



# A Methodological Framework for Assessing Water Insecurity and Urogenital Infections in Pregnant Women: A Case Study of Informal Settlements in Nairobi, 2002

A Methodological  
Framework for Assessing  
Water

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## Abstract

Urogenital infections during pregnancy are a significant public health concern in resource-limited settings. Water insecurity in informal settlements is a hypothesised, yet under-measured, determinant of these infections. A robust methodological approach is required to assess this complex relationship accurately. This methodology article presents a framework designed to measure the association between water insecurity and urogenital infections among pregnant women in informal settlements. Its primary objective is to detail the development and application of a mixed-methods protocol for this specific context. The framework employs a concurrent mixed-methods design. Quantitatively, a longitudinal cohort study measures water insecurity using a validated scale and clinically diagnoses urogenital infections. Qualitatively, in-depth interviews and focus group discussions explore lived experiences and coping mechanisms. The protocol details participant recruitment, ethical considerations, integrated data collection tools, and a plan for data triangulation. As a methodology article, it presents no empirical case study results. However, the framework was successfully piloted. Initial pilot data indicated a positive association between higher water insecurity scores and reported symptoms of urogenital infections. The proposed framework provides a comprehensive and contextually appropriate tool for investigating links between water access and reproductive health. It addresses key challenges in measuring complex socio-environmental exposures in informal urban settings. Researchers investigating environmental health determinants in similar contexts are encouraged to adapt this framework. Future applications should include longitudinal follow-up and consider integrating biological markers of stress to elucidate pathways further. Water insecurity, urogenital infections, pregnancy, methodology, mixed-methods, informal settlements, public health This work provides a novel methodological framework for the integrated assessment of water insecurity and clinical health outcomes, addressing a gap in available research tools.

**Keywords:** *Water insecurity, Urogenital infections, Pregnant women, Informal settlements, Sub-Saharan Africa, Cross-sectional study, Public health methodology*

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