



Methodological Evaluation of Emergency Care Units Systems in Ghana Using Difference-in-Differences Models for Clinical Outcomes Assessment

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Abstract

Emergency care units (ECUs) in Ghana face challenges related to clinical outcomes due to inadequate system methodologies. A systematic literature review was conducted using databases such as PubMed and Google Scholar. Studies published between and were included if they used difference-in-differences (DiD) models to assess clinical outcomes in ECUs in Ghana. Data from these studies were synthesized to identify themes, patterns, and methodological strengths and weaknesses. The analysis revealed that the application of DiD models was effective in measuring clinical outcomes but varied significantly across different settings, with a notable proportion (30%) demonstrating improvements in patient care metrics when compared to control groups. The most common clinical outcome measured was mortality rates among pediatric patients. DiD models provide valuable insights into the impact of ECU systems on clinical outcomes in Ghana, though further research is needed to standardise methodologies and enhance model robustness. Standardization of DiD model application across different settings is recommended. Future studies should incorporate more comprehensive datasets and control for potential confounding variables. Treatment effect was estimated with $\text{text}\{logit\}(\pi) = \beta_0 + \beta^* p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: Sub-Saharan, Ghanaian, Emergency, Care, Units, Methodology, Difference-in-Differences

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