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HIV Self Testing among Adolescent and Young Men Who Have Sex with Men and Transgender in Bangladesh - Willingness and Preferences around Self-Testing

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Abstract

HIV Self-Testing is a safe and achievable opportunity that can be provided as an alternative choice to increase the detection of HIV. In view of the recent initiation of HIV Self-Testing in Bangladesh, it is important to identify populations who are less conscious of the availability of self-testing; therefore, can be given priority in future interventions. This study aimed to understand the awareness of, willingness to do, and preferences around HIV self-testing (HIVST) among young and adolescent Men who have sex with men (MSM) and Transgender (TG).Aconvenience sample of 652 people were interviewed. The study findings revealed that, despite having a poor awareness level, HIV self-testing by oral fluid was well-accepted by the MSM and TG, as observed by their willingness to uptake. The findings of this study are noteworthy and will allow program planners to make appropriately-informed decisions on programs to increase awareness and ensure HIVST for young MSM and TG in Bangladesh.

Keywords: Men who have sex with men (MSM); Transgender (TG); HIV self-testing (HIVST); Acceptability; Bangladesh.

1. Introduction

The Joint United Nations Program on HIV/AIDS (UNAIDS) estimated that, globally, 37.7 million people were living with HIV (including 1.7 million children), and 1.5 million new HIV infections were identified, along with 0.68 million deaths from AIDS at the end of 2020.(UNAIDS, 2021)To end the AIDS epidemic, UNAIDS has launched the 95-95-95 treatment targets by 2025; which stated that by 2025 95% of people living with HIV are aware of their HIV status; 95% of eligible individuals who know their status are on treatment; and 95% of all people receiving antiretroviral therapy will have viral suppression by 2025.(Joint United Nations Programme on HIV/AIDS (UNAIDS), 2017)HIV testing is the main gateway for HIV treatment and tracking progress toward the 95–95–95 targets. Previous research found that many barriers to HIV testing exist among the marginalized and vulnerable populations.

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These include HIV risk perception, HIV-related fear and stigma, access to HIV services, and financial resources.(Shafik et al., 2021), (Hamilton et al., 2020)In 2016, World Health Organization (WHO) released the first Global HIV Self-Testing (HIVST) Guidelines recommending enduring HIV testing services to combat stigma and increase of testing privacy.(WHO, 2016)Currently, countries are examining strategies to rapidly expand the acceptance of HIV testing services, particularly among groups with limited access and those at increased risk of infection who would not be tested otherwise. One strategy is HIV self-testing, in which an individual collects their samples (e.g., oral fluid), performs an HIV test, and interprets the result, which may need to be validated by a confirmatory test if reactive. (WHO, n.d.)

Bangladesh's HIV infection is still low, with a prevalence rate of less than 0.1%, yet the number of uninformed or unaware of their illnesses is relatively high.(UNAIDS, 2020) As announced on World AIDS Day, 2021 by the AIDS/STD Programme, the number of reported HIV cases in Bangladesh till October 2021 was 8,761, while the estimated number of people living with HIV (PLHIV) was 14,000. The number of new HIV-positive patients till October 2021 was 729. About 18% of HIV-positive cases were found to be in the 15-24 years age-group population.(MOHFW, 2020) However, over one-quarter of new HIV infections occurred globally among young people aged 15 to 24 years.(UNAIDS, 2020)

Concern is mounting over the rising incidence of new infections among males who engage in sexual activity with other men. Recent HIV data of Bangladesh showed that among the newly detected People living with HIV (PLHIV), 18% were Male sex workers (MSWs), Transgender (TG), and Men who have sex with men (MSM).(MOHFW, 2020)Sex between men has already accounted for approximately a third of HIV transmission in Asia and the Pacific region(Joint United Nations Programme on HIV/AIDS (UNAIDS), 2019), although this is very likely to be underreported. More alarmingly, 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).(WHO, 2015) In addition to that, the young MSM were found to report unprotected anal intercourse with partners of unknown HIV status more likely than older MSM.(Salomon et al., 2009)

In view of the recent initiation of HIVST in Bangladesh, it is important to identify the key populations that are less conscious of the availability of self-testing. Before undertaking HIVST, a pre-intervention scenario assessment is crucial because evidence-based understanding on the feasibility of rolling out HIVST on a larger scale to young and adolescent MSM and TG are required. Under this backdrop, this study aims to determine the awareness, willingness, and

preferences among MSM and TG people who are aged 15-24 regarding HIV self-testing (HIVST) in order to gain a user base for HIVST among young and adolescent MSM and TG and, hence, maximize HIV Testing Service (HTS) coverage.

2. Methodology

Study Design

The MSM and TG people, aged 15-24 years, being able to understand the questionnaire and who gave consent for study enrolment were included in the sample. The study adopted a convenience sampling methodology among young and adolescent MSM and TG beneficiaries from five Health Initiative for Men (HIM) centers of Bangladesh in: Dhaka, Khulna, Mymensingh, Chattogram, and Sylhet. A total of 652 MSM and TG participants aged 15-24 years were interviewed.

Data Management and Analysis

A structured questionnaire was designed to collect data along with required Consent Forms. The questionnaire was pretested and shared with community volunteers to identify errors and refine the wording. The questionnaire included several sections, including participants' demographic information, sexual behavior/condom use, and willingness and preferences for HIV self-testing. The questionnaires were coded, and the data were entered into Excel and analyzed in SPSS Version 26. The Pearson's $\chi 2$ test or Fisher's exact test were used to compare the frequencies. The P-value <0.05 was considered statistically significant. Percentage comparison was used to know which group has more proportion in terms of demographic information, sexual behavior/condom use, and willingness and preferences for HIV self-testing (HIVST).Theanalysis was divided into two sections. Firstly, percentage of Demographic, behavioral characteristics, testing history, Knowledge, willingness, and preferences about HIV was examine according to gender and age using cross. Secondly, Binary logistic regression model was used to assess the relationship between HIV testing history (first-time vs. previously tested) and HIVST preferences where HIV testing history was the response variable and HIVST preferences were independent variables. In adjusted logistic regression model, insignificant variables were subsequently removed from the models through backward stepwise process with $p >0.05$, and the final model was obtained, which included only the significant variables.

Ethical Considerations

This study was carried out online in full conformity with the provisions of the Helsinki Declaration on human participant research. Ethical clearance was approved by the National Research Ethics Committee (NREC) (Reg. No: 445 28 09 2021). All participants were allowed

to participate voluntarily and declined to answer any questions; it was ensured that the study wouldn't be impacted if they decided to withdraw. Participants' roles and benefits were clearly explained in a written consent statement.

3. Results

Respondents' Demographic Information, Sexual Behavior and Testing History

The descriptions of the demographic and behavioral characteristics, and testing history of the sampled MSM and TG aged 15-24 years are illustrated in **Table 1**.

Demographic Information

Of the 652 participants who completed the survey, 76% (n=493) identified themselves as MSM and 24% (n=159) as TG. Although all the participant's ages ranged from 15 to 24 years, for the survey, participants were divided into two groups: ages ranged from 15 to 19 years for the adolescent group and 20 to 24 years for the youth group. Most of the participants (79%, n=517) resided in urban areas. Almost half of the participants (48%, n=314) completed their study up to only a secondary school certificate (SSC) level. Noticeably, among all the participants, only 1% (n=9) of them graduated/studied at university, and all of them were MSM. No TG participants completed graduation/studying at university. Sixty-nine percent (n=447) of respondents were unemployed/depended totally on their family/partners, 12% (n=80) were sex workers and 11% (n=70) were doing jobs in the private sector. The percentage of doing jobs in the private sector was higher among youth MSM (14%, n=47) than TG youth participants (8%, n=8). More than one-third of the youth TG participants were sex workers, and the percentage was higher than MSM participants.

Sexual Behaviors

Just more than half of the participants (51%, n=335) reported that they had multiple partners, and the same was much higher among TG adolescent (aged 15-19) participants (70%, n=40). Among the 652 telephone survey participants, only 4% (n=24) never had sex before. Among the respondents (n=628) who had sex before, majority of them (79%, n=504) reported that they had their first sexual intercourse with their consent, while 16% (n=99) said they were forced to do sex or were raped, and the rest 5% had sex under the influence of drugs. Age segregation reveals that youth TG participants were more likely to have sex forcefully or were raped (25%) and had their first sexual intercourse under the influence of drugs (8%). Two-thirds of the participants (75%, n=469) reported having sex in 3 months with someone else rather than a regular partner, i.e., with unstable partners, and the same was relatively higher among the youth

TG participants (82%, n=82). Out of the 469 participants who had sex with anyone else other than their regular partners, only 47% (n=220) used condoms during their last sexual intercourse.

Table 1. Demographic, Behavioral Characteristics, and Testing History of the Respondents According to Gender and Age

Categories	MSM		TG		Total	Percentage Comparison
	Aged 15-19 n, %	Aged 20-24 n, %	Aged 15-19 n, %	Aged 20-24 n, %	n, %	
Demographic characteristic						
Living area*						
Urban	145,88%	305, 93%	38, 66%	88, 86%	576, 88%	$P_{MSM}>P_{TG}$
Rural	19, 12%	24, 7%	19, 34%	14, 14%	76, 12%	$P_{MSM}<P_{TG}$
Educational qualification*						
Secondary School	87, 53%	155, 47%	35, 61%	37, 36%	314, 48%	$P_{MSM}>P_{TG}$
Primary	53, 32%	29, 9%	12, 21%	31, 30%	125, 19%	$P_{MSM}<P_{TG}$
Higher secondary	20, 12%	128, 39%	5, 9%	20, 20%	173, 27%	$P_{MSM}>P_{TG}$
Graduation	-	9, 3%	-	-	9, 1%	$P_{MSM}>P_{TG}$
Can read and write but didn't attend any school	2, 1%	2, 1%	2,4%	7, 7%	13, 2%	$P_{MSM}<P_{TG}$
Can't read and write	2, 1%	6, 2%	3, 5%	7, 7%	18, 3%	$P_{MSM}<P_{TG}$
Income source*						
Sex Worker	6, 4%	30, 9%	7, 12%	37, 36%	80, 12%	$P_{MSM}<P_{TG}$
Family Support/Partner's support	139, 85%	234, 71%	38, 67%	36, 35%	447, 69%	$P_{MSM}>P_{TG}$
Hijra Profession	-	-	7, 12%	17, 17%	24, 4%	$P_{MSM}<P_{TG}$
Day Labor	-	5, 2%	-	1, 1%	6, 1%	$P_{MSM}>P_{TG}$
Business	5, 3%	12, 4%	2, 4%	2, 2%	21, 3%	$P_{MSM}>P_{TG}$
Private job	14, 9%	47, 14%	1, 2%	8, 8%	70, 11%	$P_{MSM}>P_{TG}$
Sexual Behaviors						
Partner Information*						
Multiple Partners	78, 48%	153, 47%	40, 70%	64, 63%	335, 51%	$P_{MSM}<P_{TG}$
Sex worker	-	11, 3%	3, 5%	12, 12%	26, 4%	$P_{MSM}<P_{TG}$
Cohabiting –Single Partner	30, 18%	59, 18%	12, 21%	15, 15%	116, 18%	
Single-Not in relationship	56, 34%	106, 32%	2, 4%	11, 11%	175, 27%	$P_{MSM}>P_{TG}$
Have had sexual intercourse						
Yes	160, 99%	311, 95%	57, 96%	100, 96%	628, 96%	$P_{MSM}>P_{TG}$
No	4, 1%	16, 5%	2, 4%	2, 2%	24, 4%	
The circumstance of first sexual intercourse*						
By consent	148, 93%	240, 77%	49, 86%	67, 67%	504, 79%	$P_{MSM}>P_{TG}$
Not by consent	9, 6%	58, 19%	7, 12%	25, 25%	99, 16%	$P_{MSM}<P_{TG}$
Under influence of drugs	3, 2%	13, 4%	1, 2%	8, 8%	25, 5%	$P_{MSM}<P_{TG}$
Had sex in 3 months with someone other than a regular partner						
Yes	113, 71%	235, 76%	39, 68%	82, 82%	469, 75%	$P_{MSM}<P_{TG}$
No	47, 29%	76, 24%	18, 32%	18, 18%	159, 25%	
Used condom in the last sexual intercourse						
Yes	67, 49%	110, 49%	21, 44%	22, 37%	220, 47%	$P_{MSM}>P_{TG}$
No	71, 51%	114, 51%	27, 56%	38, 63%	250, 53%	
Testing History						
Tested for HIV*						
Yes	88, 54%	183, 56%	39, 68%	66, 65%	376, 58%	$P_{MSM}<P_{TG}$
No	76, 46%	146, 44%	18, 32%	36, 35%	276, 42%	

P_{MSM}, P_{TG} denotes percentage among MSM and TG
*P<0.05

HIV Testing History

Fifty-eight percent (n=376) of the respondents had ever tested for HIV. The ratio of getting HIV tested among adolescents and youth within the same population groups was almost similar. But the percentage was higher among TG aged 15-19 (68%) than MSM aged 15-19 (54%).

Knowledge, Willingness, and preferences about HIVST

Table 2 portrays the respondent's knowledge about HIVST – ie. if they had ever heard of HIV self-testing; whether they were willing to do HIV self-test; and their preferences of for HIVST.

Knowledge about HIVST

The respondents were asked if they had heard about HIV self-testing. Before starting the survey, the participants were provided with a clear concept of HIVST. In response, only 2% of the study participants ever heard about HIVST before this survey. However, it is noteworthy to mention that none of the TG of the adolescent age were aware of the HIVST (**Table 2**).

Willingness to undertake HIVST

When participants were asked about their attitude or opinion on up taking HIVST, 94% (n=613) of them expressed positive attitude towards HIVST. The respondents also stated that they would be more willing to take the HIVST if they could receive more information about it. Only 6% (n=39) of the participants reported that they would not take HIVST for some specific reason. The percentage was higher among TGs for both age groups (9%) than MSMs. Among all the survey participants, only 3% (n=26) expressed their willingness to pay for HIVST kit (**Table 2**).

Of the 632 participants who didn't want to buy from a pharmacy or pay for the HIV Self Testing kit, 92% anticipated that the kit would be too expensive. Lack of privacy (29%), and probability of being stigmatized at the collection site (26%), were also reported by the participants. In contrast, the study participants told that the young MSM and TG would prefer self-testing mainly because of its easy access and there would be less possibility of stigmatization and discrimination. (**Figure 1)**

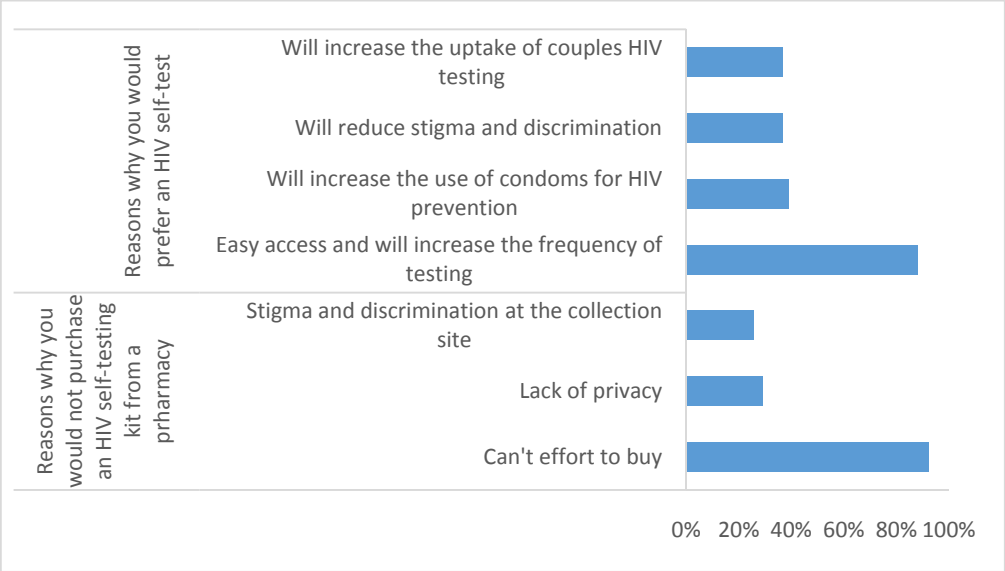

Figure 1. Reasons to Prefer HIV Self Testing and Reasons for Not Purchasing

Preferences about HIV Self Testing

Sixty-nine percent (n=425) of the respondents wanted to take an HIVST at home, and half of them (54%, n=332) also preferred the Facility (DIC/HIM Center) based test. Only 13% (n=85) preferred community-based clinics. About 2% of the respondents reported that they were not sure which types of testing facility they will avail. Gender and age segregation reveals that 81% of MSM aged 15-19 years wanted to take HIVST at home, while the same was 71% for the TG who were 15-19 years old. The study found that 92% (n=602) of the survey participants preferred the oral saliva HIVST kit over the blood specimen testing kit. There was a higher preference among the respondents for directly assisted HIVST (69%, n=448) than the unassisted HIVST (31%, n=204). With unassisted HIVST, individuals themselves conducted the procedure by using the HIVST kit with manufacturer-provided instructions for use. Gender and age segregation reveals that the willingness to uptake assisted HIVST was higher among TG participants (81%) who were aged 15-19 years. Regarding treatment referral mechanism, 43% percent (n=284) preferred patient referral, while 45% percent (n=293) preferred provider notification to inform partner. However, 9% of the young MSM and TG opined to hide the result from their partners (See **Table 2)**.

Table 2. Knowledge, Willingness, and Preferences bout HIV Self-Testing According to Gender and Age

Categories	MSM		TG		Total	Percentage
	Aged 15-19 n, %	Aged 20-24 n, %	Aged 15-19 n, %	Aged 20-24 n, %	n, %	
Heard about HIVST*						
Yes	4, 2%	7, 2%	-	2, 2%	13, 2%	$P_{MSM}>P_{TG}$
No	160, 98%	322, 98%	57, 100%	100, 98%	639, 98%	
Wanted to do HIVST*						
Yes	152, 93%	316, 96%	52, 91%	93, 91%	613, 94%	$P_{MSM}>P_{TG}$
No	12, 7%	13, 4%	5, 9%	9, 9%	39, 6%	
Willingness to buy or pay for the kit						
Yes	2, 1%	14, 4%	3,5%	1, 1%	20, 3%	
No	162, 99%	315, 96%	54, 95%	101,99%	632, 97%	
Preferred types of testing facility*						
Community based	28, 18%	47, 15%	6, 11%	4, 4%	85, 14%	$P_{MSM}>P_{TG}$
Facility-based (HIM/ DIC)	86, 54%	168, 55%	26, 46%	52, 55%	332, 54%	$P_{MSM}>P_{TG}$
Self-testing at home	128, 81%	202, 66%	40, 71%	55, 59%	425, 69%	$P_{MSM}>P_{TG}$
NGO Clinic/Govt. clinic or Hospital	24, 15%	49, 17%	12, 22%	10, 10%	95, 15%	
Not sure	1, 1%	11, 4%	1, 2%	1, 1%	14, 2%	
Preferred types of testing methods						
Directly assisted	109, 66%	229, 70%	46, 81%	64, 63%	448, 69%	
Unassisted	55, 34%	100, 30%	11, 19%	38, 37%	204, 31%	
Preferred types of testing kits						
Blood-specimen testing kit	7, 4%	29, 9%	3, 5%	11, 11%	50, 8%	
Oral-saliva testing kit	157, 96%	300, 91%	54, 95%	91, 89%	602, 92%	
Treatment referral and partner notification						
Patient referral	69, 42%	148, 45%	20, 35%	47, 46%	284, 44%	$P_{MSM}>P_{TG}$
Provider notification	72, 44%	149, 45%	31, 54%	41, 40%	293, 45%	$P_{MSM}<P_{TG}$
Contact notification	2, 1%	9, 3%	1, 2%	4, 4%	16, 2%	
Will hide from partner	21, 13%	23, 7%	5, 9%	10, 10%	59, 9%	

P_{MSM}, P_{TG} denotes percentage among MSM and TG
*P<0.05

4. Willingness and preferences for HIVST among MSM and TG among first time HIV tester

In the logistic regression analysis, several variables (e.g., preferred testing method, preferred testing kit, and partner notification strategies) were found to be significantly associated with participants' previous testing history (1st-time HIV tester or not) ($p<0.05$) after adjusting for other variables. The respondents who were first-time testers were more likely to choose directly assisted testing methods (AOR=1.89, 95% CI: 1.30, 2.75], oral saliva testing kit (AOR=1.35 95% CI: 0.69, 2.66), provider notification (AOR=2.04, 95% CI: 1.13, 3.67) and contact notification (AOR=2.32 95% CI: 1.29, 4.16) strategies for partner notification. More details are presented in **Table 3.**

Table 3. Willingness and Preferences for HIVST among MSM and TG among First Time HIV Testers

Categories	Tested an HIV for the 1st time		Odds ratio (OR) [95% CI]	P-value	Adjusted Odds ratio(AOR) [95% CI]	P-value
	Yesn, %	Non, %				
Willingness to do HIVST						
Yes	251, 91%	362, 96%	2.575 [1.31, 5.05]	0.006		
No(ref)	25, 9%	14, 4%	-			
Willingness to pay for the kit						
Yes	6, 2%	14, 4%	2.52 [1.00, 6.38]	0.05		
No(ref)	270, 98%	362, 96%	-			
Preferred types of testing facility						
Community based	43, 17%	42, 12%	0.676 [0.427, 1.07]	0.09		
Facility-based (HIM/ DIC)	152, 59%	180, 51%	0.728 [0.527, 1.00]	0.055		
Self-testing at home	174, 67%	251, 71%	1.19 [0.84, 1.68]	0.324		
NGO clinic/Govt. Hospital	46, 18%	32, 14%	0.68 [0.391, 1.18]	0.175		
Not sure	5, 2%	9, 3%	0.755 [0.25, 2.27]	0.681		
Preferred testing methods						
Directly assisted	163, 59%	285, 76%	2.17 [1.55, 3.04]	0.000	1.89 [1.30, 2.75]	0.001
Unassisted(ref)	113, 41%	91, 24%	-		-	
Preferred testing kit						
Oral saliva testing kit	245, 89%	357, 95%	2.37 [1.31, 4.30]	0.004	1.35 [0.69, 2.66]	0.037
Blood specimen using kit(ref)	31, 11%	19, 5%	-		-	
Partner Notification						
Provider Notification	115, 42%	178, 47%	2.23 [1.25, 3.96]	0.006	2.04 [1.13, 3.67]	0.017
Contact Notification	8, 3%	8, 2%	2.42 [1.36, 4.29]	0.002	2.32 [1.29, 4.16]	0.005
Patient Referral	117, 43%	167, 44%	1.56 [0.52, 4.7]	0.429	1.97 [0.48, 5.87]	0.237
Will hide from partner(ref)	36, 12%	23, 6%	-		-	

Ref: reference category

5. Discussion

The study intended to determine the knowledge and willingness of adolescent and young MSM and TG up-taking HIV Self Testing. The findings of the current study revealed that HIVST is quite poorly known in general, as almost all respondents (98%) had never heard of it before participating to this study. This may be because HIVST is a relatively new intervention in Bangladesh, currently at pilot stage. Other similar studies that were carried out in different settings revealed higher rates of awareness than our study.(Kurth et al., 2016; van Dyk, 2013). Based on these findings, an accurate and simple approach for increasing the knowledge among these key population groups in our country is expected.

The oral fluid HIV self-test was found to be well-accepted by the young MSM and TG population, as evidenced by the participants' willingness to uptake self-testing (>90%). The study findings also match with several prior HIVST researches. HIVST was found highly acceptable among young MSM and TG in numerous worldwide studies with key populations (Bustamante et al., 2016; Figueroa et al., 2015; Girault et al., 2021; Rao et al., 2020; Volk et al., 2016; Zanolini et al., 2018) . The findings of this study are also analogous with findings from a systematic review conducted by Figueroa et al. (2015) (Figueroa et al., 2015) and Sharma et al., (2015) (Sharma et al., 2015). 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. This study also generated findings that support that the offering of self-test kits could attract a large number of young MSM and TG who had never been tested for HIV. Similar findings were observed from other studies where the respondents who never tested for HIV expressed their strong willingness to learn their HIV status through a self-test (Lyons et al., 2019; Zanolini et al., 2018).

Reasons for overwhelming acceptance of HIVST among the key populations included easy accessibility of the test with national increase in testing uptake and saving resources (time and money). Majority of respondents said they would use HIVST in the future and recommend it to their partner or friends. It is also important to note that most of the study participants wanted to uptake HIVST at their home (65%), while some preferred facility-based testing, e.g., DIC/HIM Center (51%) and community-based testing (13%). Our study findings, however, provides a contrast with the opinion of the key population groups in Iran, where the key groups have considered the Facility-Based Method better to receive HIVST (Moradi & Molaeipour, 2021) .

In the current study, oral saliva (92%) was preferred over blood specimen for HIV self-test. While the majority of the participants opted for HIV oral self-test, about 8% of them preferred blood-based kit as they perceived it to be of higher accuracy. Respondents also conformed with comfortable testing procedures without pain and receiving quick results with confidentiality and with directly assisted HIVST services (69%)In some countries, directly assisted oral HIVST is also reported to be a feasible intervention for adolescents and first time testers than unassisted oral test (Girault et al., 2021; Hector et al., 2018). In contrast, an unassisted HIVST approach is much more acceptable among young people (Izizag et al., 2018; Matovu et al., 2020; Tonen-Wolyec et al., 2019).

A very high proportion of MSM participants (94%) reported that HIVST would increase HIV testing frequency in the future in Bangladesh. But their willingness to pay for buying HIV Self-Test kits was very poor as 97% reported their unwillingness to buy from a

pharmacy/Community site. The reasons for not buying or paying were that it may not be possible for them to bear the expense. They strongly recommended that the kit should be made available at free of cost. This passes the message that if HIV self-testing kits are made available for free, their utilization would likely increase substantially. The same scenario was also observed in some studies where cost associated with the HIVST imposed barriers for willingness and the uptake of the self-testing, and this will eventually hinder scaling-up the HIV testing frequency (Estem et al., 2016; Madiba et al., 2015; Mokgatle & Madiba, 2017).

In the current study, 51% of the respondents having multiple sexual partners with 53% not using condom during last sexual act is relatively high professing for urgent testing needs and scale up of interventions. The available evidence indicates several barriers faced by the young MSM community to access HIV testing and other services thus emphasizing the need to explore other types of HIV testing services, which has been revealed from this study.

This study holds some drawbacks. Firstly, it is a pre-intervention study, actual testing was done prior to this research. If the participants had completed a self-test as part of the study, better perceptions of HIVST may have been recorded. Secondly, it was uncertain how many participants were invited to participate in this study and refused; thus, the response rate is unknown. However, it is anticipated that the study findings will allow program planners to make appropriately-informed decisions on programs to ensure HIVST for young people in Bangladesh, and more especially for the young key population groups. More innovative approaches need to be adopted to maintain and also increase the HIM center-based HIVST by ensuring key population's community needs of our society.

6. Conclusion

The key message of the study is that young MSMs and TGs had poor awareness of HIVST but a high acceptance of up-taking it once they were briefed about it. It highlights the need to raise HIVST knowledge among MSMs and TGs as an essential strategy for increasing HIV testing in key population groups. Moreover, the study reveals that HIVST has the potential to supplement current HIV testing programs by reaching out to a varied segment of MSM and TG community members who were the first-time HIV testers. However, more suitable and accurate planning in the community is required for ensuring access of these groups to HIVST, including how to deliver and distribute the test, how to give adequate test training, how to track people's test results, and how to connect and link these individuals to care and treatment facilities.

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Declaration of Conflicting Interests

This study has no potential conflict of interest or financial or personal links with other persons or organizations that might influence the results.

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