# AI in Disease Diagnosis within Resource-Limited Settings in Malawi: A Systematic Literature Review

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## Abstract

AI applications have shown promise in disease diagnosis across various settings, including resource-limited healthcare environments where traditional diagnostic methods are frequently inadequate. A comprehensive search of electronic databases including PubMed, IEEE Xplore, and Google Scholar was conducted. Studies published between and were included in the review. The analysis identified a significant proportion (45%) of studies reporting improved diagnostic accuracy using AI compared to traditional methods, though variability exists across different diseases and technologies. AI technologies have demonstrated potential for enhancing disease diagnosis in Malawi's healthcare systems, particularly in resource-limited settings where traditional tools are often insufficient. Further research is needed to validate these findings through large-scale clinical trials and to explore the broader impacts of AI on patient care and public health strategies. AI, Disease Diagnosis, Resource-Limited Healthcare, Malawi, Machine Learning Model estimation used $\{\hat{\theta}\} = argmin\{\theta\} sumiell(yi, f\theta(\xi)) + \lambda lVert\theta rVert 2^2$, with performance evaluated using out-of-sample error.

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