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Investigating the Association Between Water Insecurity and Urogenital Infections Among Women in Windhoek's Informal Settlements: A Research Protocol

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| Abstract

Urogenital infections (UGIs) are a significant public health burden for women in sub-Saharan Africa, linked to adverse reproductive health outcomes. In informal settlements, inadequate water access may compromise hygiene practices, potentially increasing UGI risk. The specific association between water insecurity and UGIs among women in these contexts is not well characterised. This study aims to investigate the association between water insecurity and self-reported symptoms of UGIs among women of reproductive age (18-49 years) living in Windhoek's informal settlements. Primary objectives are to: 1) assess the prevalence of water insecurity; 2) determine the prevalence of self-reported UGI symptoms; and 3) analyse the relationship between water insecurity scores and UGI symptoms. A community-based, cross-sectional survey will be conducted. A sample of 420 women will be recruited via multi-stage random sampling from selected informal settlements. Data will be collected through interviewer-administered questionnaires capturing socio-demographics, the validated Household Water Insecurity Experiences Scale, and self-reported UGI symptoms (e.g., vaginal discharge, dysuria) over a preceding four-week period. Logistic regression will analyse associations, controlling for key confounders. As this is a protocol for future research, no empirical findings are available. The study is designed to quantify the association, with an anticipated direction that

higher water insecurity scores will correlate with increased odds of reporting UGI symptoms. This protocol outlines a method to generate evidence on the potential link between water insecurity and UGIs. The research will address a knowledge gap regarding an environmental determinant of women's health in urban informal settings. Findings will be disseminated to local health authorities and community stakeholders. Results could inform integrated public health interventions that combine water, sanitation, and hygiene (WASH) initiatives with sexual and reproductive health services. water insecurity, urogenital infections, women's health, informal settlements, Namibia, WASH This study will provide empirical evidence on the relationship between water access and gynaecological health, a neglected area of research in urban informal settlements in southern Africa.
