



A Systematic Review of Predictive Modelling Frameworks for Community Health Intervention Outcomes in Uganda: 2000–2026

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ABSTRACT

Background: Predictive modelling is increasingly used to forecast the impact of community health interventions, yet a synthesis of frameworks specific to the Ugandan context is lacking. This review systematically maps and evaluates the methodological approaches employed in this domain.

Purpose and objectives: This systematic review aims to identify, categorise, and critically appraise predictive modelling frameworks used for clinical outcome forecasting in Ugandan community health interventions, assessing their methodological rigour and contextual applicability.

Methodology: A systematic search was conducted across multiple electronic databases. Pre-defined inclusion criteria targeted studies employing quantitative models to predict clinical outcomes from community-based interventions. Study selection, data extraction, and quality assessment were performed independently by two reviewers, with discrepancies resolved through consensus.

Keywords: *predictive modelling, community health interventions, clinical outcomes, Sub-Saharan Africa, Uganda, health systems research, evaluation frameworks*

Article Highlights

- Dominant reliance on logistic regression for binary clinical outcomes.
- Critical gaps in methodological transparency and validation reporting.
- Limited incorporation of spatial or hierarchical community data structures.

Methodological Imperative

Future frameworks must account for clustered data and integrate contextual socio-economic variables to enhance utility for policymakers.

This review establishes the first comprehensive methodological taxonomy for this domain.

<ul style="list-style-type: none">• Heterogeneous quality across the 42 studies meeting inclusion criteria.	
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