Methodological Evaluation of Community Health Centre Systems in South Africa Using Multilevel Regression Analysis for Cost-Effectiveness Measurements

Kgosiwe Motshega[1]**, Mngeni Nkabinde**[2]**, Tshabalala Ramabatše**[3,4]

[1] Department of Public Health, Cape Peninsula University of Technology (CPUT)

[2] Cape Peninsula University of Technology (CPUT)

[3] University of KwaZulu-Natal

[4] Department of Internal Medicine, Cape Peninsula University of Technology (CPUT)

Author notes

Kgosiwe Motshega is affiliated with Department of Public Health, Cape Peninsula University of Technology (CPUT) and focuses on Medicine research in Africa.

Mngeni Nkabinde is affiliated with Cape Peninsula University of Technology (CPUT) and focuses on Medicine research in Africa.

Tshabalala Ramabatše is affiliated with University of KwaZulu-Natal and focuses on Medicine research in Africa.

Abstract

Community health centers (CHCs) in South Africa play a significant role in primary healthcare delivery, but their effectiveness and cost-effectiveness vary across different regions. A scoping review was conducted, encompassing studies published between and . Studies were selected based on their use of multilevel regression for cost-effectiveness measurement in CHC systems across South Africa. Findings indicate that while some studies used robust multilevel models to account for hierarchical data structures, there is variability in how these models are specified and interpreted. The review highlights the need for standardised methodological approaches to ensure consistent cost-effectiveness evaluations of CHC systems. Future research should focus on harmonizing multilevel regression methods across studies to enhance comparability and reliability of findings. 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 geography, community health centers, multilevel models, cost-effectiveness analysis, regression, data synthesis, systematic review*

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