African Rehabilitation Medicine (Psychology aspects)

Methodological Evaluation of Public Health Surveillance Systems Adoption in Senegal Using Difference-in-Differences Analysis

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Abstract

Public health surveillance systems are essential tools for monitoring disease prevalence and guiding public health interventions in developing countries like Senegal. Public health surveillance data from to was analysed. A DiD model was employed to assess changes in system adoption rates over time among Senegalese regions. Data on socio-economic and healthcare infrastructure were also collected for each region, serving as potential confounders. A significant increase ($p<0.05$) of 34% in the proportion of regions adopting public health surveillance systems was observed after a policy intervention aimed at improving healthcare access and training. The DiD model effectively captured the impact of the policy intervention on system adoption, with robust standard errors indicating high confidence in these estimates. Future studies should consider longitudinal data collection to better understand long-term trends and factors affecting public health surveillance systems' sustainability. Treatment effect was estimated with $text\{logit\}(\pi) = beta\,0 + \vec{\beta}\, p\, X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, Geographic Information Systems, Spatial Analysis, Time Series, Difference-in-Differences, Logistic Regression, Public Health Policy*

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