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Training Social Network-Central Fishermen in Western Kenya to Distribute HIV Self-Test Kits and Health Facility Referral Vouchers

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Abstract

Low HIV testing among men, particularly highly mobile fishermen, is a persistent challenge. The *Owete* Study (NCT#04772469) used social network-central men (Promoters) to promote testing and linkage to HIV services among social networks of fishermen in western Kenya. The Promoters and fishermen networks were randomized to intervention or control arms. We describe *Owete's* interactive training approach and Promoters' training experiences for implementation insights. The 146 Promoters trained (balanced across arms) were highly engaged, eager learners, and supportive of targeted health trainings for men. Promoters felt the knowledge gained improved their understanding of health matters and elevated their social status. Promoters felt empowered knowing how to interpret self-testing results and how to address PrEP use questions and correct misconceptions. Offering capacity-building for social network-central men to spearhead campaigns on health issues affecting fishermen can leverage established relationships and trust, expand knowledge, and help increase health-seeking practices among underserved highly mobile men.

Keywords

Africa; HIV prevention; men; peer approaches

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Introduction

In Kenya, people living in the fishing communities around Lake Victoria carry a heavy HIV burden. While there has been great progress on the HIV response in Kenya nationally (Borgdorff et al., 2018), the top five highest HIV prevalence counties are in the lake region (National AIDS & STI Control Programme, 2022b). The well-studied transactional sex economy along the lake region is deeply embedded in the fishing environment, whereby fishermen control fish supply and women traders (who sell fish in local markets) commonly engage in sexual relationships with fishermen to maintain access to fish, as well as the mobility of fishermen, keeps HIV transmission risk high (Camlin et al., 2013; Fiorella et al., 2015; Kwena et al., 2012; Kwena et al., 2019; National AIDS & STI Control Programme, 2022b).

A key challenge to HIV elimination efforts is low uptake of HIV testing, prevention, and treatment services among men. Historically men are less likely to access HIV services. In Kenya, 35.9% of men tested for HIV in the past 12 month compared to 51% of women (Beia et al., 2021; Mitchell et al., 2010; National AIDS & STI Control Programme, 2022b). Highly mobile and migrant populations of men such as truck drivers, traders, and fishermen face structural challenges to accessing distant clinics that are open when they are working and grapple with cultural factors including HIV-related stigma and gender norms that deter them from accessing HIV services (Camlin et al., 2016; Seeley & Allison, 2005; Sileo et al., 2019). Kenyan fishermen who move from beach to beach in search of good fish catch have particularly low HIV service uptake, and are thus referred to as a ‘hard to reach’ population and are a priority population in Kenya for HIV epidemic control (Carroll et al., 2014; Kwena et al., 2019; National AIDS & STI Control Programme, 2014; Seeley et al., 2012).

A strategy that holds promise for ‘hard to reach’ and priority populations is HIV self-testing (HIVST). HIVST, which facilitates testing oneself for HIV in a private location has emerged as a widely acceptable tool that addresses confidentiality and stigma concerns. HIVST can also reach vulnerable populations, such as fishermen, with much needed HIV testing services (Choko et al., 2011; Harichund & Moshabela, 2018; Wilson et al., 2022). HIVST is supported by the World Health Organization (WHO) as an effective and safe method to increase HIV status awareness and linkage to care (World Health Organization, 2016). Another promising approach to combat testing gaps, is the strength of peer support. Peer-based social-network approaches have been shown to generate positive social influence and to accelerate behaviour change (Christakis & Fowler, 2009; TW., 2010; Wasserman S, 1994). Building on social networks of men by providing HIVST kits to men to encourage distribution (secondary distribution) within their social peers may increase testing among men (Masters et al., 2016). An important component to integrate into the social network distribution of HIVST is using a HIV status neutral approach to centre on peers regardless of their status, from both a prevention and treatment perspective, to improve uptake and erase stigma (U.S Centers for Disease Control and Prevention, 2024).

In response to the low HIV testing among men in the region, the *Owete* (“Brothers” in Dholuo) Study (NCT#04772469) sought to test the effectiveness of an HIV status-neutral, social network-based approach to promote HIV testing, linkage to care and prevention,

adherence, and better health outcomes among fishermen in Kenya (Sheira et al., 2022). Using Beach Management Unit registries of fishermen operating in three Lake Victoria fishing communities in Siaya County, a census and social network mapping were completed to identify close social networks of men. We identified social network-central men (Promoters) and randomized their close social networks in clusters to intervention or control conditions. We describe the training approach and Promoters' training experiences to offer insights for implementation.

Methods

Setting

The study took place in Siaya County, Kenya, which has a population of about 1 million people, including 38,000 fisherfolk living in 79 beach communities (Figure 1) (Kenya National Bureau of Statistics 2019). Along these beaches, fishermen catch anchovies or Nile perch, women fish traders work in fish-drying yards, and vendors collect fish for sale. The county's poverty index stands at 38.2%, similar to poverty levels in other counties in the lake region which oscillate between 38-50% (Kenya National Bureau of Statistics 2014). Approximately 40% of residents are unemployed (County Government of Siaya 2018). Just under half the county's population are 14 years or younger; about two-thirds have primary education (Kenya National Bureau of Statistics & Society for International Development 2014).

The three study sites were beach communities selected based on fishermen volume and substantial distance from one another.

Training logistics

The study selected 158 men identified as the most influential person in clusters of fishermen (3-10 fishermen) to serve as Promoters using social network analysis measures of centrality across several domains (e.g., food borrowing, co-working in fishing industry, leisure/relaxation, money issues, health issues, and emotional support). Of these, 146 (92.4%) Promoters— 71 control and 75 intervention—participated in training. Eight trainings and five refresher sessions derived from the Kenyan Ministry of Health and WHO guidelines were conducted from February-October 2022, led by two Promoter trainers experienced in training facilitation, working in HIV contexts in communities, and with local cultural expertise (National AIDS & STI Control Programme, 2022a; World Health Organization, 2021). The trainers signed confidentiality clauses and completed ethical training. Each training and refresher session was documented by Research Assistants, from which this data was derived including paraphrased quotes.

Training content

The purpose of the trainings were to provide Promoters with the knowledge and skills to encourage peers in their social network to test for HIV and link to health facilities for prevention (pre-exposure prophylaxis (PrEP) for HIV-negative men) and treatment (antiretroviral therapy (ART) for HIV-positive men) services. Trainers employed highly interactive methodologies to enhance comprehension among this fishermen population with

diverse educational backgrounds (Figure 2). Training lasted two days: Promoters in both arms participated in the first day and only intervention Promoters participated in the second day. The first day was a didactic training focused on general information including a study overview, Promoter roles, HIV literacy including transmission facts and misconceptions, HIV testing including self-testing options, prevention methods such as PrEP, and treatment with ART. The second day for intervention Promoters included demonstrations of HIVST kit use. The demonstrations included role plays to practice communication with peers about testing and linkage to facilities. After training, control Promoters received non-monetary referral vouchers to distribute to their peers for routine counsellor-administered HIV testing at a health facility. The intervention Promoters received the HIVST kits for distribution to their peers, along with incentive vouchers for Ksh. 500 (about USD \$3.50) for health facility linkage following HIVST use. Both arms received a one-day Promoter refresher training one month after training.

Ethics

The University of California San Francisco Institutional Review Board (#19-20285) and the Kenya Medical Research Institute's Scientific and Ethics Review Unit (#677) approved this study. All study participants provided written informed consent.

Results and Discussion

Promoter experience

Overall, Promoters were highly engaged in the trainings, demonstrated eagerness to gain new knowledge, and were very supportive of efforts to target health talks and trainings to men whom they felt had been left out in the fight against HIV/AIDS. As one trainee stated, "We are happy that the organization has finally thought about the boy-child after taking so many issues focusing on girls. This is great. It shows that you also care about men." During refresher sessions, Promoters reported a positive reception from their network members who valued the opportunity to test themselves discreetly using HIVST.

Increased knowledge and social status encourage engagement

Promoters described how elevated knowledge and community status were motivating factors that kept them engaged in *Owete*. Promoters were pleased and felt privileged to learn that they were seen as leaders by their peers. One Promoter from Beach 1 remarked, "We are so happy to learn that our people hold us in high esteem. So this means that we are so special to them". Another Promoter from Beach 1 said "...They [network members] share with me lots of their health issues. I know I am not a doctor, but I feel so good and I really want to lead by example as a role model to them". During the trainings, trainer demonstrations on how to use HIVST kits and how to interpret results elicited enthusiasm from participants. Promoters felt that armed with knowledge about how to use and interpret HIVST results, they now had a way of dealing with health care providers who they say sometimes breach their confidentiality when they seek health services. This low trust of health care providers was witnessed when some Promoters and their network members opted to travel long distances to health facilities for confirmatory HIV tests.

Benefits and challenges of the social-network approach for HIVST distribution by men

Promoters valued the male-to-male HIVST distribution approach in *Owete*. They observed that it was easier to open-up to men they are close to, rather than being targeted by female health care workers or female community health volunteers, who they feel can compromise their masculinity. As one participant from Beach 3 observed, “It is easier to share your problems with a fellow man who is close to you than to go to a hospital full of all people in the village and be subjected to many inquiries by a female health provider. Certain things are better handled by fellow men.” When asked about HIVST kits distribution challenges, they indicated few since the network members were people they know. Showing the trust that his network members had in him, one Promoter remarked, “As for me, I managed to distribute all my kits and vouchers on day one ... Then we agreed and went to the facility for confirmatory tests at once.”

Some HIVST kit distribution challenges occurred. Although Promoters were trained to maintain confidentiality and remain professional, some network members reportedly refused to take HIVST kits assigned to them because of confidentiality concerns around Promoters discussing health matters with their network members. Other challenges with kit distribution centred on network member name confusion, when official names did not match the nicknames they are typically known by or due to inactive phone numbers. Promoters utilized comprehensive locator information collected by the study at enrolment including alternative contact details, official names, other nick names, and ancestral homes to overcome this challenge.

Training as an opportunity to correct PrEP misconceptions

During Promoter trainings, many questions about PrEP surfaced. Promoters had questions about how PrEP worked, whether PrEP could treat sexually transmitted infections, and the difference between PrEP, post-exposure prophylaxis (PEP – which was not a focus of the training but was a method that men were aware of), and ART. One Promoter from Beach 3 explained how he appreciated being educated about PrEP. He said, “We appreciate the organization for educating us. Now I know better. Previously, I thought that PrEP and ARVs were for HIV-positive people. I could not listen to any discussion on PrEP.” Promoters also voiced concerns about possible PrEP side effects, whether PrEP affects reproduction or causes infertility, and if use of PrEP could lead to unfaithfulness in marriages. Myths and misperceptions focused on the belief that PrEP weakened the immune system, that it increased sexual urges, and the belief that those on PrEP are already HIV-positive. Pill-burden and the large size of PrEP pills was also cited as a major cause of low PrEP uptake. As one Promoter from Beach 1 explained, “It is not easy to take those big drugs daily while you know that you are still healthy.” However, despite these concerns, Promoters thought PrEP was a good HIV prevention option. A Promoter from Beach 2 said he would start using PrEP. He explained, “We are always in the lake fetching fish and it is difficult to know what is happening in your yard [at home]. To be on the safe side, I will begin using PrEP... I will encourage other men to embrace this.” Another Promoter said that fishermen were now prepared to arm themselves with PrEP. He said, “I really want to thank our trainers for this. They clearly advised us to always go for PrEP if we feel at risk of HIV infection.”

Questions about HIV, HIVST, and concerns about HIV testing

Promoters noted that HIV knowledge gaps had fuelled misunderstandings and conflicts in families. Questions about if certain blood groups are resistant to HIV virus surfaced. Promoters also questioned why HIVST kits use saliva to test for HIV whereas they know that the virus cannot be easily found or transmitted in saliva. In general, Promoters noted that most men were afraid to test for HIV due to fear of positive results. A Promoter from Beach 2 said that anytime men are asked to go for HIV tests, they shy off lest “They provoke the virus into causing them untold anguish from its resting point.” Their motto is: “Better let the sleeping dogs lie.”

Given the low uptake of HIV services among fishermen in western Kenya, the study illustrates how training and engaging social network-central men to lead community health interventions may promote health seeking practices among underserved highly mobile men. The Owete study found that HIV testing via HIVST or other testing modality within three months of training was significantly higher among men in the intervention arm compared to the men in the control arm (65.2% compared to 31.8%; $p < 0.001$) (Camlin et al., 2024). Perhaps underscoring these findings is how valued the network-central men felt by being selected to help their community. During interactive training their eagerness to learn, interest in HIVST, and investment in clarifying health misconceptions illustrated how much they valued their role. Other studies in East Africa have also demonstrated high willingness of male peers to distribute HIVST in their communities (Choko et al., 2018; Matovu et al., 2021). An added benefit expressed by peers in the social network clusters was the ability to talk about sensitive health matters with someone they already know and trust. It is important to invest in capacity building of socially connected men, embrace their willingness to deploy newly gained knowledge and skills, and leverage their well-established relationships and trust in the community to promote uptake of HIV services among underserved men.

Conclusion

Our study suggests that with capacity building, HIV self-testing tools, and engagement, social network-central men are ready to take a leading role in spearheading health interventions to help overcome limited health service access among men in their community. Social network-central men can leverage newly acquired knowledge and established relationships to prompt health seeking practices among highly-mobile fishermen.

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Biographies

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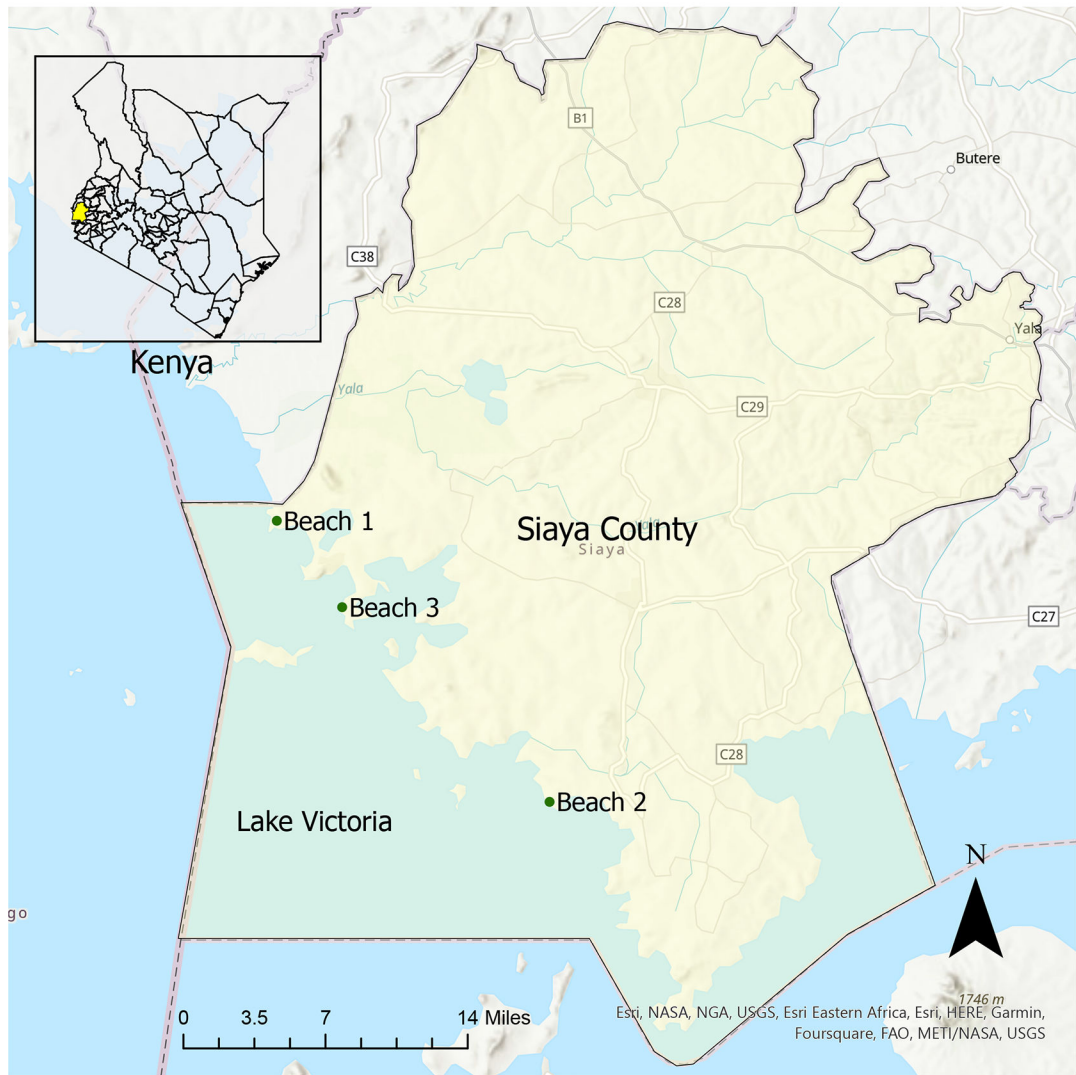


Figure 1.
Study locations in Bondo sub-County, Siaya County, Kenya



Figure 2.
Promoter training session