

ORIGINAL RESEARCH

Water, sanitation and hygiene, enteric infections and nutritional status of children in Siaya County, Kenya

Silvester Jaika¹, Prof. Gordon Nguka², Prof. Silvenus Konyole²

¹Department of Health Sciences, Rift Valley Technical Training Institute (RVTTI), 30100-243, Eldoret City, Kenya, ORCID -0000-0003-0453-0511

²Department of Nutritional Sciences, Masinde Muliro University of Science and Technology, P.O. Box 190-50100, Kakamega, Kenya, ORCIDs-[0000-0002-6749-4602](https://orcid.org/0000-0002-6749-4602), 0000-0001-8904-4373

Corresponding Author Email: silvesterndori39@gmail.com

Abstract

Poor water, sanitation, and hygiene (WASH) practices are strongly linked to undernutrition in under-fives because they increase the risk of intestinal infections, which impair nutrient absorption. Undernutrition is a public health concern and is prevalent in developing countries like Kenya. The study aimed to assess the linkage between WASH, enteric infections, and the nutritional status of children in Siaya County, Kenya. Using a cross-sectional analytical design, data were collected through structured questionnaires on WASH practices, child morbidity, and demographic and sociocultural characteristics. The study assessed the weight and height of 100 children aged 12–15 months with caregiver consent. The findings indicated that slightly below half of the households (41.0%) obtained their water from public taps/standpipes, 22.0% from surface water, about 10.0% got water from boreholes, while only 3.0% had piped water to their compound. About the sanitation facilities, the Majority (90.0%) used pit latrines without flush, nearly 6.0% used flush toilets linked to a sewer line, while both septic tank and pit latrine connected toilets were reported by 2.0% of the households. Most homes had two rooms with four occupants on average. In the past four weeks, 36.0% of children had diarrhea, 13.0% with mucus/blood, and 14.0% with worms in stool. More than half of mothers had treated worms in six months, and 56.0% reported regular deworming. Stunting was 10.0%, wasting was 45.0%, and underweight was 14.0%. Chi-square test demonstrated that stunting was significantly linked to the source of water ($p=0.033$), the type of toilet (improved or unimproved) ($p=0.007$), and the number of rooms in the house ($p=0.027$). Wasting was related to the source of water ($p=0.044$), while underweight showed a significant association with the main source of water for drinking water and type of toilet used by the household at $p=0.004$ and $p=0.001$, respectively. Diarrhea did not show any significant association with WASH practices among the children ($P<0.05$). The study emphasizes the need to revisit and improve WASH practices to reduce undernutrition and diarrhea in Kenya.

Key words: Water, Sanitation and hygiene, enteric infections, Diarrhea, Nutritional status