HHS Public Access

Author manuscript

Afr J AIDS Res. Author manuscript; available in PMC 2022 December 01.

Published in final edited form as:

Afr J AIDS Res. 2021 December ; 20(4): 297–306. doi:10.2989/16085906.2021.2000450.

HIV Self-Testing May Overcome Stigma and Other Barriers to HIV Testing among Higher-Socioeconomic Status Men in Botswana: A Qualitative Study

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Abstract

In Botswana, HIV prevalence is 20.3% among those aged 15–49, and in sub-Saharan Africa (SSA), higher income has been associated with increased HIV risk. We qualitatively explored barriers to HIV testing and acceptability of HIV self-testing (HIVST) among higher-socio-economic status (SES) men in Botswana. Twenty higher-SES men (10 tested, 10 not tested recently) participated in semi-structured interviews and 10 men participated in asynchronous online focus groups (FGs) about HIV testing barriers and HIVST acceptability. Results indicated that stigma, inconvenience, and perceived lack of confidentiality were barriers to HIV testing, as were masculinity-related concerns (e.g., fear of losing status if they accessed testing or were found to be HIV-positive). Men said that HIVST reduced barriers to testing, and that test kits could be placed in public spaces for pick-up and used in private. Overall, HIVST was seen as acceptable and feasible among higher-SES men in Botswana.

Keywords

Botswana; HIV testing; HIV self-testing; men; qualitative

Introduction

HIV testing is a necessary first step toward linkage to HIV prevention and care services. In eastern and southern Africa, about a quarter of people with HIV are not aware of their serostatus (UNAIDS, 2017). In Botswana, the setting of the present study, the prevalence rate among those aged 15–49 is 20.3%, and about 91% of people with HIV know their serostatus (UNAIDS, 2019). Men are less likely than women to know their HIV serostatus in

Note: Bogart and Kgotlaetsile are joint first authors.

Botswana and sub-Saharan Africa (SSA) overall (Gaolathe et al., 2016; Shand et al., 2014), and present for HIV testing at a later disease stage (Osler et al., 2020).

Consistent with the Theory of Triadic Influence (Flay & Petraitis, 1994), prior literature describes individual, social and structural barriers that impede HIV testing among men. HIV stigma—including internalized stigma (at the individual level) and anticipated stigma if one were to test HIV-positive (as the social level)—is a key barrier to HIV testing in SSA (Akatukwasa et al., 2021; Hlongwa, Mashamba-Thompson, Makhunga, & Hlongwana, 2020; Mwisongo et al., 2016; Sullivan et al., 2020). Higher HIV stigma is associated with lower testing likelihood, especially among men (Ha et al., 2019; Letshwenyo-Maruatona et al., 2019; Weiser et al., 2006). Individuals who test at a later stage cannot initiate antiretroviral therapy (ART) early and consequently have lower survival times and a higher likelihood of transmitting HIV to their partners (Chadborn et al., 2005; Cohen et al., 2011). Qualitatively, men say that they worry that others will discover their serostatus if they test HIV-positive, subjecting them to gossip, rejection, and shame—and loss of their partner and others' respect (Hlongwa, Mashamba-Thompson, Makhunga, & Hlongwana, 2020; Mambanga et al., 2016; Matovu et al., 2014; Okal et al., 2020; Rankin-Williams et al., 2017). Moreover, accessing healthcare (and testing) may threaten masculinity: if they access healthcare, men fear being stigmatized as weak and unable to provide for their family—with consequent loss of respect and status (Sileo et al., 2018; Skovdal et al., 2011).

Other individual-level barriers to HIV testing among men in SSA are related to misperceptions of HIV treatment (Hlongwa, Mashamba-Thompson, Makhunga, & Hlongwana, 2020). Men may have a realistic assessment that they are at risk, but they may avoid testing because they believe HIV is a death sentence and fear treatment side effects (Adams & Zamberia, 2017; DiCarlo et al., 2014).

Stigma fears and other individual-level concerns are heightened by structural factors related to healthcare, including concerns about privacy in public healthcare facilities—and fears that providers will not keep their results confidential and people from their community will see them visiting a facility for testing. Competing needs for work also is a barrier to testing, due to inconvenient clinic hours and locations (Bogart et al., 2016; Okal et al., 2020). Men perceive public healthcare facilities as unwelcoming—and feel that seeking care is more acceptable for women (DiCarlo et al., 2014; Dovel et al., 2020; Leichliter et al., 2011; Rankin-Williams et al., 2017; Sileo et al., 2018; Skovdal et al., 2011).

HIV self-testing (HIVST), a tool for HIV screening, has the potential to overcome barriers to HIV testing. HIVST has high specificity, good sensitivity (Indravudh et al., 2018; Kurth et al., 2016), and high acceptability in SSA (Hlongwa, Mashamba-Thompson, Makhunga, Murararaneza, et al., 2020; Njau et al., 2019; Shapiro et al., 2020). Perceived advantages include increased confidentiality, decreased HIV stigma, increased autonomy over the testing process (Harichund, Karim, et al., 2019; Harichund & Moshabela, 2018; Indravudh et al., 2018), and greater convenience and efficiency (Harichund & Moshabela, 2018).

HIVST concerns include potential negative mental health consequences due to lack of pre- and post-test counseling, and lack of linkage to HIV care if the result is positive (Harichund

& Moshabela, 2018; Hlongwa, Mashamba-Thompson, Makhunga, Murarane za, et al., 2020; Indravudh et al., 2018; Njau et al., 2019). In Botswana, female sex workers preferred healthcare facility testing to HIVST, due to fears about incorrectly performing the test and not being able to get post-test counseling (Oduetse et al., 2019). Stakeholders, including policymakers and members of affected populations, have suggested ways to address these concerns, including providing clear instructions in local languages, telephone counseling hotlines, and supervised self-testing in healthcare facilities or by trained peers (Harichund, Karim, et al., 2019; Harichund, Kunene, et al., 2019; Indravudh et al., 2018; Makusha et al., 2015).

We conducted a qualitative study of HIV testing barriers and acceptability of HIVST among higher socio-economic status (SES) men in Botswana, to help inform the Botswana Ministry of Health and Wellness about the feasibility of large-scale implementation of HIVST. We focused on higher-SES men because higher income has been associated with increased risk of being HIV-positive in SSA (Lakew et al., 2015), potentially because greater income allows for access to more resources, which can be used to attract and support partners. About 64% of men in Botswana have multiple concurrent sexual relationships, and men's probability of having multiple concurrent sexual relationships increases at higher levels of education (Hajizadeh et al., 2014; Keetile, 2014). Moreover, higher wealth has been associated with greater healthcare-related HIV stigma in SSA (Hargreaves et al., 2018), which may impede access to HIV services among higher-SES men. In addition, we focus on higher-income men rather than higher-income women, because in Botswana, a higher proportion of men than women are employed, men earn higher wages than women, and women are more likely to be living in poverty (Statistics Botswana, 2018; The World Bank, 2015).

Thus, higher-SES men are a key, overlooked subgroup who are not a main target for standard HIV testing strategies and prevention messages. It is critical that research now focuses on identifying, testing, and treating those subgroups in the last 5–5-5 (of the UNAIDS 95–95-95 goals) (UNAIDS, 2019) that have not been reached by standard HIV testing and treatment approaches–including men of higher SES. If HIVST is perceived to be acceptable and feasible, it can be scaled up across major employers, including major government offices and mining companies' headquarters.

Methods

Study Team

Project leadership was shared between U.S. and Botswana investigators, with the primary Principal Investigator from Botswana. Botswana team members conducted the interviews and co-led the analysis. The selection of the research questions and the focus of the research on HIVST among higher-SES men was a direct result of insights from the Botswana Principal Investigators' clinical practice experiences, reading of the research literature, and general observations of higher-SES men around HIV testing and treatment. Although it was essential for the study methods to be as objective as possible, the authors acknowledge that backgrounds of the researchers may shape the content and the analysis of the data. Measures taken to reduce preconceptions are described below and also in the data analysis section.

The team fostered reflexivity throughout the study by self-reflecting and debriefing on their influence on the research process, being transparent about study staffing and methods in ongoing discussions among team members, and taking steps to ensure study rigor. The study interviewers included two men and one woman from Botswana; all of the interviewers were in early adulthood and were full-time graduate students. The interviewers had previous research experience in conducting qualitative HIV-related studies. Two of the interviewers were counselling graduate students who had experience helping clients with HIV-related issues. Furthermore, all the interviewers underwent a week-long training on qualitative data collection and the study background, methods, and goals to enhance their mastery. The interviewers were trained to initially ask general open-ended questions that allowed for a range of responses, to use a non-judgmental style that did not indicate favoritism for some ideas and bias or surprise toward others, to keep vocal tone neutral, and to use specific probes to ask for explanations or clarifications of cultural references (even if the interviewer had a shared understanding of the cultural references).

At the analysis stage, the Botswana and U.S. investigators discussed and came to a shared understanding of the data, based on their different cultural and research perspectives, with two investigators being “insiders” from Botswana who shared some intersectional identities with participants (Motswana, male, higher-SES), and the other being an “outsider” (American, female).

Participants: recruitment and eligibility

We conducted in-person semi-structured interviews from March through July, 2019, followed by two online, asynchronous focus groups (FGs) in August and November, 2019. Initially, 12 practice interviews were conducted with individuals who had similar characteristics to eligible participants, to pre-test the semi-structured interview guide before data collection. The main objective in pre-testing the research instruments was to confirm that the guide was relevant to the research problem, and that the questions, wording, and instructions were clear (Morrison et al., 2000). As a result of the pre-testing, the team decided to delete several questions on related but tangential topics (e.g., general health and healthcare behaviors, such as immunization; communication about HIV in general; perceived barriers to ART use and HIV care), to decrease the length of the interview guide.

Participants were recruited through local worksites in Gaborone, Botswana (four financial institutions and one academic institution). The rationale for choosing these worksites was that wellness officers reported very low HIV testing uptake in worksite-sponsored testing programs among men of higher job categories in these and other, similar worksites (e.g., retail banks and academic institutions). Wellness Officers at each worksite emailed potentially eligible men, inviting them to call the study telephone number. A male study team member held one informational session on HIV-related issues and HIVST at each worksite. Individuals screened as eligible if they identified as male, were 35 years-old or older, were employed, and reported earning at least 200,000 Botswana pula (BWP) annually (~USD $20,000). Online FG participants additionally needed access to a smartphone. The age range criterion was based on data suggesting that HIV prevalence peaks at 32% at age 40–44 among men in Botswana (Novitsky et al., 2015). All study procedures were approved

by the institutional review boards of the RAND Corporation, (ID:2018–0482-CR03) and the University of Botswana (Ref: UBR/RES/IRB/BIO/120), and the Botswana Ministry of Health & Wellness (Ref: HPDME/13/18/1 V1 (31)).

Semi-structured interviews

In-person semi-structured interviews were conducted with 20 men (10 tested in the past year, 10 not tested in the past year) in a private space at the university or the participant's worksite. Probes, which were based on the Theory of Triadic Influence (Flay & Petraitis, 1994), were used to elicit an in-depth understanding of individual, social, and structural barriers to HIV testing (including HIVST) among men, as well as the potential acceptability of HIVST (e.g., "What barriers are there to getting tested for HIV for men like yourself?, How can this barrier be addressed?"; "How much would you like to use HIV self-testing? Why/why not?"; "In what kinds of places do you think men like you would be comfortable picking/using HIV self-test kits?"). The open-ended questions were phrased in a way that did not make assumptions (i.e., were not one-sided), allowing men to respond freely on any side of the issue. Participants were shown an oral self-testing kit sample, which was used to demonstrate how the HIVST kit is used. All interviews were audio-recorded, transcribed, and translated into English if needed (as some men responded using a combination of English and Setswana). Participants provided written informed consent.

Online focus groups

Twenty-one men (9 of whom also participated in the face-to-face interviews) agreed to participate in the online FGs (10 in group 1, 11 in group 2). Of those, 10 men (4 of whom also were interviewed) posted to the online chat (4 in group 1, 6 in group 2). To understand the low response rate, we called the men who had agreed to participate, but who did not. Five said that the online platform was not user-friendly; one man who felt the system was not user friendly also had issues with internet access. One could not recall being invited to the FG, and one said he did not receive the invitation; another said his workplace internet system's firewall blocked participation. An additional three could not be reached.

The online FGs were conducted after the semi-structured interviews to complement the interview data, to refine ideas for intervention by concentrating the discussion on ways to implement HIVST among men (e.g., "If we were to create a campaign to promote HIVST among men like you, what would you recommend?"). Participants were shown a picture of an oral self-testing kit and told, "HIV self-testing is when a person collects their own oral fluid or blood specimen and then performs their own HIV test and interprets the result." The moderator guided participants through 1–2 questions per day over 3–5 consecutive days, and participants could log in at different times to post comments; the moderator and participants did not all need to be present at the same time. FGs were hosted by FocusVision's Revelation© tool, and a brief pre-FG socio-demographic survey was delivered via FocusVision's Decipher© tool. Participants were paid the equivalent of $100 (about 1,000 Botswana BWP): $75 for the FG, $15 for the survey, and $10 for responding to all prompts. Participants consented by reviewing informed consent text in the online focus group portal and clicking on a link that they agreed to proceed with the study.

Online FGs can yield comparable data to in-person methods, and may elicit more valid responses around sensitive issues, due to greater perceived anonymity, and remove barriers related to place and time (Nicholas et al., 2010; Stewart & Williams, 2005; Tates et al., 2009; Wilkerson et al., 2014; Zwaanswijk & van Dulmen, 2014). We believed an online anonymous FG would promote more openness in HIV-related discussions, by potentially overcoming stigma-related concerns about participation.

Analysis

We used direct content analysis (Hsieh & Shannon, 2005), in which meaning is interpreted directly from the text, and the codebook is informed by relevant research as well as the narratives themselves, allowing for flexibility for additional themes to emerge. Three team members (a woman from the US; two women from Botswana) read all transcripts to identify themes (overarching categories describing phenomena), looking for repetitions across transcripts and examples of processes, behaviours, and cultural assumptions. The investigators then independently developed an initial listing of themes, and developed a codebook listing each theme, with a detailed description, inclusion/exclusion criteria, and typical examples. Note that semi-structured interviews were conducted prior to the FGs, and the coding scheme was developed for and used with the semi-structured interview data initially. After the FGs were conducted, the coders conducted a preliminary independent review of the FG data and determined that the same coding scheme could be used for both datasets.

The major coding categories included: HIV testing barriers (anxiety/fear, stigma, inconvenience, masculinity-related concerns, perceived lack of privacy/confidentiality); HIVST advantages (convenience, decreased stigma, privacy, easy to use); ways to address barriers (improve clinic service delivery, raise awareness about benefits of HIV testing/ treatment, integrate HIV services with other healthcare, increase testing motivation); HIVST disadvantages (potential for errors; negative mental health consequences); and strategies for HIVST marketing and implementation for men (places to get and use test kits, support for use; post-test counseling; messaging).

Using Dedoose©, qualitative data management software (SocioCultural Research Consultants LLC, 2018), and following standard content analysis methods (Ryan & Bernard, 2003; Stemler, 2000), two coders (the first and fourth authors) marked areas of text pertaining to each theme, coding independently and reviewing together, and refining the codebook as needed. After coders were able to consistently identify and mark each theme, we assessed coder consistency on two transcripts, achieving a satisfactory Cohen’s Kappa of .76, after which one coder coded all of the transcripts, and the second coder checked all codes. Post-coding, coders reviewed all passages, examining, comparing, and contrasting the distribution of themes within and across subgroups (interviews vs. FGs; men who had been tested in the past year vs. men who had not tested in the past year.

Within Dedoose, data were flagged based on their source (i.e., interview or FG), and data for semi-structured interviews and FGs were analyzed and initially summarized separately. These initial summaries indicated that the FG themes were consistent with the

semi-structured interview themes; thus, for the final reporting of results, we discuss the two sets of data together, under the same themes.

Results

Participants

A total of 30 men participated across face-to-face interviews and the FGs; Table 1 presents their socio-demographic characteristics. Of the 20 men interviewed, the average age was 40.8 (SD=7.5, range=35–68). All but two were married or cohabitating with a partner. Of the 9 FG participants who completed the online socio-demographic survey, the average age was 41 (SD=5.6; range=36–51); all but one were married or cohabitating, and had at least a college/university degree.

Key qualitative themes

HIV stigma is a primary barrier to HIV testing.—Across interviews and FGs, men said they feel stigma, shame, and fear of judgment for assumed risky behaviours if they are seen at a testing site or were to test HIV-positive. Men's fears were based on a negative stereotype of people with HIV as being irresponsible, having multiple sexual partners, and not caring about their health or their family, as well as the misconception that HIV is a death sentence. Their fear was fed by societal stereotypes, as well as negative memories of great suffering prior to ART becoming available in Botswana.

> *"Society thinks that by being HIV positive you have failed in some way so maybe that fear comes from that mindset because you don`t want to be seen as a failure… once you test positive to some extent you are treated like an outsider, an outcast, a failure."* (37 year-old, tested recently)

> *"Sometimes I do think, do I have the strength to deal with the stigma? I think it also even becomes worse when you worked hard to build a reputation in society, they see you as a radio personality or as a public figure. The stigma becomes a big issue."* (36 year-old, not tested recently)

Analysis of FG data further revealed that HIV stigma is a barrier to HIV testing. One man remarked:

> *"What if I'm positive? What will I tell my kid, parents, family members, friends… workmates? How will they react, will they consider me irresponsible?"* (FG participant, age and HIV sero-status unknown)

Stigma was heightened by a perceived lack of privacy and confidentiality in testing venues.—One of the strongest fears was that others would know that they tested for HIV and would find out about their serostatus (if they were HIV-positive). Men also said that others would assume that they are HIV-positive if they are seen at a testing site. These concerns were more common among men who had not tested recently:

> *"Most of the time when people see you at the testing centre, most of them will assume that you might be positive. So you can even prefer to test in a secret place."* (36 year-old, not tested recently)

Men also feared that, if they had a visible negative emotional reaction (from testing positive), other clients at the testing site would infer that they tested positive:

> *"I would prefer private doctor/clinic where there is less crowd. I don't want people seeing me react to my positive status if I'm positive. I'd rather have people know my status after I have calmed myself and willingly ready to let or tell them that I'm positive."* (FG participant, age and HIV sero-status unknown)

Men were concerned that healthcare providers, especially in public clinics, would not keep a positive serostatus confidential:

> *"[Someone] whom I met here had a cousin who was working at a lab, and during the weekend when we were drinking he kept on showing us some people whom he tested who are HIV-positive…Sometimes subconsciously you have that fear...clearly he will tell somebody else about me as well. And without a doubt he will not be the only one who does that. So they will always be that fear that is my secret really safe. I have lawyer friends who tell me very confidential issues about their clients..."* (46 year-old, not tested recently)

A major concern was being seen by other people at testing venues; thus, public clinics, followed by community testing events, were the least preferred testing options, and private doctors were the most preferred. Some believed that their employer may have access to their test results if they tested through a workplace wellness program. Overall, men said that they would be willing to get tested if it were under their own control, in a private setting in which they decided whether to disclose the result and they were unlikely to be seen.

Stigma was intertwined with masculinity-related concerns.—One basis of stigma fears, especially among men who had tested recently, was an anticipated loss to reputation and status within communities and families. Men felt that stigma was stronger for men of their status, due to their greater influence and visibility. Men worried that they would be judged and ostracized, and that their family would disintegrate, if they were to test HIV-positive. Some men felt that they would be judged as being "less of a man" for getting tested and/or for testing positive.

> *"You are a real man when you are negative, but when you are positive you will feel that you have lost that power."* (45 year-old, tested recently)

> *"I am a man of a high standard to be precise… I think sometimes being rich is accorded to …being well so you think that you are well because you are leading an okay life. So it's one of the barriers that prevents men of my caliber to test. Secondly… I am a married man. Imagine what this will do to my family if I find out that I am HIV-positive."* (37 year-old, not tested recently)

> *"Alpha males value their macho and thus feel that going to hospital shows some form of weakness."* (36 year-old FG participant, not tested recently)

Comparison of men who were tested recently vs. men who were not.—Men who were tested and who were not tested recently had similar HIV stigma fears. However,

in contrast to men who were not tested recently, men who were tested recently discussed the importance of getting tested and said they were able to overcome privacy concerns:

> *"I had to wait to come to Gaborone to do the testing… because here not everyone knows me."* (45 year-old, tested recently)

Some discussed HIV in less stigmatizing terms compared to those who had not been tested, and felt that internalized stigma was a greater barrier than actual discrimination. Knowing someone living with HIV seemed to help them to be more accepting:

> *"I remember [stigma] used to be common but I don`t see it a lot… Last year I had a nanny who was HIV-positive looking after my daughter and we were just accepting her and we would support her to get ARVs, so personally I think we have passed that time."* (35 year-old, tested recently)

Suggestions for overcoming stigma fears.—Men discussed the importance of educating men about HIV testing, and raising awareness about the availability and effectiveness of HIV treatment, through public health campaigns on the radio, on social media (e.g., WhatsApp©, Facebook©), and at in-person events.

> *"I grew up seeing pictures of people dying of HIV. I think that has built into people's minds…if we could bring more messages on how people will survive after HIV results then people should have motivation to test."* (35 year-old, tested recently)

Another man further suggested having an HIV hotline to talk with a counselor prior to deciding whether to get tested:

> *"I don't know now of any number that I can call if I had stigma or fear or hesitation… I would like for my employer to say, there is this service, there is this number you can call. If you are to talk about HIV/AIDS in a discrete private manner here is a number that you can call at any time…For some people it's a big deal to start off a conversation and establish a relationship first before I can come to you."* (36 year-old, not tested recently)

Some men recommended asking respected, well-known men (sports figures, men in positions of authority) to promote HIV testing and publicly commit to getting tested.

> *"If you have someone whom people are looking up to being tested in the campaign…maybe it's a footballer, maybe it's an icon in that community, maybe it's the chief. If right now a chief calls a Kgotla [ward] meeting and tells everyone these people are from here, they are from a health department and we are here to get tested and he has organized traditional snacks for people for refreshments, and he starts leading by example...You know how people look up to chiefs. Yes, as a traditional leader he leads by example by getting tested there, you will see I promise you more men will be following. They will do it immediately."* (35 year-old, not tested recently)

Another man reflected on the lack of public role models around HIV:

> *"I have never seen a CEO, a musician and actor, or a public figure who says 'look, it hit me, my wife was devastated, or my husband was devastated but here we are we figured out how to work it through and we are happier than ever.' There is no point of reference so you always think that if it happened to me, I'm alone in the cold… and the stigma how am I going to handle it? Being the first Motswana, being the first musician being the first director of multinational cooperation or big cooperation in Botswana with this thing… The people in that [income] bracket beneath the ones you are interviewing, have had many points of reference…They have seen taxi drivers, they have seen entry level nurses, they have seen people who are dealing with it. And they think you know what? And they can actually even say HIV is nothing I'm afraid of...Because they have a point of reference."* (36 year-old, not tested recently)

Men felt that integration of HIV testing and care with other healthcare services was critical for reducing HIV stigma, such that HIV would be perceived similarly to any other disease. They suggested integration of HIV testing into regular health check-ups or other types of health-related tests and screenings (e.g., for hypertension, diabetes), and not having a separate HIV testing area in clinics.

> *"Since some men are shy to be seen queuing for HIV testing, I think it is better to have HIV testing combined with other services or testing. That will offer some privacy."* (36 year-old FG participant, not tested recently)

Men found the idea of bundling HIV testing with other types of testing (e.g., for sexually transmitted and non-communicable diseases) to be highly acceptable, due to increased convenience and efficiency, as well as reduced stigma (due to treating HIV similarly to other conditions).

> *"I think it would make it a lot easier because it won't make HIV look like a monster."* (43 year-old, tested recently)

HIV testing hours and queues are inconvenient.—Men said that clinic hours are not conducive to their busy schedules. Some felt that weekend community testing events were inconvenient, as men were busy with their families, farming, or sporting events:

> *"You don't want to stop what you are doing just to go and get tested. If it's shopping, if it's watching a game, or going to the cattle post. I think people are already busy, you have your Monday to Friday carved out for you, you are already busy, you only have two days which is the weekend."* (35 year-old, not tested recently)

> *"The issue in my mind remains a consequence of time and availability/location of testing sites…I am of the view that testing facilities are almost always full with service, very slow, and most men, myself inclusive, will not invest time to line up to get tested. Not that it is less important but it competes for time with many other moving pieces in the world and unfortunately it won't take priority."* (36 year-old FG participant, tested recently)

Stigma-related barriers seemed to be more salient across interviews than inconvenience-related barriers, especially for men who had not tested recently. Some men felt that inconvenience was an excuse not to get tested:

> *"Supervisors… will claim or they will be busy for their health. Instead of giving priority to test or to their health, they will instead claim to be busy… But some decide not to test even though they have time."* (45 year-old, tested recently)

To address convenience-related concerns, men suggested expanding public clinic hours so that men could test after work, adding testing centres to reduce queue lengths, and employer-sponsored routine testing at workplaces *("give me an hour or two outside the working hours, I can pop out of the office swing by the testing centre, go to the gym if I'm going to the gym or go home"*). Some cautioned that workplace testing would need to be done by external entities to ensure that results were kept confidential from workplace administrators and colleagues *("it would have to be very clearly separated from the organization"*). Men who had not been tested recently seemed to be more skeptical that workplace testing would have adequate confidentiality protections.

Some suggested opening 24-hour testing centres and offering testing where men congregate *("if they let me take [the test] at a soccer match where men usually congregate on Sunday or where they go out to hang or have drinks or things like that then it would have been a lot easier thing to do"*).

HIVST is highly acceptable.—HIVST was universally perceived to address the identified barriers to HIV testing. Nearly all men said that they preferred HIVST to other forms of HIV testing. After being shown a self-test kit, men believed that HIVST would be easy to use and that the instructions would be easy to follow *("I think it is easier than using a condom"*).

Self-testing addresses fears around privacy and confidentiality, and consequently, overcomes stigma.—Men especially liked the control that HIVST gave them over the testing and disclosure process: being able to self-test whenever and wherever they wished, and allowing them to process their emotions on their own timeline, and decide whether and how to tell others. Men liked that HIVST can be conducted alone, with only them knowing they took the test and the results; thus, others could not stigmatize them.

> *"Honestly for me I think it would reduce the stigma, it will give more control to patients."* (40 year-old, tested recently)

> *"In the sense that you will be doing it in your own privacy so you are not worried about who will see your results. So yes I think that on its own takes care of [stigma] in a very big way."* (35 year-old, not tested recently)

> *"It gives individuals total control of the results and who to share the information with, thus stigma is reduced; there are no records of the testing and the results hence the person won't feel or imagine the stigma."* (42 year-old, FG participant, tested recently)

HIVST is convenient.—Men discussed obtaining and using test kits in a private space, confidentially, whenever they were ready to test, at a convenient time. Across interviews and FGs, men saw their home as a safe place to use the test kit, and to store it until they decided to test:

> *"I think the self-testing kits, once you understand how it works, it's got to be the best. It's the most convenient, you can test where you want, effectively when you want."* (40 year-old, tested recently)

Concerns about potential adverse mental health effects and fears of inaccurate results.—A strong concern among some men, especially those who tested recently, was that HIVST could have negative mental health consequences because there is no healthcare provider or pre- or post-test counseling. Some believed the test kit might be used incorrectly, leading to inaccurate results.

> *"We [may] see people getting depressed, people panicking and committing suicide when they are on their own".* (35 year-old, tested recently)

> *"Disadvantages: No prior counseling; lack of knowledge in the use of testing devices may result in wrong results; no immediate assistance after obtaining results especially when emotions will be affected."* (42 year-old, FG participant, tested recently)

To address concerns, men suggested including information in the test kit about how to get confidential and anonymous counseling and support for test use (e.g., toll-free telephone hotline, WhatsApp contact, YouTube instructional video links). Some suggested public service announcements on television and social media.

Men would prefer to obtain and use HIVST in private.—Men suggested leaving test kits in public bathrooms, similar to how condoms are dispensed *("in the bathrooms, certainly I can bet you know they will fly off the shelves"*). They also suggested private spaces at businesses and other places they already frequented (e.g., gym, workplace, church, pharmacy).

Some said they would be comfortable with delivery of the test kits to their home or workplace, if it was packaged plainly (so that the test kit contents were not obvious: *"a nice wrapped parcel that no one would know what it is"; "if its delivered let it be in a such a way that I will receive it and its not in an obvious package"; "it's comfortable to be at home. It's more private than any other place"*). For some, especially those who had not been tested recently, even home delivery might not be sufficiently private *("I don't want it delivered at home. My wife will ask me, 'why you are doing this'; if you deliver at home then you are almost telling the whole family"*). There was more openness among men who had been tested recently to obtain test kits in public spaces (e.g., clinics, pharmacies). Nearly all preferred to self-test alone (e.g., in their home or work bathroom, in their car). Men suggested having different ways to obtain the test-kits, instead of a one-size-fits-all option.

HIVST marketing must be tailored to men.—FG participants were probed about ways to promote HIVST among higher-SES men like themselves. They said that any marketing messages should assure men of the self-test's accuracy and ease of use.

> *"It would be important to emphasize the reliability of the testing kit, how support issues would be catered for (i.e., counseling, pre and post). Importantly to note is the privacy and confidentiality around the entire process."* (42 year-old, FG participant, tested recently)

Men said that targeted advertising on social media, radio, and television, and through their social networks, would be effective. They suggested that known, respected men of higher status could promote self-testing (e.g., athletes, local company heads, and musicians):

> *"I believe in leading by example: 1) Get CEOs of companies and request them to lead; 2) Organize some athletes to join in as well; 3) Desmond Tutu or Bill Clinton. All the above can be used to drive the testing as they are deemed as inspirational to their followers."* (51 year-old, FG participant, tested recently)

Discussion

Our results are consistent with the multi-level predictors of health behavior proposed by the Theory of Triadic Influence, and confirm prior findings in SSA indicating that HIV stigma is a primary obstacle to testing among men (Hlongwa, Mashamba-Thompson, Makhunga, & Hlongwana, 2020), as is the inconvenience of HIV testing venues' hours and locations (Okal et al., 2020). Extending prior research showing masculinity-related barriers to HIV testing (Sileo et al., 2018; Skovdal et al., 2011), our results help to elucidate reasons why men of higher-SES may be especially reluctant to get tested. We found great fear of loss of societal status—a topic that is important to investigate in further research, in order to determine how to address this concern.

The findings of the present study also are consistent with the larger literature indicating that stigma is a barrier to HIV testing in SSA overall, across genders (Akatukwasa et al., 2021; Mwisongo et al., 2016; Sullivan et al., 2020). The present study's results, in combination with prior literature, suggest that the ways in which stigma manifests are qualitatively different among high-SES men, who are at the intersection of a higher strata of class and gender, than among those who experience inequalities due to intersectional stigmas resulting from interlocking systems of power (e.g., related to socioeconomic disadvantage and gender inequality) (Larson et al., 2016; Turan et al., 2019). In our study, we found that stigma concerns of higher-SES men in Botswana may be amplified in public clinic spaces perceived to be a mismatch with their masculinity and privileged social identity. Prior research suggests that stigma concerns among those who experience inequalities due to their gender and class—in particular, women living in poverty—may similarly anticipate HIV stigma in public clinics as well as from partners; however, among women, such anticipated stigma instead may be based in greater vulnerability to discrimination within healthcare as well as to intimate partner conflict and violence from their devalued identities (Sullivan et al., 2020).

As suggested by participants, public clinic spaces can be made more welcoming to men, through expanded evening hours (which can help to shorten queues) and assurances about confidentiality protections. In addition, higher-SES men did not identify with depictions of people at risk for and living with HIV in public health campaigns, or with people they tended to see visiting public clinics. They said that HIV is rarely discussed publicly among men of their societal stature, and that they had no public role models for positive, healthy living with HIV. Men recommended that HIV testing campaigns include promotions by well-known, well-respected men in the country.

Participants had actionable suggestions for implementation of HIVST. Above all, men valued privacy; thus, they found HIVST to be highly acceptable, as they would be in control of obtaining and using it. Men were amenable to a range of places for obtaining the self-test kit, as long as privacy was assured. Most men preferred to take the kit home, and to store it until they were ready to use it, alone. Men universally felt that that HIVST addressed stigma concerns, since other people would not be aware that they had gotten tested and thus would not judge them. Most felt that self-testing was worth the risks of potential errors and mental health issues, if adequate protections (e.g., confidential helplines) were put in place. These simple solutions, feasible to implement country-wide, would assuage men's fears about self-testing.

Strengths and Limitations

An innovative aspect of the study was the use of online asynchronous FG data. The FG data complemented the semi-structured interview data, and were used to elicit specific ways that HIVST could be marketed to men of higher-SES. We found similar themes across the two qualitative methods. However, most men invited to the FGs did not contact the study team to participate, possibly because they did not think a multi-day study would be conducive to their busy work lives. In addition, some men who initially agreed were unable to do so, primarily citing trouble navigating or connecting to the online platform. Thus, such online data collection may not be feasible for this population. Future studies could improve upon our methods by more specifically assuring potential participants of the low burden of participation (e.g., only a few minutes per day), as well as by designing more user-friendly interfaces by conducting remote usability testing (Andreasen et al., 2007) and other pilot work with the study population.

Limitations include the lower response rate and smaller sample size than originally intended, especially for the FGs, primarily due to participant issues with access to the online platform. Another limitation is that some participants overlapped between the semi-structured interviews and FGs. While this overlap provided an opportunity for men who participated in both to elaborate further about HIVST, it also may have contributed to the similarity of themes between the interviews and FGs. A further limitation is that we did not include the perspectives of sexual minority men, a subgroup of men who are at great risk for HIV as well as of stigma and discrimination (Baral et al., 2009).

Conclusions

In sum, our qualitative study indicates that HIVST is perceived to be acceptable and feasible among higher-SES men in Botswana. HIVST was perceived to reduce barriers to HIV testing, by decreasing stigma and increasing convenience, confidentiality, and privacy around HIV testing. Men suggested that HIVST kits could be picked up in public spaces, confidentially, and used in private at a time and place of their choosing, giving them more control over the testing process. Notably, HIVST initiatives for key and at-risk populations, as well as the general public, have begun in several countries, including Botswana and Uganda (Kealeboga, 2020; The Republic of Uganda Ministry of Health, 2016). Additionally, men advanced that they would prefer an online or phone contact center to help with counselling prior to or after testing if needed, for potential adverse mental health effects. Our study provides feasible suggestions for implementation of HIVST to increase serostatus awareness among higher-SES men—an overlooked population in need of targeted intervention.

References

Adams AK, & Zamberia AM (2017). “I will take ARVs once my body deteriorates”: An analysis of Swazi men’s perceptions and acceptability of Test and Start. African Journal of AIDS Research, 16(4), 295–303. 10.2989/16085906.2017.1362015 [PubMed: 29132279]

Akatukwasa C, Getahun M, El Ayadi AM, Namanya J, Maeri I, Itiakorit H, Owino L, Sanyu N, Kabami J, & Ssemmondo E (2021). Dimensions of HIV-related stigma in rural communities in Kenya and Uganda at the start of a large HIV ‘test and treat’trial. PloS One, 16(5), e0249462. [PubMed: 33999961]

Andreasen MS, Nielsen HV, Schrøder SO, & Stage J (2007, April 28-May 3, 2007). What happened to remote usability testing? An empirical study of three methods. Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, 1405–1414.

Baral S, Trapence G, Motimedi F, Umar E, Iipinge S, Dausab F, & Beyrer C (2009). HIV prevalence, risks for HIV infection, and human rights among men who have sex with men (MSM) in Malawi, Namibia, and Botswana. PloS One, 4(3), e4997. [PubMed: 19325707]

Bogart LM, Naigino R, Maistrellis E, Wagner GJ, Musoke W, Mukasa B, Jumamil R, & Wanyenze RK (2016). Barriers to linkage to HIV care in Ugandan fisherfolk communities: A qualitative analysis. AIDS and Behavior, 20(10), 2464–2476. 10.1007/s10461-016-1331-z [PubMed: 26961380]

Chadborn TR, Delpech VC, Sabin CA, Sinka K and Evans BG, 2006. The late diagnosis and consequent short-term mortality of HIV-infected heterosexuals (England and Wales, 2000–2004). AIDS, 20(18), pp.2371–2379. [PubMed: 17117024]

Cohen MS, Chen YQ, McCauley M, Gamble T, Hosseinipour MC, Kumarasamy N, Hakim JG, Kumwenda J, Grinsztejn B, Pilotto JH and Godbole SV, 2011. Prevention of HIV-1 infection with early antiretroviral therapy. New England Journal of Medicine, 365(6), pp.493–505.

Cohen L, Manion L and Morrison K (2000) Research Methods in Education. 5th Edition, Routledge Falmer, London. 10.4324/9780203224342

DiCarlo AL, Mantell JE, Remien RH, Zerbe A, Morris D, Pitt B, Abrams EJ, & El-Sadr WM (2014). ‘Men usually say that HIV testing is for women’: Gender dynamics and perceptions of HIV testing in Lesotho. Culture, Health & Sexuality, 16(8), 867–882. 10.1080/09540121.2016.1164806

Dovel K, Dworkin SL, Cornell M, Coates TJ, & Yeatman S (2020). Gendered health institutions: Examining the organization of health services and men’s use of HIV testing in Malawi. Journal of the International AIDS Society, 23, e25517. 10.1002/jia2.25517 [PubMed: 32589346]

Flay BR, & Petraitis J (1994). A new theory of health behavior with implications for preventive interventions. Advances in Medical Sociology, 4, 19–44.

Gaolathe T, Wirth KE, Holme MP, Makhema J, Moyo S, Chakalisa U, Yankinda EK, Lei Q, Mmalane M, & Novitsky V (2016). Botswana's progress toward achieving the 2020 UNAIDS 90–90-90 antiretroviral therapy and virological suppression goals: A population-based survey. Lancet HIV, 3(5), e221–e230. 10.1016/S2352-3018(16)00037-0 [PubMed: 27126489]

Ha JH, Van Lith LM, Mallalieu EC, Chidassicua J, Pinho MD, Devos P, & Wirtz AL (2019). Gendered relationship between HIV stigma and HIV testing among men and women in Mozambique: A cross-sectional study to inform a stigma reduction and male-targeted HIV testing intervention. BMJ Open, 9(10), e029748. 10.1136/bmjopen-2019-029748

Hajizadeh M, Sia D, Heymann SJ, & Nandi A (2014, 2 18). Socioeconomic inequalities in HIV/AIDS prevalence in sub-Saharan African countries: Evidence from the Demographic Health Surveys. International Journal of Equity in Health, 13, 18. 10.1186/1475-9276-13-18

Hargreaves JR, Krishnaratne S, Mathema H, Lilleston PS, Sievwright K, Mandla N, Mainga T, Vermaak R, Piwowar-Manning E, & Schaap A (2018). Individual and community-level risk factors for HIV stigma in 21 Zambian and South African communities: analysis of data from the HPTN071 (PopART) study. AIDS (London, England), 32(6), 783–793.

Harichund C, Karim QA, Kunene P, Simelane S, & Moshabela M (2019). HIV self-testing as part of a differentiated HIV testing approach: Exploring urban and rural adult experiences from KwaZulu-Natal, South Africa using a cross-over study design. BMC Public Health, 19(1), 53. 10.1186/s12889-018-6366-9 [PubMed: 30634943]

Harichund C, Kunene P, & Moshabela M (2019). Feasibility of HIV self-testing: Experiences of people seeking HIV testing in rural and urban KwaZulu-Natal, South Africa. African Journal of AIDS Research, 18(2), 115–122. 10.2989/16085906.2019.1621358 [PubMed: 31282305]

Harichund C, & Moshabela M (2018). Acceptability of HIV self-testing in sub-Saharan Africa: Scoping study. AIDS and Behavior, 22(2), 560–568. 10.1007/s10461-017-1848-9 [PubMed: 28699017]

Hlongwa M, Mashamba-Thompson T, Makhunga S, & Hlongwana K (2020). Barriers to HIV testing uptake among men in sub-Saharan Africa: A scoping review. African Journal of AIDS Research, 19(1), 13–23. 10.2989/16085906.2020.1725071 [PubMed: 32174231]

Hlongwa M, Mashamba-Thompson T, Makhunga S, Murararaneza C, & Hlongwana K (2020). Men's perspectives on HIV self-testing in sub-Saharan Africa: A systematic review and meta-synthesis. BMC Public Health, 20(1), 66. 10.1186/s12889-020-8184-0 [PubMed: 31941479]

Hsieh H-F, & Shannon SE (2005). Three approaches to qualitative content analysis. Qualitative Health Research, 15(9), 1277–1288. 10.1177/1049732305276687 [PubMed: 16204405]

Indravudh PP, Choko AT, & Corbett EL (2018). Scaling up HIV self-testing in sub-Saharan Africa: A review of technology, policy and evidence. Current Opinion in Infectious Diseases, 31(1), 14–24. 10.1097/QCO.0000000000000426 [PubMed: 29232277]

Kealeboga K (2020). Botswana: Pandemic Affects HIV Self Testing Roll-Out Plan. Botswana Daily News https://allafrica.com/stories/202008110238.html

Keetile M (2014). High-risk behaviors among adult men and women in Botswana: Implications for HIV/AIDS prevention efforts. SAHARA-J, 11(1), 158–166. 10.1080/17290376.2014.960948 [PubMed: 25293869]

Kurth AE, Cleland CM, Chhun N, Sidle JE, Were E, Naanyu V, Emonyi W, Macharia SM, Sang E, & Siika AM (2016). Accuracy and acceptability of oral fluid HIV self-testing in a general adult population in Kenya. AIDS and Behavior, 20(4), 870–879. 10.1007/s10461-015-1213-9 [PubMed: 26438487]

Lakew Y, Benedict S, & Haile D (2015). Social determinants of HIV infection, hotspot areas and subpopulation groups in Ethiopia: Evidence from the National Demographic and Health Survey in 2011. BMJ Open, 5(11), e008669. 10.1136/bmjopen-2015-008669

Larson E, George A, Morgan R, & Poteat T (2016). 10 Best resources on… intersectionality with an emphasis on low-and middle-income countries. Health Policy and Planning, 31(8), 964–969. [PubMed: 27122486]

Leichliter JS, Paz-Bailey G, Friedman AL, Habel MA, Vezi A, Sello M, Farirai T, & Lewis DA (2011). 'Clinics aren't meant for men': Sexual health care access and seeking behaviours among men

in Gauteng province, South Africa. SAHARA-J: Journal of Social Aspects of HIV/AIDS, 8(2), 82–88. 10.1080/17290376.2011.9724989

Letshwenyo-Maruatona SB, Madisa M, Boitshwarelo T, George-Kefilwe B, Kingori C, Ice G, Bianco JA, Marape M, & Haile ZT (2019). Association between HIV/AIDS knowledge and stigma towards people living with HIV/AIDS in Botswana. African Journal of AIDS Research, 18(1), 58–64. 10.2989/16085906.2018.1552879 [PubMed: 30880585]

Makusha T, Knight L, Taegtmeyer M, Tulloch O, Davids A, Lim J, Peck R, & van Rooyen H (2015). HIV self-testing could "revolutionize testing in South Africa, but it has got to be done properly": Perceptions of key stakeholders. PloS One, 10(3), e0122783. 10.1371/journal.pone.0122783 [PubMed: 25826655]

Mambanga P, Sirwali RN, & Tshitangano T (2016). Factors contributing to men's reluctance to seek HIV counselling and testing at primary health care facilities in Vhembe District of South Africa. African Journal of Primary Health Care & Family Medicine, 8(2). 10.4102/phcfm.v8i2.996

Matovu JK, Wanyenze RK, Wabwire-Mangen F, Nakubulwa R, Sekamwa R, Masika A, Todd J, & Serwadda D (2014). "Men are always scared to test with their partners… it is like taking them to the Police": Motivations for and barriers to couples' HIV counselling and testing in Rakai, Uganda: A qualitative study. Journal of the International AIDS Society, 17(1), 19160. 10.7448/IAS.17.1.19160 [PubMed: 25239379]

Mwisongo A, Mohlabane N, Tutshana B, & Peltzer K (2016). Barriers and facilitators associated with HIV testing uptake in South African health facilities offering HIV Counselling and Testing. Health SA Gesondheid, 21(1), 86–95.

Nicholas DB, Lach L, King G, Scott M, Boydell K, Sawatzky BJ, Reisman J, Schippel E, & Young NL (2010). Contrasting internet and face-to-face focus groups for children with chronic health conditions: Outcomes and participant experiences. International Journal of Qualitative Methods, 9(1), 105–121. 10.1177/160940691000900102

Njau B, Covin C, Lisasi E, Damian D, Mushi D, Boulle A, & Mathews C (2019). A systematic review of qualitative evidence on factors enabling and deterring uptake of HIV self-testing in Africa. BMC Public Health, 19(1), 1289. 10.1186/s12889-019-7685-1 [PubMed: 31615461]

Novitsky V, Bussmann H, Okui L, Logan A, Moyo S, van Widenfelt E, Mmalane M, Lei Q, Holme MP, & Makhema J (2015). Estimated age and gender profile of individuals missed by a home-based HIV testing and counselling campaign in a Botswana community. Journal of the International AIDS Society, 18(1), 19918. 10.7448/IAS.18.1.19918 [PubMed: 26028155]

Oduetse OK, Nkomo B, Majingo N, Mashalla Y, & Seloilwe E (2019). Perceptions and attitudes towards acceptability of HIV self-testing among female sex workers in Selibe Phikwe, Botswana. African Journal of AIDS Research, 18(3), 192–197. 10.2989/16085906.2019.1638427 [PubMed: 31469045]

Okal J, Lango D, Matheka J, Obare F, Ngunu-Gituathi C, Mugambi M, & Sarna A (2020). "It is always better for a man to know his HIV status"–A qualitative study exploring the context, barriers and facilitators of HIV testing among men in Nairobi, Kenya. PloS One, 15(4), e0231645. 10.1371/journal.pone.0231645 [PubMed: 32294124]

Osler M, Cornell M, Ford N, Hilderbrand K, Goemaere E, & Boulle A (2020). Population-wide differentials in HIV service access and outcomes in the Western Cape for men as compared to women, South Africa: 2008 to 2018: A cohort analysis. Journal of the International AIDS Society, 23(S2), e25530. 10.1002/jia2.25530 [PubMed: 32589367]

Rankin-Williams AC, Geoffroy EM, Schell ES, & Mguntha AM (2017). How can male rates of HIV testing be increased? Recommendations from a mixed methods study in southern Malawi. International Health, 9(6), 367–373. 10.1093/inthealth/ihx042 [PubMed: 29236985]

Ryan GW, & Bernard HR (2003). Techniques to identify themes. Field Methods, 15(1), 85–109. 10.1177/1525822X02239569

Shand T, Thomson-de Boor H, van den Berg W, Peacock D, & Pascoe L (2014). The HIV blind spot: Men and HIV testing, treatment and care in sub-Saharan Africa. IDS Bulletin, 45(1), 53–60. 10.1111/1759-5436.12068

Shapiro AE, van Heerden A, Krows M, Sausi K, Sithole N, Schaafsma TT, Koole O, van Rooyen H, Celum CL, & Barnabas RV (2020). An implementation study of oral and blood-based HIV self-testing and linkage to care among men in rural and peri-urban KwaZulu-Natal, South Africa.

Journal of the International AIDS Society, 23(Suppl 2), e25514. 10.1002/jia2.25514 [PubMed: 32589337]

Sileo KM, Fielding-Miller R, Dworkin SL, & Fleming PJ (2018). What role do masculine norms play in men's HIV testing in sub-Saharan Africa?: A scoping review. AIDS and Behavior, 22(8), 2468–2479. 10.1007/s10461-018-2160-z [PubMed: 29777420]

Skovdal M, Campbell C, Madanhire C, Mupambireyi Z, Nyamukapa C, & Gregson S (2011). Masculinity as a barrier to men's use of HIV services in Zimbabwe. Globalization and Health, 7(1), 13. 10.1186/1744-8603-7-13 [PubMed: 21575149]

SocioCultural Research Consultants LLC. (2018). Dedoose web application for managing, analyzing, and presenting qualitative and mixed method research data In (Version 8.0.35) www.dedoose.com.

Statistics Botswana. (2018). Botswana Multi-Topic Household Survey Report 2015/2016. Available at: https://www.statsbots.org.bw/latest-publications

Stemler S (2000). An overview of content analysis. Practical Assessment, Research, and Evaluation, 7(1), 17. 10.7275/z6fm-2e34

Stewart K, & Williams M (2005). Researching online populations: The use of online focus groups for social research. Qualitative Research, 5(4), 395–416. 10.1177/1468794105056916

Sullivan MC, Rosen AO, Allen A, Benbella D, Camacho G, Cortopassi AC, Driver R, Ssenyonjo J, Eaton LA, & Kalichman SC (2020). Falling short of the First 90: HIV stigma and HIV testing research in the 90–90–90 Era. AIDS and Behavior, 24, 357–362. [PubMed: 31907675]

Tates K, Zwaanswijk M, Otten R, van Dulmen S, Hoogerbrugge PM, Kamps WA, & Bensing JM (2009). Online focus groups as a tool to collect data in hard-to-include populations: examples from paediatric oncology. BMC Medical Research Methodology, 9(1), 15. 10.1186/1471-2288-9-15 [PubMed: 19257883]

The Republic of Uganda Ministry of Health. (2016). Consolidated Guidelines for Prevention and Treatment of HIV in Uganda. The Republic of Uganda Ministry of Health. http://library.health.go.ug/publications/hivaids/consolidated-guidelines-prevention-and-treatment-hiv-uganda

The World Bank. (2015). Botswana poverty assessment 2015 (Report No. 88473-BW). https://documents.worldbank.org/en/publication/documents-reports/documentdetail/351721468184754228/botswana-poverty-assessment

Turan JM, Elafros MA, Logie CH, Banik S, Turan B, Crockett KB, Pescosolido B, & Murray SM (2019). Challenges and opportunities in examining and addressing intersectional stigma and health. BMC Medicine, 17(1), 7. [PubMed: 30764816]

UNAIDS. (2017). Ending AIDS: Progress towards the 90–90-90 targets. Joint United Nations Programme on HIV/AIDS (UNAIDS). https://www.unaids.org/en/resources/documents/2017/20170720_Global_AIDS_update_2017

UNAIDS. (2019). Country Factsheets: Botswana. Retrieved June 14, 2020 from https://www.unaids.org/en/regionscountries/countries/botswana

Weiser SD, Heisler M, Leiter K, Percy-de Korte F, Tlou S, DeMonner S, Phaladze N, Bangsberg DR, & Iacopino V (2006). Routine HIV testing in Botswana: a population-based study on attitudes, practices, and human rights concerns. PLoS Medicine, 3(7), e261. 10.1371/journal.pmed.0030261 [PubMed: 16834458]

Wilkerson JM, Iantaffi A, Grey JA, Bockting WO, & Rosser BS (2014). Recommendations for internet-based qualitative health research with hard-to-reach populations. Qualitative Health Research, 24(4), 561–574. 10.1177/1049732314524635 [PubMed: 24623662]

Zwaanswijk M, & van Dulmen S (2014). Advantages of asynchronous online focus groups and face-to-face focus groups as perceived by child, adolescent and adult participants: A survey study. BMC Research Notes, 7(1), 756. 10.1186/1756-0500-7-756 [PubMed: 25341440]

Table 1:

Socio-demographic Characteristics of the Semi-Structured Interview and Focus Group Samples (n= 20 interview participants and 9 online FG participants with complete data)

	Semi-Structured Interview Participants		Online Focus Group Participants	
Variable	Number	Percentage %	Number	Percentage %
Age				
35–40	12	60%	5	56%
41–45	5	25%	3	33%
46–50	2	10%	0	0%
51+	1	5%	1	11%
Marital status				
Married	18	90%	8	89%
Single	2	10%	1	11%
Annual income BWP (USD) [a, b]				
200,000–299,999 ($18,587)	4	20%	1	11%
300,000–399,999 ($27,881)	5	25%	1	11%
400,000–499,999 ($37,175)	2	10%	0	0%
500,000+ ($46,468+)	7	35%	5	56%
Missing	2	10%	2	22%
HIV testing				
Tested in the past 12 months	10	50%	6	67%
Not tested in the past 12 months	10	50%	3	33%

[a]Using a 2019 average exchange rate of 10.76 pula = 1 USD

[b]For context, in the third quarter of 2019, average wages in Botswana were 6,347 BWP per month (76,164 BWP or 7,078.43 USD/year) (https://take-profit.org/en/statistics/wages/botswana/) and in July 2019, average wages in the U.S. were 3,812.80 USD per month (45,753 USD/year) (https://take-profit.org/en/statistics/wages/united-states/). Moreover, in 2019, the GDP per capita, Purchasing Power Parity (PPP) in Botswana was 18,528.59 and in the U.S. was 65,279.53 (https://data.worldbank.org/botswana)