



# Methodological Evaluation of Maternal Care Facilities in South Africa: A Randomized Field Trial Approach

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## Abstract

Maternal care facilities in South Africa face significant challenges, particularly in rural areas where access to skilled healthcare providers is limited. A cluster-randomized trial was conducted across ten provinces, with facility performance assessed using standardised protocols. Data on patient demographics, treatment adherence, and health outcomes were collected and analysed. Among the participating facilities, those in urban areas reported significantly higher maternal mortality rates (MMRs) compared to rural ones ( $p < 0.05$ ). The study highlights the importance of addressing geographical disparities for improving maternal care quality in South Africa. Investment in infrastructure and training programmes is recommended to enhance service delivery in underserved regions. maternal health, randomized trial, clinical outcomes, rural healthcare Treatment effect was estimated with  $\text{text} \{ \text{logit} \} (\pi) = \beta_0 + \beta^{-1} p X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** Sub-Saharan, randomized controlled trial, community health services, outcome measures, maternal mortality, geographic information systems, cluster sampling

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