



Methodological Evaluation of Maternal Care Facilities Systems in Ghana: Multilevel Regression Analysis for Measuring Clinical Outcomes

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Abstract

Maternal care facilities in Ghana are critical for newborn health outcomes but face challenges such as inconsistent quality. Multilevel regression analysis was employed to assess the impact of various maternal care system components on neonatal health. Analysis revealed significant correlations between improved prenatal care access and reduced neonatal mortality rates (OR = 0.75, CI: 0.62-0.91). The multilevel regression model effectively captured the hierarchical structure of data from facilities to individuals. Enhanced prenatal care programmes should be prioritised to improve neonatal health outcomes in Ghana. Maternal Care, Neonatal Mortality, Multilevel Regression, Ghana

Keywords: *Sub-Saharan, African, Multilevel, Regression, Outcome, Epidemiology, Ghanaian*

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