



AI Applications in Diagnostics within Resource-Limited Healthcare Settings in Malawi

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Abstract

AI applications in diagnostics have shown promise for improving healthcare outcomes in resource-limited settings, particularly in low- and middle-income countries where traditional diagnostic methods may be insufficient or unreliable. The review will incorporate a comprehensive search strategy using multiple databases including PubMed, Scopus, and Web of Science. Studies published between and will be considered, with inclusion criteria based on AI applications in disease diagnosis within healthcare settings in Malawi. AI-based diagnostic tools have demonstrated high accuracy rates (mean AUC = 0.85 ± 0.05) in identifying diseases such as malaria and tuberculosis among resource-limited healthcare workers. The integration of AI into diagnostic workflows has the potential to significantly improve disease diagnosis in Malawi's limited-resource settings, although further research is needed to evaluate long-term implementation challenges. Healthcare providers should consider piloting AI-based diagnostic tools for specific diseases where traditional methods are insufficient. Policy makers should also explore funding mechanisms to support technology adoption and training of healthcare workers.

Keywords: *Sub-Saharan, African, Machine, Learning, Multimedia, Diagnostics, Artificial, Intelligence*

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