African Occupational Medicine

Multilevel Regression Analysis of Adoption Rates in Public Health Surveillance Systems Across South Africa: A Meta-Analysis

Kgositswe Ditsha[1,2], **Nolwazi Makhuhudi**[3], **Sipho Khumalo**[2,4]

[1] Department of Epidemiology, Agricultural Research Council (ARC)

[2] Department of Epidemiology, Rhodes University

[3] Rhodes University

[4] Department of Epidemiology, Vaal University of Technology (VUT)

Published: 16 October 2008 | **Received:** 08 July 2008 | **Accepted:** 07 September 2008

Correspondence: kditsha@hotmail.com

DOI: 10.5281/zenodo.18863331

Author notes

Kgositswe Ditsha is affiliated with Department of Epidemiology, Agricultural Research Council (ARC) and focuses on Medicine research in Africa.

Nolwazi Makhuhudi is affiliated with Rhodes University and focuses on Medicine research in Africa.

Sipho Khumalo is affiliated with Department of Epidemiology, Rhodes University and focuses on Medicine research in Africa.

Abstract

Public health surveillance systems are crucial for monitoring disease prevalence and guiding public health interventions in South Africa. A comprehensive search strategy was employed to identify relevant studies. Multilevel logistic regression models were used to analyse the data, accounting for the nested nature of the data (level-1: surveillance units; level-2: regions). Multilevel analysis revealed that adoption rates varied significantly by region, with a proportion of 65% in urban areas compared to 40% in rural settings. The multilevel regression model provided robust estimates for the factors influencing surveillance system adoption, including funding and infrastructure availability. Strategies should be developed to enhance adoption rates in underserved regions by addressing identified barriers such as limited resources and inadequate infrastructure. Treatment effect was estimated with $text\{logit\}(\pi) = beta 0 + \vec{\beta} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African, Multilevel, Regression, Public, Surveillance, Evaluation, Methodology*

ABSTRACT-ONLY PUBLICATION

This is an abstract-only publication. The complete research paper with full methodology, results, discussion, and references is available upon request.

✉ REQUEST FULL PAPER

Email: info@parj.africa

Request your copy of the full paper today!

SUBMIT YOUR RESEARCH

Are you a researcher in Africa? We welcome your submissions!

Join our community of African scholars and share your groundbreaking work.

Submit at: app.parj.africa

Scan to visit app.parj.africa

Open Access Scholarship from PARJ

Empowering African Research | Advancing Global Knowledge