Assessment of Artificial Intelligence Readiness Among Medical Doctors in Abuja, Nigeria: An Online Cross-Sectional Study of Knowledge, Attitudes, and Practices

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ABSTRACT

Background: Artificial intelligence (AI) promises to transform healthcare delivery through enhanced diagnostics and decision support. However, successful implementation depends on healthcare workforce readiness. Nigeria has launched national AI strategies, yet data on medical doctors' preparedness for AI adoption remains limited, particularly in Abuja, the nation's capital and healthcare policy hub. This study assessed AI knowledge, attitudes, practices, and readiness among medical doctors in Abuja.

Methodology: An online cross-sectional study was conducted among 345 medical doctors from four tertiary healthcare facilities (two public, two private) in Abuja. Data were collected using structured questionnaires covering socio-demographic characteristics, AI knowledge (15-item assessment), attitudes (23-item scale based on Technology Acceptance Model), current practices, and barriers/facilitators to adoption. Knowledge scores were categorized as good (≥70%), moderate (60-79%), or poor (<60%). Data were analyzed using R, with descriptive statistics, chi-square tests, and multiple linear regression.

Results: Participants had a median age of 41 years and 12 years' clinical experience. Good AI knowledge was demonstrated by 42%, with 36% having moderate knowledge (mean score: 71.2%). Nearly all respondents (98%) expressed positive attitudes toward AI benefits, though 60-65% simultaneously recognized risks including patient safety concerns and liability issues. Only 29% currently use AI tools, and just 21% received formal AI training. No demographic factors significantly predicted readiness. Top barriers included concerns about replacing human judgment (8.6%), regulatory uncertainties (8.2%), and infrastructure limitations (7.8%). Key facilitators were comprehensive training opportunities (7.8%), peer support (7.4%), and financial incentives (7.3%).

Conclusion: Medical doctors in Abuja demonstrate solid foundational AI knowledge and positive attitudes but minimal practical implementation. System-wide interventions are needed including curriculum integration, regulatory framework development, infrastructure investment, and comprehensive training programs to bridge the readiness-practice gap and enable responsible AI adoption in Nigerian healthcare.

Keywords: Artificial Intelligence, Readiness, Knowledge, Healthcare, Barriers, Facilitators

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