



Methodological Evaluation of District Hospital Systems in South Africa: A Meta-Analysis on System Reliability

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Abstract

District hospitals in South Africa play a crucial role in healthcare delivery, yet their reliability is often questioned. A meta-analysis approach was employed to synthesize data from various studies conducted across South Africa. The study utilised robust standard errors for uncertainty estimation in the analysis. The findings suggest that there is a significant variation ($p < 0.05$) in system reliability among different district hospitals, with some hospitals demonstrating higher reliability than others. This meta-analysis highlights the need for further research to identify best practices and improve system performance across South African district hospitals. District health authorities should prioritise standardised quality improvement initiatives based on reliable data. Continuous monitoring of hospital systems is recommended to ensure consistent service delivery. Treatment effect was estimated with $\text{logit}(\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, African, meta-analysis, randomized-controlled-trial, reliability, stakeholder involvement, systemic evaluation*

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