

Title: Associations between PrEP use, HIV risk behaviors, and perceived HIV risk among fisherfolk in Siaya County, Kenya: A cross-sectional multilevel analysis

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Background: Fishermen are a high priority population in Kenya to reach with oral PrEP, as risk of HIV acquisition is high, and mobility disrupts uptake of health services. To optimize HIV prevention efforts and reduce HIV transmission in fishing communities, we must understand the relationship between fishermen's risk perceptions, HIV risk behaviors, and PrEP use.

Methods: Baseline survey data were collected in 2022 from 712 adult in 3 fishing communities in Siaya County, Kenya, in the ongoing 'Owete' trial. Mixed effects logistic regression models were used to examine associations of self-reported PrEP use in the past 6 months with 1) HIV risk perception (none/low vs moderate/high), and 2) selected higher-risk behaviors (partnership concurrency, higher-risk partnerships (e.g., commercial sex workers), condom use, hazardous drinking), controlling for age, education, marital status, occupation, and wealth, with random intercepts for community and social-network clusters. We similarly fit models to determine associations between perceived HIV risk and HIV risk behaviors.

Results: Median age was 37 years [IQR:31-44], 86% were married, 12% reported higher-risk partnerships, and 3.9% reported using PrEP. In bivariate analyses, partnership concurrency (OR:2.61; 95%CI:1.56,4.37), higher-risk partnerships (OR:1.65; 95%CI:1.14,2.39), and condom use (OR:3.76; 95%CI:1.07,13.21) were associated with higher odds of PrEP use. In adjusted models, relationship(s) with higher-risk partners remained associated with PrEP use (adjusted OR (aOR):1.98; 95%CI:1.45,2.70). Perceived HIV risk, hazardous alcohol use, condom use, and partner concurrency were not associated with PrEP use. Partner concurrency (aOR:4.18; 95%CI:2.44,7.18) was strongly associated with moderate/high perceived HIV risk. There was no association between other HIV risk behaviors and perceived risk.

Conclusions: PrEP use was low despite availability in government clinics at baseline of an intervention study. PrEP use was associated with higher-risk sexual partnerships, but not reported HIV risk perception. Targeted promotion of PrEP is needed to increase uptake and reduce HIV acquisition among fishermen.