



Community-led Water Supply Improvements and Their Impact on Diarrhea Incidence Rates in Rural Malawi: A Year-long Intervention Study

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Abstract

Rural Malawi faces significant challenges in accessing safe drinking water, leading to high rates of diarrheal diseases. A mixed-methods approach was employed, including baseline and post-intervention surveys, focus group discussions, and water quality testing to assess compliance with safe drinking water standards. Significant reductions were observed in the incidence of diarrhea among participants who received improved water supply ($p < 0.05$), with a decrease of approximately 20% compared to baseline levels. Community-led initiatives significantly impacted the prevalence of diarrheal diseases, underscoring their importance for public health interventions in rural Malawi. Continuation and scaling-up of community-led water supply programmes are recommended to further reduce diarrhea incidence rates. Treatment effect was estimated with $\text{text}\{ \text{logit} \}(\pi) = \beta_0 + \beta^T X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *African, Community-led Initiatives, Diarrhea, Epidemiology, Health Promotion, Intervention Studies, Water Supply Systems*

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