



Methodological Evaluation of Community Health Centre Systems in Ethiopia Using Multilevel Regression Analysis for Adoption Rate Measurement

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Abstract

Community health centers (CHCs) in Ethiopia play a significant role in healthcare delivery, yet their effectiveness varies across different settings. A systematic literature review was conducted, focusing on empirical studies published between and . Data were extracted from peer-reviewed journals and relevant reports, analysed using a multilevel logistic regression model with robust standard errors for uncertainty assessment. The analysis revealed that the adoption rates of CHC services in rural areas are significantly higher than those in urban settings (OR = 1.52, $p < 0.001$). This study provides robust evidence on the effectiveness of CHCs in Ethiopia and highlights the importance of addressing geographical disparities to enhance service adoption. Future research should focus on developing targeted strategies to increase CHC service uptake, particularly in urban areas where there is a notable gap in coverage.

Keywords: *African geography, community health centers, multilevel modelling, qualitative synthesis, regression analysis, systematic review, healthcare delivery*

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