



Community-Led Total Sanitation and Paediatric Diarrhoeal Morbidity

A Comparative Analysis of Rural Programmes in Amhara, Ethiopia

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ABSTRACT

Community-led total sanitation (CLTS) is a widely implemented strategy for eliminating open defecation in rural Africa, yet robust comparative evidence of its direct impact on child health outcomes in the Ethiopian context remains limited. This study comparatively evaluates the association between CLTS programme implementation and the incidence of diarrhoeal disease among children under five years of age in rural villages of the Amhara Region. A quasi-experimental comparative design was employed, matching villages with established CLTS programmes to similar control villages without such interventions. Data were collected via household surveys, clinical records review, and structured observational checks. Multivariate regression analysis controlled for confounding variables including water source, maternal education, and household wealth. Villages with CLTS programmes demonstrated a 32% lower reported incidence of paediatric diarrhoea compared to control villages. The strength of this association was significantly moderated by the completeness of community-wide latrine coverage and the sustained presence of hygiene promotion committees. CLTS is associated with a substantial reduction in childhood diarrhoeal morbidity in this setting, but its effectiveness is contingent upon achieving high levels of community coverage and maintaining post-triggering support structures. Programme implementers should integrate robust, long-term monitoring and post-triggering engagement mechanisms to sustain latrine use and hygiene behaviour. Policy should shift from measuring initial latrine construction to metrics of consistent use and community-wide coverage. Community-led total sanitation, diarrhoeal disease, child health, rural Ethiopia, WASH, programme evaluation This study provides novel comparative evidence on the specific programme mechanisms—coverage and sustained engagement—that moderate the health impact of CLTS in a high-burden setting, moving beyond simple binary assessments of intervention presence.

Keywords: *Community-led total sanitation, paediatric diarrhoeal morbidity, comparative analysis, rural Ethiopia, Amhara Region, public health interventions, sub-Saharan Africa*

Article Highlights

Policy Implication

<ul style="list-style-type: none">• Comparative analysis reveals a 32% reduction in paediatric diarrhoea incidence in CLTS villages.• Health impact is significantly moderated by completeness of community-wide latrine coverage.• Effectiveness depends on sustained presence of hygiene promotion committees post-triggering.• Findings advocate for metrics shift from latrine construction to consistent use and coverage.	<p>Programme success requires integrating long-term monitoring and post-triggering engagement to sustain hygiene behaviour, moving beyond initial infrastructure metrics.</p> <p><i>This analysis provides comparative evidence on the mechanisms moderating CLTS health impacts in rural Ethiopia.</i></p>
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