Experiences, Perceptions, and Suggestions for Future Use of HIV Self-Testing Through Community Distribution Channels Among Adolescents and Young Adults in Nairobi, Kenya: A Qualitative Analysis

Robert Lapsley

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Committee:

Kate Wilson

Carey Farquhar

Kristin Beima-Sofie

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Abstract

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Robert Lapsley

Chair of the Supervisory Committee:

Kate Wilson

Department of Global Health

Background: Adolescents and young adults (AYA) have lower rates of HIV testing compared to adults in sub-Saharan Africa. Community-based delivery of oral HIV self-testing (HIVST) is a promising approach that may increase HIV testing uptake for AYA. Eliciting youth perspectives can help to optimize these services. **Methods**: This qualitative study explored experiences completing oral HIVST through community-based distribution and recommendations for future HIVST programs among high-risk AYA in Kenya. We conducted nine focus group discussions (FGDs) with HIV negative AYA ages 15-24 who had completed oral HIVST as part of the Youth Engaged in Self-Testing (YES) study. The YES study evaluated community-based distribution through homes, pharmacies, and 'hotspots' (bars/nightclubs) channels. FGDs were stratified by channel (three groups per channel) and age (15-17, 18-24), and were audio recorded, transcribed, and translated into English (when necessary). Thematic analysis was used to identify HIVST experiences and recommendations. **Results:** Of 61 AYA participants, 66% were

female, 72% were 18-24 years old, and 31% had romantic partners. Participants valued HIVST because it promoted autonomy further and was more convenient than traditional clinic based testing. For many, the HIVST experience gave them confidence to test again, and promoted positive behavior change including the use of condoms during sexual encounters to stay HIV negative. Testing HIV negative also helped facilitate talking about testing with partners. When considering future HIVST, AYA wanted individualized, ongoing support during and after testing, including post-test counseling and linkage to care. Participants desired peer involvement in the entire HIVST process and recommended offering multiple options to obtain HIVST and support including in-person, social media, and varied community-based distribution points such as bars, pharmacies, and youth centers. **Conclusions**: HIVST meets the needs of adolescents because it provides convenient and autonomous testing experiences. Future community-based HIVST programs should include multiple distribution points and trained peer educators in all steps of distribution, testing, and follow-up to optimize this testing strategy.

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Background

In 2017 36.9 million people worldwide were living with HIV, with 1.8 million new infections[1]. Thirty-three percent of all new infections among people over 15 occurred among AYA (aged 15-24)[1], with AIDS being the leading cause of death in males in this group and the second leading cause of death among females[6]. In Kenya in 2017, 1.5 million people were living with HIV, with 53,000 new infections annually[1]. From 2013-2015, AYA went from contributing 29% of all new infections to being responsible for 51% of new infections, representing a 17 % increase and constituting the largest proportion of people living with HIV[7]. Despite this high incidence and burden, adolescents are less likely to test than adults and less likely to know their status, driving HIV transmission and leading to treatment delays[8]. This is particularly true in Kenya, where 46% of 15-19-year-old women and 58% of 15-19-year-old men had never tested for HIV[10]. The low rates of HIV testing among AYA, an essential first step in the HIV care cascade for AYA, pose a major barrier to reaching the UN's 95-95-95 goals[1]. The reasons for lack of testing are complex, but one critical factor is that standard HIV Testing Services (HTS) strategies have been primarily designed and optimized for children and adults rather than key populations, such as AYA[9]. Common barriers for AYA to engage in standard HTS include fear of stigma and judgement, mistrust of providers, privacy concerns, long wait times, transportation time and cost, inconvenience, and the need for parental consent [3, 11, 26-28].

HIV self-testing (HIVST) is a promising strategy that may overcome barriers to conventional HIV testing for AYA. The World Health Organization (WHO) recommends that countries adopt HIVST in their national HTS algorithms[12]. This testing strategy may be especially useful for AYA and other hard to reach populations[12]. Studies with adults have shown high acceptability of HIVST, particularly the oral version (OraQuick Rapid Antibody Test), emphasizing ease of use[5] as well as similar test performance compared to standard, supervised HTS[25]. Other studies in a clinical setting, including one focused on young adults, cited many benefits of HIVST, including convenience, speed, privacy, anonymity, fewer clinic visits, and reduced cost [5,6,8].

However, studies also identified concerns related to HIVST centered on lower test sensitivity, unclear test instructions, and lack of supervision to assist with interpreting results or providing emotional support and linkage to care if the result is positive[3-4]. One qualitative study in South Africa, using focus groups among young adults (ages 18-24) to discuss their views about hypothetical HIVST, revealed the perceived benefits including privacy and convenience, and drawbacks, namely possible trauma related to a positive result.[8] Yet concerns about social harm, such as suicidality or intimate partner violence (IPV) following a positive result, have not been documented[13].

Despite global and national interest in offering HIVST to AYA, few studies documented experiences of AYA who have actually used self-testing. Important gaps remain about knowledge concerning how to best deliver HIVST to adolescents, whether AYA will be able to correctly interpret results, and how to provide support services[14]. Given AYA barriers with accessing HTS through traditional access points, use of community-based distribution channels of HIVST, such as pharmacies, which have shown good potential uptake and demand in Kenya among adults[15], may improve uptake overall. As countries scale-up alternative models of service delivery beyond health facilities, AYA user perspectives on novel testing options and delivery channels are essential for developing optimal services for this population. Understanding AYA experiences utilizing HIVST distributed through different community channels can inform alternative strategies for HIVST scale-up for AYA.

The Youth Engaged in Self-Testing (YES) study evaluated the feasibility of community-based distribution channels, including pharmacies, hot-spots, and home-based (HBT), on uptake and completion of HIVST among AYA as well as explored the experiences and perceptions of AYA who tested in a real-world urban setting. In addition, this study identified peer and parental influences on self-testing and the role of self-testing on sexual behavior. Quantitative and qualitative results from the YES study can inform strategies to optimize self-testing services in Kenya, accelerating progress towards the 95-95-95 targets for AYA.

Methods

Study Design and Population

We conducted a qualitative analysis of AYA experiences and perceptions about HIVST using community-based distribution channels, as well as eliciting their ideas for future directions for HIVST. AYA for this sub-study were recruited during the final survey of the YES study (PI: Wilson, A1027757). The YES study took place in Kawangware, a large informal settlement in Nairobi, Kenya with approximately 150,000 residents and an HIV prevalence of 3%[16]. Eligible participants in the YES study were AYA (15-24) who reported being HIV negative or having an unknown HIV status, had access to a cell phone, and could provide informed consent as adults. AYA were recruited from three community distribution channels: home-based, pharmacies, and hotspots (bars/nightclubs, targeting AYA engaged in transactional sex). Recruitment from hotspots relied on prior engagement with community members, community health workers, bar managers, and venues. Subsequently, study participants were purposefully sampled from three bar/nightclubs and were primarily employees rather than customers. For home-based testing (HBT), a ward (neighborhood) was mapped and every 5th home visited. For the pharmacy channel, 20 day-time pharmacies and 10 24-hour pharmacies were approached. Among those, two daytime sites and one 24-hour site were selected based on the willingness of the pharmacist, available private space for study activities, and volume of potentially eligible AYA. Pharmacy staff were not involved in any study procedures. Participants were followed for four months and evaluated for testing completion, yield, and linkage to care.

For the focus group discussions, purposive sampling was used to recruit and enroll a subset of AYA from among all participants in the parent cohort. A stratified random sample of participants was generated by channel and age group (15-17 and 18-24 years). Participants were recruited at the time of the four month follow-up survey. If a participant declined, the next individual on the list was contacted. FGDs focused on evaluating norms about, experiences with, and preferences for HIVST.

Conceptual Framework

This qualitative study is based on the concepts and domains of the Health Belief Model (HBM), modified to include the influence of social context and subjective behavioral norms on AYA health actions[29]. Behavioral norms can include the way AYA speak to each other about HIVST, or the perceived stigma at HTS. The HBM was developed to explain health behaviors, such as using prevention screening or smoking cessation techniques, and emphasizes the role of the individual in health related decisions[29-30]. Our modified model (Figure 1) included more interpersonal and societal factors (e.g. peers, partners, community norms) that influence adolescent testing behaviors in addition to individual factors.

Data Collection

FGDs were conducted using a semi-structured topic guide with open ended questions to explore experiences with, and perceptions and suggestions about HIVST, as well as targeted questions to capture beliefs about the utility of different community-based distribution channels. Specifically, FGD guides explored: 1) likes and dislikes of HIVST testing process itself, as well as compared to traditional HTS; 2) benefits and challenges of oral HIVST for AYA; 3) Peer, partner, and parental influences on testing decisions; 4) the influence of HIVST results on sexual behavior, and 5) suggestions for improving access and demand for HIVST. FGDs were conducted by a Kenyan qualitative researcher in the group's preferred language (Kishwahili, English, or Sheng, a local dialect used in Nairobi). FGDs lasted an average of 70 minutes (range 60-80). All participants were reimbursed 400 KES (about 4 USD) for their time. FGDs were audio recorded, and transcribed verbatim, with translation into English as needed. A separate note-taker also took detailed notes of contextual items of importance during each FGD. A debrief report, providing a targeted subjective impression of each FGD, was completed by the facilitator immediately following the FGD[31].

Data Analysis

FGDs were analyzed using a combination of conventional and directed content analysis approaches. The initial codebook was developed collaboratively by the team using both inductive and deductive coding. Deductive codes were derived from a modified version of the Health Belief Model (Figure 1) used to characterize the role of social context and subjective behavioral norms on HIVST decisions. Inductive codes were developed directly from detailed reads of debrief reports. The initial codebook was further revised based on the review of a subset of full-length transcripts and group discussions by the team members. All transcripts were coded in (ATLAS.ti version 8) using a final version of the codebook. Two members of the team assisted with coding (RL and HM) and conducted consensus coding prior to the final coding process to ensure consistent application and interpretation of codes. All transcripts were coded independently by one member of the coding team, and their coding was reviewed by another member of the team to verify interpretation and code application. Disagreements in code application were resolved through group discussion between coders and additional team members. Queries of coded transcripts and memos written during the coding process were used to develop an initial list of themes with supporting quotes. Themes were discussed with the larger analysis team and synthesized into larger thematic groups to characterize key influences on AYA decisions, perceptions, and experiences related to HIVST.

Results

Sixty-one AYA participated in nine FGDs, stratified by distribution channel (home-based, pharmacy, and hotspot) and age (15-17 year-olds, and 18-24 year-olds) (Table 1). The median age was 19 (IQR 17-23) and 66% of participants were female. The main reason participants chose to test was to learn their HIV status, and most tested with a friend, caregiver, or other relative (sibling or cousin), consistent with previous studies. Overall, AYA reported positive HIVST experiences, citing feeling supported when they tested and motivated to change behavior. Four major themes emerged from the FGDs related to AYA testing experiences : 1) The self-testing experience was convenient and promoted autonomy; 2) self-testing increased confidence to use

condoms and communicate with partners about their status; 3) AYA wanted individualized, ongoing support throughout the HIVST process, including comprehensive follow-up; and 4) AYA revealed that peers should play a key role in the HIVST process. These themes were consistent across age groups and distribution channels, with some subtle differences noted below.

The HIVST experience is convenient and promotes autonomy

AYA appreciated how HIVST promoted autonomy over testing decisions, allowing testing to happen when, where, and with whom they want. HIVST could be done at home, with friends, parents, or alone, was convenient and overcame barriers to traditional HIV Testing Services (HTS) offered through a facility. Testing at home allowed adolescents to avoid long wait times and lack of privacy. AYA also appreciated that oral self-testing did not require blood draw, one of the barriers to traditional HIV testing methods used at facilities.

> *"My experience was good, the self-test really helps, it really helps because maybe, we have people that fear injections but for this we just use saliva and it is much confidential you don't need to go to a doctor to test you do it alone, you can lock yourself in a room and then after you finish you wrap up*." 18-24 year-old, home-based channel

Self-testing also improved willingness to get an HIV test for many AYA, enabling them to avoid perceived judgement and stigmatization by health care workers (HCWs) that can occur with provider-assisted testing.

> *"Trust me, with a health care [worker], you are never sure you will get a nice person to talk to. Not all of them are good but with the self-test you do it by yourself and you get the result. Some attendants at health facilities will either discourage you or talk to you with mood swings. I have been to VCT before and the person attending to me told me, "don't come here knowing you are negative, come if you know you are positive." I left without doing the test."* 18-24 year old, pharmacy channel

"I would say that it is a better way of encouraging youths to know their status because most youths fear visiting the VCTs because they feel like they are going to be lectured and if they find me positive they will start to question me how I got it because I wasn't born that way." 15-17 year old, home-based channel

Self-testing increased confidence to use condoms and communicate with partners about HIV status

AYA described how knowing their HIV status had a positive influence on intentions and willingness to use condoms. AYA reported that other AYA like them, who also test negative for HIV, would be motivated to use condoms to maintain their negative status.

"[L]et us say you have tested with the self-test kit and you find it is negative when you go to have sex you will protect yourself so that you don't get it because you are sure you don't have(HIV)." 18-24 year old, home-based channel

The connection between knowing one's status through HIVST and motivation to use condoms was especially common among FGD participants from the hotspot channel who were engaged in transactional sex. Many reported that along with increased motivation to use condoms, taking a self-test empowered them to have the courage to negotiate condom use with clients. In addition, they reported feeling motivated to use HIVST on a routine basis in order to continue knowing their status and maintain agency over condom use decisions.

"It also gives you the confidence to use the condom so as to reduce the anxiety associated with having unprotected sex like for us sex workers who have sex with many partners." 18-24 year old, hotspot channel

In addition to promoting their own condom use, participants noted other positive influences on interactions with sexual partners from HIVST. Participants described how self-testing could motivate discussion about the importance of knowing one's status and testing together. However,

this was thought to apply only to couples in established relationships, who already felt comfortable talking to each other about HIV. AYA also noted that there are other obstacles to getting partners to test, including trust. Participants described situations where trust within the relationship was used as a justification to avoid couples testing together.

> *"[Y]ou tell them it is okay, test first before we decide to do anything, so there they will challenge you and ask you 'do you trust me', and so you will just give in and then after test that is when you will learn the truth and of course for them they won't be surprised because they know what they are after and he knows what he is doing*." 15-17 year old, home-based channel

Another obstacle to using HIVST knowledge during sexual encounters was impulsivity among youth to have sex. Even if they had kits available, sex was often unplanned.

> *"For we youths, we never plan for sex, we don't and it is never on our diary, you see like how people wake up and they are like 'I will brush my teeth, I will go to school and then come back,' no, sex is never anywhere."* 18-24 year old, Hot Spot channel

AYA want individualized, ongoing support throughout the HIVST process, including attention from HCWs beyond post-test counseling and linkage to care

While AYA embraced the autonomy of HIVST, they also desired ongoing support from the moment they take the test to post-testing linkage to care and prevention services. AYA desired support from a variety of individuals when making decisions to test, including family members and friends. Younger participants were more likely to want support from care-givers and close relatives while older participants cited important roles of friends and community members in assisting with decisions to test.

> *"As for me, when I was given the kit and I had fear, I had tension and I was like I can't test now maybe tomorrow and because my mum was aware of this so she told me if you know*

you haven't done anything, if you know you are okay, if you have never tried out anything what do you fear, just try it and I was like it's true because I know myself let me try. So, I woke up in the morning and tried out and it was okay." 15-17 year-old, home-based channel

"I love that question. I didn't know if I was going to have the self-test. I had just visited the pharmacy with my cousin and that's when I saw it. I had friends over there and they are the ones who influenced me to take the test. I agreed and in turn I influenced my cousin." 18-24 year-old, pharmacy channel

AYA also appreciated the support of the study staff during the testing experience, noting the importance of engagement and encouragement.

"I am a skeptical person; I don't believe in things easily so I was skeptical of the test that does not draw blood since I could not understand how it could detect the virus without blood. I only knew of the one that uses blood, so, I wondered that this automatic one will mislead me but I drew strength from the study staff who were giving out the kits and they kept assisting us and enlightening us on how to interpret the results and they told us that if you see such and such a thing and you are not sure of it then we should go back to the clinic." 18-24 year old, hotspot channel

Post-test support, including post-test counseling and linkage to care if they were to test positive, were noted by AYA as critical to ensuring a positive test experience. AYA used the term "mentor" several times in noting what attributes they hoped a post-test support person would embody. To AYA in the study, a mentor was described as person you could contact easily, at your convenience, by phone or via social media, and who would know your individual needs and cater to them. AYA wanted post-test support to include multiple options for communication and location.

"Online, because that is where most youth spent their time, like let us say the counselors have their own page, someone that will encourage you because you will not see their reaction, so if they are online you will ask the question and they will respond to your need." 15-17 year-old, home-based channel

"Because many people are scared of being seen going to hospitals for care and stigmatization then it is easier to link the affected person to counsellors directly by the use of e-mails and phone numbers so that in case one needs the help he can contact the counsellor directly." 18-24 year-old, pharmacy channel

While vocal about wanting support for post-test counselling, participants expressed mixed views about their own knowledge and of prevention services. While most participants wanted more opportunities to receive family planning services, they were less aware of sexually transmitted infection (STI) screening or pre-exposure prophylaxis (PrEP). A few participants felt that taking PrEP everyday was too burdensome and preferred condoms.

"Family planning is common, for STI, when you feel like there is a bad feeling you will go, and for PEP and PrEP, not everyone is aware like in our population, the girl child is more aware about PrEP, and so you need to create awareness as you favor the gender, even if the girl child is in, you still need to consider the boy child." 18-24 year old, pharmacy channel

Most appreciated the clarity of the self-testing procedures and the helpfulness, friendliness, and positive communication of the study staff (who were trained HCWs and peer mobilizers) who assisted with distributing the HIVSTs. Being treated with respect and receiving positive guidance from these staff increased confidence to test. Access to kind, caring and supportive HCWs, as modeled by our study staff, improved the HIVST experience.

"I can say it was good, they were nice and they talked to us nicely such that even when testing you are not scared. They counsel you before you test yourself, so, even if the outcome is a positive or a negative one, they have given you the morale and the confidence." 18-24 year old, hotspot channel

AYA felt peers should play a key role in the HIVST process

Participants from all channels and both age groups reported that their peers were vital to engaging other AYA in HIVST. AYA suggested that peers be involved in a variety of distribution channels like schools, clubs, clothing markets and stores for teens, as well as malls and roadshows. AYA viewed peers as uniquely positioned to understand the specific issues facing AYA and help overcome barriers to testing and linkage to care. AYA felt peers were able to understand the specific issues facing AYA better than older adults. Peers used the same local dialect and cultural terms, enabling youth to feel understood, less stigmatized, and more energized about HIVST. Peers were viewed as being more fun, a major influential factor for AYA. The term "send a thief to catch a thief", which came up often, refers to the idea of "it takes one to know one." The stealth and secrecy of thieves is not seen in pejorative terms, but rather as a way to reach young people by virtue of being in their social network. Specifically, peers spread information faster and more effectively to other peers; peers can discuss sensitive topics like sex with other peers; and peers who have already tested and are the early adopters, can motivate others.

"I would say just one thing, 'send a thief to catch a thief', like for us who are here, we have used it and we have the experience, they can just take us and send us to the field and so that we can educate these guys so that they can get the information about these things instead idling around." 18-24 year old, hotspot channel

The connection through shared experiences and perspectives made the use of peers for HIVST demand generation and communication about HIVST more valuable.

"Youths attract each other, they are like magnet for example if I tell one person that I have a party they will go tell others and the word will spread and they will all come." 15-17 year old, home based channel

Despite the important role of peers in the testing process, there was general caution that peer educators should not be too young and should have the training and experience needed to serve as a peer educator.

"I chose 18 years because of communication and perception. Imagine of a scenario where a 10 year comes to you and tries to catch your attention on the whole thing, you won't give it any seriousness. It's easier to listen to a peer." 18-24 year-old, pharmacy channel

Discussion

This qualitative study was conducted among AYA who had completed HIVST that were offered through community-based distribution channels. Our analysis revealed that AYA liked the convenience and autonomy of HIVST. For some the experience of HIVST led to increased confidence to use condoms and engage partners in discussions about their HIV status. Our participants identified strong preferences for peer educators to be involved in all aspects to the HIVST process, and that professional support be available if desired. AYA wanted the freedom to choose, from multiple options, how to connect to post-test services, but that these services would be individualized and local.

The Health Belief Model aligns well with the key influences on AYA HIVST experiences and perspectives[29]. The self-efficacy that HIVST created, modified in part by previous negative experiences with HTS, empowered youth to engage the health promoting behavior of using condoms. In addition, the cue to action (engaging in the study), modified by positive relationships with HCW's on study staff, that led to engaging in the positive health behavior of testing. Participants desire to have peers involved all aspects of the HIVST process demonstrates the importance of social context, a dynamic at the core of our modified conceptual model.

Recent studies have shown that HIVST is highly acceptable to AYA, and that barriers to traditional HTS for AYA can be addressed by HIVST[3-5]. Our findings are consistent with these studies among actual test users and demonstrate feasibility of real world community settings. Our data also suggests that although there is a high value placed on autonomy, which leads to empowered decision making and confidence around condom use, there is an expressed desire to have support available from test to post-test counselling and beyond. This was true across age groups and distribution channels, with subtle differences such as the younger groups looking to immediate family and care-givers as well as friends for support, and with older groups looking more to their peer cohort and distant relatives. This non-professional support provided a social context that facilitated testing decisions. All groups noted that support from friendly, patient, and caring HCWs on the study staff made their HIVST experience easier and described similar "mentor" like roles as suggestions for future HIVST services. Participants want peers to engage them in HIVST, as well as to educate and guide them to post-test services, but they want the option to have HCW mentors available when needed. This is consistent with other studies highlighting the importance in AYA HIV testing of support from care givers and other adults[23]. Our findings also agree with studies citing the benefits of peer involvement in HIV testing[32].

Participants also preferred a variety of choices in how to engage in care or prevention services, and have this care highly individualized. There was ambivalence in the usefulness of prevention services other than family planning. In contrast, AYA voiced enthusiasm for a variety of options to link to post-test services from toll free numbers on test-kits, to confidential websites and social media groups. They wanted these services to be personalized, so that when they chose to connect to them via a webpage for example, a counselor on the other end would know their individual medical and other needs as a sort of one-stop shop. They also desired these services to be near them, with the ability to freely drop-in when convenient. They want to be known, but on their terms and their schedule.

The use of the three community distribution channels, home-based, pharmacies, and hotspots, fits well with this need for options. Other suggestions for distribution channels included schools, clubs, clothing markets and stores for teens, as well as malls and roadshows. Some participants were more careful about revealing their connection to HIVST in terms of peer outreach, suggesting that they do peer to peer education in neighborhoods other than their own, and there was one recommendation that the counselors “not be locals” due to fear of gossip. Finally, cost was often cited as a potential barrier for HIVST, so many participants advocated for free HIVST kits.

All FGDs were conducted in a combination of English and Swahili but were analyzed in English. Therefore, there is the possibility that certain nuanced descriptions of decisions or experiences were difficult to interpret. However, having a Kenyan interviewer and translator as a coder for this analysis helped minimize this limitation. While qualitative studies do not aim to produce generalizable results in the same way as quantitative studies, insights gained from this study provided valuable insight for future scale-up[16-17]. Finally, because only one in the parent study had a confirmed HIV positive test, we were not able to elicit feedback from AYA who actually linked (or did not link) to HIV care. However, this study was not designed to use self-testing as a case finding strategy, but rather as a formative, implementation exploration of possible distribution channels for high-risk AYA.

AYA in this population were comfortable with HIVST and enthusiastic about the potential to reach more high-risk young people with this intervention. Community distribution channels are a promising way to reach high risk AYA and potentially increase engagement in care and prevention services. In addition, HIVST may influence behavior around condom use and partner behavior around testing. Future programs should consider providing optional supportive guidance by adolescent-friendly healthcare providers throughout the HIVST process while still allowing for AYA autonomy for those who want it. Programs should engage trained peer-educators to enhance education, testing engagement, distribution, and linkage to care. Finally, future programs should

provide multiple options and methods for AYA to connect with care, including providing local facilities. Insights gained from this study show that there is great potential to address the disproportionate HIV burden of AYA, and thus there is great hope that Kenya can reach the 95-95-95 goal.

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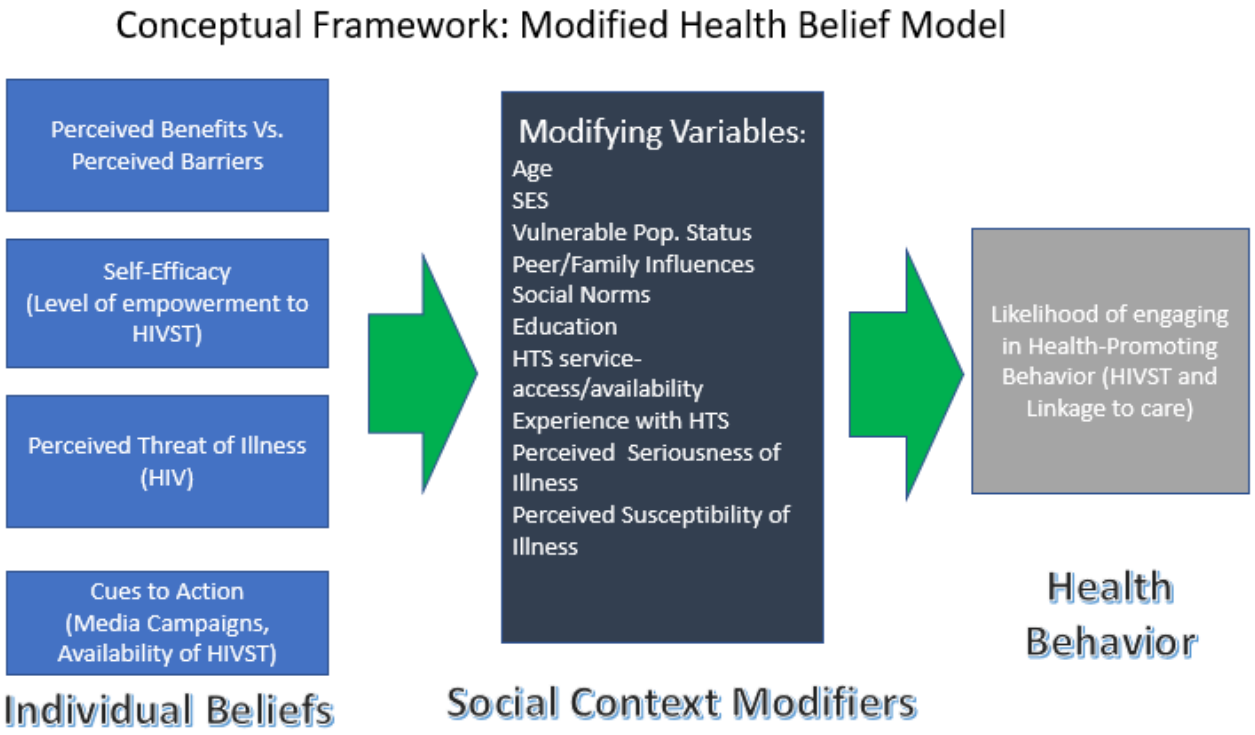
Table 1

Focus Group Characteristic	Home-based n (%) (n=23)	Pharmacies n (%) (n=19)	Hot Spots n (%) (n=19)	Total n=61 (%)
Age 18-24 (vs. 15-17)	6 (26)	19 (100)	19 (100)	44 (73)
Female (vs. Male)	15 (65.2)	14 (73.6)	11 (57.8)	40 (65.6)
Single/No Sexual Partner	16 (69.6)	8 (42.1)	1 (5.3)	23 (37.7)
Married	0 (0)	2 (10.5)	0 (0)	2 (3.3)
Steady Girlfriend/Boyfriend	7 (30.4)	6 (31.6)	6 (31.6)	19 (31.1)
Casual Partner	0 (0)	0 (0)	16 (84.2)	16 (26.2)

Figure 1


Conceptual Framework: Modified Health Belief Model
Perceived Benefits Vs. Perceived Barriers
Self-Efficacy (Level of empowerment to HIVST)
Perceived Threat of Illness (HIV)
Cues to Action (Media Campaigns, Availability of HIVST)
Individual Beliefs
Modifying Variables:
Age
SES
Vulnerable Pop. Status
Peer/Family Influences
Social Norms
Education
HTS service-access/availability
Experience with HTS
Perceived Seriousness of Illness
Perceived Susceptibility of Illness
Social Context Modifiers
Likelihood of engaging in Health-Promoting Behavior (HIVST and Linkage to care)
Health Behavior