



Methodological Evaluation of Emergency Care Systems in Tanzanian Units: A Randomized Field Trial for Clinical Outcomes Measurement

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Abstract

Emergency care systems in Tanzanian units are essential for managing acute health crises efficiently. However, their effectiveness and efficiency require rigorous methodological evaluation to ensure optimal patient outcomes. A mixed-methods approach was employed, combining quantitative data from randomized interventions with qualitative insights from healthcare providers. The study utilised a two-arm randomized controlled trial design where one unit served as the intervention group and another as a control group. In the intervention units, there was a statistically significant improvement in patient triage times, reducing average response time by 15% ($mean = -15\%$, $CI: [-20\%, -10\%]$) compared to baseline. Qualitative feedback highlighted enhanced communication protocols and resource allocation strategies. The methodological evaluation demonstrated the efficacy of randomized field trials in measuring clinical outcomes, particularly in reducing response times within emergency care units. Further research should focus on replicating these findings across different regions and incorporating technological advancements to further improve patient management systems.

Keywords: *Tanzania, Emergency Medicine, Quality Improvement, Randomized Controlled Trial, Outcome Measurement, Clinical Trials, Data Collection Methods*

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