MINISTRY OF HEALTH AND WELLNESS

2021 INTEGRATED BIOLOGICAL AND BEHAVIOURAL SURVEILLANCE SURVEY AMONG MEN WHO HAVE SEX WITH MEN

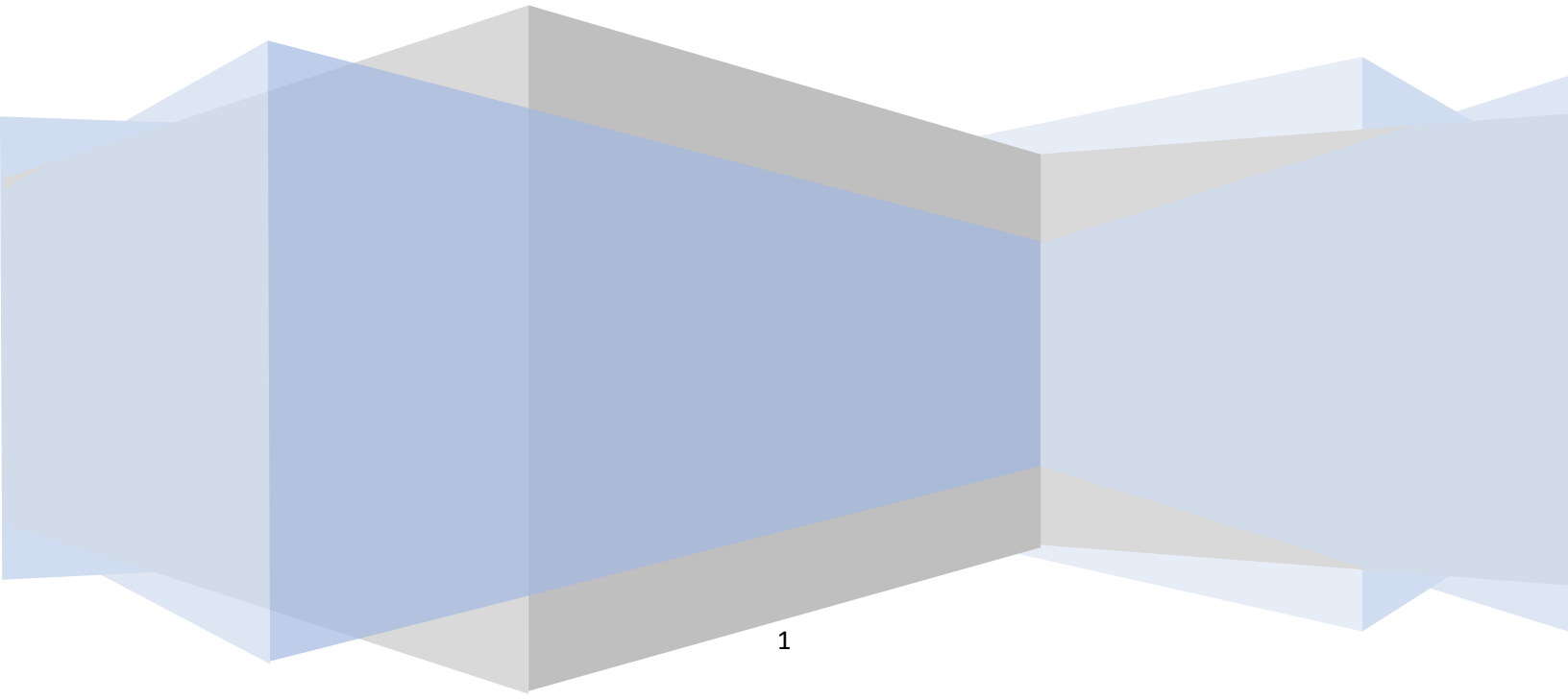

TABLE OF CONTENTS

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Acronyms

AIDS	Acquired Immunodeficiency Syndrome
FSW	Female Sex Worker
HBV	Hepatitis B virus
HCV	Hepatitis C virus
HIV	Human Immunodeficiency Virus
HRU	Harm Reduction Unit
IBBS	Integrated Biological & Behavioural Surveillance
NAS	National AIDS Secretariat
RDS	Respondent Driven Sampling
PLHIV	People Living with HIV
PWID	People Who Inject Drugs
STI	Sexually Transmitted Infection
TG	Transgender persons

2021 IBBS survey among Men who have Sex with Men

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Executive Summary

Background and Objectives

From 2010 onwards, IBBS surveys have been carried out in Mauritius to establish HIV and related behavioral trends to develop informed and evidence-based HIV responses, and to direct resources towards the most vulnerable populations to HIV in an effective and efficient way. The last IBBS study among Men who have Sex with Menwas carried in 2015 and taking into account the changes having occurred in the HIV landscape since then, it was essential get new data on the high-risks groups i.e the Men who have Sex with Men.

The main objectives of the 2021 IBBS survey among Men who have Sex with Menwere to:

- determine the prevalence of HIV, hepatitis B, hepatitis C and syphilis among Men who have Sex with Men.
- assess the sexual as well as other high-risk behaviours associated with HIV.
- describe the demographic characteristics of Men who have Sex with Menin Mauritius and their health seeking behaviours.
- develop the capacity to strengthen the national HIV and Sexually Transmitted Infections (STIs) surveillance system.
- provide policy-makers with evidence-based information to enable review existing policies, strategies and plans to improve the HIV response

Methodology

The 2021 IBBS survey among Men who have Sex with Men used respondent-driven sampling (RDS) to recruit Men who have Sex with Men in the Island of Mauritius. For this study, eight seeds (2 per sites) were selected to reflect diversity on several key characteristics, including geographic residence, level of risk behaviours, age, and education. Each seed was provided with three uniquely coded coupons to be used for recruiting their peers into the survey. Participants with a valid recruitment coupon were screened for eligibility, and those eligible gave informed consent for a face-to-face interview, as well as for other procedures associated with the study. The

recruits were counselled, and tested for HIV, HCV, HBV and syphilis tests.All laboratory analysis was conducted at the Central Health Laboratory, Victoria Hospital. Questionnaires in creole language were used during the interviews to collect data on socio-demographic characteristics, high risk behaviours, HIV transmission, HIV knowledge, their social networks sizes, access to and utilisation of HIV and IDU related services.

Key Findings

Using the RDS method, Souillac had the highest recruitment (28.4% for the recruits) and Grand Bay had the lowest number of recruitments (22.0%). Most of the respondents belonged to networks with sizes less than 10 Men who have Sex with Men, with the mean network size being 8 Men who have Sex with Men.

The HIV prevalence among the Men who have Sex with Men was 17.6% which was slightly higher than the 17.2% reported in the 2015 survey.

The prevalence of hepatitis C was 29.1% compared to the 27.6% reported in 2015, an increase of 5.4% over five years.

None of the respondents had hepatitis B.

There was also an increase in the prevalence of syphilis compared to the 2015 figures (18.8% in 2021 vs. 14.1% in 2015). Regarding co-infections, 27.8% of the respondents had at least one of the diseases, 14.7% had at least two co-infections and 2.8% had three co-infections. 54.7% had no infections.

More than half (53.2%) of the participants had a history of illegal drug use with 19.5% having injected illicit drugs. Heroin is the drug of choice mostly used by the Men who have Sex with Men who injected drugs. Although most of the respondents had knowledge on existing harm reduction services, 28.9% of those who injected drugs had shared needles with heroin as the drug of choice mostly use by them.

During sexual intercourse with a female partner, condoms were used in about 49% of the time, with the Men who have Sex with Men taking the decision to use the condom in about 50% of the time. However, condoms were less likely to be used when sex was with a trusted partner. Also, during group anal sex, condoms were always used in about 50.8% of the time. 73.5% used condoms when they last had anal sex with a foreigner; in 52.7% (81) of cases, this was the decision

of the Men who have Sex with Men; in 35.3% of cases, the decision was joint and in 12% of cases, it was the partner's decision.

All the respondents knew that HIV was a sexually transmitted infection. While 88% understood that condom use could protect them from catching HIV, 20% incorrectly thought that HIV could be transmitted via mosquito bites. The majority of the Men who have Sex with Men (97.9%) correctly answered that HIV could be transmitted through the sharing of needles and syringes and 90.4% of the participants agreed that a healthy-looking individual may be infected with HIV.

Among the participants interviewed, 88.9% knew where to go to get tested for HIV and 73.3% of recruits had an HIV test in the past. Moreover, 52.0% preferred to be tested for HIV through blood samples as opposed to prick tests. About 53% of the respondents have taken an HIV test at least three times before.

General Observations from the survey

1. The prevalence of HIV has not changed significantly among Men who have Sex with Men from 2015 (17.2%) to 2021 (17.6%).
2. Overall condom use has improved from 2015 (53.1%) to 2021 (59.4%). However, up to 28.9% of respondents claimed not to have access to condoms.
3. Knowledge about STIs among the Men who have Sex with Men has improved since 2015 (93.9% vs. 87%). However, despite an improvement in knowledge, 20.1% of Men who have Sex with Men never sought to get tested for an STI.
4. Abuse of intravenous drugs among Men who have Sex with Men increased from 11.9% in 2015 to 19.7% in 2021 but there was no significant difference in the percentage who abused IV drugs in the last 3 months preceding the study (3.6% in 2015 and 3.2% in 2021). Recreational and sexual drug use in sex and/or clubbing venues among men who have sex with men is a growing public health issue. Pleasure may act as a strong motive for drug use in this community. Physical benefits of having sex on drugs include increased libido, sexual pleasure, and sexual longevity.
5. The rate of HIV testing among Men who have Sex with Men has increased from 67.4% in 2015 to 73.3% in 2021 possibly reflecting the intense efforts being made within the HIV programme to target this key population.

6. Less Men who have Sex with Men were forced to have intercourse in 2021 (3.6%) than in 2015 (8.5%). This is partly a result of the capacity building and advocacy being carried out in the community by the NGOs and other stakeholders.
7. The prevalence of syphilis among Men who have Sex with Men has increased from 14.1% in 2015 to 18.8% in 2021. Globally, there were an estimated 7 million new syphilis infections in 2020. The global pooled prevalence of syphilis among Men who have Sex with Men was 7.5% during 2000 – 2020 (95% CI: 7.0-8.0), as compared to the most recent estimate of syphilis among men in the general population in 2016, 0.5% (95% UI: 0.4-0.6). Prevention fatigue, drug use and the use of internet to find sex partners represent factors that may contribute to the increases of syphilis rate among Men who have Sex with Men.

Review Strategies

1. Condom programming should be refined to identify better ways of reaching the Men who have Sex with Men engaged in commercial sex work. Installation of condom vending machines at strategic places may be envisaged to facilitate access and availability of condoms.
2. Further education of this key population would be needed to increase the willingness to get tested for STIs. The use of dual HIV-syphilis rapid diagnostic test will definitely upscale testing of STIs among the Men who have Sex with Menpopulation. Additionally, further studies are required to identify the factors that could increase the willingness of Men who have Sex with Men to test for STIs.
3. Access to the Needle Exchange Programme should be revamped for Men who have Sex with Men and such harm reduction services should be gay-friendly.

1. Country Profile

1.1 Country Demographic, Socio-Economic and Health Profile

The Republic of Mauritius is an upper middle-income country with a population of 1,266,334 as of 01 July 2021 on its main islands, Mauritius, Rodrigues,Agalega and St Brandon with slightly more females than males. The average population density in the country is 631/Km^2 and the median age in 2020 was 36.9 years with 64.9% of the population aged 15-64 years. Life expectancy for both sexes in 2021 is 75.36 years and the ageing population is maintaining its upwards trend. The economy of Mauritius is diversified and export oriented. It includes service industry such as tourism, ICT and banking, construction, agriculture and manufacturing. The country's estimated Gross Domestic Product per capita in 2021 was $ 8,681.61 and it is expected to increase to $ 9,437.5 in 2022. The official language is English and Creole is the language used by most of the population. More than 50% of the population resides in rural areas.

The health care system in Mauritius consists of public and private health care services. The public health care services operate a three-tier system consisting of primary, secondary (District and Regional health care services) and tertiary levels. The primary health care facilities constitute approximately 90% of the health care facilities and is the backbone of the country's health care system. The secondary health care facilities provide inpatient and outpatient services as well as supervise the 21 Area Health Centers and 130 Community Health Centers and 6 Medi clinics. Maternal and Child Health (MCH) services delivered within these primary health care facilities consist of 159 MCH health points. Similarly, immunization activities consisted of 174 vaccination points while Family Planning services were provided in 166 such facilities. The tertiary health care facilities provide specialized health care and serve as referral centers. There are five health regions which are semi-autonomous, while the Ministry of Health and Wellness takes responsibility for the overall coordination of the health sector response and policy formulation. Health care is free in public facilities. There are also social protection measures such as old age pensions and family allowances. The private health care provides essential complementary services to the public health care system and accounts for most of the out-of-pocket expenditures on health care in the country.

The life expectancy of the male and female which was70 and 77 years respectively in 2011 increased to 71 and 78.6 years in 2020, thus indicating the continuous gain in health improvement. The human development index was 0.78 in 2014 as compared to 0.76 in 2010 andwith an index of

0.8 in 2020, Mauritius is the only country of the African continent out the 65 best performing nations that joined the very high human development category.

2. Literature Review

2.1The HIV epidemic in Mauritius

In 2020,the estimated number of people living with HIV in Mauritius was 13,870 with 8,577males and 5,294 females (source UNAIDS Spectrum 2021). In 2020, the HIV prevalence among the population aged above 15 years in Mauritius was 1.27%.

The HIV epidemic in Mauritius is concentrated (HIV prevalence above 5%) among the key populations (KP) which comprise of Men who have Sex with Men, people who inject drugs (PWIDs), female sex worker (FSW) and, the transgender persons. From 2002 onwards, injecting drug use has remained the key driver of the HIV epidemic in the country with about 60% of the total number of those diagnosed with HIV as at December 2021 being people who inject drugs.

From October 1987 when the first HIV case was notified in Mauritius to 31stDecember 2021, 8,440 Mauritian citizens have been diagnosed with HIV including 103 childrenborn with the virus. The male - female sex ratio is 3:1 with 6110 (72.4%) males and 2330 (27.6%) females. A total of 1,904 AIDS-related deaths have been registered mostly among the injecting drug users co-infected with Hepatitis C. As at December 2021, out of the 6,536 persons living with HIV, 4,311 have been initiated on antiretroviral drugs with an adherence rate is 70%.

The peak of the HIV epidemic was reached in 2005 with 92% of the newly diagnosed HIV cases among the detainees with a background of injecting drug use. To prevent the HIV epidemic bridging from the People Who Inject Drugs (PWIDs) to the population at large,harm reduction measures such as the Needle Exchange Program (NEP) and the Opioid Substitution Therapy (OST) were implemented in 2006.Subsequently, these HIV preventive measures led to a decline in the number of newly diagnosed HIV cases among the people who inject drugs.In 2021, only 22% of the new cases detected were among the people who inject drugs.At present, with 18% of the people diagnosed with HIV in the age group 15 – 24 years, adolescents and young adults are considered as highly vulnerable groups to HIV and other Sexually Transmitted Infections (STIs). The distribution of newly diagnosed HIV cases in the age group of 15 to 24 years was 18.4% in 2012

and increased to 21.7% in 2014 followed by a drop to 19.4% in 2015. The HIV prevalence among the pregnant women has remained steady at around 1.1% in the past few years.

2.2Overview of the national response to HIV and AIDS in Mauritius

The Government of Mauritius has shown its commitment to reinforce the national AIDS response through the various treaties on HIV and AIDS that it has signed and strived to be aligned with. Some of the regional and global commitments on HIV and AIDS are

- The Maputo Plan of Action on Sexual and Reproductive Health and Rights 2007 to 2010
- The 2011 Political declaration on HIV and AIDS, June 2011
- The 2011 Global Plan towards elimination of new HIV infections among children and keeping their mother alive
- Global response of three-zeros (zero infection, zero death and zero discrimination)
- The 2012 African Union Roadmap on Shared Responsibility and Global Solidarity for AIDS, TB and Malaria in Africa
- The 2015 United Nations agenda for Sustainable Development Goals (SDGs)
- The UNAIDS 2016-2021 Strategy
- Fast-Track – Ending the AIDS Epidemic by 2030 - UNAIDS

The High-Level Drug and HIV Council under the Prime Minister's Office established in 2018 translates the government's strong determination to provide all support required to end AIDS by 2030. Furthermore, the five-year HIV National Action Plan (NAP) sets forth the country's commitments and new targets to drive the AIDS response towards eradication of the HIV epidemic as a public health threat. The country relentlessly strives for equity in all health policies, plans and programmes so that no one is left behind. A multi-sectoral,rights-based and person-centred approach has been adopted for the development of the HIV NAP 2022 – 2026 with the collaboration of all stakeholders including the people living with HIV and the diverse key populations.

The country's aim to meet the Sustainable Development Goals to ensure Universal Health Coverage is incorporated in the Ministry of Health and Wellness vision to have a healthy nation with a constantly improving quality of life.Mauritius is a welfare state with all health services available at the public health institutions accessible to all without any discrimination. All HIV services comprising of diagnostics, prevention, treatment, care and support are free of charge and

available at the state-owned health institutions.Strategies have been worked out in line to with the UNAIDS 95-95-95 targets: 95 % of people with HIV know their status. 95% of the people who know their status are initiated on treatment and 95% of those on treatment are virally suppressed.

Mauritius has a long-standing dynamic HIV Testing and Counselling Services (HTS). HTS is carried out in both health and non-health settings to upscale the number of people knowing their HIV status and accessing the HIV prevention, treatment and care services. While the national HIV programs target all Mauritian citizens, there aretailored HIV prevention for the highly vulnerable key populations which have infection rates ranging between 10% to 30%.

Age-appropriate prevention tools have been developed for effective Information, Education and Communication. Awareness sessions on HIV and other STIs are carried out at educational institutions, workplaces and in the community. For the high-risks groups residing in hard-to-reach locations, prevention programmes are conductedwith the collaboration of the peer educators of thekey populations. Behavioural Change Communication with intensive focus on adoption of safe behaviours is promoted among the high-risks groups. Condom programming along with free distribution of lubricant gels are on-going to encourage their correct and consistent use to prevent HIV and other STIs. The rise in the syphilis prevalence among the KPs is of great concern. Studies have shown the presence of sexually transmitted infections as a causative agent increasing risks of both acquisition and transmission of HIV. Despite the distribution of an average 700,000 condoms annually, previous IBBS surveys have shown condom usage has to be up-scaled to have the expected outcomes.While promoting the U = U, emphasis needs to laid on condom usage to protect against other STIs and avoid some of the related life-long health implications.

In line with the 2015 WHO guidelines, Pre-Exposure prophylaxis (PrEP) as an additional prevention tool is accessible to all the people at substantive risk of HIV acquisition since end 2018. However, this prevention tools appears to be used exclusively by the homosexuals in Mauritius. Demand creation for PrEP through use of digital platforms, social media and social networks have been necessitated to get the buy-in from the other vulnerable populations.

Post Exposure Prophylaxis (PEP) as a short-term use of ART to prevent HIV transmission is provided for occupational and non-occupational accidental exposures to the virus.Testing for HIV, HBV, HCV and syphilis are included in the PEP treatment and follow-up protocol.

The country aims to eliminate Mother-To-Child Transmission (MTCT). The B+ option implemented in 2015 has contributed in keeping the Prevention of Mother-To-Child Transmission (PMTCT) coverage above 90% in the past five years. In Mauritius, the HIV positive mother is advised not to breastfeed andthe PMTCT protocol makes provision for free formula milk to be distributed for the babies. Tracking of lost to follow up pregnant women, ensuring their retention in care with hightreatment adherence rateis confided to a dedicated team which has developed a tailored to needs approach. Stigma (self-stigma) is a major barrier to access the health services is the causative factor for poor treatment adherence thereby leading to vertical transmission.

With the 'Treat All" Strategy implemented in 2017, all those who are diagnosed with HIV are initiated on antiretroviral treatment without delay, irrespective of their immune status in order to achieve viral suppression and halt further HIV transmission. The HIV testing algorithmsfor HTS for adults and the babies exposed to HIV include use of the viral load test, nucleic acid test. For Early Infant Diagnosis (EID) Polymerase Chain Reaction tests are conducted at birth, 3 and 6 months of age to allow timely ART initiation to reduce mortality rate among the HIV infected babies.

The government takes full ownership of the antiretroviral treatment which is aligned with the World Health Organisation's recommendations. The updated treatment protocol includes the use of safer, better tolerated regimen to improve the quality of life of the PLHIV. To improve retention in care, the country is contemplating to integrate the HIV services in the mainstream. This will also reduce the stigma and discrimination towards the PLHIV.

The Harm Reduction Unit caters for the needs of the PWIDS through the Needle Exchange Programmes and the Methadone Substitution Therapy. The service package comprises of IEC materials, BCC, needles and syringes, condoms and lubricant gels, HIV Testing and Counselling, screening for hepatitis B, hepatitis C and syphilis. Referrals are made to the addiction and/or rehabilitation units, mental health clinics, NEP and MST clinics amongst others. The psychologist provides support alongside the peer educators who have a critical role in the management and follow up of those infected with and affected by HIV including their sexual partners.

2.3 Men who have Sex with Men, HIV and syphilis in Mauritius

Men who have Sex with Men have greater risk for acquisition of HIV and are 19 times more likely to be living with HIV. Global targets are for 95% of Men who have Sex with Men know their status, linked to prevention, treatment, care and support services to halt ongoing HIV transmission. To monitor progress to the targets, estimates of the population size of the Men who have Sex with Men need to be as close to the true number as possible. However, size estimates of the population of Men who have Sex with Men are often not conducted with sufficient frequency and rigor because of difficulties, high costs and stigma associated with reaching them. Due to stigma towards same sex behaviours and absence of a widely recognised golden standard for population size estimates of hidden and hard-to-reach communities, measuring the size estimates of the Men who have Sex with Men continues to be a challenge worldwide.

In Mauritius, the mapping exercise carried out in 2014 by the National AIDS Secretariat estimated a population size of 5,467 Men who have Sex with Men.

The table below shows the trend of selected indicators as shown by the IBBS surveys in 2010, 2015 and 2021

Year	Prevalence of Disease (%)					Ever injected drugs (%)	Condom use at last time had sex (%)	Have ever been stigmatised (%)	Correct knowledge of HIV (%)	Ever had HIV test (%)
	HIV	Syphilis	Hepatitis C	HIV/ Hepatitis co-infection rate	Hepatitis B					
2010	20.0	5	14.2	6.4	0.0	7.5	46.2	17	44	42
2015	17.2	14.1	27.6		0.08	11.9	53.1	39.4	87.0	67.4
2021	17.6	18.8	29.1	8.1	0.0	19.5	59.4	-	93.9%	73.3
2015 - 2021	Prevalence of HIV has not changed. This may be due to mortality rate being similar to incidence rate	Increase in incidence of syphilis worldwide. Consistent and correct use ofcondoms to be promoted				Needle sharing increased from 21.4% to 28.9%	Condom use increased but 29% claimed not to have access to condoms.		Increase in knowledge but 20.1% never sought to get tested for STI	Increase access to test result results from 86.6% to 90.2%

The survey data shows that despite HIV preventive measures are accessible and avialble to all, free of user-cost, great effort is required to haul up in the right direction to reach zero new HIV

infetions by 2030. Innovative and tailored services have to be established for each of the KPs so as to retain them in care and prevent further HIV transmission .

3. Rationale and Objectives of the 2021 IBBS survey among Men who have Sex with Men

The IBBS survey and case reporting among the key populations are reliable tools used to understand the magnitude and dynamics of the HIV epidemic. From 2010 onwards, IBBS surveys have been carried out to establish HIV and related behavioral trends in order to develop informed and evidence-based HIV responses. The previous surveys among Men who have Sex with Men were conducted in 2010, 2012 and 2015 respectively with the collaboration of the NAS, AIDS Unit and the NGOs. The survey data helped direct resources towards the most vulnerable to HIV populations in an effective and efficient way.

3.1 Specific objectives of the 2021 IBBS survey were to:

- measure the prevalence of HIV, hepatitis B, hepatitis C and Syphilis among Men who have Sex with Men.
- assess sexual and other risk behaviors associated with HIV.
- describe demographic characteristics and the nature of high-risk behaviors.
- assess health seeking behaviors, including HIV counselling and testing.
- develop capacity to strengthen the national HIV/STI surveillance systems.
- provide policy-makers evidence-based information to enable review existing policies, strategies and plans to improve the HIV response.

4. Methodology

4.1 Respondent Driven Sampling (RDS)

The 2021 IBBS survey among Men who have Sex with Men used respondent-driven sampling (RDS) to recruit men having sex with men in the Island of Mauritius. RDS is similar to the chain referral sampling method but with additional mathematical theory introduced to avoid biases generally associated with chain referral methods. RDS which has been designed for the study of hard-to-reach, high risk and hidden populations uses the social network theory based on how people, organizations or groups interact inside their networks. The social network in RDS is the

social structures of individuals connected to each other by specific types of inter-dependency related to their common activities, interests and friendship amongst others.

Recruitment in RDS is initiated with a number of purposefully selected members of the study population referred to as “seeds”. Each seed is given a fixed amount (usually no more than three) of uniquely numbered coupons with which to recruit peers. The recruited peers for the survey are considered the first wave of participants. Each participant in the first wave who completes the survey is then provided a number of coupons with which to recruit other peers. Successive waves of recruitment continue until a statistically valid sample size is reached.

Each participant is monitored through the unique numbers on their coupons which also ensure participants’ anonymity by linking each participant to their questionnaire and biological test results, thereby avoiding the need to collect names or addresses.

4.2 Sample Size Calculation

The formula used for the sample size was:

$$\mathbf{n} = [\ D * Z_{1-\alpha}{}^{2*P\ (1\ -\ P)}] / d^2$$

n = The required sample size

$Z_{1-\alpha}$ = Z score for the desired confidence level, set as 1.96 for 95% confidence

P = Expected proportion

d = Precision (set as 5%)

D = Design effect.

A prevalence of 17.4% was used, given the prior information of the 2015 Men who have Sex with Men. The precision was decided at 5%. The final calculation of the required sample size was 500 giving a design of 2.55.

4.3 Data Collection

4.3.1 Target population and survey sites

The target population for the 2021 IBBS study among Men who have Sex with Men was men having anal sex and/or oral sex, in the last six months with a male, and that they were aged 15 years or more, while living in the study area, that is, in the main Island of Mauritius.

To have a proper geographical representation of participants there was a need to increase and ease accessibility to the survey sites in terms of minimising the distance and at the same time the travel cost required to reach these sites. Accordingly, a total of four survey sites was rented for this study across the whole Island of Mauritius, namely: Grand Bay, Port Louis, Rose Hill, and Souillac.

4.3.2 Seeds

Eight seeds (2 per sites) were selected to reflect diversity on a number of key characteristics, including geographic residence, level of risk behaviors, age, and education.

4.3.3 Recruitment Process

Seeds identified for the study population are provided each with three uniquely coded coupons to be used for recruiting their peers into the survey. Participants who present a valid recruitment coupon to one of the survey sites are screened for eligibility. Once informed consent is obtained, pre-test counseling for HIV and blood samples for HIV, HCV, HBV and syphilis are collected. Interviews are conducted in Creole language by trained interviewers. Data collected refer to their socio-demographic characteristics, high risk behaviors, knowledge on HIV transmission, signs and symptoms of STIs and HIV, information on participants' social networks sizes, as well as access and utilization of HIV and harm reduction services. After the interview, each participant is provided with a maximum of three coupons for recruiting other peers.

Participants receive a primary compensation for completing the survey and an additional secondary compensation for each recruit who is eligible and consented to participate in the survey. Once the blood samples have been collected, each participant receives uniquely numbered voucher which will be used after two weeks when the participants return to the site to receive their test results along with counselling. The participants are referred to the specilalised centres for prevention, treatment, care and support services accordingly. To ensure confidentiality, participants' questionnaires and biological tests are identified using the unique study identification number provided on the recruitment coupons.

4.3.4 Tools development and staff training

Field staff including supervisors, screeners, interviewers, peer leaders, voluntary counselling, and testing counsellors were trained on seeds selection and participant recruitment, ethical consent, coupon and participant tracking, the incentive process, administration of the behavioural questionnaire, collection of the biological samples, processing and transportations, specimen testing, provision of biological test results, and referrals by the Ministry of Health and Wellness.

4.3.5 Laboratory procedures

A 5cc sample of venous blood was collected from each compliant study participant after the completion of the survey questionnaire. After blood collection on survey sites, the samples were transported to the Central Health Laboratory, Victoria Hospital.

The HIV P24Antigen and antibodies to HIV1 and HIV2 were detected using an Enzyme Immunoassay, Genscreen Ultra HIV Ag-Ab (Manufacturer: BIORAD, France). Reactive specimens were confirmed by Western Blot Assay HIV Blot 2.2 MP Diagnostics (Singapore).

Hepatitis B surface antigen (HBs Ag) was detected using MONOLISA HBs Ag Ultra (Manufacturer: BIORAD, France) and antibodies to HCV were detected using MONOLISA Anti - HCV Plus version 3 (Manufacturer: BIORAD, France).

Syphilis infection was tested with VEDA (Manufacturer: VEDALAB, France), a hemagglutination test for Treponema Pallidum antibodies (IgG and IgM) in serum. Reactive Specimens for TPHA were also tested by Fortress carbon antigen (Manufacturer: Fortress Diagnostics Limited, UK).

4.3.6 Dataset management and analysis

Data were entered into Epi Info. Data cleaning and quality control were performed. The final dataset was converted to SPSS. Further consistency checks and frequencies were performed to check validity and logic of all variables in the datasets. The final SPSS dataset was imported by the RDS Analyst software designed for RDS analysis (RDS Version 0.5 – 5 created on 2017 – 11 – 20. Copy right (c) 2014, Krista J. Gile, University of Massachusetts - Amherst. Mark S. Handcock, University of California – Los Angeles)

The analysis settings used are: 0.95 for confidence interval with 500 bootstraps, while the weight has been set to Gile's SS and the population iteration is 1,000.

4.3.7 Ethical considerations

Participants were informed and were with the consent form to read or, the consent was read to the participant by a staff member. They were free to opt-out. Based on Respondent Driven Sampling (RDS) principles, the survey was completely anonymous, such that, no survey participants could be identified except through the unique identification survey numbering system

4.3.8 Constraints and Limitations

The well-known and popular method of Multiplier Technique for estimating the population size was not used because of logistics constraint. **Caution should be taken for indicators associated with small sample.**

The survey was subject to several limitations:

(i) Behavioural data being self-reported in face-to-face interview – social desirability bias may have resulted in the under-reporting of risky sexual practices and drug use behaviours**.**

(ii) Recruitment was ensured through convenience sampling that included sampling within the community (snowball sampling). This affected the representativeness of the sample.

(iii) The use of financial incentives for respondents is a critical element of recruitment in RDS and determining the amount is a real challenge. Should the incentive be too high, there is the risk that some recruits may fake eligibility. And with a low financial incentive, difficulties arise in recruitment of respondents. The financial incentives may boost recruitment thus leading to biased enrolment and undue inducement. For consent to be valid, it should reflect the respondent's autonomous choice to participate in the study. Engaging in financial incentives could act as a motivator for individuals with lower socio-economic status to participate and engage in research. This may impact the core population recruited for the programme, creating skewed distributions/observations.

(iv) The investigators were also members of the treating staff of the Day Care Centres for the Immunosuppressed. This may lead to subject bias, in such that the participants would tend to match expectations of the investigator so as to be seen favourably.

(v) The Men who have Sex with Men community remains largely concealed in Mauritius. The current recruitment strategies act in favour of the subjects from the low end of the socioeconomic ladder. The legislation, at present, regarding legal recognition of non hetero normative is non-existent. There is also the paucity of research on the composition of the LGBTQIA community in Mauritius. These impact the visibility of the whole Men who have Sex with MenSpectrum in the country.

5. Results and Analysis

This section presents the behavioral findings and biological results from the 2021 IBBS survey among Men who have Sex with Men.

5.1 Recruitment diagnosis

During the month of November/December 2021, 500 participants including eight (8) seeds were enrolled for the study. Recruitment by the four survey sites were as follows: Souillac accounted for 28.4% of the respondents while Port Louis and Rose-Hill recruited 25.6% and 24.0% of the total respondents respectively. Grand Bay had the least number of recruits at 22.0% (see Figure 1).

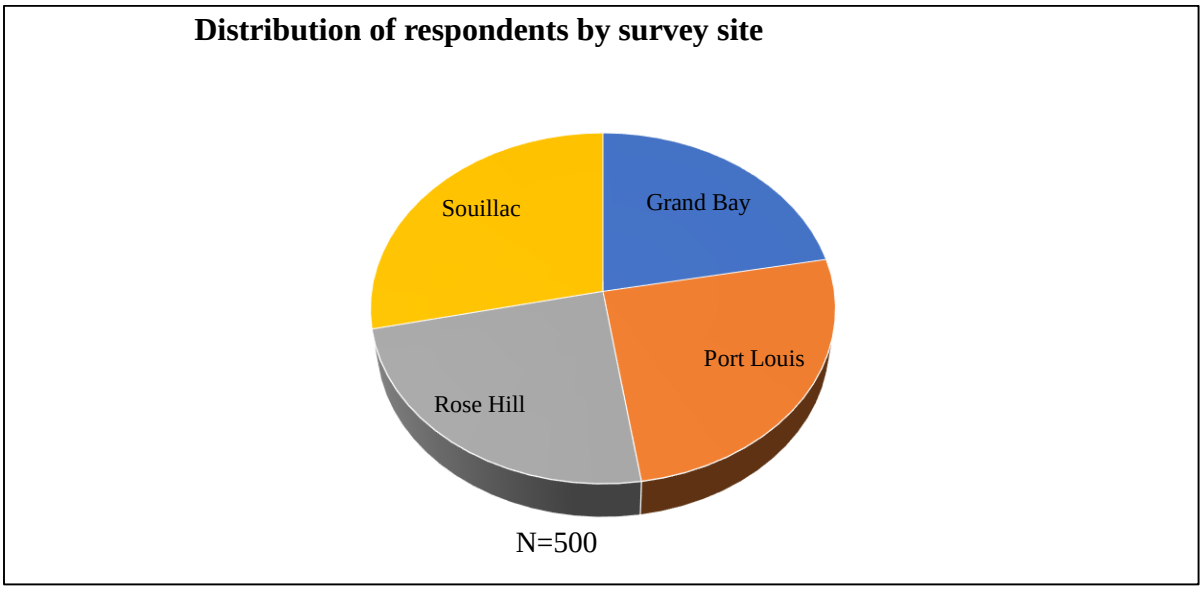

Figure 1

As illustrated in Figure 2, the seed with the lowest performance was at Grand Bay and he recruited only 7.4% of the participants while the best performing seed from Souillacwas able to enlist more than twice more Men who have Sex with Men.

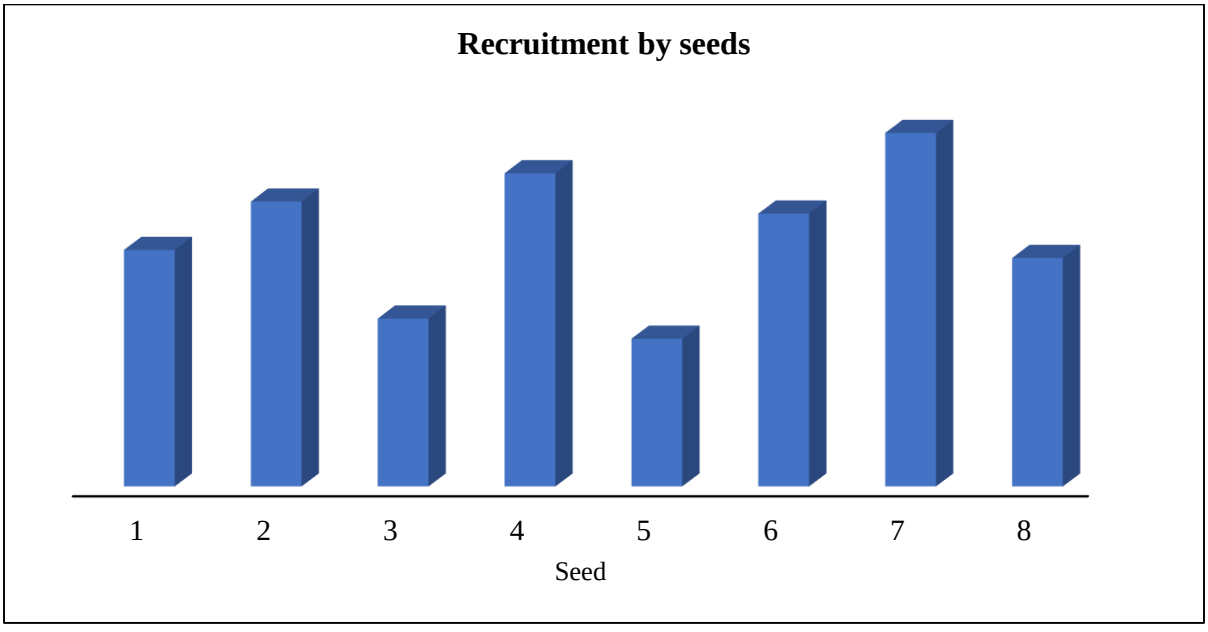

Figure 2

The recruitment distribution is shown in

Table 1with the best operation occurring at Souillac where 142 Men who have Sex with Men were identified; slightly less participants were enrolled at Grand Bay.

	Site	Port Louis		Rose Hill		Grand Bay		Souillac		Total
	Seed Number	1	2	3	4	5	6	7	8	
Recruits resported to:	Grand Bay	0	*15*	0	0	37	55	*3*	0	110
	Port Louis	49	56	*11*	*6*	0	*6*	0	0	128
	Rose Hill	*7*	0	31	72	0	*7*	*3*	0	120
	Souillac	*3*	0	0	0	0	0	82	57	142
Total		59	71	42	78	37	68	88	57	500

Table 1

Each respondent was limited to a maximum of three (3) recruitment coupons. The age of the seeds ranged from 23 years to 52 years with a mean of 36.5 years. 3 out of the 8 seeds were HIV positive as mentioned in

Table 2.

Seed No:	Age	HIV Status	HEP C Status	Syphilis Status
1	45	Positive	Positive	Negative
2	28	Negative	Positive	Positive
3	52	Negative	Negative	Positive
4	41	Negative	Negative	Negative
5	27	Positive	Negative	Positive
6	26	Negative	Negative	Negative
7	50	Negative	Negative	Positive
8	23	Positive	Negative	Negative

Table 2

Only 2 out of the 8 seeds had ever used illegal injecting drugs; however, theydid not do so in the last three months preceding the survey. None of the seeds were arrested during the last twelve months nor have they been denied employment because of their sexual practice.

85.8% of the respondents reported being part of a network of less than 10 Men who have Sex with Men.12.2% were in networks of 10-20 Men who have Sex with Menand the rest (2.0%) were in networks of 20 or more. The overall mean network size was 5 with a median of 3. Analysis by survey site showed that the mean network size was 3 at Port Louis and 6 at Rose-Hill. Correspondingly, the figure stood at 8 for Grand Bay while at Souillac it was 3.

This is illustrated in Figure 3 and Figure 4. The recruitment chain at each site is shown in Figure 5.

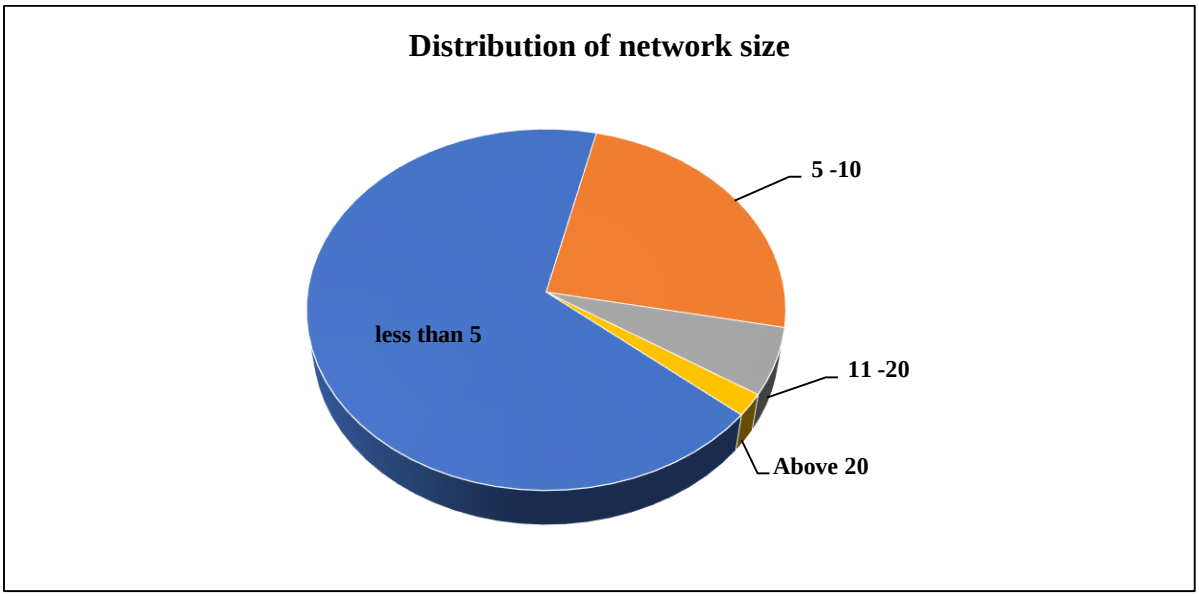

Figure 3

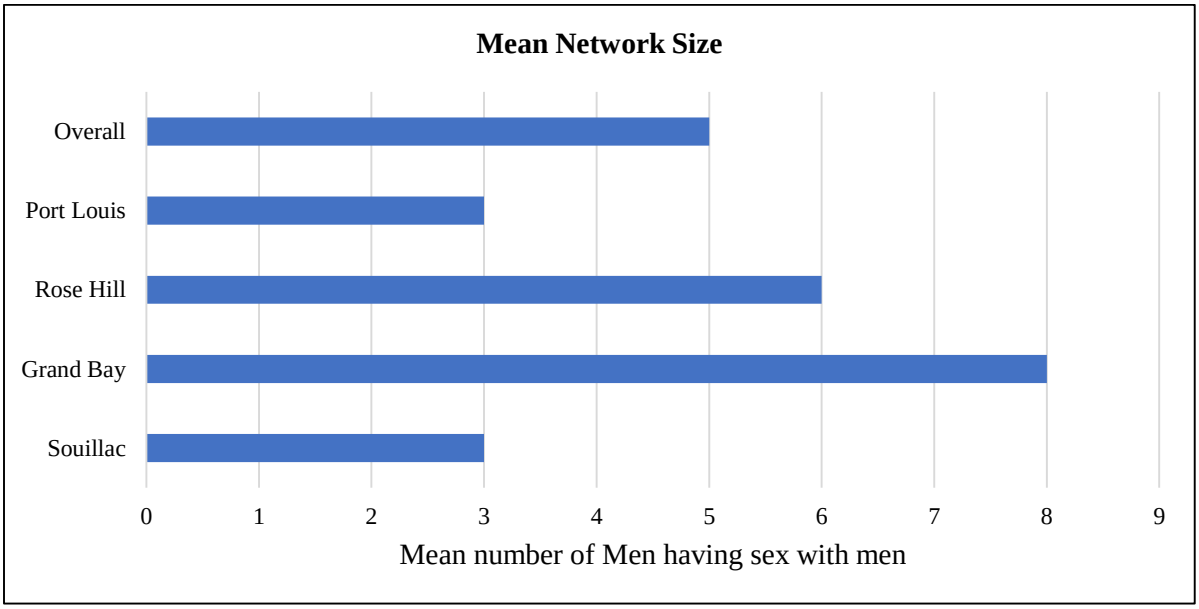

Figure 4

Recruitment graph with a survey sample size of 500 respondents with eight seeds recruitment chains

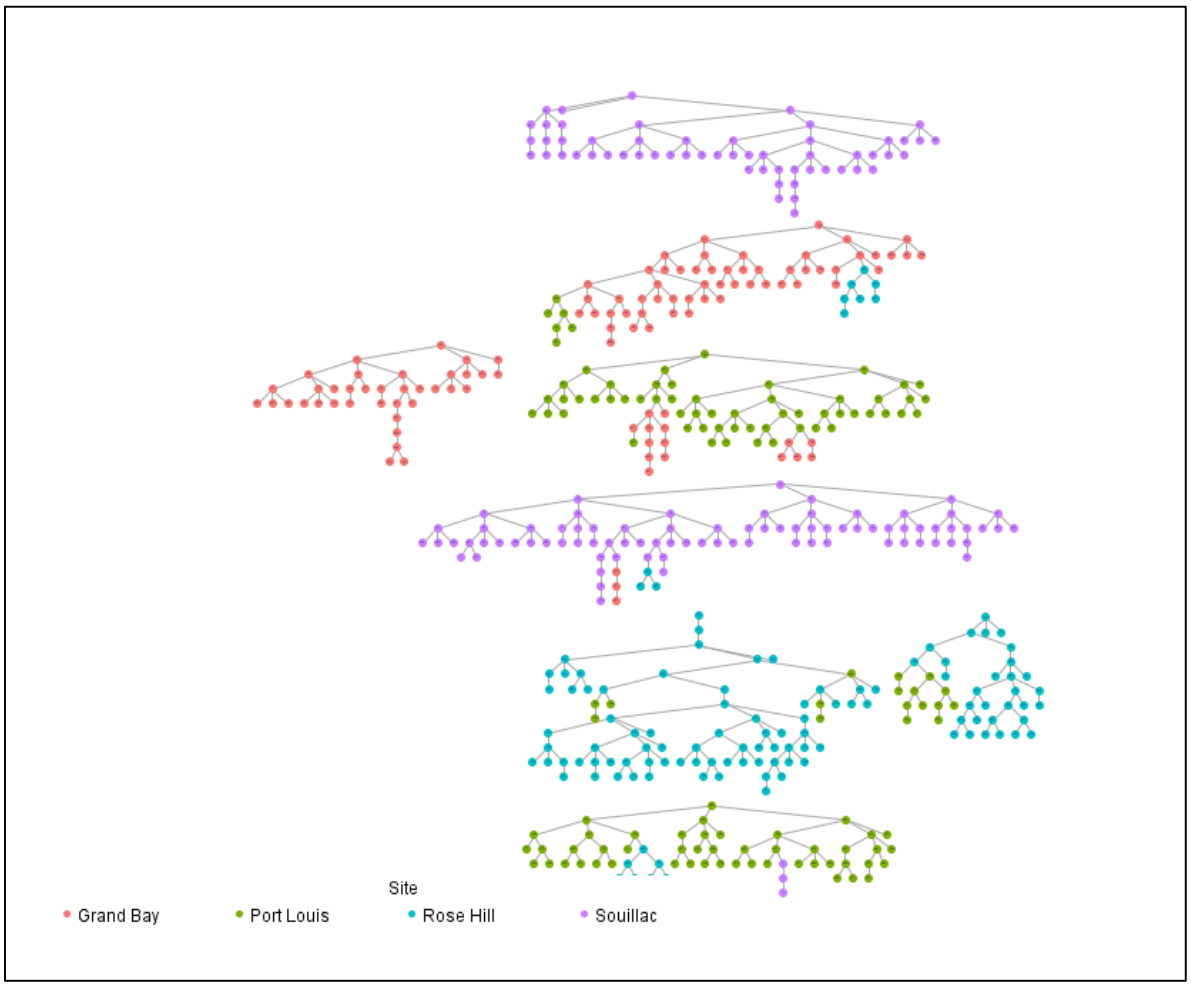

Figure 5: The seeds are at the dots appearing on the topmost position of each chain.

69.0 % of the respondents stated that the main reason for accepting to participate in this survey was to know their HIV Status while 10.7% participated only for the given incentive (see Table 3)

Reason for enrolling in the study	Frequency
For the incentive	10.7
For HIV test results	69.0
For syphilis test results	1.4
For hepatitis C results	0.4
Recommendation from person who gave coupon	7.9
The study seemed interesting/useful	10.1
I have free time	0.6

Table 3

5.2 Profile of respondents

Most of the attendance came from the districts of Savanne, Plaines Wilhems, Port Louis and Rivière du Rempart while few participants were recruited from the districts of Flacq, Rivière Noire and Moka (see Table 4).

District of residence of Respondents	Survey site				Total
	Grand Bay	Port Louis	Rose Hill	Souillac	
Port Louis	3.6%	63.3%	3.3%	-	17.8%
Pamplemousses	20.9%	13.3%	3.3%	-	8.8%
Riviere du Rempart	70.0%	3.9%	0.8%	-	16.6%
Flacq	1.8%	1.6%	-	-	0.8%
Grand Port	-	-	5.0%	7.0%	3.2%
Savanne	2.7%	0.8%	4.2%	90.8%	27.6%
Plaines Wilhems	-	9.4%	65.0%	1.4%	18.4%
Moka	0.9%	3.1%	10.8%	-	3.6%
Black River	-	4.7%	7.5%	0.7%	3.2%
All survey sites	**100% (n=110)**	**100% (n=128)**	**100% (n=120)**	**100% (n= 142)**	**100% (N= 500)**

Table 4

67.1% of respondents were single, 15.3% were cohabitating and 11.9% were divorced (see Table 5) – these values are similar to those found in previous IBBS surveys.

Civil Status	Point Estimate	95% Lower Bound	95% Upper Bound	Estimated Design Effect	Standard Error	Sample Size
Single - never married	67.1%	62.954	71.137	1.05	2.088	334
Married	4.8%	1.96	7.659	2.47	1.454	20
Divorced/Separated	11.9%	8.517	15.328	1.54	1.738	63
Widower	0.9%	-0.119	1.989	1.67	0.538	4
Cohabitation	15.3%	10.923	19.652	2.05	2.227	70
Total	100.0				Total	492

Table 5

60.5% ofMen who have Sex with Menlived with other family members, 24% lived alone and 10.3% lived with their male partners (see Figure 6).

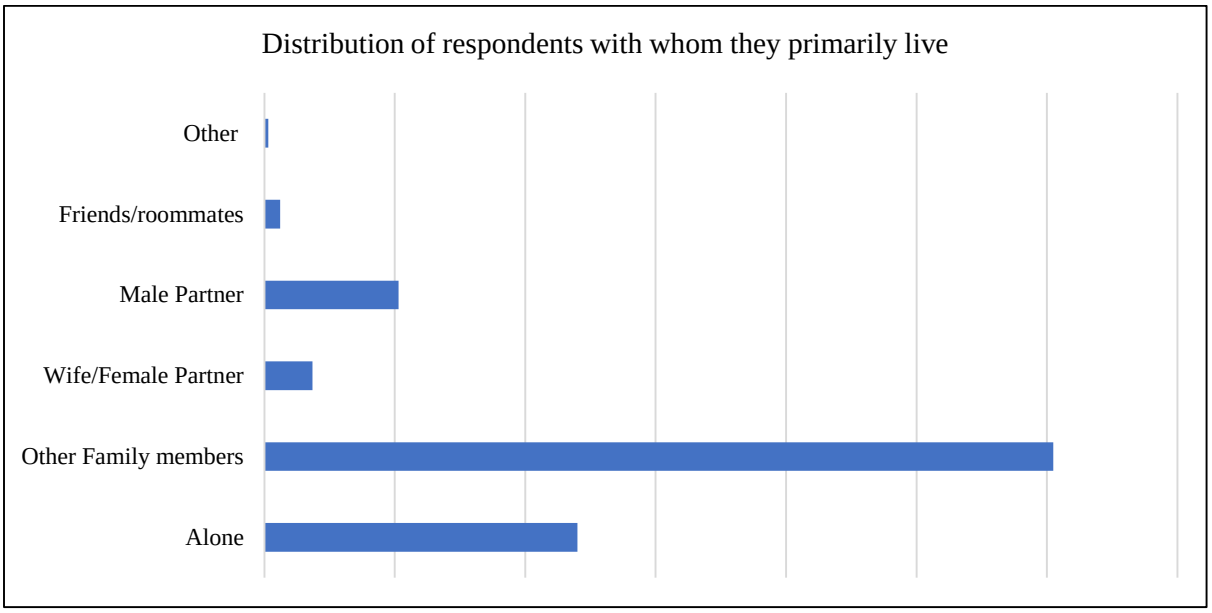

Figure 6

The age of the respondents ranged between 15 to 61 years with a mean and a median of 28.5 and 26 years respectively. Most participants were aged between 20 years and 29 years (see Table 6). No major difference is noted from the findings in the IBBS survey of 2015.

Age group (years)	Point Estimate	95% Lower Bound	95% Upper Bound	Estimated Design Effect	Standard Error	Sample Size
15-19	11.7%	8.67	14.66	1.24	1.53	53
20-24	19.0%	14.52	23.53	1.87	2.3	94
25-29	20.7%	16.4	25.09	1.63	2.22	97
30-34	15.1%	11.2	19	1.68	1.99	79
35-39	8.9%	6.11	11.66	1.35	1.41	49
40-44	10.7%	7.34	14.02	1.66	1.7	60
45-49	5.0%	2.58	7.34	1.71	1.22	21
50 &above	8.9%	5.54	12.32	2.01	1.73	47
Total	100.0					500

Table 6

35.7% of the respondents did not complete secondary school, 21.7% completed primary school and 18.6% finished GCE O-level (see Table 7). This is similar to the values from the IBBS survey of 2015.

Highest level of education	Point Estimate	95% Lower Bound	95% Upper Bound	Estimated Design Effect	Standard Error	Sample Size
Never Attended School/ No Formal Education	0.70%	-0.135	1.557	1.44	0.432	5
Incomplete Primary	3.50%	1.731	5.336	1.35	0.92	20
Complete Primary	21.70%	17.435	26.053	1.55	2.199	112
Incomplete Secondary	35.70%	30.589	40.532	1.53	2.537	178
SC/GCE O-level	18.60%	14.464	22.774	1.62	2.12	88
HSC/GCE A Level	4.70%	2.385	7.083	1.74	1.199	25
Tertiary-University	4.40%	1.909	6.971	2.14	1.292	18
IVTB/Other Training Institutions	10.70%	7.174	14.143	1.81	1.778	54
Total	100.0					500

Table 7

28.3% of the participants had an income from Rs 10,000 to Rs 14,999 while 26.6% had an income of more than Rs 20,000 (see

Table 8). The 2015 survey reported similar figures.

Monthly Family Income	Point Estimate	95% Lower Bound	95% Upper Bound	Estimated Design Effect	Standard Error	Sample Size
Less than Rs5,000	7.2%	4.042	10.268	2.035	1.59	26
Rs 5,000 - Rs 9,999	16.6%	12.071	21.097	2.054	2.3	80
Rs 10,000 - Rs 14,999	28.3%	25.208	31.481	0.676	1.6	148
Rs 15,000 - Rs 19,999	21.3%	16.526	26.047	1.887	2.43	101
Rs 20,000 and above	26.6%	22.3	30.959	1.338	2.21	137
Total	100.0				Total	492

Table 8

Out of the 500 respondents, 458 answered the question related to their occupation for the last twelve months. Among them 6.6% (30) reported having done more than 1 type of job during that period. 31.8% worked in craftmanship and related trade while 23.9% had a job in elementary occupations. The distribution of the occupation is given below.

Occupation	Point Estimate	95% Lower Bound	95% Upper Bound	Estimated Design Effect	Standard Error	Sample Size
Clerical support workers	1.0%	-0.3055	2.3066	2.215	0.666	5
Craft and related trade workers	31.8%	26.618	36.9407	1.586	2.633	139
Elementary occupations	23.9%	19.1726	28.5928	1.575	2.403	104
Manager	0.5%	-0.2698	1.1725	1.5	0.368	1
Others	3.1%	0.6247	5.5723	2.635	1.262	12
Plant and machine operators and assemblers	3.5%	1.703	5.3773	1.276	0.937	16
Professional	1.2%	-0.5328	2.9036	3.26	0.877	4
Self employed	0.7%	0.2678	1.191	0.379	0.236	5
Service and sales workers	21.8%	18.5381	24.9119	0.77	1.626	119
Skilled agricultural and fishery worker	9.1%	5.378	12.9261	2.212	1.926	39
Student	1.1%	-1.315	3.5799	6.923	1.249	3
Technicians	0.9%	-0.0147	1.8842	1.257	0.484	4
Unemployed	1.4%	0.3674	2.4092	0.981	0.521	7
Total	100.0					458

Table 9

5.3 Sexual activity and type of sexual partners

55.5% of respondents reported being bisexual (see Figure 7). However, 62.3% preferred having sexual intercourse with males (see Table 10).

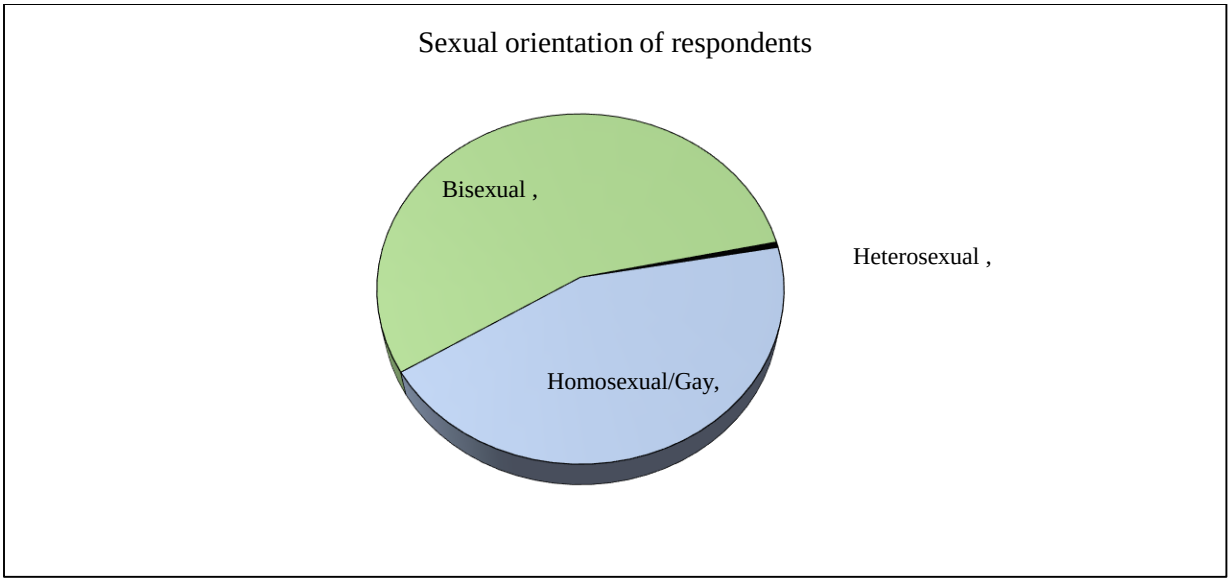

Figure 7

Prefer Sexual Intercourse	Point Estimate	95% Lower Bound	95% Upper Bound	Estimated Design Effect	Standard Error	Sample Size
Male	62.3%	55.98	68.51	2.36	3.2	334
Female	11.2%	7.32	15.14	2.17	2	41
Both	26.5%	21.62	31.43	1.74	2.5	123
Total	100.0				Total	498

Table 10

The minimum age reported for penetrative sexual intercourse was 6 years while the maximum reported age was 35 with a mean and median age of 16.3 and 16.0 years respectively. 59.9% had their first sexual experience between the age of 15 years and 19 years (see Table 11). There is not much difference compared to the IBBS surveys of 2012 and 2015.

Age Group (years)	Point Estimate	95% Lower Bound	95% Upper Bound	Estimated Design Effect	Standard Error	Sample Size
Under 10	0.8%	-0.0469	1.6472	1.27	0.432	4
10 - 14	26.1%	21.4287	30.7228	1.58	2.371	138
15 - 19	59.9%	54.9413	64.9023	1.46	2.541	293
20 years & above	13.2%	9.7556	16.6491	1.46	1.759	62
Total	100.0				Total	497

Table 11

37.4% of participants reported using condom during their first sexual experience. 54.2% of the recruits stated that that their first sexual partner was male. The reported age for first anal sex ranged between 6 years to 58 years with a respective mean and median age of 18.1 years and 17.0years (see Table 12). This has not changed compared to previous years.

	Point Estimate (%)	95% Lower Bound	95% Upper Bound	Estimated Design Effect	Standard Error	Sample Size
Under 10	0.8%	0.0138	1.5751	1.09	0.398	4
10 -14	16.6%	13.0208	20.2372	1.33	1.841	95
15 - 19	51.5%	46.2197	56.6779	1.55	2.668	263
20 years & above	31.1%	26.0956	36.1598	1.67	2.567	136
Total	100.0				Total	498

Table 12

15 respondents declared that their first sexual act was non-consensual. The reasons that were advanced included (a) being forced without violence (36.6%), (b) being forced with violence (42.0%) and (c)drunk and being forced (21.5%).

Most participants indicated that they were in an open relationship at the time of the study (see Figure 8). This represents a notable increase since 2012 when only 9.8% of recruits mentioned being in an open relationship.

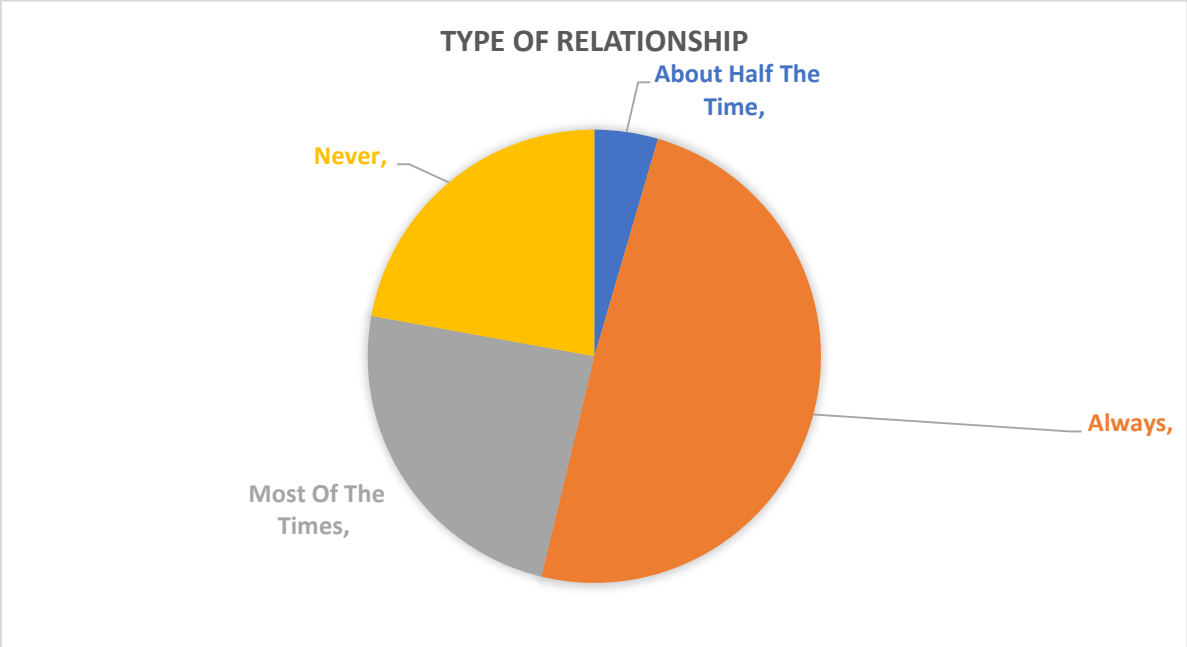

Figure 8

51% had exclusively insertiveanal sex (see Figure 9) and 19.8% of the respondents stated that they never openly express their sexual orientation while 3.3% always express their sexual orientation (see Table 13).

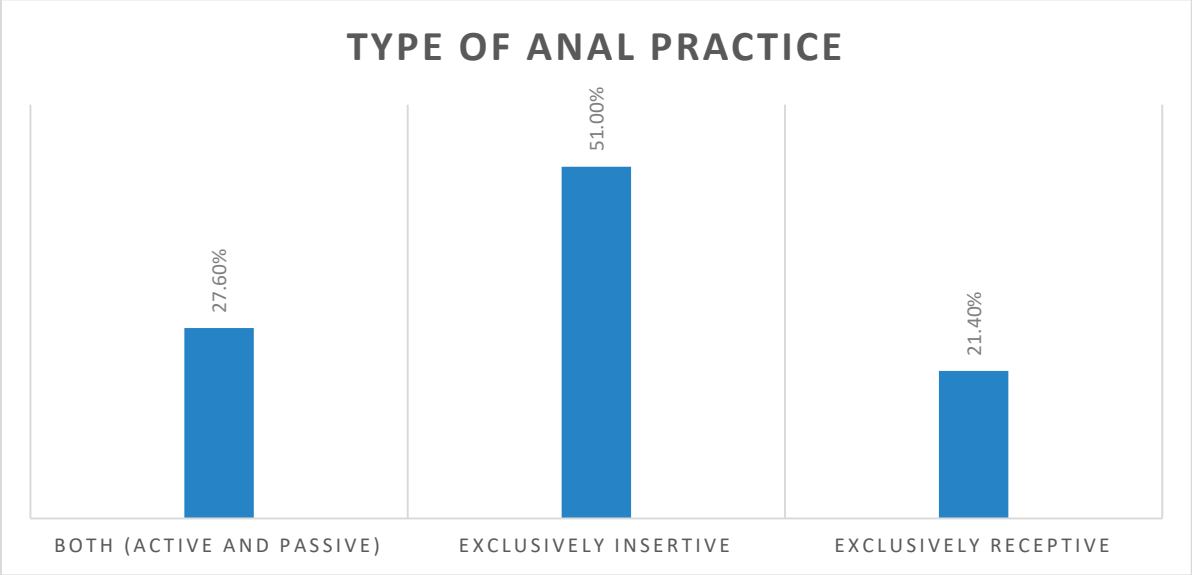

Figure 9

Circumstances openly express sexual orientation	Point Estimate	95% Lower Bound	95% Upper Bound	Estimated Design Effect	Standard Error
Always	3.3%	1.01	5.67	2.38	1.19
Never	19.8%	14.97	24.58	2.06	2.45
With friends	55.5%	50.46	60.63	1.49	2.6
Gay parties	32.0%	27.09	36.86	1.56	2.49
Discotheque	24.1%	19.54	28.59	1.59	2.31
On web social network	13.3%	9.89	16.67	1.42	1.73
with strangers	7.8%	5.08	10.5	1.45	1.38
					N=500

Table 13

The number of different male anal sexual partners the respondents had in the last six months ranged between 1 to 50 with a mean and median of 4 and 5 respectively. With regards to number of oral sex partners, the figure ranged between 0 to 25 with a mean and a median of 3 and 2 respectively.

49.3% of recruits had sex with a known partner while 15.5% had sex under the influence of alcohol (see Figure 10).

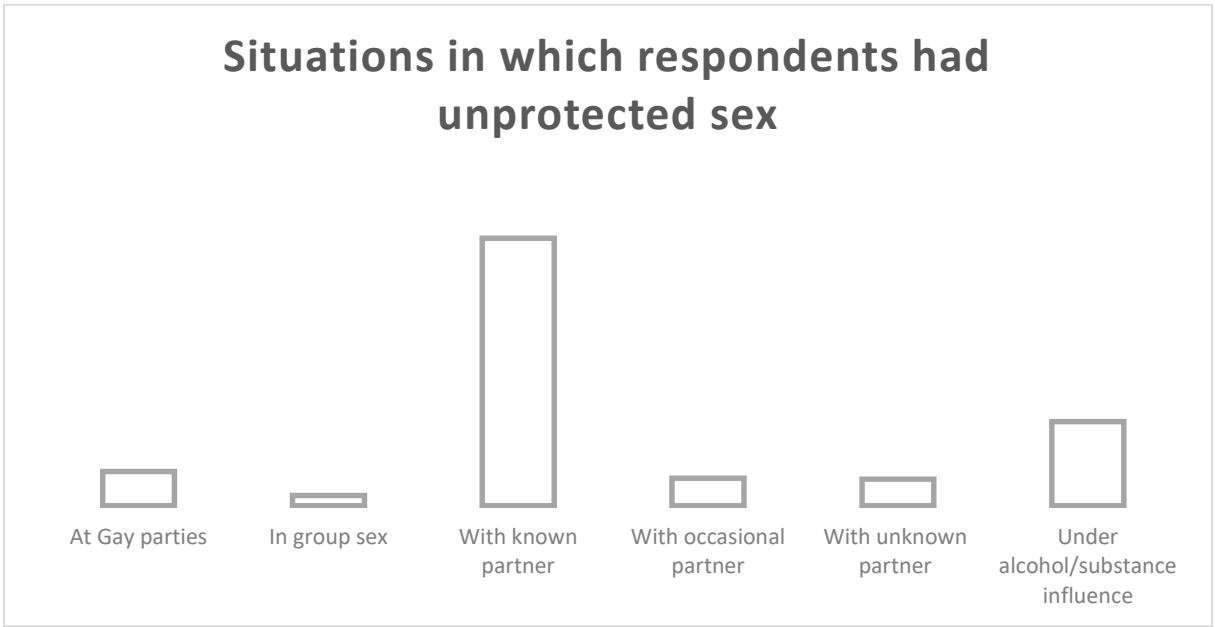

Figure 10

Amongthe 500 respondents, 24.2% reported having sold anal sex during the last six months preceding the survey and among them 71.2% made use of a condom the last time they had anal sex. The decision for using a condom was taken mostly by the respondent himself in 77.2% of cases (see Figure 11). With regards to those who did not make use of a condom for their last anal sexual practice, the main reason stated was "not pleasurable" (50.2%).

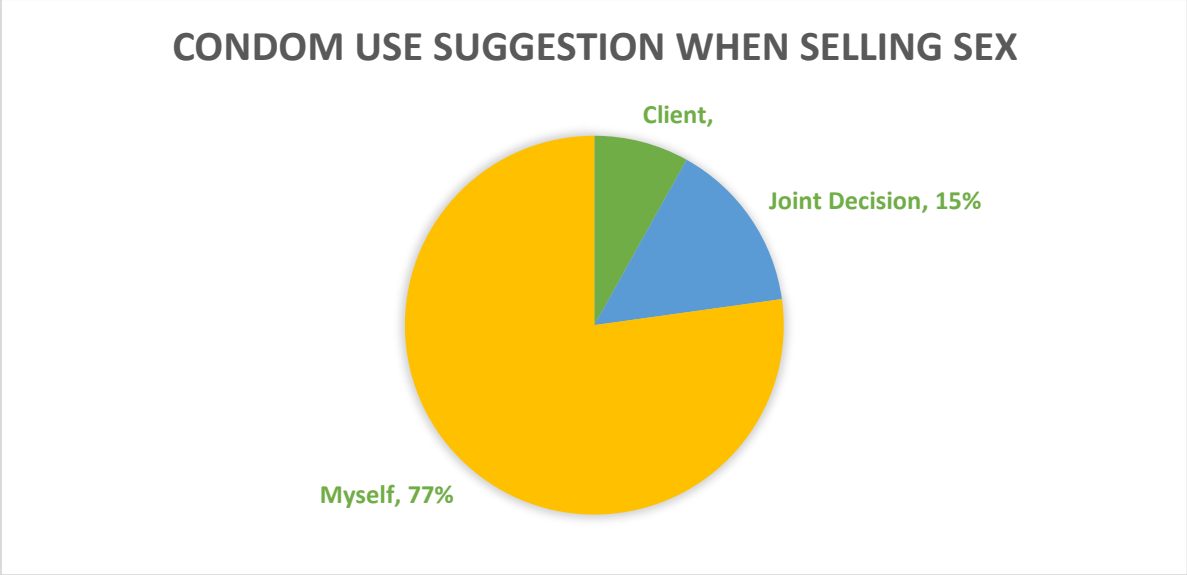

Figure 11

5.9% of Men who have Sex with Men caught a sexually transmissible infection when selling sex while 4.3% were arrested (see Figure 12). This is comparable to what was noted in 2012 when 5% of Men who have Sex with Men went under arrest due to commercial sex.

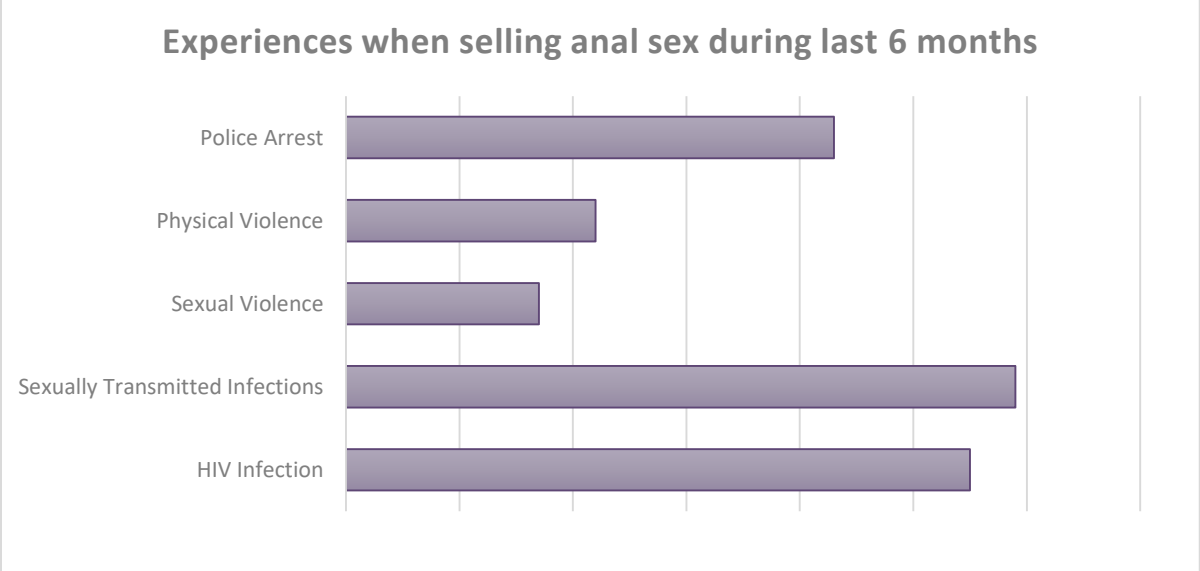

Figure 12

34% (159) respondents reported having sexual intercourse with females during the last six months. 45% mentioned having occasional encounters while 34.9% had a girlfriend. 60.3% of Men who have Sex with Men stated that none of their female partners were aware of their Men who have Sex with Menstatus (Table 14 and Table 15).

Female sex partners in last six months	Point Estimate	95% Lower Bound	95% Upper Bound	Estimated Design Effect	Standard Error	Sample Size
Wife-Living Partner	18.2%	11.1	25.28	1.43	3.62	29
Female sex worker	4.7%	1.87	7.328	0.709	1.39	12
Occasional partner	45.0%	33.99	55.97	2.08	5.61	74
A girlfriend	34.9%	24.8	45.07	1.92	5.17	52
						N=159

Table 14

Female partner aware:	Point Estimate	95% Lower Bound	95% Upper Bound	Estimated Design Effect	Standard Error	Sample Size
Wife-Living Partner	7.2%	3.01	11.18	1.07	2.08	15
Female sex worker	2.5%	0.103	4.755	0.962	1.19	5
Occasional partner	18.5%	10.28	26.5	1.85	4.14	33
A girlfriend	12.4%	7.19	17.48	1.04	2.63	22
None was aware	60.3%	49.91	71.06	1.99	5.4	86
						N=159

Table 15

25.8% of respondents had group anal sex at least once in their life. Of these, 26.2% (47) had group anal sex in the last 6 months. The minimum number of different partners for group anal sex ranged between 2 to 15 with a mean of 5 partners at a time (see Figure 13).

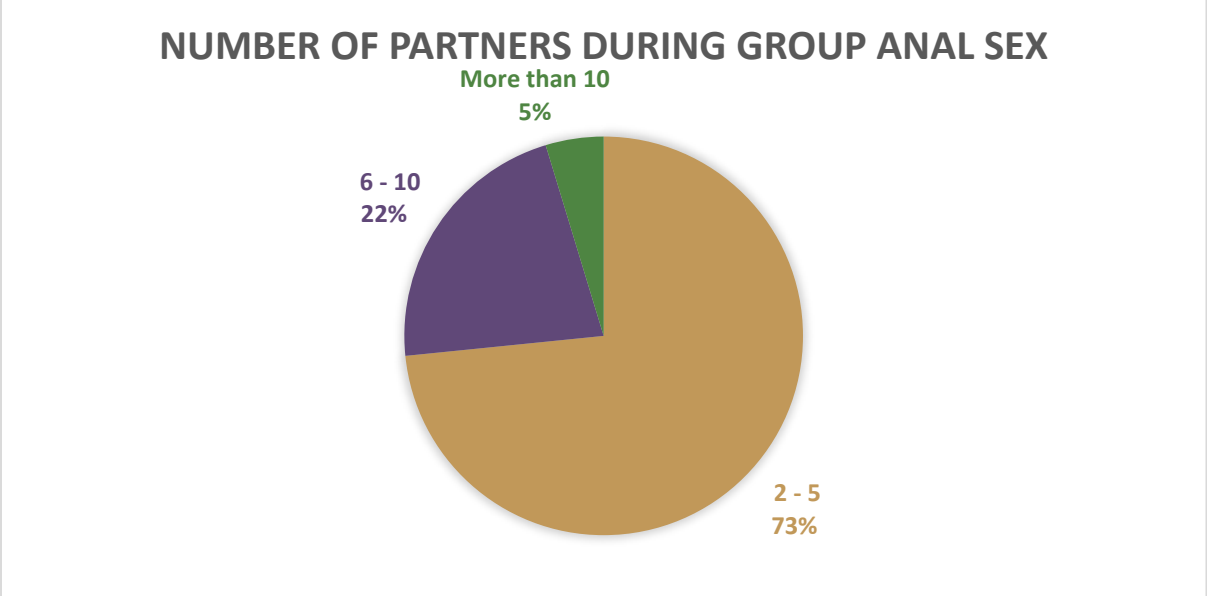

Figure 13

Most people who had group anal sex did so for pleasure (83.8%); 14.6% had group anal sex in exchange for money and 0.5% engaged in this activity in exchange for a gift.

63.3% of Men who have Sex with Men never had sex with a foreigner, 20.6% had sex occasionally with a foreigner and 16.1% had sex once with a foreigner. Among the 200 respondents who stated having had anal sex with foreigners, 168 respondents met them in Mauritius, 36 had sexual contacts abroad and 17 participants met over the internet. Most Men who have Sex with Men socialized on Facebook (see Figure 14).

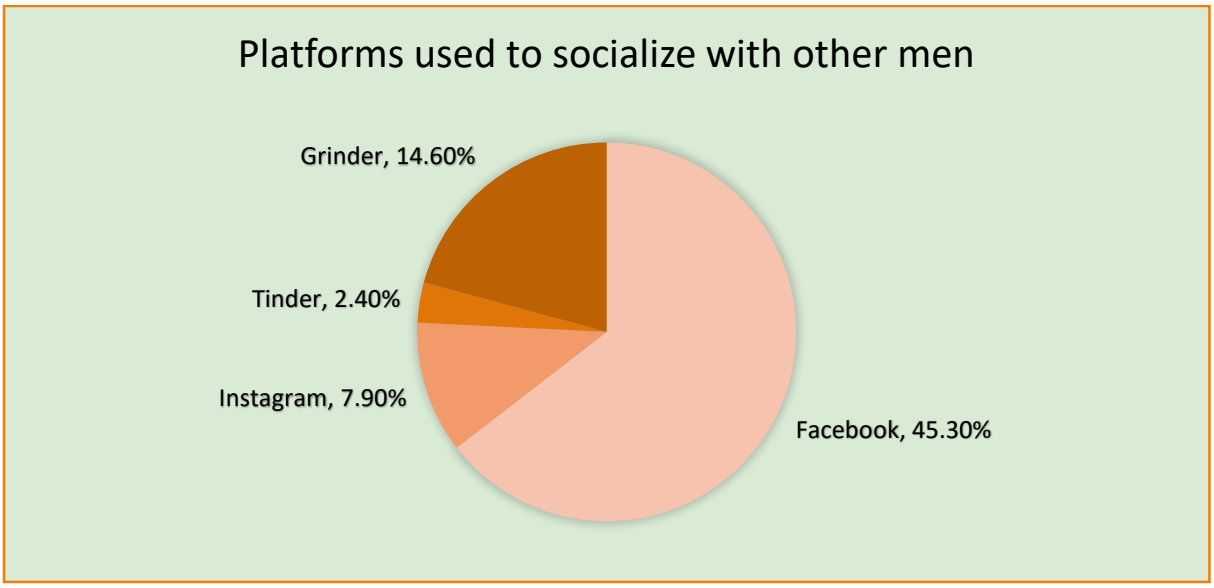

Figure 14

5.4 Condom use

59.4% of respondents said that they used condoms during their anal sex. This is an improvement from the rate of condom use in 2015 when it was 53.1%.

Most participants mentioned not using a condom either because it is not pleasant or because they trust their partner (see Table 16). However, more Men who have Sex with Men (28.9%) mention that condoms were not readily available in this study compared to the 2012 IBBS survey when 22.8% of Men who have Sex with Men mentioned not having access to condoms.

Reasons for not using male condom	Point Estimate	95% Lower Bound	95% Upper Bound	Estimated Design Effect	Standard Error	Sample Size
Not available	28.9%	21.25	36.78	1.58	3.96	53
Not pleasurable	34.5%	25.8	42.94	1.75	4.37	73
No time to buy	2.1%	-0.00736	4.13746	1.13	1.06	6
Both partners are HIV negative	5.1%	0.316	10.045	2.61	2.48	7
Trust partner	32.1%	23.09	41.05	1.99	4.58	68
Expensive	0.5%	-0.593	1.618	1.29	0.564	1
Monogamous relationship	3.3%	0.101	6.373	1.67	1.6	9
Sex do not feel good with condom	15.3%	8.36	22.14	1.98	3.52	33
Both partners are HIV positive	0.5%	-0.594	1.632	1.3	0.568	1
						N=200

Table 16

56.6% of participants observed that they used condoms most of the time or every time in the last 6 months (see Figure 15). During commercial sex, 59.7% of Men who have Sex with Men declared they usedcondoms most of the time or always (see Figure 16).This is a non-statistically noteworthy drop from the corresponding 2012 value which indicated that 62.9% of Men who have Sex with Men always used condoms.

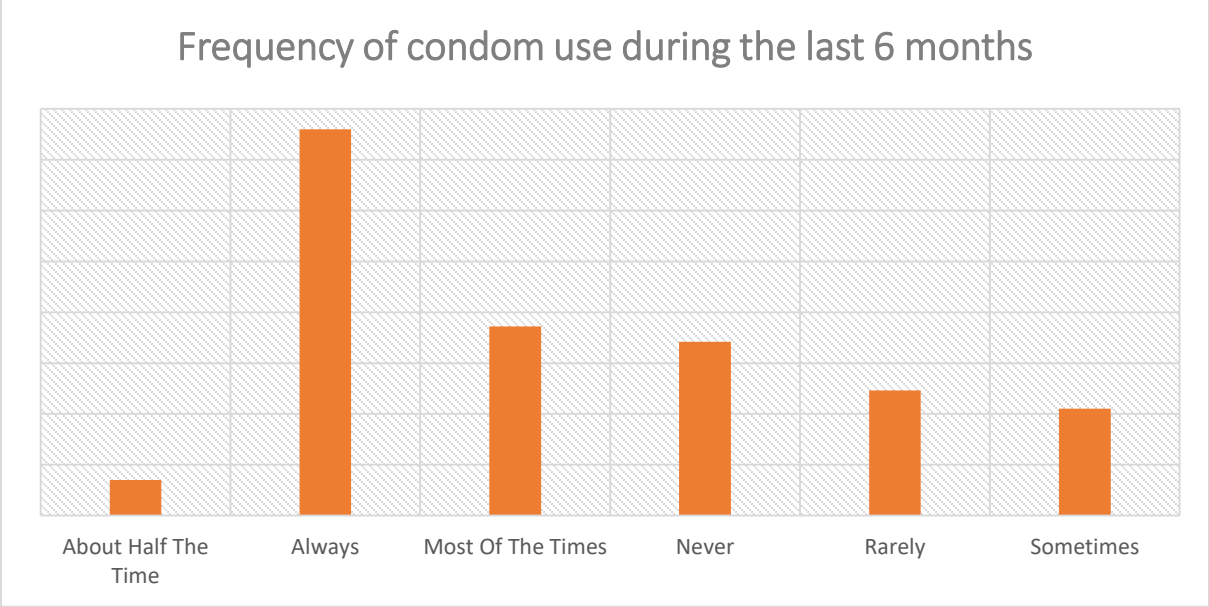

Figure 15

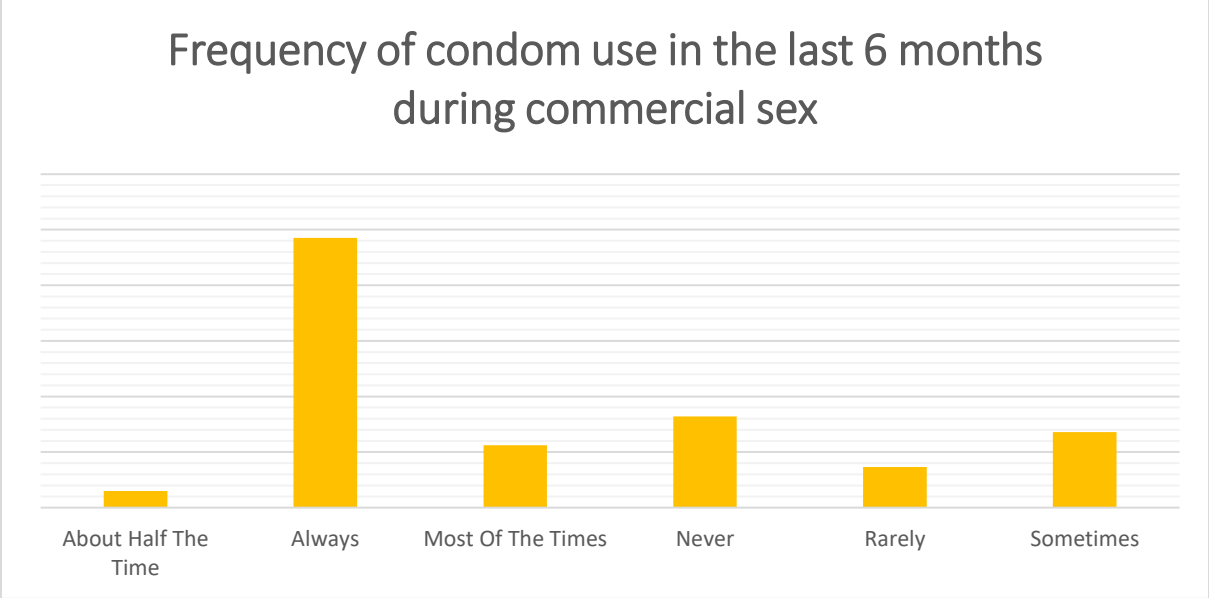

Figure 16

When having sex with a female partner, 49.4% (84) of respondents mentioned using condoms and in 50.4% of cases, the decision was taken by the Men who have Sex with Menhimself. In 34.4% of cases, condoms were not used because the partner was fully trusted. 46.8% of Men who have Sex with Men declared that they used condoms always or most of the time when having sex with a female. For details, see Table 17, Table 18 and Table 19.

Condom use suggestion	Point Estimate	95% Lower Bound	95% Upper Bound	Estimated Design Effect	Standard Error	Sample Size
Joint decision	27.20%	18.39	35.91	0.86	4.47	23
Partner	22.40%	10.83	34.09	1.73	5.93	16
Myself	50.40%	36.54	64.23	1.7	7.06	45
Total	100.0					84

Table 17

Reasons for not using condoms with female partner:	Point Estimate	95% Lower Bound	95% Upper Bound	Estimated Design Effect	Standard Error	Sample Size
Not available	12.3%	5.147	19.418	0.934	3.64	9
Not pleasurable	29.2%	19.794	38.656	0.851	4.81	22
Didn't think was necessary	15.5%	6.32	24.31	1.22	4.59	15
Trust partner	34.4%	24.078	44.615	0.924	5.24	25
Wife/Living Partner	15.3%	5.33	25.52	1.56	5.15	8
						N=75

Table 18

Frequency of condom use with female partner in last 6 months:	Point Estimate	95% Lower Bound	95% Upper Bound	Estimated Design Effect	Standard Error	Sample Size
About half the time	0.6%	-0.286	1.508	0.549	0.458	1
Always	28.4%	20.927	35.627	1.108	3.75	50
Most of the times	18.4%	12.622	24.173	0.927	2.947	27
Never	33.7%	25.218	42.325	1.366	4.364	48
Rarely	10.9%	4.43	17.46	1.817	3.324	17
Sometimes	8.0%	2.933	13.063	1.451	2.584	13
Total	100.0					156

Table 19

During group anal sex, only 60.5% used condoms always or most of the time (see Fig. 17).

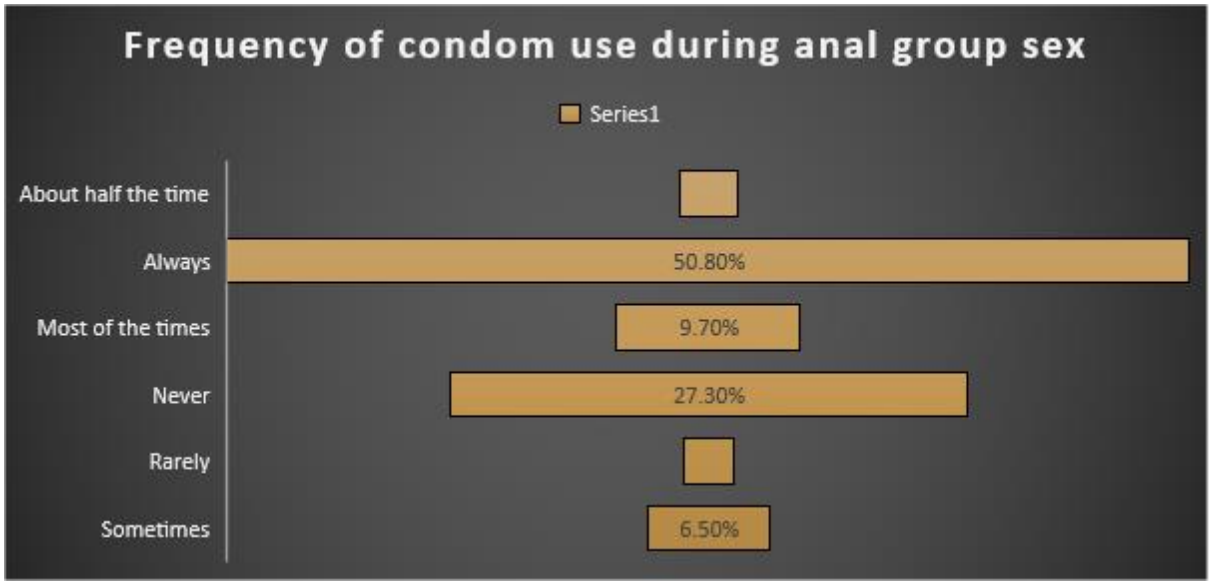

Figure 17

73.5% used condoms when they last had anal sex with a foreigner; in 52.7% (81) of cases, this was the Men Who had Sex with Men's decision, in 35.3% of cases, the decision was joint and in 12% of cases, it was the partner's decision.

44.4% of participants reported receiving counseling on condom use and safe sex in the past 3 months. 67.7% were given lubricants and condoms for free in the last 3 months. 35.3% of Men who have Sex with Men received condoms or lubricants from NGOs and 33.8% received these from peer educators (see Table 20).

Received condoms/lubricants from:	Point Estimate (%)	95% Lower Bound	95% Upper Bound	Estimated Design Effect	Standard Error	Sample Size
Health centre/facility - FP clinics	15.3%	10.99	19.73	1.31	2.23	44
Bar/guest house/hotel	2.2%	1.078	3.23	0.489	0.549	7
Outreach service	4.2%	0.854	7.56	2.5	1.71	11
Drop-in centre	0.6%	-0.646	1.862	2.34	0.64	1
One stop-shop	0.2%	-0.062	0.375	0.269	0.111	1
Sexual Health Clinic	1.2%	-0.343	2.78	1.83	0.797	2
Friend	23.7%	16.94	30.43	2.24	3.44	81
NGO	35.3%	28.13	42.41	1.99	3.64	116
Caravan(testing)	16.7%	11.43	21.96	1.77	2.69	62
Caravan (NEP)	6.7%	3.82	9.6	1.19	1.48	27
VCT centre/AIDS Unit	18.7%	13.4	23.9	1.6	2.66	63
Peer educator (AIDS Unit outreach)	33.8%	21.68	46.11	5.94	6.23	98
						N=324

Table 20

53.1% of Men who have Sex with Men faced partners who refused to use condoms at all costs (see Fig. 18).

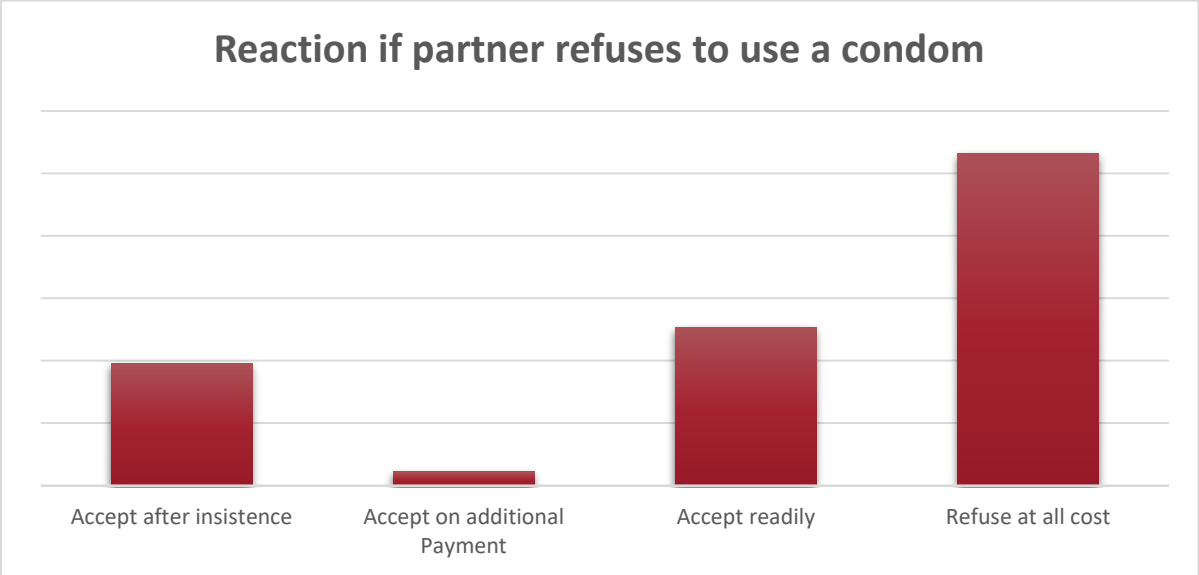

Figure 18

56.6% of participants always had to negotiate for the use of condoms prior to sex, 29.6% negotiated only on a few occasions while 13.8% did not negotiate at all.

Only 18.7% of respondents had ever used female condoms. Lubricants were always used during 53.6% of anal sex encounters, they were used sometimes in 31.1% of cases and they were never used in 15.3% of anal sex. Lubricants were mostly obtained from pharmacies or from NGOs (see Table 21). 26.6% of Men who have Sex with Men used saliva as lubricant (see Fig. 19).

Places where water-based lubricant can be obtained	Point Estimate	95% Lower Bound	95% Upper Bound	Estimated Design Effect	Standard Error	Sample Size
Shop/Supermarket	23.3	18.65	27.97	1.72	2.38	117
Pharmacy	41.4	36.19	46.68	1.61	2.68	214
Bar/guest house/hotel	0.848	-0.0671	1.7607	1.41	0.466	4
Friend	21.2	16.88	25.61	1.62	2.23	111
NGO	26.9	22	31.7	1.7	2.48	136
Peer-Educator	22.6	16.4	28.8	3.1	3.15	99
VCT centre/AIDS Unit	18.8	14.77	22.88	1.53	2.07	97
						N=500

Table 21

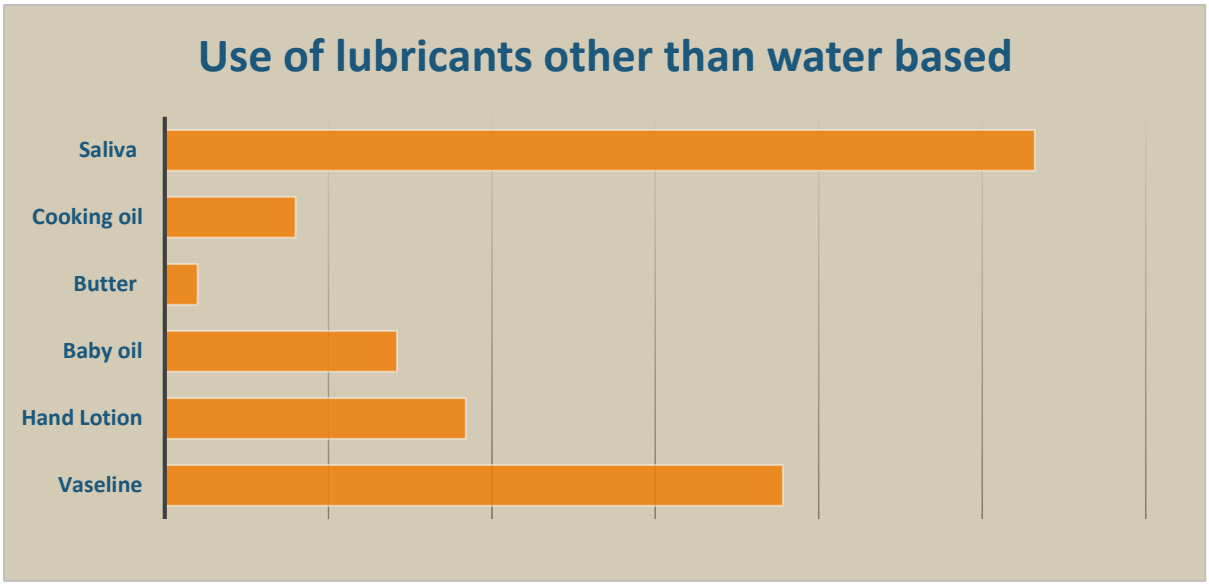

Figure 19

5.5 Sexually transmissible infections (STIs)

93.9% of respondents have heard about STI. However, 20.1% never sought to be checked for an STI (see Table 22). Most Men who have Sex with Men presented with genital discharge or dysuria when they had STIs (see Figure 20). 91.4% of participants did not have a genital discharge, anal discharge, a sore or an ulcer during the last twelve months. The majority of

Men who have Sex with Men went to a government facility for treatment when symptoms developed (see Figure 20).

Sought routine check for STIs	Point Estimate (%)	95% Lower Bound	95% Upper Bound	Estimated Design Effect	Standard Error	Sample Size
Never	20.1%	16.578	23.626	1.035	1.8	102
Once every 3 months	12.5%	8.577	16.512	1.923	2.02	57
Once every 6 months	16.9%	13.311	20.499	1.231	1.83	85
Once monthly	2.2%	-0.952	5.312	6.172	1.6	8
Once yearly	24.9%	21.66	27.958	0.711	1.61	133
Yes, but no time frame mentioned when	23.4%	18.375	28.544	1.933	2.59	89
Total	100					474

Table 22

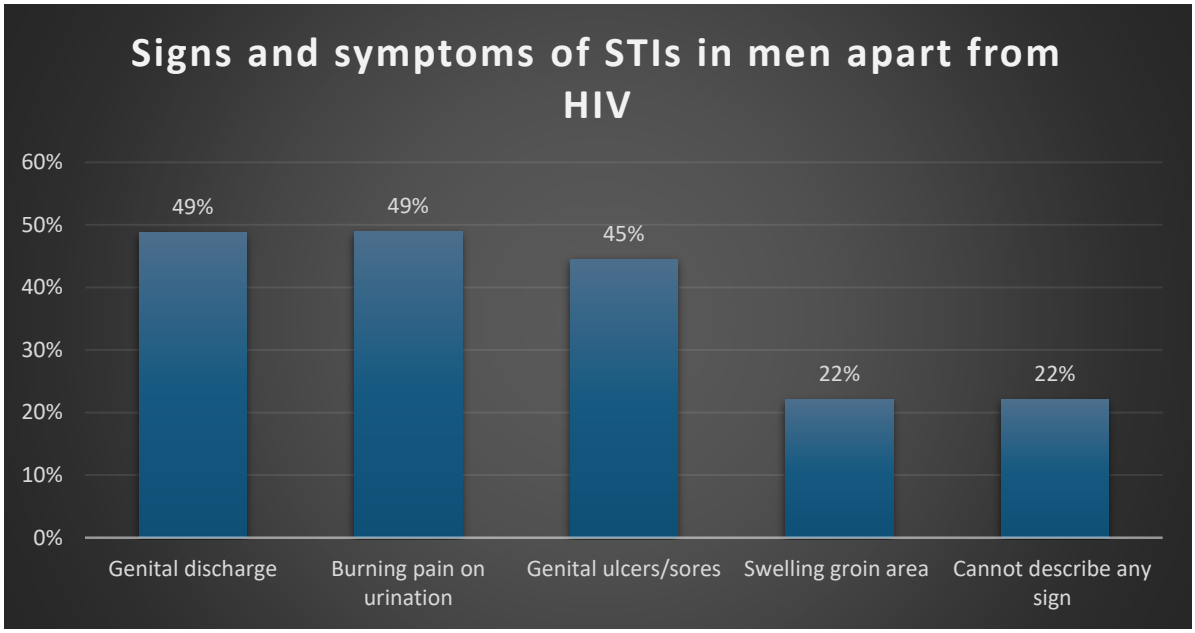

Figure 20

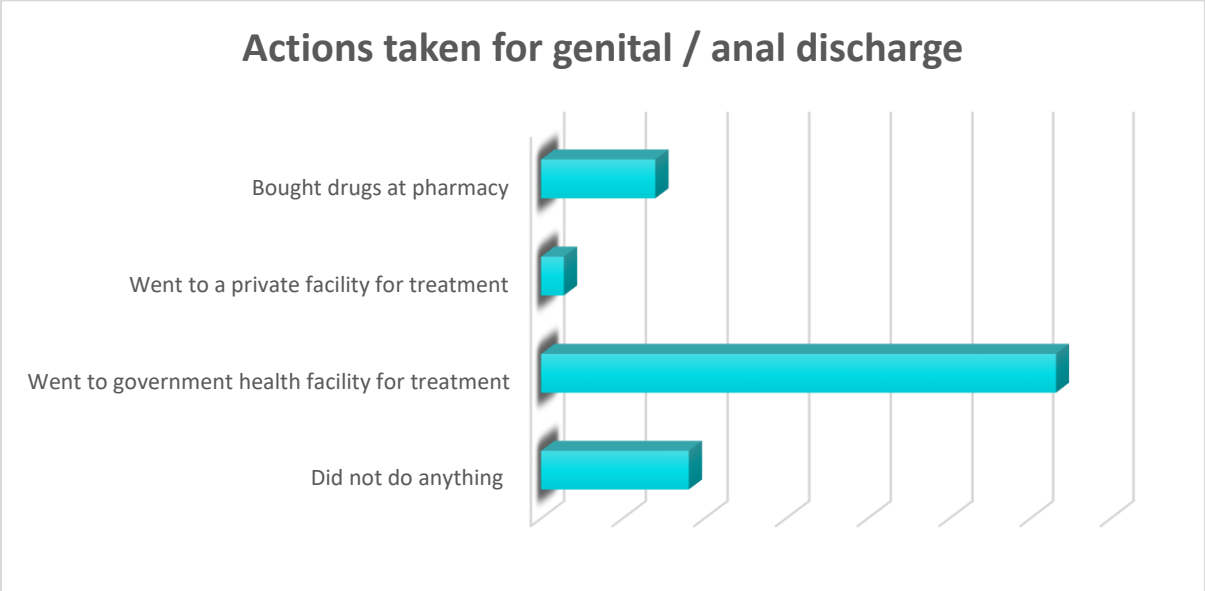

Figure 21

5.6 Knowledge, opinions and attitudes on HIV / AIDS

All the respondents knew that HIV was an STI. 88% understood that condom use could protect them from catching HIV. 20% incorrectly thought that HIV could be transmitted via mosquito bites. 97.9% correctly answered that HIV could be transmitted through the sharing of needles and syringes. 90.4% of participants agreed that a healthy-looking individual may be infected with HIV. 88.9% of Men who have Sex with Men interviewed knew where to go to get tested for HIV. 73.3% of recruits had an HIV test in the past. 52.0% preferred to be tested for HIV through blood samples as opposed to prick tests.

90.2% of participants were able to find out the results of their HIV test; of those who knew their results, 12.4% were tested positive for HIV, 87.0% were tested negative and 0.6% were indeterminate. Among those who answered the question on HIV treatment, 92.9% (26) received antiretroviral therapy in the last twelve months.

40.8% of participants learnt about HIV on radio and television (see Table 23).

First learn about HIV:	Point Estimate	95% Lower Bound	95% Upper Bound	Estimated Design Effect	Standard Error	Sample Size
"Audiovisuel"(Radio/TV)	40.8%	35.64	46.099	1.6	2.668	197
Govt. Institutions(Ministries) Aids Unit	21.3%	16.413	26.133	1.994	2.48	110
Internet	1.7%	0.185	3.168	1.909	0.761	10
NGOs	11.8%	9.244	14.374	0.893	1.309	62
Press	0.5%	-0.288	1.241	1.738	0.39	7
Social Media	2.1%	1.004	3.152	0.8	0.548	14
Other	21.8%	17.59	26.045	1.481	2.157	98
Total	100.0					498

Table 23

Most Men who have Sex with Men were tested for HIV more than 3 times (see Figure 22).

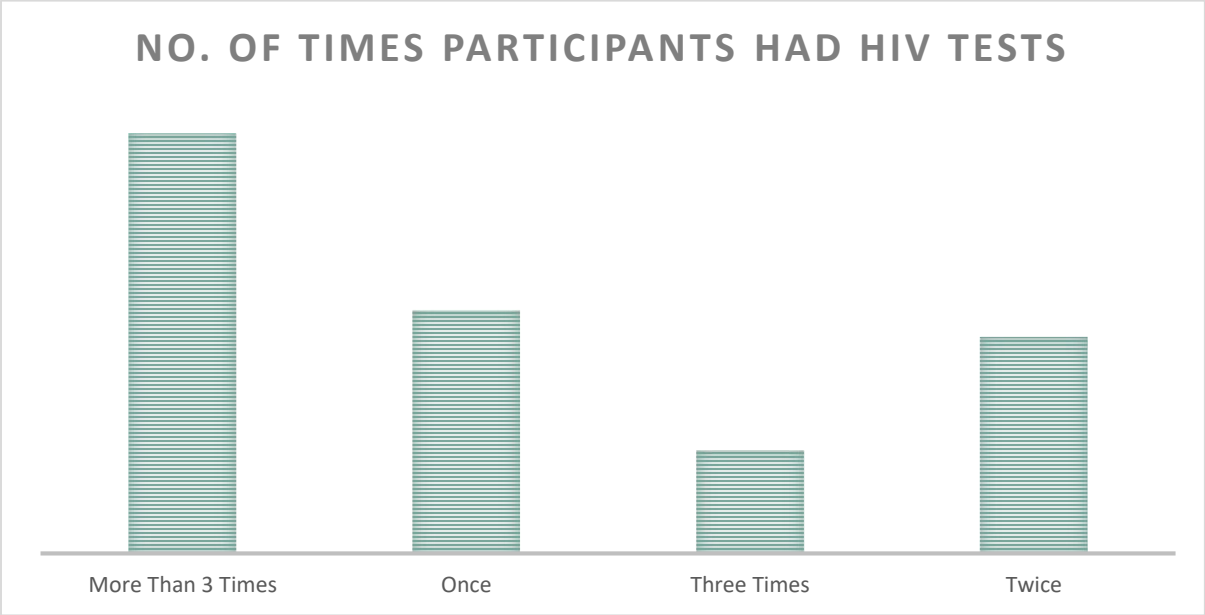

Figure 22

The majority of Men who have Sex with Men were tested for HIV in caravans or at hospitals (see Table 24).

Place for HIV-tests	Point Estimate	95% Lower Bound	95% Upper Bound	Estimated Design Effect	Standard Error	Sample Size
Hospitals	29.4%	23.8	35	1.5	2.85	109
HealthCentres	14.6%	9.58	19.72	2.06	2.59	45
AIDS unit	25.9%	20.28	31.45	1.63	2.85	98
Caravan	29.8%	23.73	35.78	1.74	3.07	114
PILS	18.50%	12.92	24.03	2.05	2.84	68
Collectif-Arc-En-Ciel	0.90%	-0.638	2.343	2.62	0.761	3
Outreach services	14.50%	9.05	19.95	2.4	2.78	44
Private labs/Clinics	9.2%	5.69	12.73	1.48	1.8	34
Abroad	0.7%	-0.499	1.824	2.06	0.593	2
						N= 361

Table 24

Amongst respondents who never had an HIV test, 24.2% did not feel they were at risk for acquiring HIV while 22.3% did not know where to go to get tested (see Figure 23).

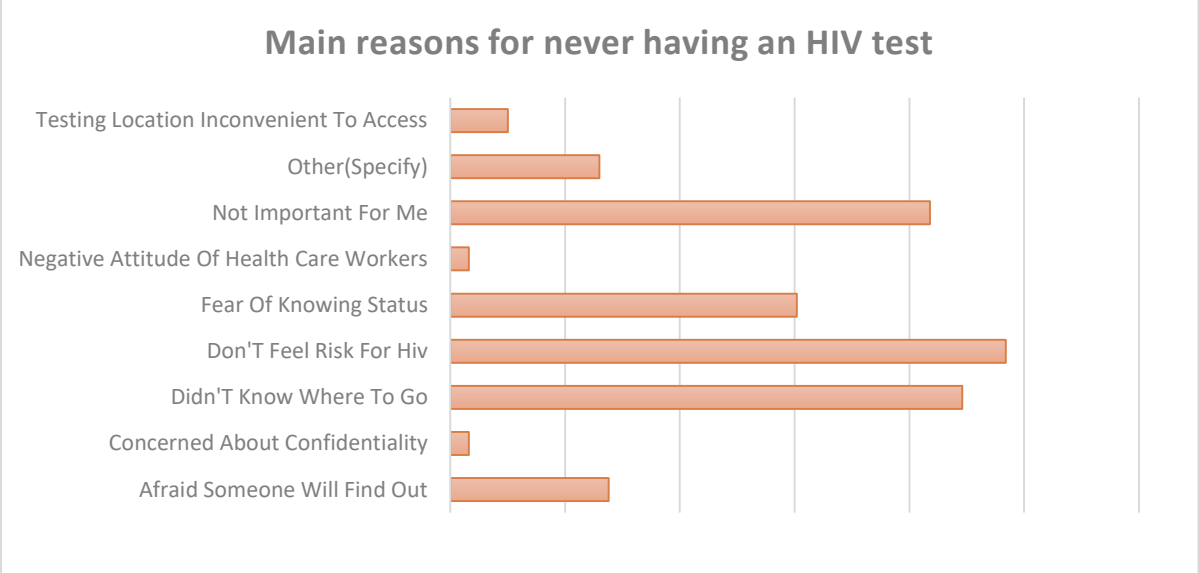

Figure 23

35.7% of participants had their HIV test done more than a year ago (see Figure 24).

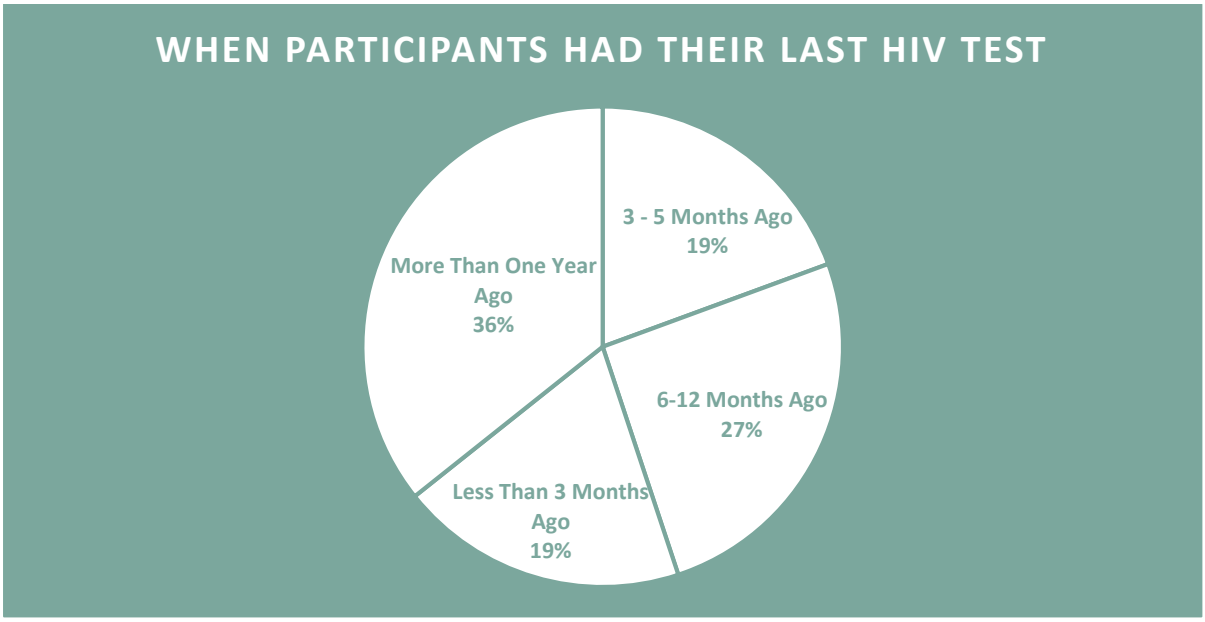

Figure 24

Of those participants who were positive for HIV, 83.2% were on antiretroviral therapy while 12.5% never had a medical follow-up or stopped their follow-up (see Table 25).

Medical Follow up following positive test result	Point Estimate	95% Lower Bound	95% Upper Bound	Estimated Design Effect	Standard Error	Sample Size
Has Stopped Medical Follow Up	2.6%	-1.234	6.317	0.541	1.93	1
Never Had Any Medical Follow Up	9.9%	-6.315	26.647	2.848	8.41	2
On Medical Follow Up but Not On ARV	3.2%	-0.448	6.548	0.378	1.78	2
On Medical Follow Up With ARV	83.2%	68.049	98.404	1.556	7.74	30
Other	1.1%	-1.807	3.84	0.699	1.44	1
Total	100.0				Total	36

Table 25

Among interviewees who did not get their HIV results, 32.4% stated that they did not have the time to go on their appointment to know about their HIV status and 23.0% declared they were still waiting for their results (see Figure 25).

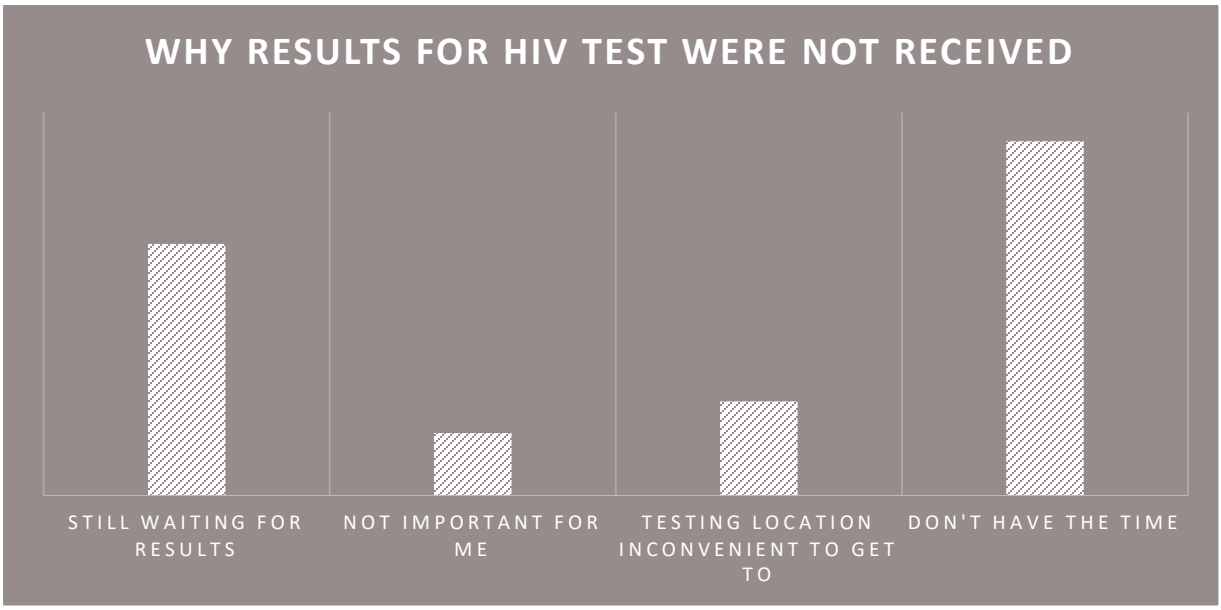

Figure 25

5.7 Alcohol and drug use

53.2% of participants mentioned using illegal drugs in the past; 19.7% (85) have injected drugs; of these, 28.9% (23) have shared needles even though 95.4% (75) were aware of harm reduction services.41.5% drank alcohol occasionally while 22.2% never drank alcohol (see Table 26).

Frequency of alcohol drink consumption in the last 6 months	Point Estimate	95% Lower Bound	95% Upper Bound	Estimated Design Effect	Standard Error	Sample Size
Almost Everyday	5.5%	3.19	7.74	1.42	1.161	30
Never	22.2%	18.02	26.28	1.4	2.107	106
Occasionally (Drinking Once Monthly Or Less)	41.5%	36.29	46.76	1.6	2.67	200
One Day Weekly	16.3%	12.5	20.08	1.5	1.934	83
Three To Five Days Weekly	3.4%	1.64	5.23	1.38	0.916	18
Two Days Weekly	11.1%	8.02	14.27	1.4	1.594	63
Total	100.0				Total	500

Table 26

The majority of people who used non-injecting drugs consumedmarijuana(see Table 27).

Non-injecting drugs used in past 3 months	Point Estimate	95% Lower Bound	95% Upper Bound	Estimated Design Effect	Standard Error	Sample Size
Marijuana	66.4%	59	73.4	1.6	3.67	187
Sniffing glue	1.4%	0.214	2.578	0.699	0.603	5
Codeine	6.2%	2.1	10.19	1.96	2.06	17
Cough Mixture	4.5%	1.1	7.91	1.87	1.74	12
Tranquilizers	14.0%	8.93	19.07	1.48	2.59	34
Synthetic drugs	28.4%	22.08	34.79	1.38	3.24	66
None	17.5%	11.27	23.94	1.93	3.23	31
						N=255

Table 27

The majority of injecting-drug users utilized heroin in the last 3 monthsand preferred heroin overall(see Figure 26 and Figure 27).

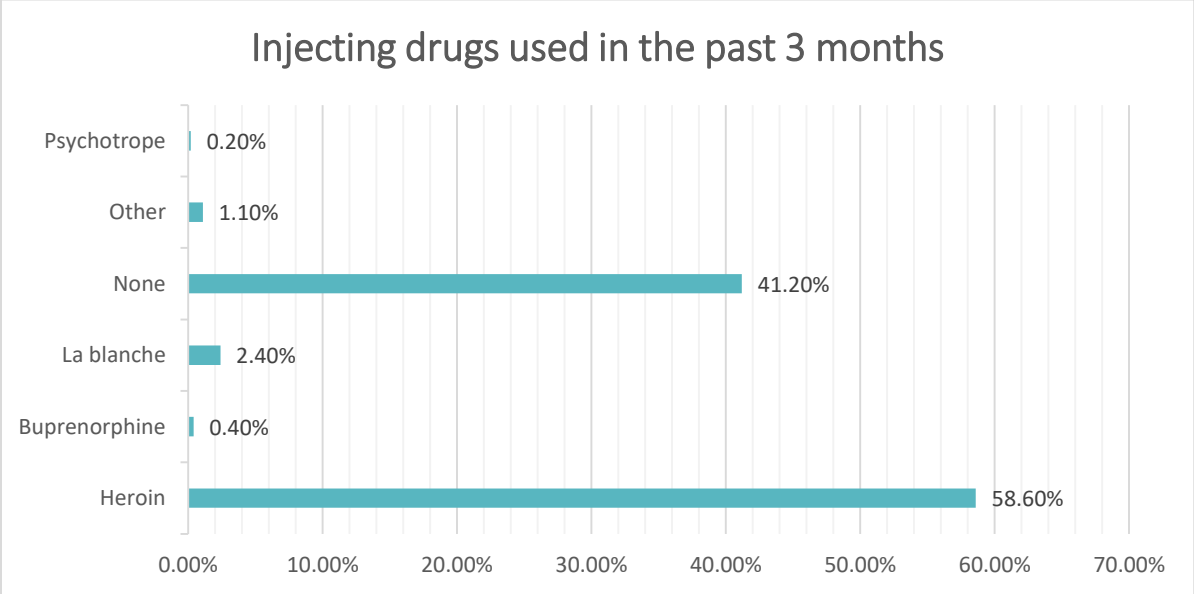

Figure 26

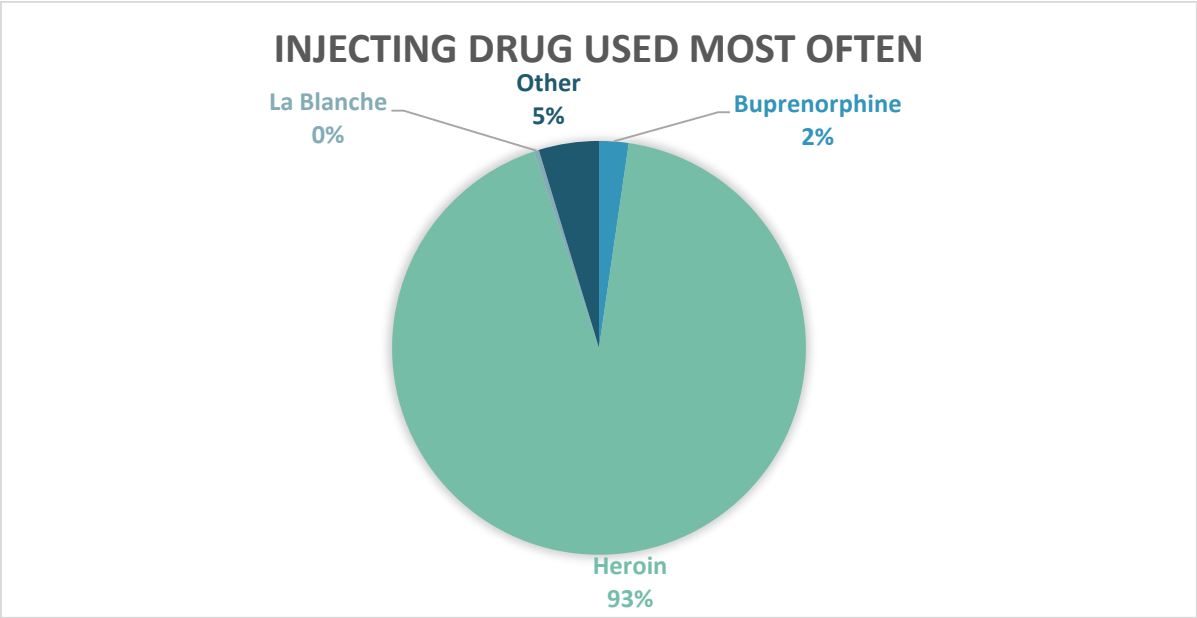

Figure 27

Among IV drug users, 42% did not inject drugs in the last 3 months and 47.9% were on the methadone programme(see Table 28 and Table 29).

Frequency of injecting drugs in past 3 months	Point Estimate	95% Lower Bound	95% Upper Bound	Estimated Design Effect	Standard Error	Sample Size
Not Injected In Last Three Months	42.0%	29.128	55.093	1.534	6.62	32
2-3 Days Weekly	12.7%	5.56	20.041	1.04	3.69	11
4-6 Days Weekly	2.2%	-0.236	4.529	0.597	1.22	2
Daily	30.6%	19.265	41.866	1.334	5.77	26
One Day Every 2 Months	3.1%	-8.71	14.776	10.216	5.99	4
One Day In The Last 3 Months	3.2%	-1.651	8.058	1.688	2.48	3
One Day Per 15 Days	1.1%	-1.302	3.449	1.174	1.21	1
One Day Per Month	2.9%	-0.819	6.661	1.088	1.91	3
One Day Per Week	2.2%	-0.374	4.667	0.668	1.29	2
Total	100.0				Total	84

Table 28

Using services of Harm Reduction	Point Estimate	95% Lower Bound	95% Upper Bound	Estimated Design Effect	Standard Error	Sample Size
None	45.8%	32.1	59.6	1.5	7	34
Needle Exchange Programme	17.1%	5.85	28.09	1.72	5.67	15
Methadone Programme	47.9%	33.66	62.27	1.62	7.3	35
Rehabilitation Centres	2.3%	-0.0113	4.6186	0.467	1.18	2
						N=75

Table 29

5.8 Status of infectious diseases among Men who have Sex with Men (HIV, HBV, HCV and syphilis)

Of all the respondents who were tested on the survey sites and whose tests were not indeterminate, 17.6% were positive for HIV, 29.1% were positive for HCV and 18.8% were positive for syphilis. 8.1% had both HIV and HCV (see Figure 28 and Figure 29). Note tht only 2.4% of MSM were positive for HIV only, implying that most other HIV positive MSM are co-infected.

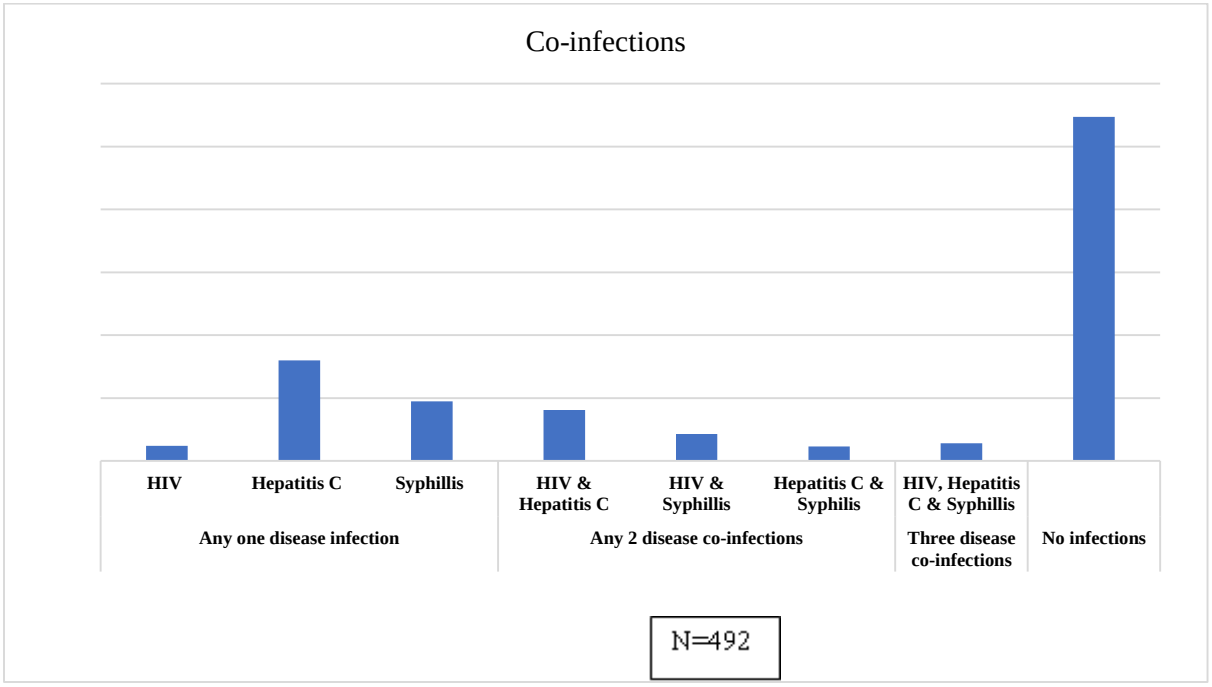

Figure 28

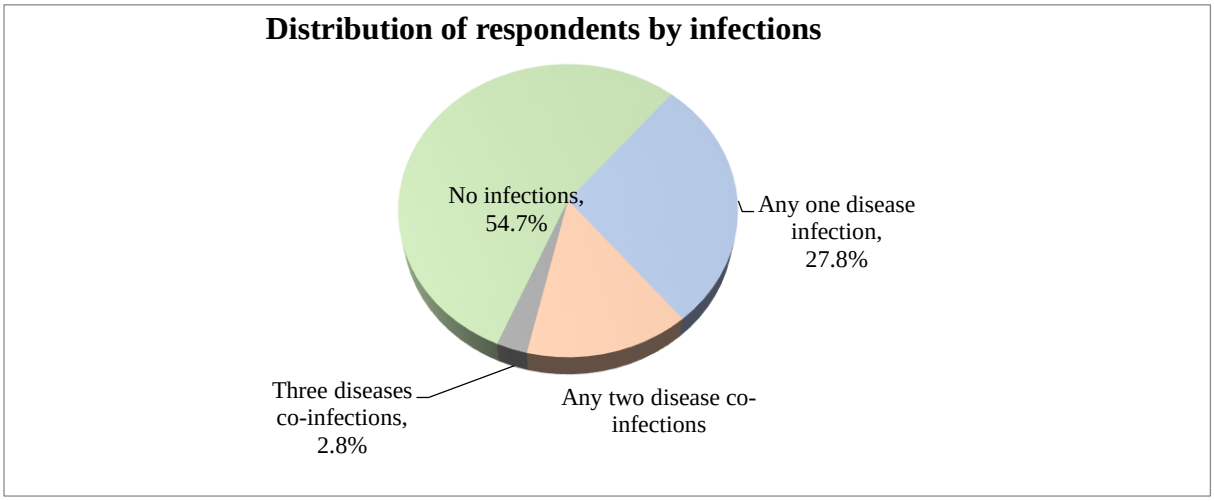

Figure 29

When compared to 2015, in 2021, the HIV and HCV rate among Men who have Sex with Men remained steady, syphilis increased by 4.7% and HBV decreased to nil (see Table 30).

Comparison of prevalence between 2015 and 2021				
Year	Prevalence of disease (%)			
	HIV	Syphilis	Hepatitis C	Hepatitis B
2015	17.2	14.1	27.6	0.8
2021	17.6	18.8	29.1	0.0

Table 30

5.9 Personal stigma, discrimination, violence and arrest

14.8% of respondents avoided seeking medical care in the last 12 months; of these, 18.1% stated that they were afraid of being identified as gay (see Figure 30).

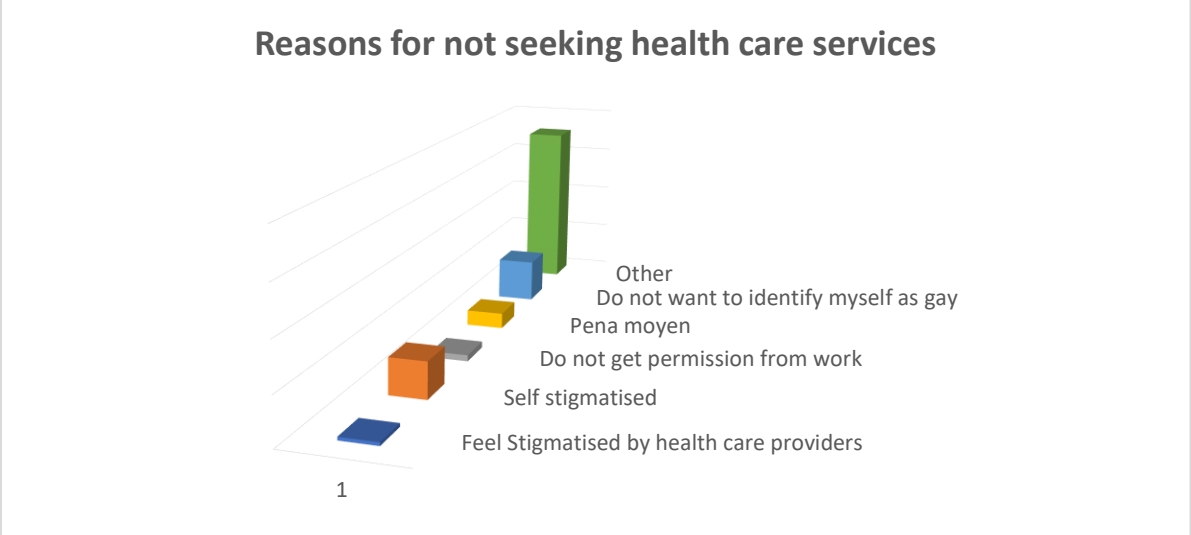

Figure 30

18.1% of participants said they did not seek healthcare services because they did not want to identify themselves as gay (see figure 30). Among the 71.3% who had other reasons for not looking for medical help, some respondents mentioned being afraid of getting blood taken from them, some were in denial about their HIV status andsome did not feel that it was important to get tested for sexually transmissible infections while others did not feel they were sick.

18.6% of Men who have Sex with Men who did not seek medical care, felt depressed and 4.2% had suicidal ideation (see Figure 31). 4.6% of Men who have Sex with Men felt they were misunderstood and had difficulties to express themselves openly.

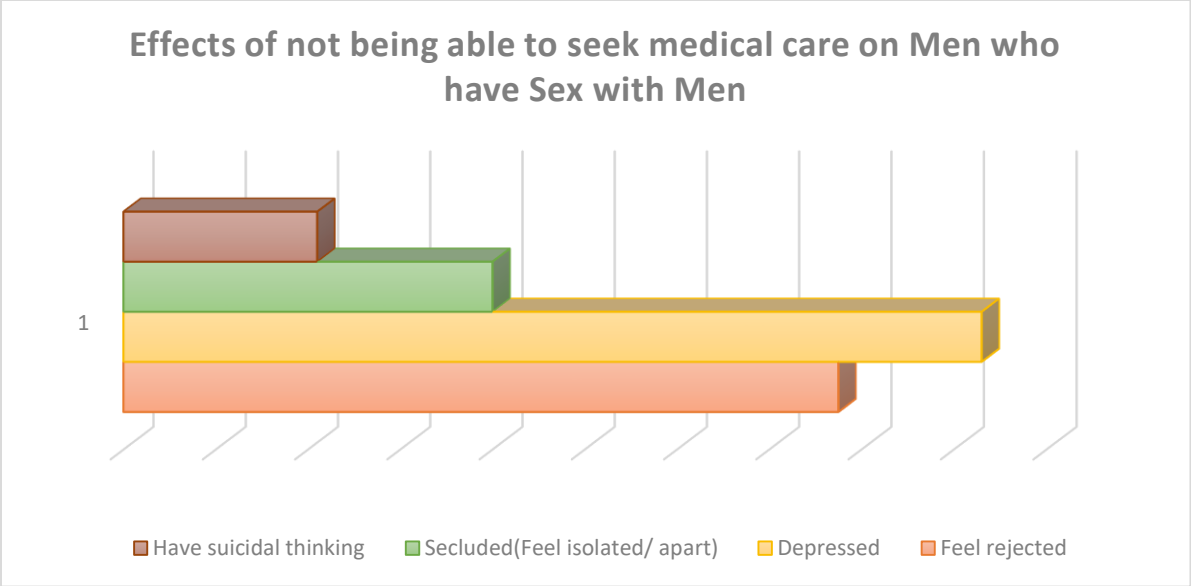

Figure 31

3.6% of participants were forced to have sexual intercourse in the last 12 months; amongst these individuals, 48.2% were raped by a friend (see Figure 32).

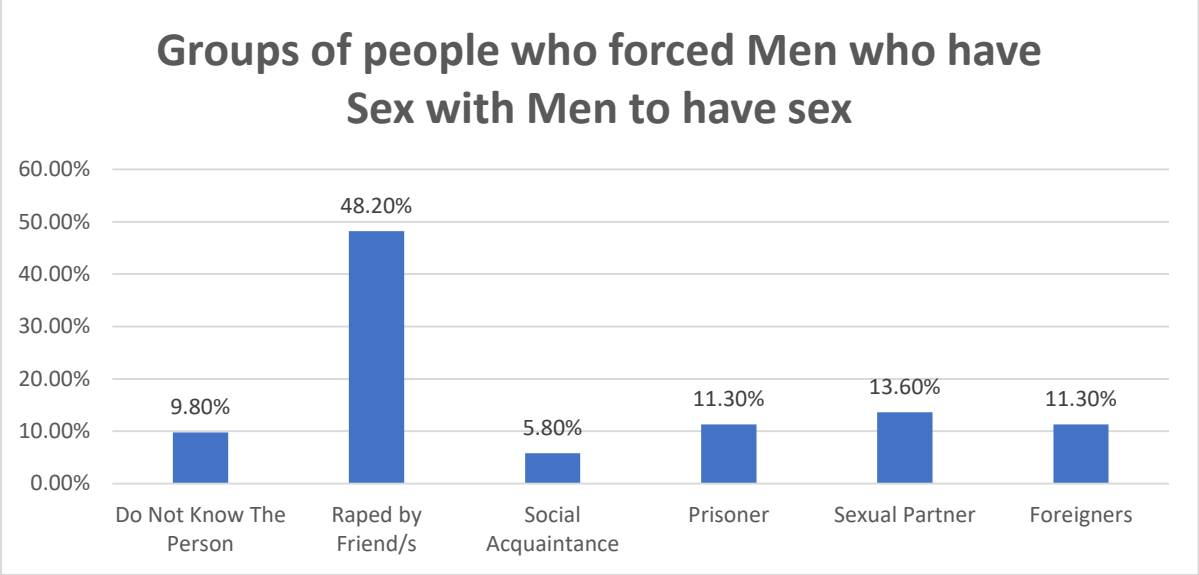

Figure 32

13.6% of the recruits were arrested during the last 12 months, mostly because of possession of drug or because of larceny (see Table 31).

Main reason for arrest	Point Estimate	95% Lower Bound	95% Upper Bound	Estimated Design Effect	Standard Error	Sample Size
A Cause Violence	22.3%	11.8	32.97	1.04	5.4	13
Larceny	22.9%	11.95	33.75	1.08	5.56	15
Drug	36.3%	23.78	48.97	1.1	6.43	20
Other	18.5%	4.68	32.1	2	6.99	13
Total	100.0				Total	61

Table 31

4.0% of respondents were denied employment or expelled from school because of their sexual practice while 10.6% felt aversion from their family members because they were gay. The majority of Men who have Sex with Men believed that strengthening anti-discrimination and protective laws for vulnerable groups will reduce stigmatization and violence towards them (see Figure 33).

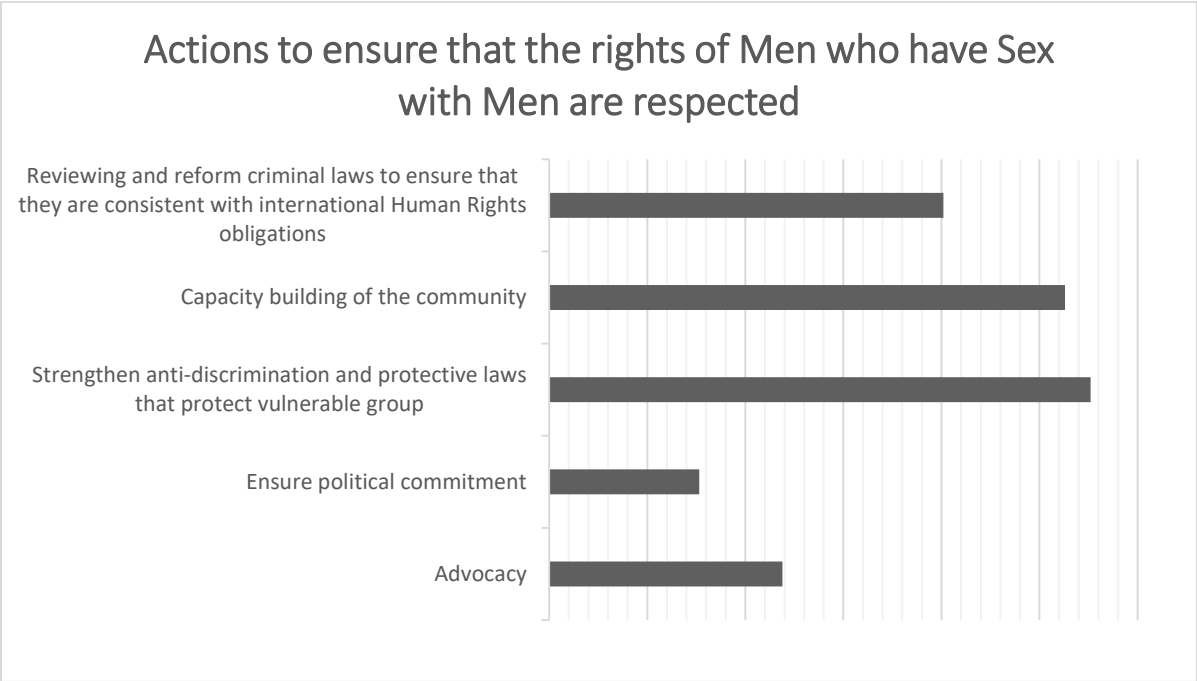
Actions to ensure that the rights of Men who have Sex with Men are respected
Reviewing and reform criminal laws to ensure that they are consistent with international Human Rights obligations
Capacity building of the community
Strengthen anti-discrimination and protective laws that protect vulnerable group
Ensure political commitment
Advocacy

Figure 33

6.General Observations and Recommendations

1. **The prevalence of HIV has not changed significantly among Men who have Sex with Men from 2015 (17.2%) to 2021 (17.6%).**

   This suggests that the mortality rate in this group is similar to the incidence rate. Due to limitations of the IBBS study, we cannot assess whether the incidence has diminished among Men who have Sex with Men. Nevertheless, a sudden drop in prevalence would have pointed towards a high number of deaths. That the prevalence graph flattens out in a chronic epidemic is expected. Prevalence in the less than 30 years old remains high in the population. Targetted preventive strategies for this group has to be enhanced.

2. **Overall condom use has improved from 2015 (53.1%) to 2021 (59.4%).**

   However, up to 28.9% of respondents claimed not to have access to condoms. Moreover, condom use during commercial sex did not improve. Strategies to improve condom availability for Men who have Sex with Men who engage in commercial sex should be identified. Installation of condom vending machines in strategic places for easy accessibility is in process. Community networks can be improved to furthet increase accessibility to condoms. Only 18.7% of this key population had access to condom at the VCT centers and AIDS Unit. Condom use can be promoted at these settings.

3. **Knowledge about STIs has improved with 87% of the Men who have Sex with Men population having heard of an STI in 2015 and 93.9% having heard about it in 2021.**

   Despite an improvement in knowledge, 20.1% of Men who have Sex with Men never sought to get tested for an STI. This suggests that further BCC advocacy should be carried out with this group through use of social media to ensure that they understand the importance of getting tested and treated if needed, especially since 18.1% did not seek medical attention even after noticing symptoms like anal discharge. There is about 45% of the men who have sex with men socialize on facebook, therefore this platform can be used to target them. More than 60% of the men who have sex with men learn about HIV on radio/TV and the AIDS Unit while only 1.7% have access to internet. Information on HIV and other sexually transmitted infections dissemination should be stepped up through internet and social media.

4. **Abuse of intravenous drugs among Men who have Sex with Men increased from 11.9% in 2015 to 19.7% in 2021.**

However, there was no significant difference in the percentage who abused IV drugs in the last 3 months (3.6% in 2015 and 3.2% in 2021). This implies that many of these men who have sex with men used illegal drugs intravenously more than 3 months ago. Nevertheless, it should be noted that the rate of needle sharing increased from 21.4% in 2015 to 28.9% in 2021. Access to the Needle Exchange Programme should be revamped for men having sex with men and such harm reduction services should be gay-friendly.

5. **The rate of HIV testing among Men who have Sex with Men has increased from 67.4% in 2015 to 73.3% in 2021.**

This reflects the intense effort being made within the HIV program to target this key population. In addition, more men who have sex with men were able to find out about their test results (90.2% vs 86.6%).

6. **Less Men who have Sex with Men were forced to have intercourse in 2021 (3.6%) than in 2015 (8.5%).**

This is partly a result of the capacity building and advocacy being carried out in the community by the AIDS Unit, Outreach Networks, NGOs and other stakeholders.

7. **The prevalence of syphilis among Men who have Sex with Men has increased from 14.1% in 2015 to 18.8% in 2021.**

This likely represents a genuine rise in the incidence of syphilis, an issue that has been noted worldwide. There is an urgent need to improve access to syphilis testing, treatment and prevention services in the community during outreach programs.Stakeholders must address structural barriers, like discrimination and violence; improve sexuality education and expand access and delivery of syphilis testing and immediate treatment for all populations at higher risk of infection. HIV integrated services is one way to ensure reduce STIs and its improve its management because 63% of this population go to Government services.

8. **About 6.5% of the men who have sex with men experienced arrest or physical violence.**

   There is a dire need to sensitise the police officers on HIV and STIs to reduce stigma and discrimination against this vulnerable group. All police officers should take cognizance of the national HIV programmes.

Way Forward

The study findings confirm the urgent need for establishment and expansion of programs targeting Men who have Sex with Men in Mauritius. The following measures are recommended:

1. Disseminate survey results: IBBS survey report will be uploaded on the website of the Ministry.

2. Share the survey results with staff of the AIDS Unit and NGOs involved in prevention programs including the Pre-Exposure Prophylaxis. Improvements to be brought in required areas. Discuss how to make changes happen. Dig deeper in survey results.

3. A comprehensive package for prevention, care, and treatment of HIV infection, to be provided in a more user-friendly environment which is easily accessible and free of discrimination.This package should build on existing services and integrate important messages on how to reduce sexual and drug use risk, particularly among individuals that engage in multiple risk behaviors.

4. Rigorous promotion of condom usage, intensive HIV/STIs screening and treatment, and linkage to appropriate HIV care and treatment services should be ensured, particularly in the hot-spots where it is concentrated.

5. To reach this key population, it is essential to reinforce the collaboration with NGOs, Civil Society as well as peer educators of this vulnerable group.