African Film Industry Studies (Arts/Media/Social)

Smartphone Tracing Apps' Role in Evaluating Vaccination Coverage Among School-Age Children in the Western Cape, South Africa

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Abstract

Vaccination coverage among school-age children is crucial for preventing outbreaks of vaccine-preventable diseases in South Africa's Western Cape province. However, traditional data collection methods are often time-consuming and costly. A mixed-methods approach was employed, combining a mobile app with pre-existing health records for data collection among school-age children in the Western Cape. Data were analysed using logistic regression models. The smartphone tracing app detected vaccination coverage rates at a rate of 85% within a week, demonstrating its potential as an efficient tool for monitoring these metrics. Smartphone tracing apps can effectively evaluate vaccination coverage among school-age children in the Western Cape and reduce reliance on traditional data collection methods. Further research should be conducted to validate these findings across different regions and populations, potentially leading to broader adoption of smartphone tracing apps for public health monitoring. Model estimation used $\hat{\{}\theta\}=argmin\{\theta\}sumiell(yi,f\theta(\xi))+\lambda lVert\theta rVert2^{2},$ with performance evaluated using out-of-sample error.

Keywords: *Sub-Saharan, AfricanGeography, VaccinationEpidemiology, ContactTracing, MobilityModeling, PublicHealthInformatics, DataIntegration*

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