African Food Systems Research (Interdisciplinary - incl Agri/Env)

Methodological Evaluation of Public Health Surveillance Systems in South Africa: A Randomized Field Trial on Adoption Rates

Sifiso Mkhonwane[1], **Moses Khumalo**[1]

[1] Rhodes University

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Correspondence: smkhonwane@outlook.com

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Author notes

Sifiso Mkhonwane is affiliated with Rhodes University and focuses on Medicine research in Africa.
Moses Khumalo is affiliated with Rhodes University and focuses on Medicine research in Africa.

Abstract

Public health surveillance systems are critical for monitoring and managing diseases in South Africa. These systems rely on various data sources and methodologies to ensure timely and accurate information is available. A comprehensive search strategy was employed across multiple databases including PubMed and Web of Science. Studies published between and were considered. Inclusion criteria included studies that evaluated the effectiveness of surveillance systems in South Africa, with a specific focus on adoption rates among healthcare providers. In our analysis, we identified a significant variation ($p < 0.05$) in the proportion of healthcare providers who reported adopting public health surveillance systems based on their perceived benefits and resource availability. The findings suggest that while there is variability in adoption rates across different regions of South Africa, certain factors such as training programmes and financial incentives significantly influence adoption rates. To enhance the effectiveness of public health surveillance systems, it is recommended that policymakers implement targeted training initiatives and provide adequate funding to support healthcare providers in adopting these systems. 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, geospatial analysis, data quality, surveillance models, algorithmic validation, geographic information systems, statistical methodologies*

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