African Political Communication (Media/Politics/Social)

AI Diagnostic Applications in Resource-Limited Health Settings of Malawi: A Methodological Framework

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Abstract

AI applications in resource-limited healthcare settings have shown promise for improving disease diagnosis and treatment outcomes. In Malawi, where medical resources are scarce, integrating AI could be particularly beneficial. The methodology will involve pilot testing an AI-assisted disease diagnosis system with local healthcare providers and patients. Data collection will include patient demographics, clinical symptoms, and diagnostic outcomes to evaluate accuracy and utility. Initial data analysis indicates a positive correlation between the AI model's predictions and actual diagnoses, suggesting potential for enhancing medical decision-making in resource-constrained environments. The methodological framework developed can serve as a guide for future AI deployment projects in similar settings, aiming to optimise diagnostic accuracy and reduce reliance on expensive off-site specialists. Healthcare providers should be trained in using the AI system, and ongoing validation studies are recommended to refine and expand its application across different diseases and patient populations. AI, healthcare diagnostics, resource-limited settings, Malawi Model estimation used $\hat{\{}\theta\}=argmin\{\theta\}sumiell(yi,f\theta(\xi))+\lambda lVert\theta rVert2^2$, with performance evaluated using out-of-sample error.

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