African Traditional and Complementary Medicine
(Medical focus)

Methodological Evaluation of Public Health Surveillance Systems in Nigeria: A Quasi-Experimental Assessment of System Reliability

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Abstract

Public health surveillance systems in Nigeria are essential for monitoring and responding to infectious diseases. However, their reliability is often questioned. A mixed-methods approach was employed, including quantitative data analysis using logistic regression to assess system efficiency and qualitative interviews with stakeholders for context understanding. The study utilised a convenience sampling method within selected states. The findings revealed that the surveillance systems in three out of five sampled states showed moderate reliability (75% ± 10%), indicating room for improvement, particularly in data accuracy and timeliness. While Nigeria's public health surveillance system has potential, it requires targeted enhancements to ensure consistent and reliable disease monitoring. Strengthening data collection protocols, improving training of healthcare workers, and enhancing inter-agency collaboration are recommended for system improvement. 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 Africa, Quasi-experiment, Public health surveillance, System reliability, Sampling methods, Data quality assurance, Spatial analysis, Geographic information systems*

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