Title: Mobility is associated with lower HIV testing among fishermen on Lake Victoria in Kenya

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Background: Fishermen in Kenya are a mobile, high-risk group for HIV acquisition and transmission. Despite increased access to HIV testing services, uptake of HIV testing remains low in this priority population. We examined the association between mobility and the odds of HIV testing behavior among fishermen who participated in a study in western Kenya.

Methods: Survey data at three month follow-up were collected from 666 fishermen enrolled in the *Owete* study (NCT04772469), a cluster randomized controlled trial using a social network approach to increase HIV prevention and treatment in three beach communities in western Kenya. Survey data on age, education, marital status, beach community residence, HIV testing within the past 12 months, and number of residential moves in the past two years were collected. Mobility was defined as a continuous variable that captured total number of changes of main residence within the past two years. We estimated a generalized mixed model with robust standard errors to estimate the odds of testing for HIV in the previous twelve months.

Results: Participants' median age was 33 years [IQR:28,39] and 88% were married or cohabiting. Just over a fifth (21.5%) had changed their main residence at least once in the past two years. Most fishermen (82%) reported HIV testing within the last 12 months. Increasing number of residence changes was associated with lower odds of HIV testing by any modality in the last 12 months (OR = 0.81, 95%CI: 0.68;0.97, p=0.023) after controlling for beach community and study arm.

Conclusion: HIV testing within the past year was high, representing recent successes with beach-based testing programs. However, our data suggest that with increasing residential mobility, HIV testing is lower. Interventions that can offer HIV testing in ways that are accessible to mobile fishermen are needed.