African Epidemiology Research (Clinical/Biostats focus)

Multilevel Regression Analysis to Evaluate Clinical Outcomes in South African Urban Primary Care Networks Systems

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Abstract

Urban primary care networks in South Africa are designed to improve healthcare access and outcomes for underserved populations. However, their effectiveness is not well understood, particularly regarding clinical outcomes. Multilevel logistic regression models were employed to analyse data from a cohort study involving 5000 patients across 20 urban primary care networks in South Africa. Patient-level variables included demographics, comorbidities, adherence behaviors; network-level variables included staffing levels and resource availability. Data collection occurred over one year. The multilevel regression analysis revealed that patient adherence to treatment was significantly influenced by both individual socioeconomic status (SES) and the proportion of healthcare professionals with advanced training within their networks (OR = 1.25, $p < 0.05$). Our study provides evidence for the importance of considering both network-level and patient-level factors in assessing urban primary care effectiveness. Further research should examine the impact of these findings on policy-making to improve healthcare delivery systems in South Africa.

Keywords: *Sub-Saharan, African, Networks, SocialDeterminants, QualitativeAnalysis, RandomEffects, HealthInequalities*

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