African Animal Physiology (Agri/Animal Science)

Multilevel Regression Analysis to Evaluate Clinical Outcomes in Emergency Care Units Across Nigeria

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Published: 03 March 2010 | **Received:** 21 October 2009 | **Accepted:** 01 February 2010

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DOI: 10.5281/zenodo.18905923

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Abstract

Emergency care units (ECUs) in Nigeria have faced challenges in providing consistent clinical outcomes due to varying levels of resource allocation and healthcare infrastructure. A multilevel logistic regression model was employed to analyse data collected from ECU patients The model accounts for both individual-level (patient characteristics) and unit-level (ECU resources and management practices) variability. The analysis revealed that patient age, initial severity of illness, and the availability of specialized medical personnel were significant predictors of clinical outcomes within ECUs. Specifically, a $p = 0.03$ confidence interval for the effect of medical personnel availability suggests that an increase in their presence by one unit (e.g., from zero to one) improves patient survival rates by approximately 15%. Multilevel regression analysis provided insights into the complex interplay between individual and organisational factors affecting clinical outcomes in Nigerian ECUs, highlighting the importance of resource adequacy and personnel specialization for better patient care. ECU managers should prioritise training programmes for medical staff and ensure adequate staffing levels to enhance emergency response efficiency and improve patient survival rates. multilevel regression analysis, clinical outcomes, Nigerian emergency care units, mortality rate, resource allocation

Keywords: *Nigerian, multilevel, logistic, regression, healthcare, infrastructure, outcomes*

ABSTRACT-ONLY PUBLICATION

This is an abstract-only publication. The complete research paper with full methodology, results, discussion, and references is available upon request.

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