



Methodological Evaluation of Emergency Care Units in South Africa: A Randomized Field Trial for Clinical Outcomes Assessment

Them bani Ngubane¹, Sibusiso Mncube²

¹ Department of Internal Medicine, Durban University of Technology (DUT)

² Durban University of Technology (DUT)

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Correspondence: tngubane@outlook.com

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Author notes

Them bani Ngubane is affiliated with Department of Internal Medicine, Durban University of Technology (DUT) and focuses on Medicine research in Africa.

Sibusiso Mncube is affiliated with Durban University of Technology (DUT) and focuses on Medicine research in Africa.

Abstract

Emergency care units (ECUs) in South Africa are critical for managing acute health emergencies, yet their effectiveness and efficiency remain underutilized. A randomized controlled trial was conducted with 200 patients across five ECU sites. Participants were randomly assigned to either standard or enhanced ECU protocols, followed by post-intervention assessments. Enhanced ECU protocols showed a statistically significant improvement in patient survival rates ($p < 0.05$) compared to the control group, with an odds ratio of 1.6 for survival. The study highlights the importance of standardising and enhancing ECU procedures, which could potentially reduce mortality rates by up to 20%. Implementing standardised protocols in all ECUs is recommended to ensure consistent care delivery and patient outcomes. Emergency Care Units, Clinical Outcomes, Randomized Field Trial, Survival Rates Treatment effect was estimated with $\text{text}\{\text{logit}\}(\pi) = \beta_0 + \beta^T X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Sub-Saharan, ECU, Randomization, Quality Improvement, Outcomes Assessment, Patient Safety, Clinical Trials*

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