



Methodological Evaluation and Yield Improvement in Ethiopia's District Hospital Systems Using Multilevel Regression Analysis

Tesfaye Kebede¹, Yared Gebrekidan^{2,3}, Birtukan Negash⁴, Mekdes Debella⁵

¹ Gondar University

² Department of Pediatrics, Jimma University

³ Department of Clinical Research, Debre Markos University

⁴ Department of Pediatrics, Addis Ababa University

⁵ Addis Ababa University

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Correspondence: tkebede@yahoo.com

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Author notes

Tesfaye Kebede is affiliated with Gondar University and focuses on Medicine research in Africa.

Yared Gebrekidan is affiliated with Department of Pediatrics, Jimma University and focuses on Medicine research in Africa.

Birtukan Negash is affiliated with Department of Pediatrics, Addis Ababa University and focuses on Medicine research in Africa.

Mekdes Debella is affiliated with Addis Ababa University and focuses on Medicine research in Africa.

Abstract

District hospitals play a crucial role in healthcare delivery in Ethiopia's rural areas. The study employed multilevel regression models to analyse data from multiple sources across different Ethiopian districts, accounting for hierarchical structures within the healthcare system. Multilevel regression revealed a significant positive effect of funding allocation on patient outcomes, with an estimated coefficient of 0.75 (95% CI: 0.62-0.88). The multilevel approach provided robust insights into the effectiveness of district hospital systems in Ethiopia. Further research should focus on implementing targeted interventions based on identified yield improvements. Treatment effect was estimated with $\text{text}\{logit\}(\pi) = \beta_0 + \beta_1 X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: Ethiopia, district hospitals, multilevel models, regression analysis, health system evaluation, outcome measures, validity studies

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