African Biomechanics in Sport (Social/Health/Applied)

Bayesian Hierarchical Model for Measuring Clinical Outcomes in Ethiopian District Hospitals Systems,Context

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Abstract

Clinical outcomes in Ethiopia's district hospitals are critical for monitoring health service delivery and patient care quality. A Bayesian hierarchical model was applied to analyse clinical outcome data from - in Ethiopian district hospitals. Data included patient demographics and outcomes such as mortality rates. The model revealed significant heterogeneity in patient survival rates among the districts, with a median survival rate of 65% across all hospitals, indicating substantial variability in healthcare quality. This study provides a methodological framework for assessing clinical performance in Ethiopian district hospitals using Bayesian hierarchical models. The findings suggest improvements are needed to enhance patient outcomes and resource allocation strategies within the Ethiopian health system. Treatment effect was estimated with $text\{logit\}(\pi)=beta0+\beta^{\rightarrow} p X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African geography, Bayesian methods, Hierarchical modelling, Quantile regression, District health systems, Outcome measurement, Epidemiological indicators*

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