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Views on HIV self-testing among adolescent and young men who have sex with men and transgender people in Bangladesh: a qualitative exploration to inform HIV program

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Abstract

Introduction: In Bangladesh, human immunodeficiency virus (HIV) testing coverage needs to increase in general. Traditional HIV testing services are yet to attract underprivileged and vulnerable populations, such as men who have sex with men (MSM) and transgender (TG/hijra) people. For this purpose, priority should be given to communities, who are less aware of availability of HIV self-testing (HIVST). This study aimed to understand the awareness, willingness to perform HIVST, and preferred choices and views of young and adolescent MSM and TGs regarding HIV infection, and the proposed opportunity of HIV self-testing with risk perceptions.

Material and methods: The study used a convenience sampling methodology to recruit participants among young MSM and TGs through Health Initiatives for Men (HIM) centers in Bangladesh. In each study site, one focus group discussion (FGD) was conducted with each target group; there were 10 FGDs in five study sites, and 72 FGD participants in total.

Results: The study findings revealed that, despite a poor awareness level, HIV self-testing by oral fluid was well-accepted among the young MSM and TGs. The majority of FGD participants preferred an oral saliva testing kit with assisted testing services. They also suggested to assess cost-effectiveness of various HIVST distribution strategies, ensuring pre- and post-test counseling, referral for a confirmatory test (facility-based), and link with an antiretroviral center if needed.

Conclusions: HIVST has the potential to strongly impact rapid scaling-up of existing testing procedures. Therefore, collaboration between government and community stakeholders is required to identify the most optimal strategies of HIVST implementation, considering cost-effectiveness of HIVST kits.

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Key words: men who have sex with men (MSM), transgender (TG), HIV self-testing (HIVST), oral fluid testing kit.

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Introduction

Globally, several targets have been set to help promote an acquired immune deficiency syndrome (AIDS)-free generation. The UNAIDS's 95-95-95 initiative encapsulates these targets and its related objectives. The treatment targets seek to ensure that 95% of people living with human immunodeficiency virus (HIV)/AIDS (PLHIV) are aware of their status, that 95% of PLHIV are started on antiretroviral treatment (ART), and that 95% of ART recipients achieve viral load suppression [1]. These goals necessitate greatly enhanced HIV testing access and regular uptake [2]. Unfortunately, traditional HIV testing services (HTS) have yet to achieve global access to HIV prevention, treatment, and care, particularly for non-testers with limited access, those at greater risk of HIV transmission, and hard-to-reach populations [3]. Compared with global conditions, Bangladesh's HIV infection level is very low, with a prevalence rate of less than 0.1%; however, the number of people uninformed or unaware of their illnesses is relatively high [4].

Bangladesh exhibited an early understanding of and response to the AIDS threat. The National AIDS Committee was set up in 1985, four years before the country reported the first HIV case [5]. However, men who have sex with men (MSM) and transgender (TG/hijra) people are often overlooked as a high-risk for HIV infection in Bangladesh [6]. Male sex workers (MSW), TG people, and MSM have been included in the National HIV and Syphilis Surveillance (NHSS) data since 2000-01. Recent HIV records of Bangladesh (published on December 1st, 2021 by the AIDS/STD Program, under the Directorate General of Health Services, Ministry of Health and Family Welfare) showed that among newly detected PLHIV, 18% were MSM, MSW, and TG people [7]. Sex between men has already accounted for approximately a third of HIV transmission in Asia and the Pacific region [8]. However, this is very likely to be underreported. More importantly, the technical brief on "HIV and young men who have sex with men" mentions that many young MSM are unaware that unprotected anal sex can transmit HIV and other sexually transmitted infections (STIs) as well as about the importance of condom-compatible lubricants in HIV prevention [9]. Furthermore, they were found to report unprotected anal intercourse with partners of unknown HIV status more likely than older MSM [10].

Research show that underprivileged and vulnerable populations, such as MSM and TGs, face several HIV testing hurdles, e.g., low HIV perception risk, fear and stigma, inadequate access to HIV services, and financial obstacles [11-13]. In 2016, WHO released global HIV self-testing (HIVST) guidelines to eliminate stigma and promote testing privacy [14]. With HIVST, an individual can self-test for HIV by collecting samples (e.g., oral fluid), perform a test, and interpret the result, which may need to be confirmed [15].

HIV testing services in Bangladesh are available in community settings and in public centers; community representatives often deliver the kits. The revised 4th National Strategic Plan for HIV and AIDS Response 2018-2023 is clear in its strategic directive to fast-track the national response to HIV: "In order to increase case detection, new and innovative approaches, e.g., quick HIV testing by peer educator/community health workers has been initiated in the country, and pilot study on HIV self-testing through oral fluid is ongoing. Evidence-based, cost-effective interventions should be scaled up by involving key population (KP) communities to increase testing and treatment coverage among KPs." In this reality, in order to increase HIV case detection, new and innovative approaches, such as HIV (self) testing through oral fluid should be adopted and implemented [16, 17].

HIVST was found highly acceptable among young MSM and TGs in numerous worldwide studies among key populations [18-26]. Similar findings were observed in other studies, where the respondents who never tested for HIV expressed their strong willingness to learn their HIV status through a self-test [22, 27]. In Bangladesh, the overall history of HIV testing as well as the frequency of testing remain low among young adults in their social and sexual networks. No previous study has been conducted on the acceptability of HIVST among adolescent and young MSM and TG people in Bangladesh, as HIV self-testing has just been introduced in the country. Therefore, HIVST must be evaluated before it can be implemented on a larger scale to adolescents and young adults in order to implement evidence-based decisions on the viability of a large-scale rollout of HIVST.

In the view of recent initiation of HIVST in Bangladesh, this study aimed to obtain a qualitative perspective of young MSM and TG participants, aged 15-24 years, on whether they are aware of and willing to undertake HIVST, the modality of services they prefer, and also to gather their suggestions to build a user base for HIVST, thus maximize HTS coverage.

Material and methods

Inclusion criteria

To be eligible for inclusion in the study, individuals had to be a MSM or TG, aged between 15 and 24 years, and provide informed consent for participation in the study.

Sampling design

The study used a convenience sampling methodology to recruit participants from 5 divisions of the country. The study was conducted among adolescent and young MSM and TG beneficiaries of five Health Initiatives for Men (HIM) centers in Bangladesh, including Dhaka, Khulna, Mymensingh, Chattogram, and Sylhet. In each study site, one FGD was conducted with each target group, totaling 10 FGDs. Each of the FGD comprised 6-8 participants, who were selected in consultation with community members of Bandhu Social

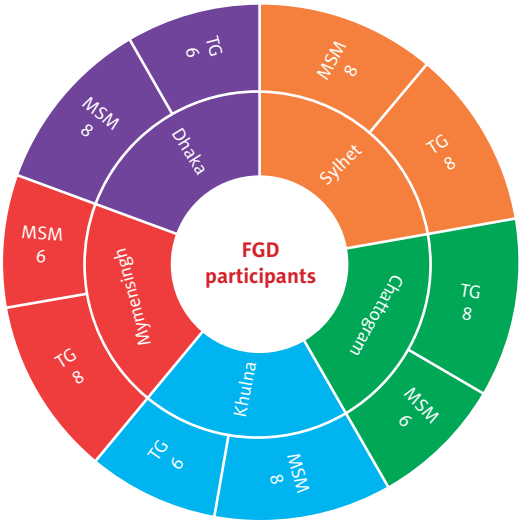

Figure 1. Number of FGD participants of each group from five HIM centers

Welfare Society (Bandhu). In total, the number of FGD participants in five study sites was 72 (Figure 1).

Data collection instruments and strategies

After a literature search, a FGD guideline was designed to collect data along with required consent forms. Questionnaire and consent form were then translated into Bangla to ensure easy accessibility for all participants. Then, trained interviewers conducted all sessions, completed consent and interview forms, and obtained qualitative data using audio equipment. Researchers observed the discussions, and audio recorders were used to tape all FGDs to ensure accuracy of participants' views. Each FGD lasted approximately 60-75 minutes, while participants were reached through a peer-driven approach. Discussions focused on adolescent and young MSM's and TGs' awareness of HIVST: if they would be willing to use self-testing over the more widely used test administered by a health worker, their preferred distribution model, and the preferred type of test kit (invasive or non-invasive).

Ethical considerations

Since this study focused on stigmatized people, ethical and human rights standards were followed, and maintaining privacy of participants falls also under these guidelines. The National Research Ethics Committee (NREC) (Reg. No: 445 28 09 2021) approved the study before it started. Participants had complete discretion over whether or not to participate, and if any questions made them feel uncomfortable or for any other reason, they could withdraw from the study at any time. Participant roles and benefits were clearly explained in a written consent statement. For under 18 years old participants, written consent was taken according to Bangladeshi government protocol, i.e., those who are at risk of HIV and stay away from their parents, their parent's consent is not needed. Privacy of respondents was strictly secured by performing FGDs in a private location, and by guaranteeing their anonymity by deleting all personal identifiers from FGD transcripts.

Data analysis

The recorded FGDs were transcribed, and views obtained from the sessions were extracted and categorized to determine whether there was a theme trend among respondents' perceptions. Digital codes were transferred to a Word file. A thematic analysis was carried out to determine whether the target groups shared any patterns or had distinct patterns. Next, a coherent scenario was crafted by using recurrent patterns, which emerged from the qualitative data analysis.

Results

Background characteristics of participants with sexual behaviors

Of the 72 participants who participated in the FGDs, half identified themselves as MSM and the rest as TGs. Although all the participants' age ranged from 15 to 24 years, for the survey, they were divided into two groups: ages ranging from 15 to 19 years constituted the adolescent group, and those aged 20-24 years were included in the youth group.

Of the 36 MSM, more than half (55.6%, n = 20) were unemployed/dependent on a family member, and 41.7% (n = 15) were self-employed persons. There was only one MSM sex worker in the groups. On educational background, 27.8% (n = 10) of participants were graduates, and majority of them (66.7%, n = 24) had at least primary education level. Regarding partner information, a third (n = 12) of the MSM participants had multiple sex partners, a little over a third (n = 14) had cohabiting-single partners, and the rest of them (n = 10) were not in a relationship.

Of the 36 TGs, 13.9% (n = 5) were sex workers, 27.8% (n = 10) were unemployed or depended on their partners or friends, and none were doing private jobs. Twenty-one TG participants (58.3%) were involved in the Hijra profession (i.e., dancing, collecting money from stores/vehicles, etc.). Regarding schooling, there was only one TG person who completed graduation; nine of them (25%) had no education, and the rest (n = 26) had at least primary school level education. On partner information, 72.2% (n = 26) of the TG participants had multiple sex partners, and 27.8% (n = 10) were not in a relationship (Figure 2).

Sexual behavior

Information about sexual behavior and condom use were collected from the participants to determine the extent

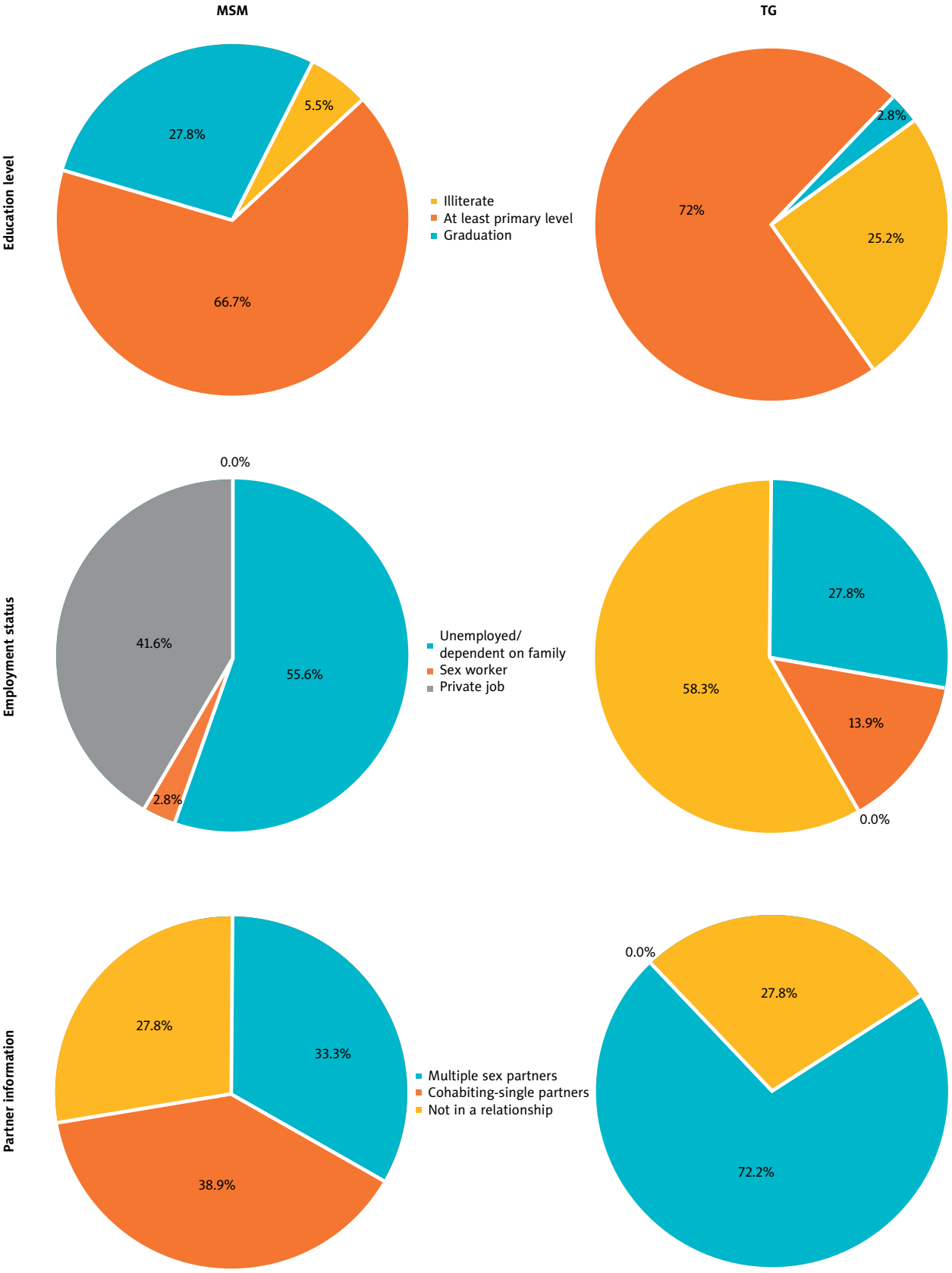

Figure 2. Demographic characteristics of the participants (*N* = 72)

to which they were at risk of getting infected with HIV or other STIs. Some FGD participants shared their experiences of first sexual intercourse as follows:

"I did not give consent during my first sexual intercourse. I went to a friend's house where one of his friends forced me to have sex." (MSM, age 20).

"The first sexual intercourse in my life was forced. One of my teachers raped me. I was about 5 or 6 years old then, as far as I can remember. I still remember I had a lot of bleeding." (TG, age 23).

Regarding the use of condoms, many FGD participants said they usually use condom during anal sex. While some of them also shared that they often do not use condom:

"I have had sex with many other people besides my regular partner in the last three months. Most of them are strangers to me, and I have not used condoms; my partners do not want to use condoms." (MSM, age 20).

"I am in a financial crisis because of COVID-19. I have lost my job. Since I sell sex, many people give me extra money if I agree to have sex without condom, so most of the time I offer sex without condom." (TG, age 21).

Themes explored in HIVST

The qualitative exploration among the young MSM and TGs revealed several key issues related to HIVST, including general awareness and attitude towards HIVST, perceived barriers to purchasing HIV testing kits, preferences for testing kits, methods and locations for applying HIVST, and linkage to care and support. The modalities of distributing the required information on HIVST were also revealed from the discussion groups. Additionally, the participants shared their ideas on how to deal with problems they had encountered, and how to enhance awareness about HIVST. The qualitative findings are summarized in Table 1.

Awareness and attitude about HIVST

The question, "Have you heard about HIV self-testing?", was used to assess the participants' knowledge on HIV self-testing. Before starting this survey, the participants were provided with a formal definition of HIVST according to WHO guidelines to facilitate responding to the question. In this study, HIV self-testing was defined as:

Table 1. Specific findings from the interview responses

Themes explored		Specific findings
Awareness and attitude about HIVST		Lack of awareness
		New concept
		High acceptability
Perceived barriers to buying the kit		Expensive: Price may discourage people from buying and doing the test
		May increase gender-based violence and suicide
		Stigmatization
		Lack of privacy to conduct the test
Preferences	Testing kit	Oral saliva kit
	Testing method	Directly assisted test
	Testing place	At home/facility-based test
Linkage to care		Referral for confirmation and treatment
		Go to hospital for re-test, start ART supply, take counseling
		Follow partner and provide notification strategies
Medium of information to learn about the kit		Pre-education
		Hotline number
		Mass-media campaign
		Internet-based applications
		Videography/live demonstration
Suggestions and preferences for HIVST		Free testing kit
		Assisted HIVST
		Couple-based HIVST
		Provision of pre- and post-test counseling services
		Community sensitization and mobilization
		Facilitation of linkages to care and treatment, particularly in health centers

"HIV self-testing allows people to check themselves for the presence of HIV. The individual collects their own saliva or blood. The individual then uses the test kit to conduct the test and interprets the result, often in a private setting, either alone or with someone he or she trusts. Any HIV-positive result must be followed up with a second test by a healthcare provider to confirm the result and get linked to appropriate prevention, treatment, and care measures. Those who get negative results will repeat the test within 3-6 months after the last exposure to a risk factor."

None of the TG participants had ever heard of HIVST before this study. After the study participants were informed about HIVST, they were asked if they would prefer HIVST or the usual HIV test. It is worth mentioning that almost all the study participants wanted to do HIVST in the future, and showed a positive attitude towards HIVST. They mentioned that implementing HIVST would increase reaching to more individuals, particularly those who do not routinely visit testing centers. Also, they would prefer HIVST for easy access, as it would reduce stigma and discrimination towards them and increase the uptake of couples' HIV testing. Only a few showed a negative attitude. Awareness and attitude towards HIVST among these marginalized communities, i.e., young MSM and TGs, are shown below:

"We have not heard before how to do this test. As far as I understand today, I don't have to give blood to do this test. I can do it with the saliva from my mouth. We will surely do this test if someone explains or teaches us." (TG, age 24).

"I think HIVST will be the best if it is available for our community. It will increase the test rate among us. Many people are scared to see the needle and do not want to test. Testing with saliva in this new way will give everyone a lot of encouragement to do the test." (MSM, age 23).

One participant, however, showed a negative attitude and said:

"I don't want to do HIVST because I don't know what kind of result the new kit will give. If any wrong result comes, I will be shattered. So, I will not do this HIVST. If I get assurance that my result will be accurate, I will do the test." (MSM, age 22).

Perceived barriers to the willingness to buy and pay for HIV testing kit

Although the FGD participants expressed their willingness to perform HIVST, they also mentioned that lack of money, stigmatization at collection sites, and lack of privacy, might be the major barriers to purchasing the kit. Although only a few participants wanted to pay for the kit, almost all others said they would not be able to spend money due to their poor economic status. They also added that, due to COVID-19, everyone's income decreased significantly over the past two years. They strongly recommended that the kit should be made available free of cost. Even if the government subsidizes the test kits and testing procedure incurs costs, it might be unaffordable to potential users. The following quotes demonstrate their concerns:

"When I can't buy a single condom from a pharmacy for fear of embarrassment and being stigmatized at this age, how do I buy an HIV test kit from there? I can't do this. If the price is low and if it is available at the community clinic, only then I will buy it." (MSM, age 22).

"We earn money by doing Hijragiri (Hijra profession) or by collecting money from the roadside or buses. Our daily income is about 100 to 150 BDT. How can we buy such an expensive kit?" (TG, age 21).

The preferred types of testing kits, methods, and testing place

Most participants preferred to use an oral saliva testing kit over traditional blood specimen test, if it will be available in pharmacy, community clinic, or government hospital. Only a few participants preferred the existing testing method of collecting blood specimens. The following quotes illustrate the participants' preferred type of HIVST:

"Seeing blood makes me dizzy, so I would like to do the test with saliva. It is a very good initiative taken by the HIM center. Every one of our age will like it, and I will do it with an oral saliva kit." (TG, age 19).

Most of the respondents reported preferring an assisted test administered by a healthcare professional over self-testing at home because they believed that healthcare professionals are trained to conduct the test correctly and can provide pre-and post-test counseling services, as opposed to self-testing alone at home, combined by the challenge of coping with the test results all alone. This was expressed as follows:

"I would love to do directly-assisted HIVST. If I do this test from a community clinic or DIC, I can do it through a trained person, so that my test results will be accurate. Fear will work in me while doing this test alone, so it will be good for me if someone helps me or guides me to do the test." (MSM, age 23).

Linkage to care: Confirmation and treatment referral and partner notification strategies

The FGD participants revealed that counseling before and after testing, including how to use HIVST, should be an integral part of the HIV self-testing procedure. In response to "What will you do if the test result is positive?", the respondents said that they would go to a health center for confirmation, begin ART, and seek advice for counseling, confidentiality, and support. Most participants preferred partner referral and provider notification strategies to notify their partners about their HIV status. The following quotes demonstrate this:

"I don't want any person to be infected with HIV because of me, so if I get a positive result, I will go to the clinic/

hospital and get tested again. I will also seek advice." (MSM, age 21).

"If I get a positive result, I will be emotionally broken. It will not be possible for me to tell my partner. I will not be able to do this test alone, so I will seek help from a healthcare provider and inform my partner." (MSM, age 21).

"I will tell my partner that I have HIV and can infect him with the virus. Further, we will go to a healthcare provider to receive advice and use condoms regularly. We can overcome this situation if the service providers help us." (TG, age 24).

Medium of information

The majority of the FGD participants felt that community empowerment via appropriate training and education would be essential to increase the uptake of HIVSTs. Moreover, they proposed to use mass-media campaigns to enhance HIVST awareness among the key populations. They were confident that appropriate information on how to perform the test is vital to boost HIVST understanding, which may result in a shift in attitudes and personal agency towards HIVST. Their opinions regarding this are expressed in the following quotes:

"If the testing procedure is shown to us through counseling, training, or videography, then it will be better. Everyone will understand." (MSM, age 21).

"It would be better if we are trained directly instead of on mobile apps or TV; everyone will understand better. Moreover, we all don't have a smartphone." (TG, age 23).

Suggestions for making the HIVST program successful

The participants were asked about their suggestions for making HIV self-testing and counseling services more successful. The young MSM and TGs suggested many ways to improve the uptake of HIVSTs. The participants opined that the community people should be informed whom to contact for further information and clarity. They advised that the program should provide counseling services for self-testers, and that people who collected kits but did not share results should be visited. A health worker should always be there to support individuals who need help and may collect the test results, so that they can get results instantly. They suggested ensuring assisted HIVST along with couple-based HIV tests. Pre- and post-test counseling and information on treatment, care, and support services (especially in health centers) should be provided to ensure linkage to care and support. Both HIV self-testing (administering the test and interpreting the result at home) and outreach community testing (HIV tests administered in fixed, community-based sites, or as part of outreach activities as assisted alternative) may offer alternatives to testing within sexual health services and other medical settings. In the future, policy-makers should explore how HIV testing and re-testing can be implemented: HIVST and the cost-effectiveness of various HIVST distribution strategies, and linkage to care modalities (that may need to be assessed).

The following quotes express these ideas:

"To make HIVST successful, we have to ensure low price and easy availability of the kit. When this service is launched, mental health treatment must also be ensured." (MSM, age 24).

"The more people know about this test, the more they want to do this test. There are still a lot of people like us who don't know anything about it. So, the authorities should take the initiative to create awareness among the people and spread the news to all." (TG, age 24).

"Many of us are uneducated and have unprotected sex. We may make mistakes while testing. It will be helpful if healthcare workers or trained people help us or guide us on how to do the test. I think the HIVST program can succeed by ensuring assisted HIVST and couple-based HIV tests." (TG, age 20).

"Those, who live in the city can easily get this service, but the authorities should also keep in mind the people who live in the village. If this service can be arranged in the local area, the actual number of HIV patients will be identified." (MSM, age 22).

Discussion

In Bangladesh, the distribution of HIV self-testing kits can contribute to approaching people who do not get tested due to stigma, discrimination, or fear of revealing their status. HIVST can be used in conjunction with facility and community-based HIV testing and counseling. This comprehensive study generates evidence for this in the context of Bangladesh, and emphasizes the necessity of HIVST successful implementation to combat operational challenges associated with conventional HIV counseling and testing (HCT).

The study indicate that the concept of HIVST is relatively unknown, as evidenced by the fact that practically none of the survey's participants had ever heard of it before. This might be because HIVST is a novel intervention in Bangladesh, currently in the pilot stage. Kenya, Iran, South Africa, and other countries have reported higher levels of awareness [20, 28, 29]. Based on this review, a straightforward and accurate strategy to expand knowledge in our country is anticipated. The Ministry of Health and other stakeholders must develop appropriate awareness tools to promote HIVST.

According to the findings of this research, both the young MSM and TG participants are unequivocally willing to undertake HIV self-screening. It is also worth noting that the findings of our study are consistent with other research [20, 30]. HIVST was found to be well accepted among young MSM and TGs in our investigation, which is also consistent with previous studies conducted among several key population groups [18, 19, 21-25].

The test's effectiveness was attributed to its comfort of use and a rise in the number of people taking tests throughout the country. However, this study did not compare HIV self-testing with routine screening services because of its scope of work. Nevertheless, HIVST can be an alternative where traditional HTS could not reach those at greater risk of HIV transmission, and also those who are difficult to approach. Some studies in developing countries demonstrated that self-testing persons are likely to utilize HIVST for their next HIV test, and would suggest it to relatives and friends [20, 30]. Similarly, most respondents in the current study said they would use HIVST in the future, and recommend it to their partners and friends.

In this research, saliva was preferable over blood testing due to comfort, rapid result, confidentiality, and HIVST-assisted services. In certain countries, assisted oral HIVST has already been found to be a feasible intervention for young adolescents [31].

Among the young MSM and TG participants, high willingness to HIVST uptake was found, but only some of them wanted to purchase the kit. The reason they asserted was that the test kit is costly, therefore they could not afford it. The participants suggested making the kit free of cost, and if HIVST kits are made available for free, their utilization would undoubtedly increase. In several studies, the cost is a barrier to HIVST willingness and adoption, thus the HIV testing kits should be available for free [20, 32-35]. This may attract a large number of the target populations, who have never been tested for HIV, or who are at high-risk of getting infected with HIV.

As most respondents have never heard about oral saliva testing for HIV before, an emergence action is needed to raise HIVST knowledge among young MSM and TGs as an essential strategy for increasing HIV testing among the young key population groups. Furthermore, educating communities about HIVST is expected to increase the acceptance and frequency of HIV testing. Therefore, it is necessary to provide health education to communities, particularly on the necessity of HIV testing in reaching the 95-95-95 target by 2025.

Advertising in the media is another potential useful resource, which may be utilized to raise awareness of HIV self-testing among the target groups, particularly in rural areas. Utilizing of mobile and/ or virtual applications or services, such as telephone calls or lite versions of apps, to monitor patients and connect them to HIV prevention, care, and treatment, can also be effective ways to increase awareness and ease the use of HIVST.

Pre- and post-test counseling were found to be crucial by most participants via face-to-face demonstration or telephone consultation as well as hotline/telephone call-ins. Expansion of self-testing among target populations would be supported by providing post-test counseling, and facilitating linkage to care and treatment support. Therefore, the study suggest to design interventions to link people tested HIV-positive to an appropriate healthcare services for confirmatory testing and additional services (facility-based) as well as connect them to ART centers if needed.

In the light of these findings, HIVST can address hard-to-reach populations, such as young and adolescent KPs, and individuals in the general population, who may not attend facilities for testing due to stigmatization.

HIV self-testing in Bangladesh has been recently initiated, and no studies have been conducted to assess its acceptability among young MSM and TGs. As a consequence, before scaling up HIV self-testing, this study attempts to evaluate the feasibility of its implementation in the country as well as determines the cost-effectiveness of various HIV self-testing distribution strategies and care linkage modalities.

Since it was a pre-intervention study, it has few disadvantages, and actual HIV testing was performed after conducting this research. However, if the participants had completed self-testing before the data collection, better perceptions on HIV self-testing could be recorded.

Conclusions

The young MSM and TGs have shown a high willingness to adopt HIVST and acceptance due to its simplicity in use and interpretation, anonymity, and privacy. To successfully integrate HIVST program, a number of priority issues need to be considered. Community members ought to have access to self-testing kits at no cost or at affordable and fair fee. In order to establish links and referral channels between key populations, community-based non-governmental organizations (NGOs), and providers of current sexual and reproductive health services, a standard operational manual must be prepared. It is important that people who will perform their HIV tests have access to information on HIVST and how to interpret the results. These information should be disseminated via television, social media, internet-based apps, etc. Moreover, it is important to offer counseling before and after testing, and provide information on treatment, care, and support services.

Disclosures

1. Institutional review board statement: This research obtained ethics approval issued by the National Research Ethics Committee (NREC) (Reg. No: 445 28 09 2021).
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4. Conflicts of interest: None.

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