

A social network-based intervention to promote HIV prevention and treatment among fishermen in Kenya

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Abstract

Background: Men in sub-Saharan Africa are less likely than women to know their HIV status and utilize HIV prevention and treatment services. We previously showed a social-network based intervention increased HIV testing uptake by 50% among men in Kenya. Here, we evaluate the impact of the intervention on HIV prevention and treatment outcomes using objective metrics.

Methods: Data are from the *Owele* study (NCT04772469), an RCT of an HIV status-neutral, social-network-based intervention to promote HIV self-testing and linkage to prevention and treatment among men in Lake Victoria fishing communities. After a census of fishermen, distinct social networks with a network-central “promoter” were mapped and randomized to study arms. Promoters were asked to (1) distribute self-tests to men in their network and encourage linkage and retention in prevention and care (intervention clusters) or (2) distribute vouchers for free self-tests redeemable at study-affiliated health facilities (control clusters). We evaluated PrEP adherence measured via urine assay for tenofovir among men initiating PrEP, and HIV RNA viral load assessed via the Xpert assay (40 copies/ml threshold) among people with HIV (PWH), at 3 months. We coded missing viral load as failure (detectable). We conducted logistic regression controlling for site (beach) and with a random intercept for cluster to evaluate the intervention’s impact on PrEP adherence and viral suppression.

Results: Of 934 men in the intent-to-treat sample, 733 were interviewed at baseline (374 intervention) and 339 linked to study-affiliated clinics: 71 initiated PrEP, and 169 were PWH. Urine tenofovir was detected among 12 of 71 participants on PrEP (14% of control vs. 12% intervention), and 107 of 169 participants on ART had undetectable viral loads (58% of control vs. 69% intervention). We did not detect a statistically significant difference between study arms in PrEP adherence (odds ratio [OR]: 0.85; 95% CI: 0.17, 4.23, $p = 0.84$) or viral suppression (OR= 0.59; 95% CI: 0.29, 1.22; $p = 0.16$).

Conclusion: A social network-based, status-neutral intervention in Kenya that successfully promoted testing among men did not impact PrEP adherence or viral suppression, although we demonstrate preliminary indications of intervention effect at a relaxed alpha of 0.2. Given the small number of men on PrEP and ART, an adequately powered study is required to evaluate whether social-network-based interventions can improve these outcomes among fishermen and other hard-to-reach populations.