African Occupational Therapy Research (Applied)

Methodological Evaluation of Public Health Surveillance Systems in Kenya Using a Difference-in-Differences Approach to Assess Risk Reduction Efforts

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Abstract

Public health surveillance systems are essential for monitoring disease outbreaks and implementing effective risk reduction strategies in Kenya. However, there is a need to evaluate the effectiveness of these systems through rigorous methodological approaches. The study will employ a difference-in-differences approach to compare changes in disease incidence before and after implementing the public health surveillance system. Data from multiple years will be analysed to ensure temporal control. A preliminary analysis suggests that the DiD model indicates a significant reduction in infectious diseases by 20% within the intervention area compared to non-intervention areas. The difference-in-differences approach is shown to be effective for evaluating public health surveillance systems, providing evidence of risk reduction. Future studies should consider these findings and continue methodological refinement. Public health officials are advised to use the DiD model in future evaluations of their surveillance systems to enhance accountability and effectiveness. Treatment effect was estimated with $text\{logit\}(\pi) = beta 0 + \vec{\beta}\ p\ X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Kenya, Public Health Surveillance, Methodological Evaluation, Difference-in-Differences, Epidemiology, Geographic Information Systems, Spatial Analysis*

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