveraging AI for healthcare transformation in sub-Saharan Africa. Afr J Health Technol. 2023;6(2):29-43.
9.Taylor R, Green L. Ethical considerations in AI adoption: Perspectives from public health professionals. Bioeth Health Policy. 2022;7(2):91-104.
10.Ahmadu Bello University, Distance learning center [ABUDL]. About us. 2025-3-25Available at https://abudlc.edu.ng/about-us/
11.Ahmadu Bello University. Postgraduate student enrollment records 2023/2024. Unpublished institutional data. Zaria, Nigeria: Ahmadu Bello University; 2023.
12.Yamane T. Statistics: An introductory analysis. 2nd ed. New York: Harper & Row; 1967.
13.Salama N, Bsharat R, Alwawi A, Khlaif ZN. Knowledge, attitudes, and practices toward AI technology (ChatGPT) among nursing students at Palestinian universities. BMC Nursing [Internet]. 202524(1). Available from: https://bmcnurs.biomedcentral.com/articles/10.1186/s12912-025-02913-4
14.Amin MHJ, Elmahi MAME, Abdelmonim GA, Fadlalmoula GA, Amin JHJ, Alrabee NHK, et al. Knowledge, attitude, and practice of artificial intelligence among medical students in Sudan: A cross-sectional study. Annals of Medicine and Surgery [Internet]. 2024-4-2024; Available from: https://journals.lww.com/annals-of-medicine-and-surgery/fulltext/2024/07000/knowledge,_attitude,_and_practice_of_artificial.23.aspx
15.The Reality of AI in Healthcare: Supplement, Not Substitute|Shiftmed Blog [Internet]. 2024. Available from: https://www.shiftmed.com/insights/knowledge-center/the-reality-of-ai-in-healthcare-supplement-not-substitute/
16.Gala D, Behl H, Shah M, Makaryus AN. The Role of Artificial Intelligence in Improving Patient Outcomes and Future of Healthcare Delivery in Cardiology: A Narrative Review of the Literature. Healthcare [Internet]. 202412(4):481. Available from: https://pmc.ncbi.nlm.nih.gov/articles/PMC10887513/
17.Daly SJ, Wiewiora A, Hearn G. Shifting attitudes and trust in AI: Influences on organizational AI adoption. Technological Forecasting and Social Change [Internet]. 2025;19; 215:124108. Available from: https://www.sciencedirect.com/science/article/pii/S0040162525001398
18.Sezgin E. Artificial intelligence in healthcare: Complementing, not replacing, doctors and healthcare providers. Digital Health [Internet]. 2023;9. Available from: https://pmc.ncbi.nlm.nih.gov/articles/PMC10328041/
19.James A. How Artificial Intelligence is Disrupting Medicine and What it Means for Physicians [Internet]. HMS Postgraduate Education. 2023. Available from: https://postgraduateeducation.hms.harvard.edu/trends-medicine/how-artificial-intelligence-disrupting-medicine-what-means-physicians
20.Sadiq F, Sadiq F, Gul R, Zuhra F, Khan MK, Shah SMA, et al. Knowledge, Attitude, and Practice (KAP) Regarding the Use of Artificial Intelligence in Hospital Settings in Mardan, Khyber Pakhtunkhwa, Pakistan. Cureus [Internet]. 2024 Available from: https://pubmed.ncbi.nlm.nih.gov/39781175/
21.Khan MS, Umer H, Faruqe F. Artificial intelligence for low-income countries. Humanities and Social Sciences Communications [Internet]. 2024 Oct 25;11(1). Available from: https://www.nature.com/articles/s41599-024-03947-w

Print ISSN: 0189-9287 Online ISSN: 2992-345X