



Better Sanitation without Subsidies: New Research Shows Childhood Stunting Diminishes With Community-Led Promotion of Latrines

Background

Lacking adequate sanitation facilities, over one billion people defecate in the open. The resulting exposure to fecal contamination in the environment leads to health consequences such as diarrhea and intestinal parasite infections. For children, the health risks are especially severe, with early exposure to intestinal illnesses linked to malnutrition and long-term stunted growth.

The international development community has sought to expand access to adequate and equitable sanitation worldwide, but much work is still needed. Many countries failed to meet the sanitation service targets set by the United Nations Millennium Development

About the Researcher

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Goals, which expire at the end of 2015. Among the U.N.'s newly proposed Sustainable Development Goals (SDGs): "Ensure availability and the sustainable management of water and sanitation for all," which includes a target to end open defecation by 2030. The provision recognizes the importance of addressing the special needs of women and girls to successfully accomplish this goal.

Community-led total sanitation (CLTS) has had some success in reducing open defecation. The program uses participatory methods to incentivize the building of latrines or toilets in rural areas. CLTS focuses on mobilizing communities for change, and therefore does not provide hardware or financial subsidies to assist households in constructing latrines. The approach aims to change behavior through strong emotional drivers – shame, disgust, pride and dignity – that trigger collective action. Communities that achieve universal latrine coverage are rewarded with open defecation-free certification, typically presented by government officials at a ceremony.



CLTS was first implemented in Bangladesh in 1999. Since then it has been applied in 50 countries with at least 15 incorporating CLTS into national policy. While there is momentum in CLTS implementation, there have been few independent evaluations and no published randomized controlled trials. Due to the level of CLTS scale-up and the need to contribute to international development community sanitation targets, rigorous evaluations are essential for understanding program success.

This research brief is based on an analysis of a rural sanitation intervention trial in sub-Saharan Africa, and provides insights for decision-makers seeking to address sanitation development goals. The study indicates that CLTS projects are contributing to the reduction of open defecation — the goal of the U.N.'s Call to Action on Sanitation campaign to end open defecation by 2025 and the SDGs target to end open defecation by 2030. The intervention was implemented by UNICEF and the Directorate of Sanitation of Koulikoro in Mali. The evaluation was funded by the Bill & Melinda Gates Foundation.

Increased Access and Use of Sanitation Facilities

The study reveals that CLTS, without financial subsidies, can substantially increase access to sanitation facilities in a rural setting in sub-Saharan Africa.

- In CLTS villages, access to a private latrine almost doubled to 65% household ownership.
- CLTS increased access to private latrines among poor households in particular. Poor households in CLTS villages were three times more likely than poor households in non-CLTS villages to have a private latrine.
- Latrines in CLTS villages were better stocked with soap and water for handwashing, more likely to have the pit latrine hole covered, and less likely to have flies nearby.

The study also reports a reduction in open defecation rates in CLTS villages. Open defecation-free certification was achieved in 58 out of the 60 CLTS assigned villages in the study, according to the National Sanitation Directorate in the Malian Ministry of the Environment.





A toilet in Mali, including a covered latrine hole and a container with water.



Children participating in a triggering session.

- Self-reported open defecation rates fell to less than 10% among adult men and women, and safe management of child feces improved.
- Among households with access to a latrine in the study, 98% of adults reported the latrine as the prime defecation location.
- Mothers reported that children younger than five years were significantly more likely to use a child potty in CLTS villages (51%) than in control villages (15%).

CLTS households ranked their primary defecation location as more ideal in terms of cleanliness, functionality, privacy and comfort. Women in CLTS villages were more likely to feel safe defecating at night, and said they had more privacy.

Health and Growth Outcomes for Children

Although the study found no evidence that the CLTS intervention reduced child diarrheal illness, improvements in child growth were observed.

- Children younger than five in CLTS villages were found to be taller and 14% less likely to be stunted than children in control villages.
- The prevalence of severely underweight children was 35% lower in CLTS villages.
- Children younger than two at enrollment showed greater improvements in height and weight than older children in CLTS villages. They were 17% less likely to be stunted, and 16% less likely to be underweight than control children. These findings suggest the window of opportunity for preventing long-term growth faltering is when children are under two years of age.



CLTS may have prevented stunting through pathways other than reducing diarrhea. Potential explanations include that less open defecation reduces child exposure to feces, which lowers the prevalence of intestinal worm infections and/or reduces the chance of a child developing environmental enteric dysfunction (when a child's gut is not able to absorb nutrients well). Both issues are associated with stunted growth among children.

Considerations for Policymakers

1. CLTS (without financial subsidies) can be an effective option for increasing rural sanitation services, although further research is needed to evaluate the program's impact in additional settings other than rural Mali.
2. Through financing, training, and adequate monitoring, governments and donor agencies play an important role in implementing CLTS correctly and effectively.
3. Further research is needed to understand the biological pathways through which improved sanitation can improve child growth in sub-Saharan Africa and other regions of the world.

Conclusions

Behavioral intervention, without financial subsidies, can substantially increase access to sanitation facilities under the right circumstances. Improved sanitation may be a pathway to improved child growth, although further research is needed. There is potential for progress towards the SDG goal of eliminating open defecation through the expansion of CLTS.

This brief is based on findings from the paper, "Effect of a community-led sanitation intervention on child diarrhea and child growth in rural Mali: a cluster randomised controlled trial" published in the *Lancet Global Health* on October 14, 2015.

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