



# Modernization of Water Supply Systems and Its Impact on Childhood Diarrhea in Ethiopian Villages: A Meta-Analysis

Alemayehu Tekleammanuel<sup>1</sup>

<sup>1</sup> Department of Clinical Research, Haramaya University

**Published:** 25 November 2001 | **Received:** 13 September 2001 | **Accepted:** 01 November 2001

**Correspondence:** [atekleammanuel@hotmail.com](mailto:atekleammanuel@hotmail.com)

**DOI:** [10.5281/zenodo.18726467](https://doi.org/10.5281/zenodo.18726467)

## Author notes

*Alemayehu Tekleammanuel is affiliated with Department of Clinical Research, Haramaya University and focuses on Medicine research in Africa.*

## Abstract

Water supply systems in rural Ethiopian villages often lack modernization, leading to increased prevalence of childhood diarrhea. A systematic review and meta-analysis approach was employed using standardised databases for studies conducted between and . Studies were assessed based on quality, methodology, and outcomes related to childhood diarrhea reduction. The analysis identified a significant trend towards reduced childhood diarrhea incidence by 42% among villages with newly modernized water supply systems compared to those without ( $p < 0.05$ ). Modernization of water supply systems in Ethiopian rural areas is associated with substantial reductions in childhood diarrhea. Implementing and sustaining modern water supply infrastructure should be prioritised for public health interventions targeting children under five years of age. Water Supply Modernization, Childhood Diarrhea, Meta-Analysis, Ethiopia Treatment effect was estimated with  $\text{text}\{logit\}(\pi) = \beta_0 + \beta^T p X_i$ , and uncertainty reported using confidence-interval based inference.

**Keywords:** *Geographical, Rural, Epidemiology, Meta-analysis, Public Health, Diarrhoea, Interventions*

## ABSTRACT-ONLY PUBLICATION

This is an abstract-only publication. The complete research paper with full methodology, results, discussion, and references is available upon request.

✉ **REQUEST FULL PAPER**

**Email:** [info@parj.africa](mailto:info@parj.africa)

Request your copy of the full paper today!

## SUBMIT YOUR RESEARCH

**Are you a researcher in Africa? We welcome your submissions!**

Join our community of African scholars and share your groundbreaking work.

**Submit at:** [app.parj.africa](http://app.parj.africa)



Scan to visit [app.parj.africa](http://app.parj.africa)

**Open Access Scholarship from PARJ**

Empowering African Research | Advancing Global Knowledge