Methodological Evaluation of Public Health Surveillance Systems in Ethiopia: A Randomized Field Trial Approach

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Abstract

Public health surveillance systems are critical for monitoring disease outbreaks in Ethiopia, where healthcare infrastructure can be limited. A systematic literature review was conducted to evaluate existing surveillance practices. The study employed a mixed-methods approach combining quantitative data analysis with thematic synthesis. The evaluation revealed that while some systems have robust methodologies, others are prone to biases related to reporting and data quality. This review highlights the need for standardised training programmes and improved data collection methods to enhance surveillance system effectiveness in Ethiopia. Public health officials should prioritise regular assessments of their surveillance systems and implement targeted interventions based on identified weaknesses. Treatment effect was estimated with $text\{logit\}(\pi) = beta\,0 + \beta^{\top} p\,X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Ethiopia, Public Health Surveillance, Methodology, Evaluation, Randomized Controlled Trial, Outcome Measures, Geographic Information Systems*

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