Behavioural and Biological Surveillance Survey Among Key Populations in Zanzibar, 2018-2019

People who inject drugs, men who have sex with men and female sex workers/sexually exploited children

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Disclaimer

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3.0 ABBREVIATIONS / ACRONYMS

AIDS	Acquired immunodeficiency syndrome
ANC	Antenatal clinic
BBS	Behavioural and biological survey
CDC	Centers for Disease Control and Prevention
CI	Confidence Interval
DEFF	Design effect
ELISA	Enzyme-linked immunosorbent assay
EQA	External quality assurance
FA	Formative assessment
FGD	Focus group discussion
FSW/SEC	Female sex worker/sexually exploited children
HBsAg	Hepatitis B surface antigen
HBV	Hepatitis B virus
HCV	Hepatitis C virus
HTS	HIV Testing Services
HIV	Human immunodeficiency virus
IDI	In-depth interview
IQR	Inter-quartile range
KII	Key informant interview
KP	Key population
MAT	Medication-assisted therapy
MOH	Ministry of Health
MSM	Men who have sex with men
NBTS	National Bloods Transfusion Service
NC	Not calculable
NGO	Non-governmental organization
NHLQATC	National Health Laboratory Quality Assurance and Training Centre
ODK	Open data kit
OST	Opioid substitution therapy
PEPFAR	President's Emergency Plan for AIDS Relief
PMTCT	Prevention of mother to child transmission
PWID	People who inject drugs
RA	Rapid assessment
RDS	Respondent driven sampling
RDSAT	Respondent driven sampling analysis tool
RDSA	Respondent driven sampling analyst
RPR	Rapid plasma reagin
STI	Sexually transmitted infection
TB	Tuberculosis
TZS	Tanzanian Shillings
UCSF	University of California, San Francisco
VCT	Voluntary counselling and testing
WHO	World Health Organization
ZAC	Zanzibar AIDS Commission
ZIHHTLP	Zanzibar Integrated HIV, Hepatitis, TB and Leprosy Programme
ZAMREC	Zanzibar Medical Research Ethical Committee
95% CI	95% CI= 95% Confidence Interval

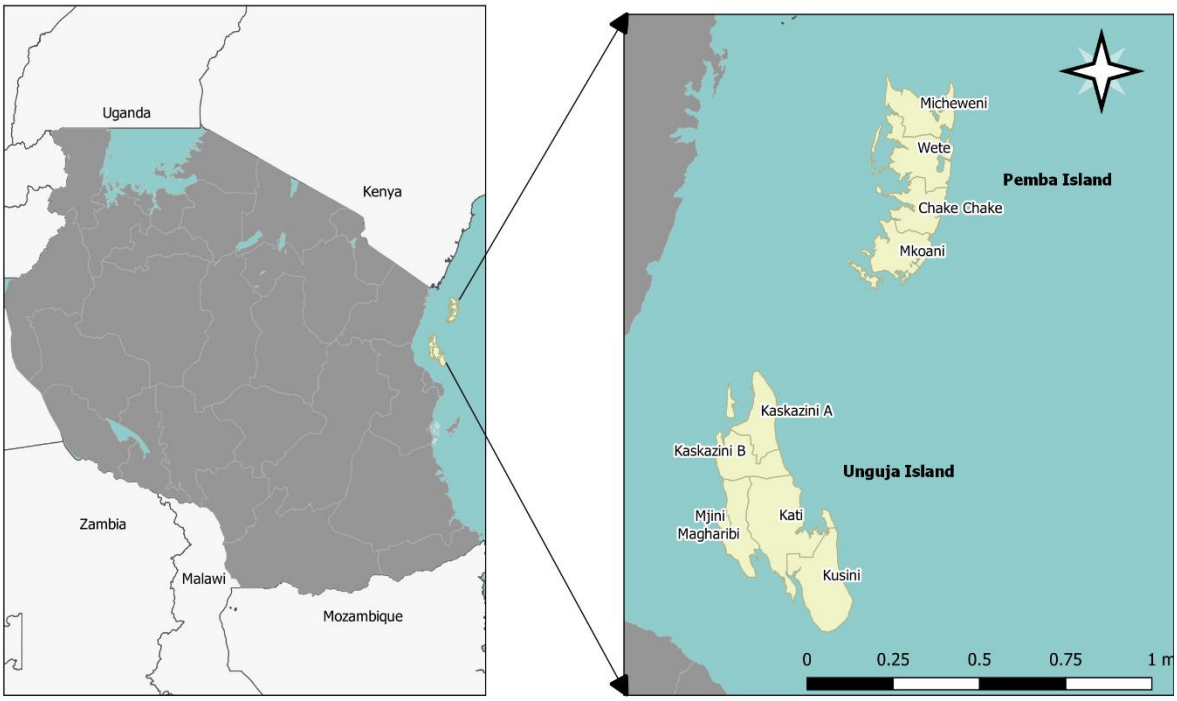
4.0 EXECUTIVE SUMMARY

Results from the Tanzania HIV Impact Survey (THIS) 2016-2017 show that the prevalence of HIV infection in Zanzibar remains low (less than 1%) in the general population. Routine surveillance among key populations (KPs) in Zanzibar has shown disproportionately high HIV prevalence (over 5%) among people who inject drugs (PWID), men who have sex with men (MSM), and female sex workers/sexually exploited children (FSW/SEC). Zanzibar has a concentrated HIV epidemic within KPs; therefore, PWID, MSM, and FSW/SEC have been an ongoing focus of HIV surveillance activities. Zanzibar Integrated HIV, Hepatitis, Tuberculosis and Leprosy Programme (ZIHHTLP), Ministry of Health, implemented abio-behavioural survey (IBBS) among KPs in Zanzibar in 2018/19 with technical assistance from the University of California, San Francisco (UCSF) through the Global Health Sciences program. The US Centers for Disease Control and Prevention (CDC) in Tanzania provided technical assistance and the funding was provided by the US President's Emergency Plan for AIDS Relief (PEPFAR) through CDC.

Zanzibar is an archipelago comprising several islands, including two main islands of Unguja and Pemba (

Figure 1).

Figure 1: Map of Tanzania showing the Zanzibar archipelago



ZIHHTLP first conducted an IBBS among key populations in Unguja in 2007. This survey was repeated in 2011/12, and a third round conducted in 2018/19 (Table 1). The objective of these surveys has been to carry out routine surveillance to understand trends in HIV and STI prevalence, risk behaviours and impact of prevention and treatment programmes among PWID, MSM and FSW/SEC in Unguja. In addition to IBBS in Unguja, a rapid assessment (RA) was conducted in Pemba, Zanzibar

in 2011/12 to estimate HIV prevalence among MSM, FSW/SEC, and PWID, identify and characterize their risk behaviours, and contextualize their risk of HIV infection. This RA was repeated in 2018/19 to update HIV and STI proportion estimates as well as risk behaviours among KPs in Pemba (Table 1). The information obtained from these surveys includes data that can be used to monitor epidemic trends and provides essential evidence to inform both programmatic and policy responses for these populations for control of the epidemic. This report presents the findings from the third round of surveillance among KPs in Unguja, Zanzibar and findings from the second round of surveillance among key populations (KPs) in Pemba, Zanzibar.

Table 1: HIV-focused surveillance among KPs in Zanzibar

	2007	2011/12	2018/19
Unguja Island	IBBS - first round	IBBS - second round	IBBS - third round
Pemba Island		Rapid assessment - first round	Rapid assessment - second round

The 2018 RA among PWID, MSM and FSW/SEC in Pemba used both qualitative and quantitative methods that were similar to the 2011 RA. Data from the 2011 RA, which showed relatively small population sizes that were not well networked, guided the selection of the methods. Consented RA participants either completed an in-depth interview (IDI) or participated in a focus group discussion (FGD). They were also tested on site for HIV, hepatitis B virus (HBV), hepatitis C virus (HCV) and active syphilis, and immediately received their results. Key informant interviews were conducted with staff of local non-governmental organizations (NGOs) and government officials who work with KPs in Pemba.

In Unguja, 2018/19 KP surveys used respondent driven sampling (RDS) to obtain samples of 419 PWID, 341 MSM and 580 FSW/SEC aged 15 years and older. RDS is a chain-referral sampling method specifically designed to obtain probability-based samples of 'hidden' populations. Consented participants completed a face-to-face questionnaire, provided blood specimens to be tested for HIV, HBV, HCV and active syphilis, and immediately received their results with post-test counselling. Viral load (VL) testing was also performed. Proportion estimates adjusted for participants' probability of recruitment were calculated in Stata 13 using weights generated by RDS Analyst (RDS-A).

Key findings from Pemba

This second rapid assessment conducted in 2018 in Pemba provided evidence of the continued presence of PWID, MSM and FSW/SEC in Pemba. Using a modified Delphi approach, a team of local experts estimated KP population sizes of 700 (400-800) FSW/SEC, 300 (200-400) MSM, and 400 (200-600) PWID. The population size increases from the 2011 RA suggest that KPs in Pemba may be more open and accessible than in the past as well as a potential real increase in the number of KP. HIV positivity among RA participants was 5.4% (n=3) among 56 FSW/SEC and 12.3% (n=7) among 57 PWID. None of the 50 MSM participants tested positive for HIV. These proportions of HIV positivity are lower than what was seen in the 2011 RA. However, because these assessments are not generalizable due to convenience sampling of the participants, findings can be interpreted very

cautiously. RA participants were also tested for HBV, HCV and active syphilis. There was one FSW/SEC who tested positive for HBsAg and none who tested positive for HCV or syphilis antigen. One MSM tested positive for HBsAg, and one each for HCV and syphilis antigen. HBV and HCV positivity among PWID participants were 12.3% and 19.3%, respectively, with no cases of syphilis.

This RA also confirms that KPs in Pemba continue to engage in some of the same behaviours that put them at increased risk for HIV infection as were seen in 2011, including multiple concurrent sexual partnerships, exchanging sex for money, low levels of condom use, and risky drug injection practices, while other risk behaviours may be decreasing. Among PWID, needle sharing practices appear to have decreased since 2011. While condom use remains low among MSM and PWID, condom use among FSW/SEC seems to have increased since the 2011 RA. The 2018 findings also indicate that KP-targeted services have been expanded in Pemba and are successfully reaching all three populations with a variety of HIV prevention, care and treatment interventions, and modest gains appear to have been made in HIV testing. However, in spite of these gains, all three populations cited services that are either not yet available or are not available to a wide enough extent. There are opportunities for KP prevention programs to expand the widespread availability of condoms to all three populations, and to include activities that focus on harm reduction, peer education on HIV risk behaviours and HIV transmission prevention, and sensitization of the authorities as well as health care providers. If possible, medication-assisted therapy (MAT) services for opioid dependence may also be made available to PWID.

Surveillance activities among KPs in Pemba may be repeated in 3-5 years; however, considering the population size estimates from this survey, a more robust method could be considered for the next round. RDS could be considered for PWID, as they appear to be well-networked. However, neither MSM nor FSW/SEC appear well-networked enough to meet the assumptions for RDS. For these two populations, a more in-depth RA that could possibly include a peer-referral component could be used.

Key findings from Unguja

ZIHHTLP has successfully established a functioning surveillance system among KPs in Zanzibar with the ability to monitor trends over time. This third IBBS among MSM, FSW/SEC and PWID in Unguja, Zanzibar, has provided a third set of surveillance data, allowing for the analysis of trends of the burden of HIV and other co-infections, risky sexual behaviours, and coverage, access to and uptake of HIV services. This third round has also provided data that allow us to measure progress towards the UNAIDS 90-90-90 targets – which aim at 90% of HIV positive individuals knowing their status, of which 90% are receiving ART, of which 90% are virally suppressed by 2020 – among all three populations. HIV Testing Services was done following the national HIV rapid test algorithm. For those testing positive, VL was quantified and VL suppression (VLS) was defined as <1,000 HIV RNA copies/mL. The HIV status awareness indicator was constructed from a combination of self-report, antibody testing, and viral load testing. Individuals who disclosed an HIV-negative status but tested HIV positive and were virally suppressed were categorised as knowing their status and on ART. This information is paramount for mounting the response needed to achieve epidemic control. It is important to note when comparing results that the methods employed in the three rounds of surveillance are sensitive to sub-populations and changes in the characteristics of samples across surveys, which can change over time especially with increased public scrutiny and changes in levels of acceptance towards KP groups.

2018/19 HIV prevalence was 5.1% among PWID, 5.0% among MSM and 12.1% among FSW/SEC. Population size estimates were 2,200 for PWID, 4,854 for FSW/SEC, and 3,000 for MSM. Although prevalence of HIV and STIs continues to be higher among KPs in Unguja than the general population, prevalence of HIV, HCV, and HBV have either decreased or remained stable across all three populations since 2007. Due to the differences in syphilis testing across the three survey rounds, with previous rounds using tests that detected lifetime syphilis infection while the current round used a test that detects active syphilis infection, conclusions about changes in syphilis prevalence cannot be made.

Good progress has been made towards achieving the second and third "90s" of the UNAIDS 90-90-90 targets; however, identification of PLHIV among KPs remains a challenge. HIV programmes may focus on index testing among KP clients as well as the coverage of outreach services that include HIV testing as strategies to improve progress towards the first "90". A recency surveillance system may also be considered to detect new infections and inform where to highlight and focus prevention efforts.

PEOPLE WHO INJECT DRUGS

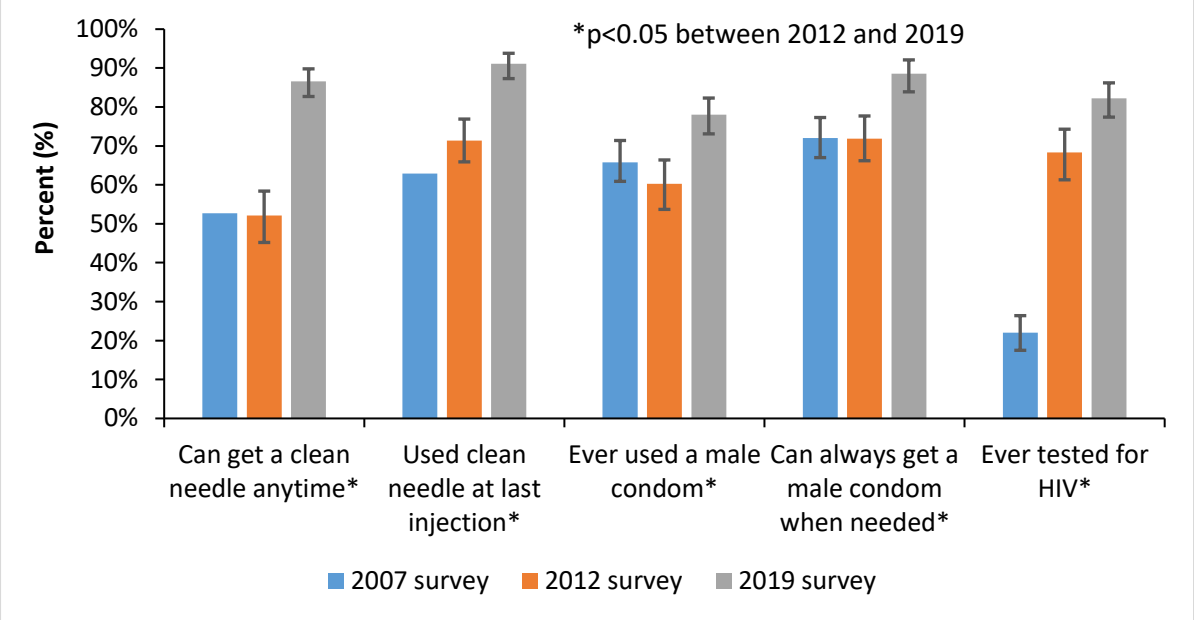
PWID biomarker test results and population size estimate, Unguja 2018/19		
HIV prevalence: 5.1%	HBV prevalence: 4.4%	HCV prevalence: 13.7%
Syphilis prevalence: 0.2%	HIV and HCV co-infection: 3.4%	Pop size estimate: 2,200

Trends in HIV, HBV, HCV prevalence, service uptake and risk behaviours among PWID in Unguja

Service provision and uptake have increased while risk behaviours have decreased

From the 2011/12 to the 2018/19 survey, the proportion of PWID who reported being able to access clean needles anytime increased from 52.1% to 86.6% ($p<0.001$) and the proportion of PWID who reported the use of a clean needle at last injection increased from 71.4% to 91.1% ($p<0.001$) during the same time period. The proportion of PWID who reported using a needle already used by someone else in past month decreased from 29.1% in 2011/12 to 18.7% in 2018/19 ($p<0.001$). In addition, availability of male condoms increased from 71.9% to 88.6% ($p<0.001$) and use of male condoms increased by from 60.3% in 2012 to 78.0% in 2019 ($p<0.001$) (Figure 2). Conversely, decreases were seen from 2011/12 to 2018/19 in the number of PWID accessing PWID-focused facility-based health services (from 28.1% in 2011/12 to 23.3% in 2018/19; $p<0.001$) and the number of PWID who had contact with a peer educator in the past year (from 70.8% in 2011/12 to 57.8% in 2018/19; $p<0.001$).

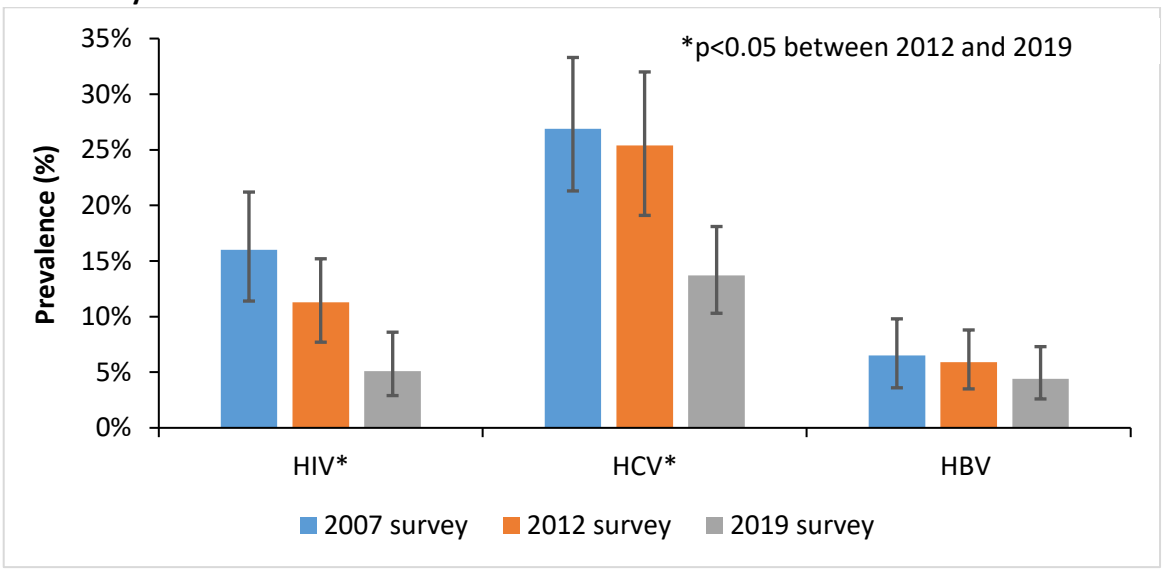
Figure 2: Access to and uptake of HIV prevention and testing services among PWID in Unguja, comparison of 2007, 2012 and 2019 surveys



HIV and HCV prevalence have decreased

There was an overall decrease in HIV prevalence among PWID from 16.0% in 2007 to 5.1% in 2019. Similarly, HCV prevalence among PWID decreased from 26.9% in 2007 to 13.7% in 2019 (Figure 3). No direct comparison can be made for syphilis.

Figure 3: HIV, HCV, and HBV prevalence among PWID in Unguja, comparison of 2007, 2012 and 2019 surveys

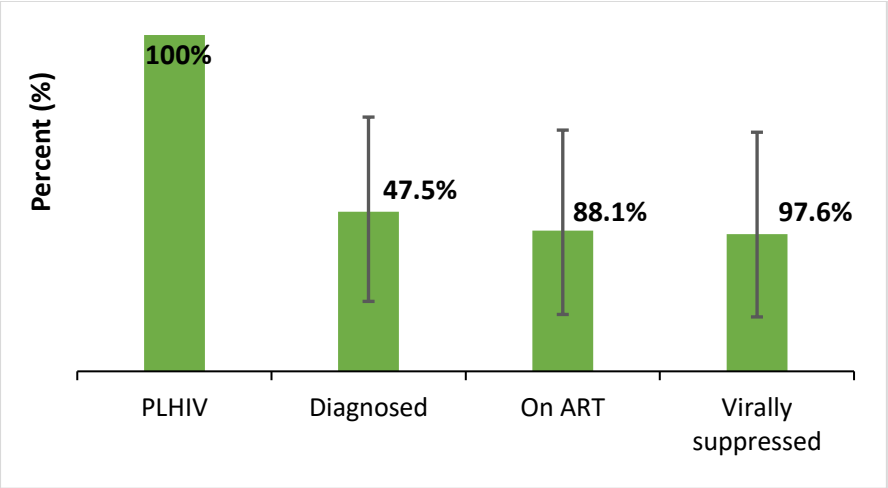


Progress towards UNAIDS 90-90-90 targets among PWID in Unguja

Less than half (47.5%; n=8) of PWID who are living with HIV had been previously diagnosed. Of those, 88.1% (n=7) were on ART. Of those on ART, 97.6% (n=6) were virally suppressed (Figure 4). While the target for linkage to treatment has nearly been met, and the target for viral suppression

has been achieved, there is a notable gap in the diagnosis of PWID living with HIV. However, these results should be interpreted with caution due to the small sample sizes.

Figure 4: Progress towards 90-90-90 targets among PWID, Unguja, 2019*



* Numbers in the graph are conditional percentages. The height of each bar indicates an absolute proportion of PLHIV.

MEN WHO HAVE SEX WITH MEN

MSM biomarker test results and population size estimate, Unguja 2018/19		
HIV prevalence: 5.0%	HBV prevalence: 1.8%	HCV prevalence: 0.5%
Syphilis prevalence: 0.0%	HIV and HCV co-infection: 0.0%	Pop size estimate: 3,000

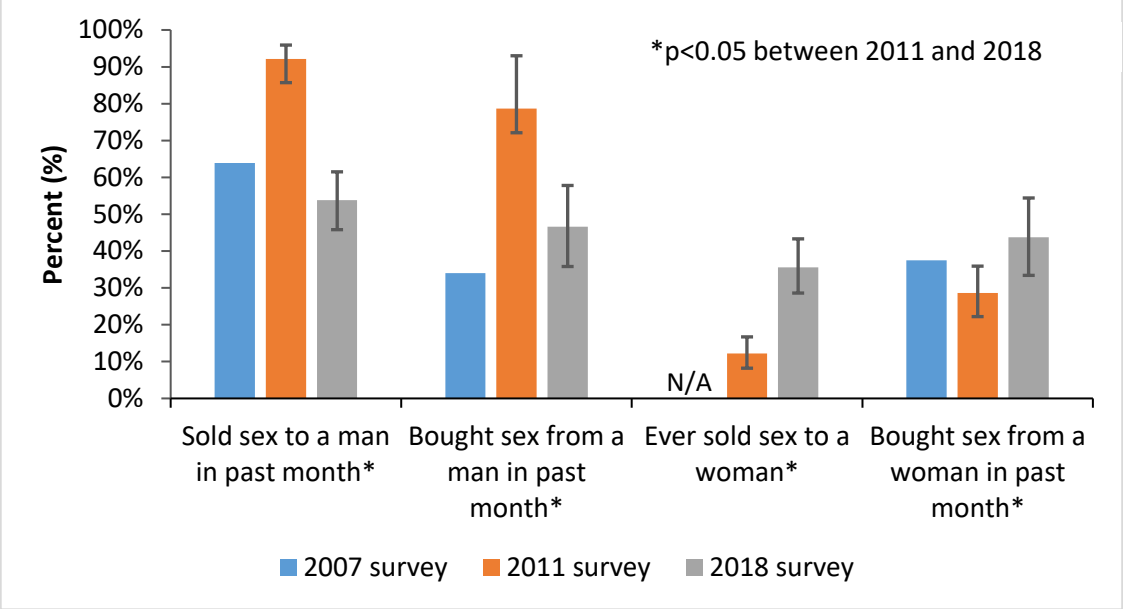
Trends in HIV, HBV, HCV prevalence, service uptake and risk behaviours among MSM in Unguja

Mixed trends in uptake of services and changes in risk behaviours

Since 2011, condom use among MSM has decreased for most partner types. Reported condom use at last receptive sex with non-paying male partners decreased from 47.1% to 42.0% (p=0.440) while reported condom use at last sex with a female sexual partner where no payment was involved decreased from 42.9% to 26.5% (p=0.020).

Selling sex for money in the past month to male partners decreased from 92.1% in 2011 to 53.8% 2018 (p<0.001) and buying sex from another man in the past month decreased from 78.7% to 46.6% (p<0.001). Ever selling sex to a woman increased from 12.2% to 35.6% (p<0.001) and buying sex from a woman in the past month increased from 28.6% to 43.7% (p=0.020) (Figure 5).

Figure 5: Risk behaviours related to buying and selling sex among MSM who ever reported transactional sex with each partner type in Unguja, comparison of 2007, 2011 and 2018 surveys



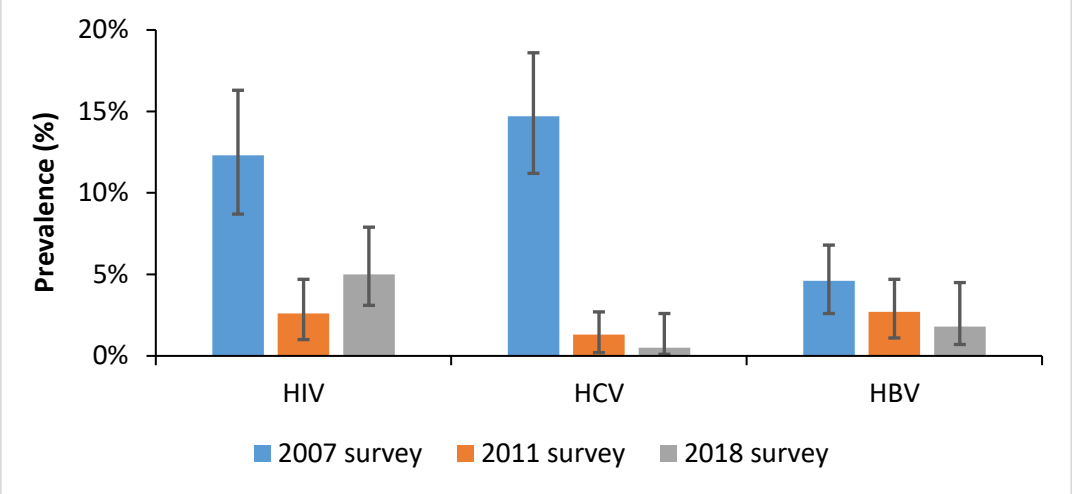
While the proportion of MSM who reported ever having tested for HIV did not change, the proportion of those who reported testing in the past 12 months decreased from 53.7% to 44.2% (p=0.040). Similarly, the proportion of MSM who reported having contact with a peer educator in the year prior to the survey decreased from 53.6% to 38.9% (p<0.001). Conversely, the proportion of MSM who reported visiting a clinic or drop-in centre for MSM services increased from 13.3% in 2011 to 22.2% in 2018 (p=0.020).

HIV, HBV and HCV prevalence have decreased since 2007

HIV prevalence among MSM was 2.6% in 2011 and 5.0% in 2018 (p=0.120). HBV prevalence decreased from 2.7% to 1.8% (p=0.500), and HCV prevalence decreased from 1.3% to 0.5% (p=0.380). However, none of these changes were statistically significant. No direct comparison can be made for syphilis.

However, larger differences were seen in HIV and STI prevalence between 2007 and 2018. HIV prevalence among MSM decreased from 12.3% in 2007 to 5.0% in 2018 (p<0.001). HBV prevalence decreased from 4.6% in 2007 to 1.8% in 2018 (p=0.060) and HCV prevalence decreased from 14.7% in 2007 to 0.5% in 2018 (p<0.001) (Figure 6).

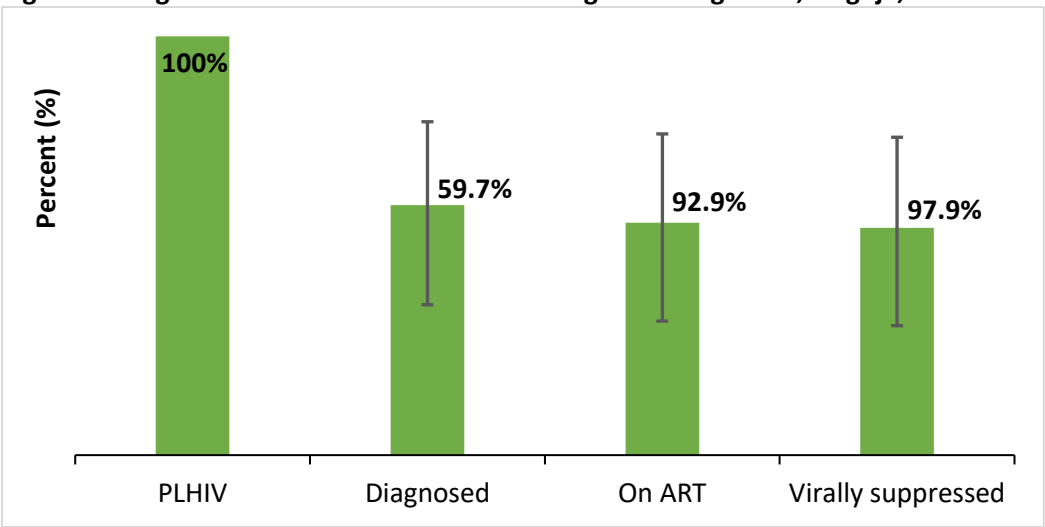
Figure 6: HIV, HBV, and HCV prevalence among MSM in Unguja, comparison of 2007, 2011 and 2018 surveys



Progress towards UNAIDS 90-90-90 targets among MSM in Unguja

Among MSM who had a positive HIV test during the survey (n=27; 5.0%), only 59.7% (n=13) were aware of their HIV-positive status. Among those diagnosed, 92.9% (n=12) were estimated to already be on ART, and of those on ART, 97.9% (n=11) were virally suppressed (Figure 7).

Figure 7: Progress towards UNAIDS 90-90-90 targets among MSM, Unguja, 2018*



* Numbers in the graph are conditional percentages. The height of each bar indicates absolute proportions.

FEMALE SEX WORKERS/SEXUAL EXPLOITED CHILDREN

FSW/SEC biomarker test results and population size estimate, Unguja 2018/19		
HIV prevalence: 12.1%	HBV prevalence: 1.0%	HCV prevalence: 0.7%
Syphilis prevalence: 0.1%	HIV and HCV co-infection: 0.2%	Pop size estimate: 4,854

Trends in HIV, HBV, HCV prevalence, service uptake and risk behaviours among FSW/SEC in Unguja

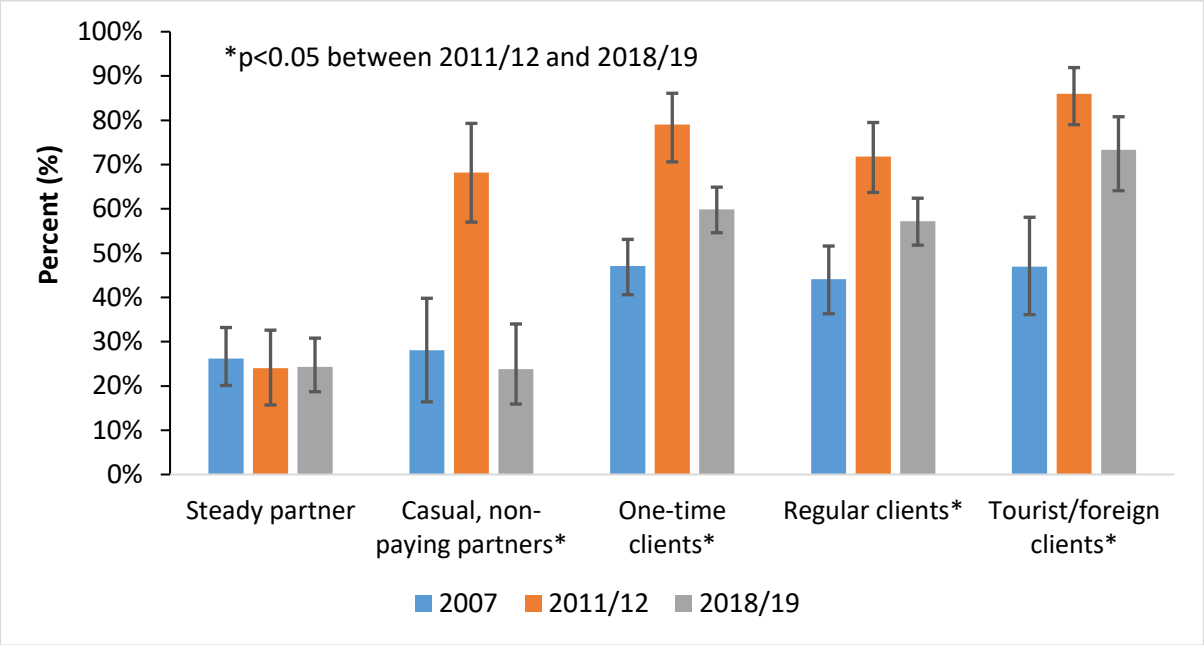
Older FSW, changes in ways of meeting clients, increases in uptake of services and decreases in condom use

The proportion of survey participants aged 35 and older has increased across the three surveys, from 16.1% in 2007 to 33.6% in 2018/19 ($p<0.001$). This could signal that fewer young people are entering into sex work or that this sub-population has increasingly been left out of the surveys. It is important to ensure that young FSW/SEC are being targeted and reached with prevention efforts.

The primary place that FSW/SEC report meeting clients has changed over time, with the focus shifting away from guesthouses/private rooms and hotels to pubs/bars as well as through telephone and internet. Mobile applications such as WhatsApp used by FSW/SEC to find clients could serve as a new avenue through which to target them with prevention services and messaging.

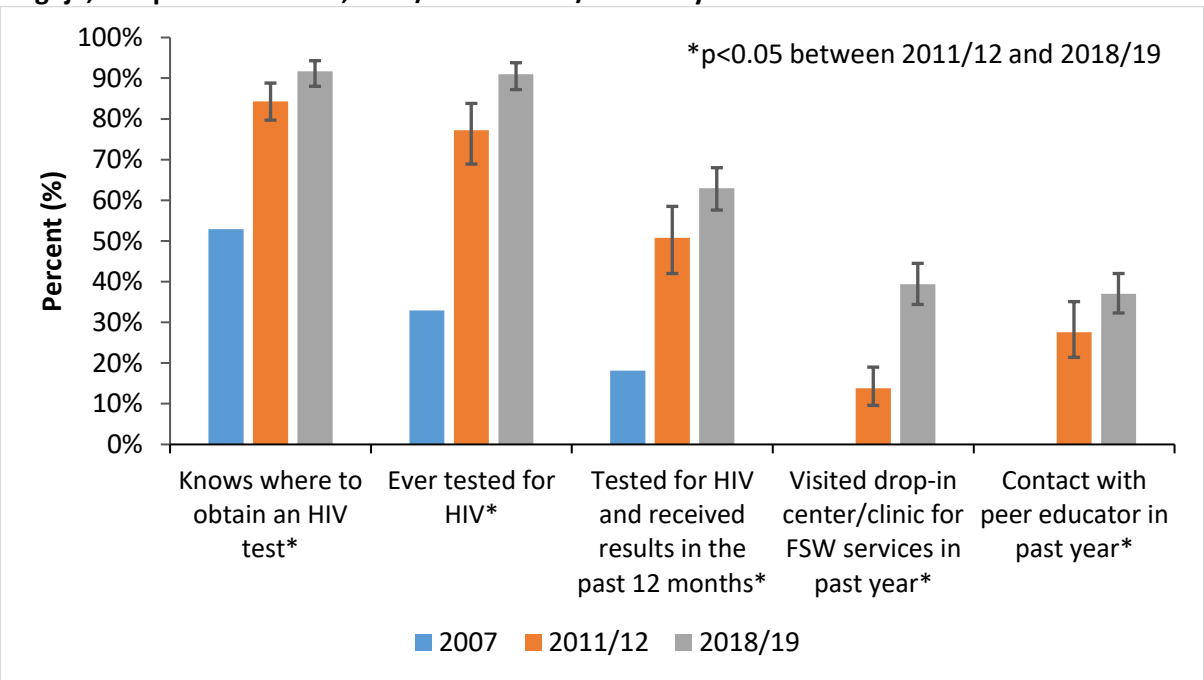
While there were notable gains from 2007 to 2018/19 in the proportion of FSW/SEC who reported 'always' using condoms in the past month with one-time (47.1% versus 59.9%; $p<0,001$), regular (44.1% versus 57.2%; $p<0.001$) and tourist/foreign clients (46.9% versus 73.3%; $p<0.001$), there was a decrease in the proportion of FSW/SEC who reported 'always' using condoms with all partner types other than steady partners from 2011/12 to 2018/19 ($p<0.001$ for casual partners, one-time clients and regular clients; $p=0.020$ for tourist/foreign clients) (Figure 8). However, although condom use decreased overall from 2011/12 to 2018/19, the 2018/19 survey found higher HIV prevalence among FSW/SEC who reported more frequent condom use. Coupled with the high percentage of HIV-infected FSW/SEC knowing their status, this could indicate that FSW/SEC who have been diagnosed with HIV are more consistently using condoms to protect themselves and their partners than their HIV-negative counterparts.

Figure 8: "Always" used condoms in past month among FSW/SEC in Unguja, comparison of 2007, 2011/12 and 2018/19 surveys



Gains have been seen in HIV testing among FSW/SEC since 2007, with sizeable increases in the proportion who reported ever testing for HIV (77.2% versus 91.0%; p<0.001) and testing for HIV in the year prior to the survey (50.8% versus 63.0%; p=0.020) from 2011/12 to 2018/19. The 2018/19 survey also found increases in the uptake of FSW/SEC -targeted health services, both facility-based (13.8% versus 39.4%; p<0.001) and through peer educators (27.6% versus 37.0%; p=0.020) (Figure 9).

Figure 9: Access to and uptake of HIV testing and FSW/SEC -targeted services among FSW/SEC in Unguja, comparison of 2007, 2011/12 and 2018/19 surveys

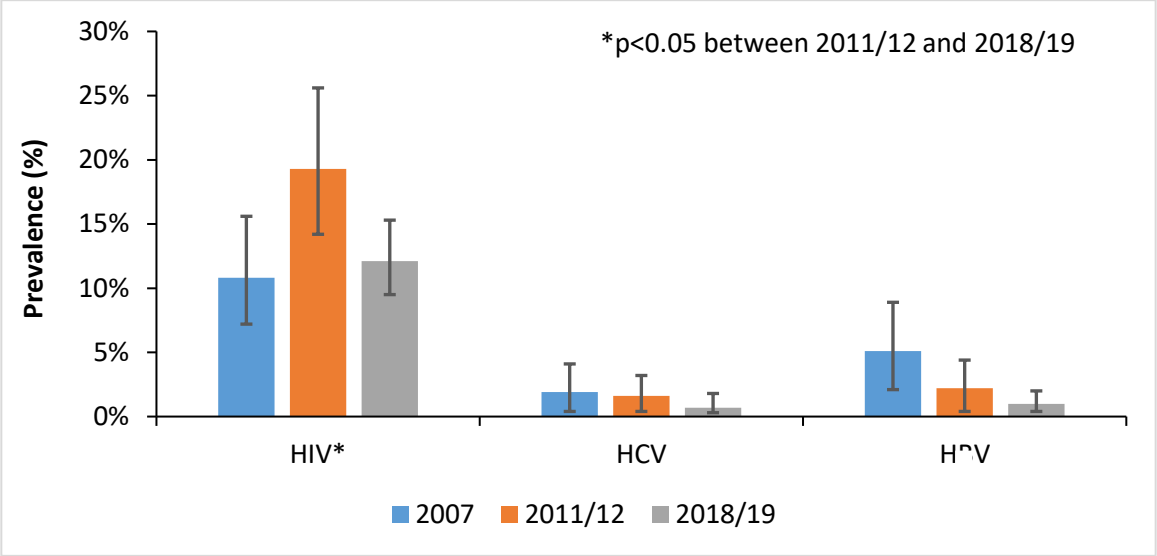


Note: Confidence intervals for 2007 values not available

HIV prevalence has decreased

HIV, HBV, and HCV prevalence in 2018/19 were lower than in 2011/12 (Figure 10). HIV prevalence decreased from 19.3% in 2011/12 to 12.1% in 2108/19 (p=0.020). No direct comparison can be made for syphilis.

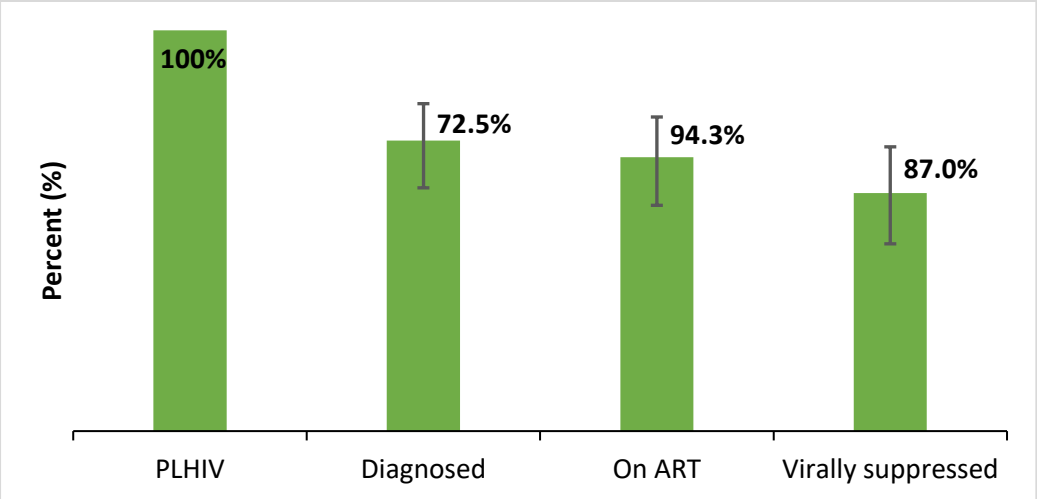
Figure 10: HIV, HCV, and HBV prevalence among FSW/SEC in Unguja, comparison of 2007, 2011/12 and 2018/19 surveys



Progress towards UNAIDS 90-90-90 targets among FSW/SEC in Unguja

Almost three-quarters (72.5%) of FSW/SEC who are living with HIV had been previously diagnosed, representing the greatest progress among the three target populations towards achieving the first of the UNAIDS 90-90-90 targets. Of those FSW/SEC who had been previously diagnosed, 94.3% were on ART. Of those on ART, 87.0% were virally suppressed (Figure 11**Error! Reference source not found.**).

Figure 11: Progress towards UNAIDS 90-90-90 targets among FSW/SEC, Unguja, 2018/19*



* Numbers in the graph are conditional percentages. The height of each bar indicates an absolute proportion

5.0 RATIONALE AND OBJECTIVES

Zanzibar is a semi-autonomous region of Tanzania, comprising a number of islands off the coast of mainland Tanzania. The two largest islands are Unguja, with a population of 1,125,036, and Pemba, with a population of 500,569 (Office of the Chief Government Statistician, Zanzibar). The island of Unguja is home to Zanzibar's capital city and is mix of urban and rural settings with a large tourism industry, while Pemba island is considerably more rural and much less impacted by tourism. Zanzibar is predominantly Muslim and is culturally conservative.

Results from the Tanzania HIV Impact Survey (THIS) 2016-2017 show that the prevalence of HIV infection in Zanzibar remains low (less than 1%) in the general population. Routine surveillance among KPs in Zanzibar has shown disproportionately high HIV prevalence (over 5%) among PWID, MSM, and FSW/SEC. With Zanzibar having a concentrated HIV epidemic, continuous HIV surveillance among KPs is paramount for understanding the response needed to achieve epidemic control in Zanzibar.

ZIHHTLP first conducted an IBBS among KPs in Unguja, Zanzibar, in 2007, which was then repeated in 2011/12. The objective of these surveys was to estimate HIV and STI prevalence among each population and characterize their risk behaviours. In addition to an IBBS in Unguja, a rapid assessment was conducted in Pemba, Zanzibar in 2011/12 to estimate HIV seropositivity among PWID, MSM, and FSW/SEC, identify and characterize their risk behaviours, and contextualize their risk of infection. Results from these activities informed intervention programs targeting PWID, MSM, and FSW, as well as identifying acceptable methods for further research of these populations.

The specific objectives of the 2018/19 biological and behavioural surveillance activities in Pemba were:

1) Estimate HIV prevalence among PWID, MSM, and FSW/SEC;
2) Identify and characterize basic risk behaviors among PWID, MSM, and FSW/SEC; and
3) Understand the context in which HIV risk behaviors take place for PWID, MSM, and FSW/SEC.

The specific objectives of the 2018/19 biological and behavioural surveillance activities in Unguja were:

1) Estimate prevalence of HIV, hepatitis B, hepatitis C, and syphilis among PWID, MSM and FSW;
2) Identify and characterize risk behaviours and sexual and drug using networks among PWID, MSM, and FSW/SEC;
3) Assess health seeking behaviours among PWID, MSM, and FSW/SEC;
4) Assess uptake of HIV prevention, care, and treatment services targeting PWID, MSM, and FSW/SEC;
5) Estimate population size for PWID, MSM, and FSW/SEC;
6) Estimate proportion of HIV infections acquired recently; and
7) Estimate viral load suppression among PWID, MSM, and FSW/SEC.

6.0 METHODS

Methods used in Pemba

6.1. Overview of rapid assessment methods

This rapid assessment used both qualitative and quantitative data collection methods. Key informant interviews (KIIs) were conducted with HIV service providers who were knowledgeable about the populations of interest in order to understand the characteristics of the populations, available KP-targeted services, and to plan survey logistics. For KP participants, there were three components of data collection: a quantitative demographic and risk factor survey, focus group discussions (FGDs), and biomarker testing for HIV, hepatitis B, hepatitis C and syphilis using venous blood specimens. The RA was conducted in each of the three main districts in Pemba Island: Chake Chake, Wete, and Mkoani. These were the same districts included in the 2011 RA and were districts where KP-targeted services were being implemented. Data collection took place from 23-30 July 2018.

6.2. Composition and training of RA team

The RA team was made up of data collectors and investigators who are affiliated with ZIHHTLP and who have knowledge of and experience working with key populations, as well as peer educators who are self-identified current and/or former sex workers, self-identified MSM, or self-identified former PWID. Data collectors and investigators screened RA participants to confirm eligibility, collected socio-demographic data, and conducted qualitative interviews. Peers were responsible for recruiting RA participants through their own networks and local contacts.

All members of the RA survey team participated in a five-day training to provide them with the knowledge and skills required to implement the rapid assessment. The training gave the RA team an understanding of the objectives and methods of the assessment; developed participants' interview and facilitation skills; and imparted an understanding of how to deal with ethical issues that may occur during implementation. All data collection tools were reviewed during the training together with peer educators to ensure that questions were asked using appropriate language. The RA team received practical, hands-on training in electronic data collection using tablets and conducted practical walk-throughs of the survey process to ensure an understanding of the survey flow and all survey activities. The RA team also received comprehensive human subjects training to ensure the protection of RA participants. Laboratory staff were also trained in all of the laboratory tests being used during the RA. Training was provided to staff to identify and appropriately respond to children disclosing child sexual abuse or sexual exploitation and linkage of sexually exploited children to ZAYADESA clinic.

6.3. Sample size

A maximum of 7-9 KIIs were planned in Chake Chake, Wete, and Mkoani, for a maximum of 90 KI participants, as described in Table 2. Although KIIs were initially planned with both KP and non-KP stakeholders, all KIIs were conducted with individuals who provide health services to KP groups and were therefore interviewed as service providers, regardless of whether they happened to belong to a KP group. A maximum of 2 FGDs with up to 10 participants each were planned for each population in Chake Chake, Wete, and Mkoani. The sample size was based on the knowledge that qualitative assessments rely on a theoretical saturation approach.

Table 2: Maximum planned sample size for Pemba Rapid Assessment, 2018

RA participants	Maximum number of KIIs/FGDs per town	Number of districts	Maximum number of participants
KII PWID*	7	3	21
KII MSM*	7	3	21
KII FSW/SEC *	7	3	21
KIIs who interact with KPs (i.e., service providers)	9	3	27
Maximum number of KI participants			**90**
FGD participants – PWID	2	3	60
FGD participants – MSM	2	3	60
FGD participants – FSW/SEC	2	3	60
Maximum number of KP participants			**180**

** Although initially planned, KIIs with KP members were not conducted – instead all KP members were involved in FGDs or IDIs. KIIs were only done with HIV service providers who work with KPs.*

6.4. Eligibility criteria

To participate in the RA as a key informant, individuals were required to meet the following criteria:

- 18 years of age or older;
- Able to adequately grant informed consent; and
- Knowledgeable about the local context of HIV risk behaviour among FSW/SEC, MSM, or PWID, OR own a local business that caters to FSW/SEC, MSM, or PWID, OR involved in outreach work among FSW/SEC, MSM, or PWID, OR involved in research with local FSW/SEC, MSM, or PWID

The eligibility criteria for KP participants to take part in the sociodemographic and risk survey, FGD and HIV and STI testing are shown in the figure below (Figure 12).

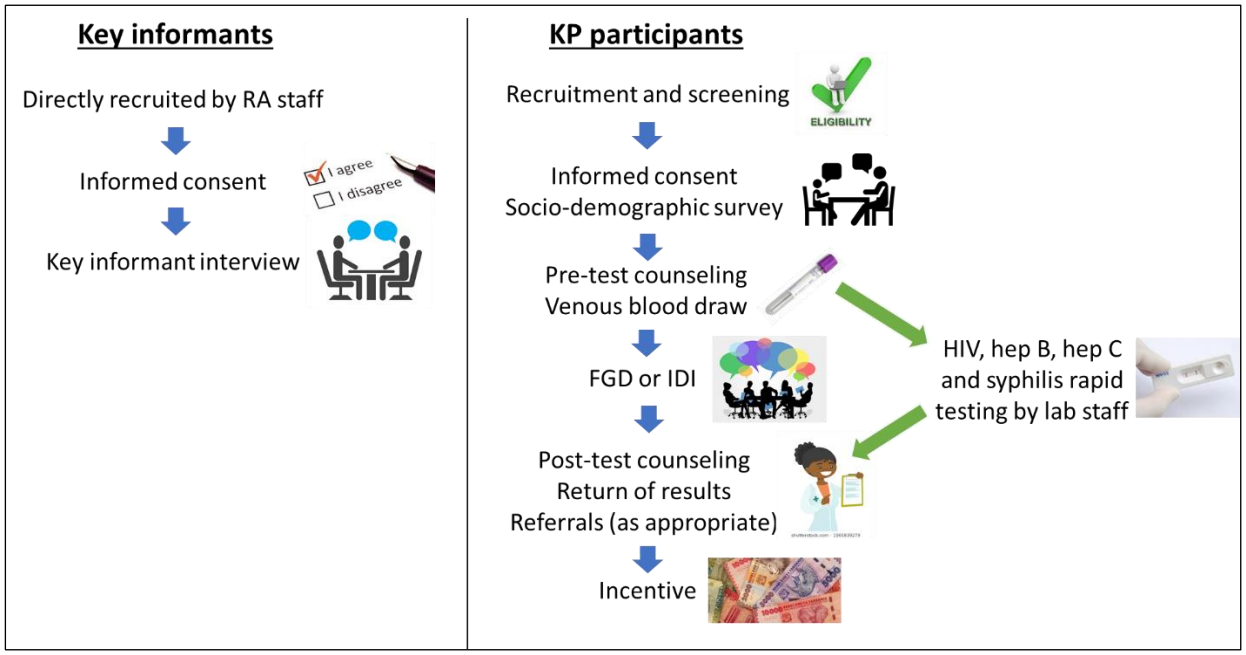
Figure 12: Eligibility criteria for RA key population participants

PWID	MSM	FSW/SEC
• injected drugs in the past three months; • liberated minors, male or female, aged 15 years or older; • lived in Pemba for the past three months; and • willing and able to provide informed consent	• engaged in anal sex witho ther males in the past three months; • liberated minors, male, aged 15 years or older; • lived in Pemba for the past three months; and • willing and able to provide informed consent	• exchanged sexual intercourse for money in the past month; • liberated minors, female, aged 15 years or older; • lived in Pemba for the past three months; and • willing and able to provide informed consent

6.5. Data collection

Figure 13 shows the flow of the RA for both key informant and key population participants.

Figure 13: RA flow for key informant and KP participants, Pemba 2018



Key informant interviews were conducted with stakeholders who were not KP members themselves. KIIs followed and interview guide (Appendix B), lasted between 45 and 60 minutes and were conducted by one or two survey staff who took notes by hand and later transcribed into Microsoft Word. KIIs were primarily conducted at the workplaces of the key informants.

Data were collected from KP members through a variety of methods: FGDs, a brief individual sociodemographic and risk behaviour survey, and rapid testing for HIV, hepatitis B, hepatitis C and syphilis. One-on-one IDIs were offered to those who wished to participate in the survey but did not feel comfortable in a group interview setting. All data collection activities with KPs took place at a single site within each town.

No personal identifying information was collected or recorded during interviews or group discussions. Notes taken during interviews were only accessible to the survey team.

6.5.1. Participant recruitment

Key informants were selected and directly recruited by the survey team. KIs were chosen who provide KP-targeted HIV services in Pemba.

KP participants were recruited by peer educators. These peers used their organizational and personal contacts to recruit eligible KPs to participate in FGDs or IDIs. In some cases, their contacts recruited others from within their network to participate. Peers recruited ten KPs for each planned FGD. Key informants were identified and recruited directly by survey staff.

All prospective KP RA survey participants were screened upon arrival at the survey site. Those who met the eligibility criteria were required to provide verbal consent to participant in the rapid assessment. Only eligible individuals who provided consent were enrolled. Upon enrolment,

participants were given a coupon with a barcode sticker containing their unique survey ID. Barcode stickers containing the same unique ID were then used to label all survey materials related to that participant.

6.5.2. Sociodemographic and risk behaviour survey

The survey team administered the appropriate (KP-specific) socio-demographic questionnaire (Appendices D, E and F) to all KP participants using tablets loaded with open data kit (ODK) collect software. The questionnaire collected information on participants' socio-demographic characteristics, sexual and drug risk behaviours, access to and utilization of HIV-related services, and HIV status. Data were uploaded to a password-protected server at the end of each day.

6.5.3. Qualitative data

FGDs and in-depth interviews (IDI) followed an interview guide (Appendix C) and lasted between 60 and 90 minutes. IDIs were conducted by two survey staff, one interviewer and one note-taker. FGDs were conducted by a minimum of two survey staff, one moderator and one note-taker, although additional staff participated, when available, as co-moderators. Notes were taken by hand and later transcribed into Microsoft Word. All participants were provided with a snack, as well as compensation for transport to the interview site.

The focus group discussions and in-depth interviews collected data on characteristics of the KP populations in Pemba, risk behaviours common among KPs in Pemba, participants' social networks, knowledge of HIV prevention, access to and utilization of health services (including HIV-related services), and venues where members of their population congregate. HIV knowledge was assessed using the standard UNAIDS comprehensive HIV knowledge questions.

The survey team also interviewed FSW/SEC, MSM, and PWID stakeholders who met the eligibility criteria for key informants, including health care workers and local NGO staff who provide services to KPs. Key informant interviews with stakeholders collected data on characteristics of the KP populations in Pemba and their experiences providing STI/HIV and other related services to KPs.

6.6. Laboratory procedures

KP participants who consented received pre-test counselling from a trained counsellor and were tested for HIV, HBV, HCV and syphilis using rapid tests using the following tests:

a) HIV serostatus was assessed using a serial algorithm in accordance with the national testing guidelines for HIV. All specimens were screened using SD Bioline HIV-1/2 3.0 test (Standard Diagnostics, Kyonggi-do, South Korea) and reactive specimens were confirmed using Unigold (Trinity Biotech, Bray, Ireland). In the event of a discordant result, the specimen was sent to the National Blood Transfusion Services (NBTS) Zanzibar, where an ELISA test was performed for final confirmation.
b) Presence of hepatitis B surface antigen (HBsAg) was detected with ACON HBsAg virus test strips (ACON Laboratories, Inc., Hangzhou, China), a qualitative lateral flow immunoassay for detection of HBsAg in serum or plasma.
c) Antibodies to HCV were detected using the ACON hepatitis C virus test strips (ACON Laboratories, Inc., Hangzhou, China), a qualitative, membrane-based immunoassay for the detection of antibody to HCV in serum or plasma.

d) Syphilis infection was tested using the Chembio Dual Path Platform (DPP) Syphilis Screen and Confirm Assay, which is WHO pre-qualified, according to manufacturer guidelines. This test can simultaneously detect antibodies against treponemal and non-treponemal antigens. Since antibodies wane after effective treatment except for a small number of serofast individuals, the test can distinguish between active and past treated infection (WHO/ Special Programme for Research & Training in Tropical Diseases, 2006). It is important to note that the first two rounds of IBBS measured antibodies using a rapid treponemal test, SD Bioline Syphilis Test (Standard Diagnostics, Kyonggi-do, South Korea) which cannot distinguish between active and past treated infection. Therefore, a direct comparison of syphilis prevalence cannot be made across the three surveys.

Qualified staff collected whole blood specimens in plain 5 ml vacutainer tubes that were labelled with a barcode sticker containing the participant's unique survey ID. Blood collection took place after the socio-demographic and risk behaviour survey. Rapid testing was conducted onsite by trained laboratory technicians while participants were in the FGDs and IDIs. Participants received results after their qualitative interview in conjunction with post-test counselling and referrals for treatment as appropriate. Individuals who tested negative for hepatitis B were given the first dose of the hepatitis B vaccine and were given a vaccination card as well as instructions to go to the district hospital for the second and third doses which were provided to them for free.

Test results were captured using both a paper log and using tablets. KP participant barcodes were scanned and their results for each of the four tests were entered. These data were uploaded to a password-protected server at the end of each day.

6.7. Data management and analysis

All confidential survey-related materials, including data collection tablets, remained in the possession of the survey team at all times while in the field. Once data collection was completed, data were kept in a locked cabinet and on password-protected computers in the ZIHHTLP office. Data collected on tablets were uploaded to a password-protected server at the end of each day. The survey team did not record names or other personal identifiers in their notes or on any of the laboratory specimens or results. Instead, barcode stickers with unique survey IDs were used to label survey materials and link participant data.

Analysis of qualitative data was done through an iterative process. The survey team took detailed notes of all interviews and FGDs and, after each day of interviews, spent a day transcribing their notes into Microsoft Word, expanding their notes and debriefing. During debriefs, the team reviewed their notes to look for common and divergent themes among focus group participants and across groups and individual interviews. The same was done upon completion of all interviews and findings were summarized in an Excel spreadsheet according to key themes and topics.

The sociodemographic and testing data were downloaded from the survey server and simple frequencies were tabulated in Microsoft Excel.

6.8. Population size estimation

KP rapid assessment participants were asked to estimate the size of the key population to which they belong during the FGD or IDI. Key informants were asked to estimate the size of the population they have experience working with during their interviews. Estimates were requested for each of the

four main districts of Pemba. KI and KP participants were asked to provide estimates only for those districts that they were familiar with. During analysis, the survey team, together with stakeholders who are very knowledgeable about KP groups in Pemba and were invited to participate in the analysis workshop, reviewed the population size estimates provided during the interviews. The estimates were summarized in an Excel spreadsheet and mean and median values were calculated. The group reviewed and discussed the estimates until they came to a consensus on a final estimate for each population that all participants were confident in.

6.9. Ethical considerations

Participation in the RA was completely voluntary, and participants were informed that they could withdraw from the survey at any point in time. Following careful explanation of what would happen if they agreed to participate in the survey, including both the benefits and the risks, survey staff gave eligible participants the consent form to read or, if necessary, survey staff read the consent form to the participant. All participants acknowledged that they had either read the consent form or had it read to them, had the opportunity to ask questions, and knew that they were free to refuse to participate, and then verbally gave their consent to participate. KP participants were asked to consent separately to (1) participate in an interview, and (2) to provide a blood specimen for biological testing and receive their HIV test results.

All survey data including behavioural and laboratory information were kept confidential. The survey team did not record names or other personal identifiers on any survey materials. After data collection was complete, data were kept in a locked cabinet and on password-protected computers in the ZIHHTLP office.

The survey protocol, including questionnaires and consent forms, received approvals from the Zanzibar Medical Research Ethical Committee (ZAMREC) and the ethical review board at the University of California, San Francisco (UCSF), and was approved as non-engaged research by the Centers for Disease Control and Prevention (CDC). Participants aged 15 to less than 18 years, who self-reported that they are not living under the support or auspices of a parent or guardian considered emancipated and able to consent for themselves. Furthermore, the legal age of consent for HIV testing and service in Tanzania is 15 years. For sexually exploited children aged 15-17 years, active referral or linkage was offered support to access appropriate services. APPENDIX A is a list of organizations providing various services to KPs in Pemba Child protection services and psychosocial counseling.

6.10. Limitations

This survey was subject to several limitations. Because behavioural data were self-reported, social desirability bias may have resulted in underreporting of sexual practices and drug use and over-reporting of condom use. In addition, the sample is likely not representative of all PWID, MSM, and FSW/SEC in Pemba as convenience sampling was used to recruit participants and the sample sizes were relatively small, particularly for those found to be HIV-infected. Many of the members of these populations, in particular MSM and FSW/SEC, are still hard to reach since the behaviours they engage in are illegal and highly stigmatized, particularly in Pemba's culturally and religiously conservative society. Because behavioural data were self-reported, social desirability bias may have resulted in underreporting of sexual and injection practices.

Methods used in Unguja

6.11. Respondent-driven Sampling (RDS)

The survey in Unguja used respondent-driven sampling (RDS) to recruit participants from all three survey populations. RDS is a chain referral sampling method designed to reduce the biases generally associated with chain referral methods in order to yield a probability-based sample. It is specifically designed to sample hard-to-reach and hidden populations such as PWID, MSM, and FSW/SEC.

Recruitment in RDS is initiated with a number of purposefully selected members of the survey population referred to as "seeds." Each seed was given three uniquely coded coupons which they use to recruit peers into the survey. Any recruited peers who enrol in the survey were considered the first wave of participants. Each participant in the first wave who completed the survey was then given three coupons with which to recruit their peers into the survey. Successive waves of recruitment continue until the sample size is reached.

The unique codes on each coupon link recruiters to their recruits and each participant to their questionnaire and biological test results. Pre-printed barcode stickers with unique identification numbers were used to identify all survey materials, including biological specimens, related to a given participant.

Prior to each RDS survey, a brief qualitative formative assessment (FA) was conducted using key informant interviews and focus group discussions. The FA included KP members, peer educators, gatekeepers, NGO staff, members of civil society and KP advocacy groups and focused on collecting information to facilitate survey planning and logistics. Specific FA objectives included: identifying potential seeds for the RDS, verifying the planned survey location, pre-testing the survey instrument to identify areas requiring fine-tuning or revisions, and determining the appropriate amount to compensate participants for their time spent participating in the survey and their transport to the survey site.

6.12. Training of survey team

In September 2018, all survey personnel participated in a five-day training that covered all aspects of RDS including identification and recruitment of seeds, selection and management of interview sites, the interview and incentive claim process, survey documentation and management, methods for controlling sample growth and ending recruitment, and data management. In addition, all survey personnel were trained on the procedures for survey implementation, including training on coupon and participant tracking, administration of informed consent, administration of the behavioural questionnaire, collection of biological samples, sample processing and transport, specimen testing, and provision of biological test results and referrals. Immediately following the training, the survey was launched for the first key population (MSM). Before launching the RDS surveys for the second and third populations, survey staff participated in trainings focused on components that changed from one population to another, namely participant screening and the behavioural questionnaire.

Additional trainings were held for individuals involved in formative assessment activities, and those involved in distribution of unique objects for population size estimation for each of the three surveys. Formative assessment trainings covered the objectives and methods involved in the FA and included training on qualitative interview techniques, note-taking, expanding field notes as well as reviews of the interview guides over one and a half days. FA teams also agreed on standardized

procedures for naming and tracking interview files during the training. Half-day trainings prior to unique object distribution covered the purpose of unique object distribution and how it fit into the larger RDS survey as well as the methods to be used during unique object distribution. The peer educators responsible for unique object distribution were also trained on the relevant documentation used during the activity.

The survey team also received comprehensive human subjects training to ensure the protection of survey participants. Training was provided to staff to identify and appropriately respond to children disclosing child sexual abuse or sexual exploitation and linkage of sexually exploited children to ZAYADESA clinic.

6.13. Sample size calculation

Power and sample size estimates were based on achieving desired precision around point estimates for HIV infection in each KP. According to 2011/12 estimates for Unguja, the prevalence of HIV infection was 11.3% among PWID, 2.6% among MSM, and 19.3% among SW. According to 2007 estimates for Unguja, the prevalence of HIV infection was 16.0% among PWID, 12.3% among MSM, and 10.8% among SW. Sample sizes for each survey population based on these prevalence estimates (P) are provided below. Sample sizes were corrected for finite population correction (FPC) and an expected large design effect (DEFF) of 2.3, based on the median DEFF found for key variables in similar RDS surveys of MSM in South Africa and Uganda (Hladik, et al., 2012). Because there were large differences between the prevalence estimates for MSM in 2007 and 2011/12, we used the larger sample size to be conservative.

Population	Estimated HIV prevalence % (95% CI)	Population size estimate	Sample size with DEFF of 2.3
PWID 2011/12	11.3 (7.7-15.2)	3,000	337
MSM 2007	12.3 (8.7-16.3)	2,157	319
MSM 2011/12	2.6 (1.0-4.7)	2,157	88
SW 2011/12*	**19.3 (14.2-25.6)**	**3,958**	**519**

**Note in 2011/12 IBBS male sex workers participated in the survey; therefore, SW is used so as to be inclusive of both men and women.*

95% CI= 95% Confidence Interval

6.14. Eligibility criteria

To participate in an FA, individuals were required to meet the following criteria:

- 18 years of age or older;
- Able to grant informed consent; and
- Knowledgeable about the local context of HIV risk behaviour among PWID, MSM, or FSW/SEC,
  OR own a local business that caters to PWID, MSM, or FSW/SEC,
  OR involved in outreach work among PWID, MSM, or FSW/SEC,
  OR involved in research with local PWID, MSM, or FSW/SEC,
  OR male clients of sex workers.

The eligibility criteria for RDS participants are shown in Figure 14. All potential participants were screened for eligibility by survey staff upon arrival at the survey site and only those who met the eligibility criteria were enrolled in the survey. All eligible persons were required to provide verbal consent to participate in the survey.

Figure 14: Eligibility criteria for RDS participants

PWID	MSM	FSW
• injected illicit drugs in the past three months and not currently in MAT • liberated minors, female or male, aged 15 or older • lived in Unguja for the past three months • able to adequately grant informed consent • in possession of a valid recruitment coupon	• engaged in anal sex with other males in the past three months • liberated minors, male, aged 15 or older • lived in Unguja for the past three months • able to adequately grant informed consent • in possession of a valid recruitment coupon	• exchanged sexual intercourse for money in the past one month • liberated minors, female, aged 15 or older • lived in Unguja for the past three months • able to adequately grant informed consent • in possession of a valid recruitment coupon

6.15. Data collection

6.15.1. Formative assessment activities

The Unguja FA used key informant interviews (KIIs) with KPs, peer educators, gatekeepers, and NGO staff, as well as focus group discussions (FGD) with KPs. No demographic information was collected from participants. Participants were recruited purposively through ZIHHTLP contacts and community partners.

A trained research assistant (either an interviewer or moderator) read the Swahili consent form to the participant(s), which explained the purpose and process of the interview or group discussion. Separate consent forms were developed for KP participants and stakeholder participants. For each KP participant that provided consent, the interviewer or moderator signed a statement indicating that this information has been provided to the participant and that he/she provided consent to participate in the FA component of this survey. Stakeholders were required to sign a statement indicating they understood the information provided and consented to participate in the FA component of the survey.

Interviews were conducted in Kiswahili by using interview guides that had been updated from the interview guides used for the 2007 and 2011/12 KP surveillance studies, as well as during the FA conducted in 2017. The interviews were not recorded or transcribed verbatim, only notes and themes were recorded. Key informants received compensation for transportation to the survey site. FGD participants received compensation for transportation to the survey site and a snack during the discussion.

6.15.2.RDS data collection activities

Table 3 provides an overview of RDS data collection activities for all three key populations.

Table 3: Overview of data collection activities for the 2018/19 IBBS in Unguja

	PWID	MSM	FSW/SEC
Dates of survey	March – April 2019	September – November 2018	December 2018 – February 2019
# of seeds	5 (one with no recruits)	8 (one with no recruits)	4
Final sample size[1]	419	341	580
Compensation	15,000 TZS ($6.49 USD as of 4 Dec 2019) for completing the survey and providing a biological specimen; individuals who did not provide a biological specimen received 10,000 TZS ($4.33 USD as of 4 Dec 2019)	15,000 TZS ($6.49 USD as of 4 Dec 2019) for completing the survey and providing a biological specimen; individuals who did not provide a biological specimen received 10,000 TZS ($4.33 USD as of 4 Dec 2019)	20,000 TZS ($8.66 USD as of 4 Dec 2019) for completing the survey and providing a biological specimen; individuals who did not provide a biological specimen received 15,000 TZS ($6.49 USD as of 4 Dec 2019)*
	5,000 TZS ($2.16 USD as of 4 Dec 2019) for each successful recruit	5,000 TZS ($2.16 USD as of 4 Dec 2019) for each successful recruit	5,000 TZS ($2.16 USD as of 4 Dec 2019) for each successful recruit
# of recruitment coupons given	Maximum of three[2]	Three	Three

**FSW/SEC were provided a higher incentive than MSM and PWID based on information collected during the FA.*

Seeds were identified during the formative assessment and selected to ensure representation based on a number of key characteristics. Seeds identified for each key population were given a fixed number of coded coupons, which they used to recruit their peers into the survey. Participants who presented a valid recruitment coupon to the survey site were screened for eligibility and then consented to each of the following survey components: a face-to-face interview, a blood draw

Interviews were conducted in Kiswahili using a standard questionnaire (Appendices G, H and I) programmed into a tablet with ODK and took approximately 45 minutes to complete. The questionnaire collected data on participants' socio-demographic characteristics, sexual and drug risk behaviours, STI and HIV knowledge, social networks, and access to and utilization of HIV-related services. Following the interview, participants met with a trained nurse counsellor who provided

[1] Final sample size may have exceeded the calculated sample size as recruits continued to redeem valid coupons after RDS recruitment ended.

[2] The majority of participants were given three coupons; however, towards the end of the survey younger PWID were targeted and fewer coupons were given to those who did not have young PWID in their social networks.

them with standard pre-test counselling information and confirmed their consent to provide a biological specimen for testing. Nurse counsellors collected blood specimens via venous blood draw, and trained laboratory staff conducted the rapid STI and HIV tests on site.

Rapid test results were returned to survey participants by the same nurse counsellor who had conducted pre-test counselling and specimen collection, together with standard post-test counselling. Those with positive test results for HIV, HBV, HCV, and/or syphilis infection were referred to the HIV/STI care and treatment centre at Mnazi Mmoja Hospital for further management. Participants who tested negative for HBV were offered an HBV vaccine injection and were provided with the necessary information to receive the other two vaccinations in the series.

Finally, each participant was provided three coupons with which to recruit eligible peers. All biological and behavioural data collection took place at ZIHHTLP offices in Stonetown, Zanzibar.

Participants received a primary compensation for completing the survey, and an additional secondary compensation for each individual they recruited who was eligible and consented to participate in the survey.

No personal identifying information was collected. To ensure confidentiality, participants' questionnaires and biological tests were identified using a unique survey identification number provided on the recruitment coupons.

6.16. Laboratory procedures

Venous blood draws were conducted at the survey site by nurse counsellors. Testing for HIV and STI was conducted on site by trained laboratory personnel. Additional blood specimens were transferred daily to Mnazi Mmoja Hospital Laboratory in two 5 mL EDTA tubes. At the laboratory, one EDTA tube was used prepare DBS cards from HIV positive specimens for additional testing at the National Health Laboratory Quality Assurance and Training Centre (NHLQATC) in Dar es Salaam. The remaining specimen from this tube was centrifuged and plasma used for viral load testing. The second EDTA tube was centrifuged and serum was aliquoted into one or two tubes of approximately 1.5 mL, one to be used for serology confirmation and the other to be banked for long-term storage and future testing for consenting participants. Biological samples were coded with the participant's unique barcode.

Each sample was tested for HIV, HBV, HCV, and syphilis testing, additional testing (viral load, recency and phylogenetics) using the same blood specimen if they had a positive HIV result, and long-term storage of remnant blood for possible future testing. Samples were tested according to the following procedures:

a) HIV serostatus was assessed using a serial algorithm in accordance with the national testing guidelines for HIV. All specimens were screened using SD Bioline HIV-1/2 3.0 test (Standard Diagnostics, Kyonggi-do, South Korea) and reactive specimens were confirmed using Unigold (Trinity Biotech, Bray, Ireland). In the event of a discordant result, the specimen was sent to the National Blood Transfusion Services (NBTS) Zanzibar, where an ELISA test was performed for final confirmation.

b) Presence of hepatitis B surface antigen (HBsAg) was detected with ACON HBsAg virus test strips (ACON Laboratories, Inc., Hangzhou, China), a qualitative lateral flow immunoassay for detection of HBsAg in serum or plasma.
c) Antibodies to HCV were detected using HCV OraQuick Rapid Test by Orasure.
d) Syphilis infection was tested using the Chembio Dual Path Platform (DPP) Syphilis Screen and Confirm Assay, which is WHO pre-qualified, according to manufacturer guidelines. This test can simultaneously detect antibodies against treponemal and non-treponemal antigens. Since antibodies wane after effective treatment except for a small number of serofast individuals, the test can distinguish between active and past treated infection (WHO/ Special Programme for Research & Training in Tropical Diseases, 2006). It is important to note that the first two rounds of IBBS measured antibodies using a rapid treponemal test, SD Bioline Syphilis Test (Standard Diagnostics, Kyonggi-do, South Korea) which cannot distinguish between active and past treated infection. Therefore, a direct comparison of syphilis prevalence cannot be made across the three surveys.

Serological confirmation of biomarkers was conducted in order to assure the accuracy of test results. All reactive and 10% of non-reactive samples for HIV, HCV, HBV and syphilis were retested by NHLQATC, the national reference laboratory in Dar es Salaam. For HIV, retesting was done with Innolia. For HBV, HCV and syphilis, retesting was done using the same tests that were used in the field.

6.17. Data management and analysis

Data for the Unguja FAs were collected using paper tools and stored in the ZIHHTLP office. Interviewers expanded their field notes following each interview and entered them into Microsoft Word. Notes were reviewed by the survey team to identify key information that could be used to inform the implementation of the RDS survey.

Data for the RDS behavioural surveys were collected using tablets programmed with ODK. HIV and STI test results were collected using both paper tools and an ODK survey. All electronic data were uploaded to a password-protected cloud-based server on a daily basis and were only accessible to authorized staff members. The team of investigators reviewed data on a weekly basis, monitoring for bottlenecks and convergence. This included performing consistency checks and tabulating frequencies to check validity and logic of all variables. Final datasets were converted to Stata for further cleaning. Data will be destroyed five years after the report is disseminated.

Data for each population were analysed following the completion of the survey for that population. Data management and recoding were conducted in Stata. Weights were generated using RDS Analyst (RDSA) software, exported into Microsoft Excel, and merged with the cleaned Stata datasets. Point estimates and 95% confidence intervals (CI) were calculated using weighted datasets in Stata 13.1. The abbreviation of NC (not calculable) is used when the sample size was too small to compute a point estimate or a reliable confidene interval could not be calculated.

6.18. Population size estimation

Five different population size estimation methods were used to determine the number of PWID, FSW/SEC and MSM living in Unguja in 2018/19, each of which are described in detail below. A panel of experts for each of the three key populations convened during analysis of the RDS survey data

and reviewed the results of each of the estimation methods. During this review, they came to a consensus of the "best" estimate of the key population size for each of the three KP groups.

Unique object multiplier

Two weeks prior to the launch of the 2018/19 RDS surveys for each key population, unique objects procured especially for this activity (green key chains for PWID, pink key chains for MSM, and purple key chains for FSW/SEC) were distributed over the span of 5-7 days to members of the populations by 6-8 trained peer educators from local NGOs, supervised by ZIHHTLP staff. A total of 1,650 unique objects were planned for distribution: 600 among PWID, 300 among MSM, and 750 among FSW/SEC. For MSM, under the scenario of recruiting 519 participants, a prior estimate of 2,157 MSM in Zanzibar, and a DEFF of 3, the distribution of 300 objects would project 2,157 MSM +/- 836. These calculations for MSM and for the other two populations can be seen in Table 4.

Table 4: Unique object calculations

KP group	# of tokens distributed (n1)	Size of RDS sample (n2')	RDS Design Effect (DEFF)	(Prior) estimate of pop size (S')	Size of RDS sample (n2= n2'/DEFF)	Number of tokens expected among RDS respondents (m)	r = m/n2	V(S)1 (Variance addend 1)	V(S)2 (Variance addend 2)	V(S) Variance Estimate	w = 1/2 width of C.I. (sqrt(V(S)* 1.96)
PWID	600	337	3	3000	112	22	0.20	320474.78	15000.00	335474.78	1135
MSM	300	519	3	2157	173	24	0.14	166473.39	15508.83	181982.22	836
FSW/ SEC	750	319	3	3958	106	20	0.19	630166.41	20887.69	651054.09	1581

Locations for distribution of the unique objects (hot spots for PWID and hotels, bars, and other meeting places for MSM and FSW/SEC) were selected prior to the survey launch based on information obtained during the formative assessment. The selected locations were known to be places where members of the key populations congregate. The peer educators verified that individuals met the survey inclusion criteria and that they had not received a key chain from a different peer educator before giving them a unique object. Each individual from the key population received exactly one key chain and was asked not to give it to anyone else because he or she might be asked about it in the near future by another survey staff member. Peer educators distributing the unique objects recorded the number and location of each object distributed and the age and sex of the recipient using a standardized log sheet. During the 2018/19 RDS surveys, survey participants were asked if they had received the specific coloured key chain. The population size was calculated by using the RDSA-adjusted percent of those who had received the object prior to the 2018/19 survey divided by the number of objects distributed.

Service multiplier

Counts of key population members utilizing specific services were available from a variety of government service outlets and NGOs in Zanzibar who provide services to one or more KP groups. Data used for this multiplier method were taken from KP-targeted services provided specifically for PWID, MSM, and FSW/SEC by ZAYEDESA during the 12 months prior to the 2018/19 RDS survey. Because ZAYEDESA issues unique ID numbers to its clients, the data that were used described service encounters with unique individuals. During the survey, participants were asked if they had received

services from ZAYEDESA in the 12 months prior to the survey. The population size was calculated by dividing the number served according to the service data by the RDSA-adjusted number of those who had received services from ZAYEDESA in the 12 months prior to the survey from the 2018/19 survey data.

Recapture of 2007 and 2011/12 RDS survey participants

During the 2018/19 RDS survey, participants were asked if they had also participated in the 2007 round of the RDS survey, and/or in the 2011/12 RDS survey. The previous surveys were described as surveys similar to the one they were now participating in, where they received a coupon that was the specific colour used for their KP group. Because all three surveys were conducted by ZIHHTLP at the ZIHHTLP office and ZIHHTLP is the only institution carrying out RDS surveys among KPs in Unguja, it is unlikely that survey participants confused the 2007 and 2011/12 RDS surveys with other surveys or research activities.

The total number of members of the population recruited in the 2018/19 survey was then divided by the RDSA-adjusted percent of participants who had also participated in the 2007 survey and, separately by the RDSA-adjusted percent of participants who had also participated in the 2011/12 survey, to get estimates of the population size.

Literature review

A search of literature was done to find a number that accurately describes the proportion of adults who inject drugs; the proportion of adult females who engage in sex work; and the proportion of adult males who have sex with other males either in Zanzibar or in similar settings. There are limited publications available with numbers specific to Zanzibar and most of them were published based on previous RDS surveys. Therefore, estimates were used from settings that are similar to the Zanzibar context. A publication estimating the size of key populations in Nairobi, Kenya found the proportion of MSM in the adult male population in Kenya to be 1.2% (Okal, et al., 2013). For FSW/SEC, a publication estimating the size of the FSW/SEC population in Kenya found the proportion of FSW/SEC in Mombasa to be 4% of adult women ages 15 and above, and the proportion of FSW/SEC in Nairobi to be 3% of adult women ages 15 and above (Odek, et al., 2014). A report from the United Nations Office on Drugs and Crimes provides estimates on the proportions of PWID by region as percentages of the adult population ages 15-64. The report provides low, middles and high estimates for Africa as a region at 0.06%, 0.11% and 0.34%, respectively (United Nations Office on Drugs and Crime, 2016).

Each of the panels of experts for the three sub-populations reviewed this available literature and reached a consensus on the following estimates as plausible for Zanzibar: 1.2% of adult males are MSM and between 0.34% and 0.5% of the adult population are PWID. The panel of experts did not find the FSW/SEC estimates from Kenya to be comparable to the Zanzibar context and so these were not considered. These percentages were multiplied by the 2018 projections of the Zanzibar population over the age of 15 to calculate the population size estimate for this method.

Modified Delphi

A panel of experts for each of the three key populations made up of ZIHHTLP staff, Zanzibar AIDS Commission staff, international and local NGO staff working with KPs, and current or former members of the three populations was asked how many MSM, FSW/SEC and PWID are living in Unguja. The responses were recorded and mean, and median values were calculated. The panel was

then presented with data from the other size estimation activities and published sources, and the panel's estimates were discussed in light of the other data sources. After review and discussion of available data, panel members were asked to submit a second estimate, which could be the same as or different from their initial estimate. Mean and median values were calculated and compared to the first set of estimates as well as other available data. The panels continued discussions and submitted additional rounds of estimates as needed, until the group was able to come to a consensus on the best estimate.

6.19. Ethical considerations

Survey participation was strictly voluntary, and participants were informed that they were free to withdraw from the survey at any point in time. Following careful explanation of the survey, survey staff gave eligible participants the consent form to read or, if necessary, survey staff read the consent form to the survey participant. All participants verbally stated that they understood the information provided in the consent form and were asked to agree individually to each of the items contained in the consent form in order to enrol in the survey. Survey staff completed and signed the consent form according to participant responses. The participants were given the option to complete the interview only and decline the biological tests, as well as the option to agree to have a portion of their biological specimen anonymously stored for future testing or studies. Participants could refuse to answer any specific question in the course of the interview. All participants were given the name and telephone number of the local survey coordinator should they have any questions about the survey or if they believed they had been injured or mistreated as a result of being or not being part of the survey.

To minimize any discomfort due to the sensitive nature of the questions asked, the questionnaire was administered in a private, confidential setting by survey personnel who had experience working with the survey population. Survey staff provided referrals to local services for care and treatment, as appropriate.

All survey data were kept confidential. The survey team did not record names or other personal identifiers on the survey questionnaires, laboratory specimens or results. In this survey, coupon identification numbers were assigned to each of the participants using barcode stickers and used to link questionnaire responses to behavioural and laboratory test results. After data collection, forms and test results were kept in a locked metal cabinet at the ZIHHTLP office. Electronic data were stored on a password-protected server that was accessible only to authorized survey staff.

The survey protocol, including questionnaires and consent forms, received approvals from the Zanzibar Medical Research Ethical Committee (ZAMREC) and the ethical review board at the University of California, San Francisco (UCSF), and was approved as non-engaged research by the Centers for Disease Control and Prevention (CDC). Participants aged 15 to less than 18 years, who self-reported that they are not living under the support or auspices of a parent or guardian considered emancipated and able to consent for themselves. Furthermore, the legal age of consent for HIV testing and service in Tanzania is 15 years. For sexually exploited children aged 15-17 years, active referral or linkage was offered support to access appropriate services from ZAYADESA clinic.

6.20. Limitations

This survey was subject to several limitations. Behavioural information was self-reported, and participants were asked to recall periods of up to twelve months when reporting on sexual and drug use behaviours; therefore, the accuracy of responses may have been affected by recall bias. In addition, social desirability bias may have resulted in underreporting of sexual practices and drug use in relation to HIV and social norms.

Compensation for participants is a crucial element of recruitment in RDS but it can be challenging to determine the appropriate amount for each unique population. If the compensation offered is too high, there is a risk of double-enrolment or of encouraging recruits to fake eligibility requirements. If the amount is too low, recruitment will not be successful. For these surveys, compensation amounts were set based on the formative assessments and feedback from the survey populations and were carefully adjusted to reach appropriate levels. In order to prevent double-enrolment and ensure all participants met eligibility criteria, recruits attending the survey site were carefully screened by peers and survey staff who had experience working with the survey population.

Ensuring that only true members of the key population are able to enrol in the survey is critical for RDS but can be difficult when dealing with members of hidden or stigmatized populations. While all survey participants received a short training on how to recruit eligible peers, between 16% and 20% of recruits were found to be ineligible for the survey for all three populations. Having so many potential participants found to be ineligible may have affected recruitment patterns as well as the ability of the RDS method to successfully reach all sub-groups within the KPs.

KPs can be made up of a variety of sub-populations and RDS attempts to capture and represent them all. However, some sub-populations may be more difficult to reach than others. This survey attempted to capture female PWID but was only able to recruit a small number. Similar challenges have been documented in other IBBS (Abramovitz, et al., 2009).

Small sample sizes for some variables and missing values for others added to the limitations of the survey. Analysis of drug use behaviour was limited to recent use in the past three months; therefore, a causal relationship between drug use and disease prevalence is not possible to determine. Although the estimates presented here may be considered representative of the populations from which participants were recruited, the small number of values for certain variables may limit our ability to detect statistically significant differences between groups. In some cases, confidence intervals were too wide for meaningful interpretation. Furthermore, as analysis in RDSA depends on the integrity of recruitment chains to determine and adjust estimates for the probability of recruitment, missing values may distort adjusted proportion estimates. We have attempted to correct for this in the analysis by taking special care with missing values and skip patterns.

Lastly, recent literature acknowledges the sensitivity of RDS to sub-populations and changes in sample characteristics (Burt & Thiede, 2012) (Khatib, et al., 2017) (Ruan, et al., 2009). This was noted in the large changes in HIV prevalence found between the 2007 and 2011/12 rounds of surveys, specifically among the MSM and FSW/SEC populations, in conjunction with significant differences in the demographic characteristics of these populations between the two studies. Having observed these differences between the 2007 and 2011/12 rounds, efforts were made, although not always successfully, to ensure that the demographic characteristics of the 2018/19 sample were aligned with the 2011/12 round. This was done by varying the number of recruitment coupons given to

participants, based on whether they were able to recruit KPs with characteristics of interest and only occurred during the PWID survey.

7.0 RESULTS FOR PEMBA

This section presents biological and behavioural findings for PWID, MSM and FSW/SEC in Pemba. It is divided into separate sub-sections for each population that describe socio-demographic characteristics, risk behaviours, HIV and STI proportions, and access to HIV-related services. The results from data collection activities with KP participants (i.e., FGDs/IDIs, sociodemographic and risk questionnaire and bio-marker testing) are presented alongside the information collected from key informants. Results from the sociodemographic and risk questionnaire are typically quantified and presented as both a proportion and a number. Information gathered during FGDs/IDIs with KP participants is typically presented as contextual information and observations by PWID about the larger PWID community. Results from KIIs are specified as having come from key informants.

Table 5 summarizes the number of key population members who participated in this rapid assessment and the numbers and types of interviews conducted. IDIs were conducted with KP members who wanted to participate in the RA but were not comfortable in a group interview setting. In addition to the KP participants presented in the table, a total of 18 KIIs were conducted: 6 with service providers familiar with FSW/SEC in Pemba, 4 with service providers familiar with MSM in Pemba, and 8 with service providers familiar with PWID in Pemba.

Table 5: Summary of KP participants in 2018 Pemba RA

KP population	Number of FGDs conducted	Number of FGD participants	Number of IDIs conducted	Total number of KP RA participants
PWID	6	57	0	57
MSM	6	42	9	51
FSW/SEC	6	51	6	57

7.1. People who inject drugs (PWID)

A total of 57 PWID were recruited for six FGDs in three districts of Pemba (Table 6). No IDIs were conducted as all participants were comfortable participating in group interviews. All recruits were eligible to participate. All participants completed the socio-demographic questionnaire, and all agreed to testing. In addition, eight KIIs were conducted with people familiar with this population.

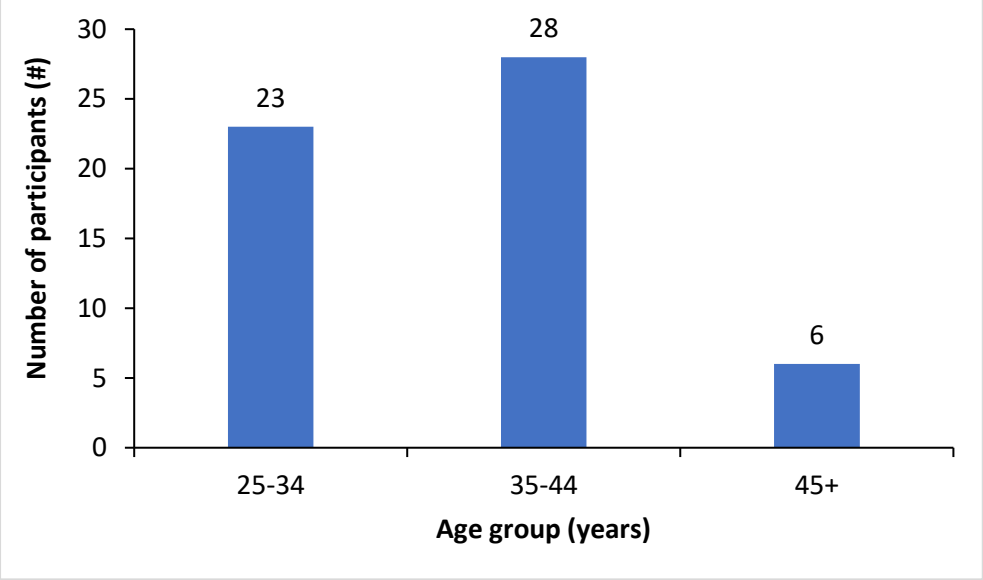
Table 6: Number of PWID participants in Pemba RA by interview type and location

Location of interviews	Number of FGDs conducted	Number of FGD participants	Number of IDIs conducted	Total number of RA PWID participants
Chake Chake	2	17	0	17
Mkoani	3	30	0	30
Wete	1	10	0	10

7.1.1. Description of RA participants

All PWID who participated in the RA were men, ranging in age from 25 to 60 years (median 36 years). Although the age distribution of PWID in Pemba as reported in KIIs and FGDs was between 15 and 60 years old, the youngest RA participant was 25 years. The distribution of PWID RA participants by age group is shown in Figure 15.

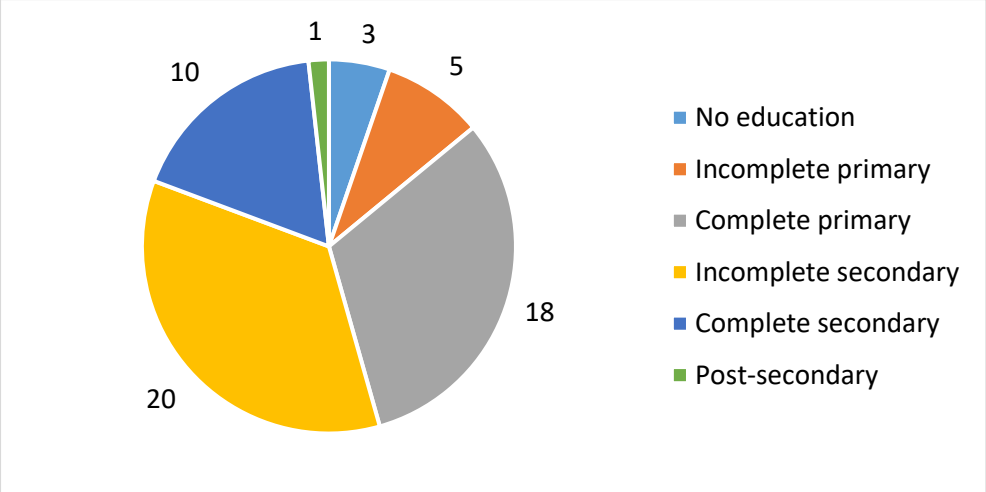
Figure 15: Age distribution of PWID RA participants, Pemba 2018



Just over half of PWID participants (52.6%; n=30) were recruited from Mkoani, while 29.8% (n=17) were recruited from Chake Chake and 17.5% (n=10) from Wete. All participants reported that they live in the same district where they were recruited. In addition, the majority of PWID participants (78.9%; n=45) reported residing in these districts for their entire lives. PWID reported that most PWID in Pemba originate from Pemba, although a few were reported to be from outside Pemba, including Unguja and Tanga.

More than three-quarters of PWID participants (80.7%; n=46) had not completed secondary school, with only one participant having post-secondary education (Figure 16). Three participants reported having no education.

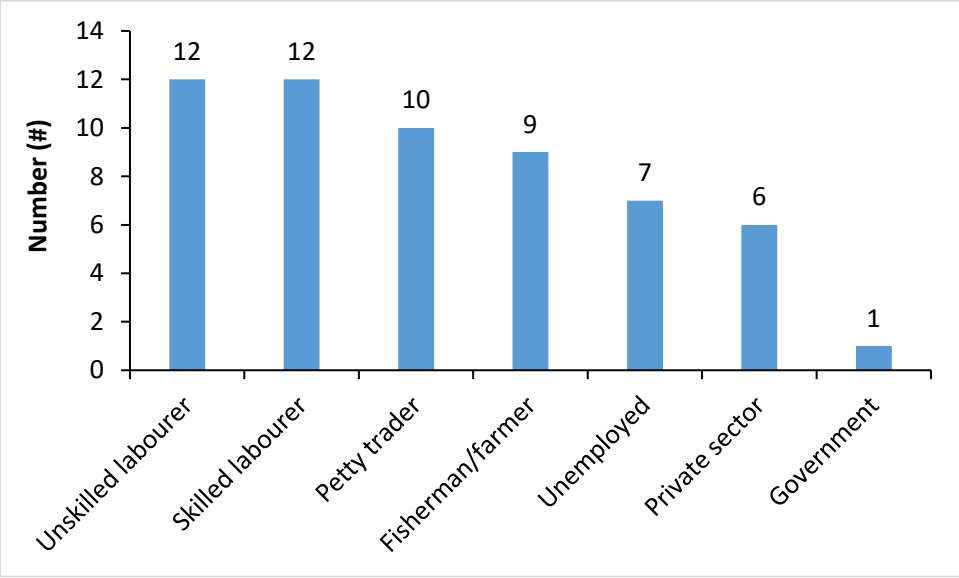
Figure 16: Education level of PWID RA participants, Pemba 2018



Only 21.1% (n=12) of RA participants were in current steady sexual relationship; of these, four were married and one reported that he is not married but is living with his partner.

The majority of PWID participants reported working as unskilled labourers (e.g., porter), skilled labourers (e.g., carpenter, mechanic, etc.), petty traders, or farmers/fishermen, while several reported being unemployed (Figure 17). One participant reported being employed in the government sector.

Figure 17: Reported occupations of PWID RA participants, Pemba 2018



7.1.2. Description of PWID subgroups and venues where they congregate

Both PWID participants and key informants reported that PWID in Pemba can be divided according to several different classifications: occupation (petty traders, beach boys, government employees), income level (high and low earning), HIV status, amount of drug use (high and low dose users),

district of residence, age (old and young), and duration of drug use (those who have recently started injecting and those who have injected for a long time).

PWID were reported to know each other and interact often in the search for drugs, through work (as many work in similar jobs, e.g., porters), and because they spend time together and share drug paraphernalia. While younger and older PWID were reported to interact, it was reported than new PWID do not always mingle with other PWID, and those from different districts are not networked across districts.

Venues where PWID were reported to congregate include abandoned houses, ports, mangrove areas, bush areas, local bars, where drug suppliers can be found, and car wash and market areas. The participants mentioned 12 venues in Wete, 15 in Chake Chake, 9 in Mkoani and 5 in Micheweni districts. Participants reported that PWID mostly meet in the early morning and evening. However, some PWID reported that they meet others any time they have money for buying drugs.

PWID move a lot within Pemba to search for drugs. Less often, they travel outside of Pemba to run away from arrest and look for drugs if they are not available in Pemba. The areas they reported traveling to in search of drugs included Nungwi (Unguja) and Tanga (mainland).

7.1.3. HIV knowledge among PWID

PWID participants had high levels of HIV knowledge (Table 7). All participants correctly rejected the misconceptions that HIV can be transmitted from a mosquito or by sharing food with someone with HIV, and knew that a healthy-looking person can have HIV. Nearly all participants responded correctly when asked whether HIV can be prevented by having one uninfected partner who has no other partners and by using condoms every time, they have sex.

Table 7: HIV knowledge questions asked during RA and percent of PWID participants who responded correctly, Pemba, 2018

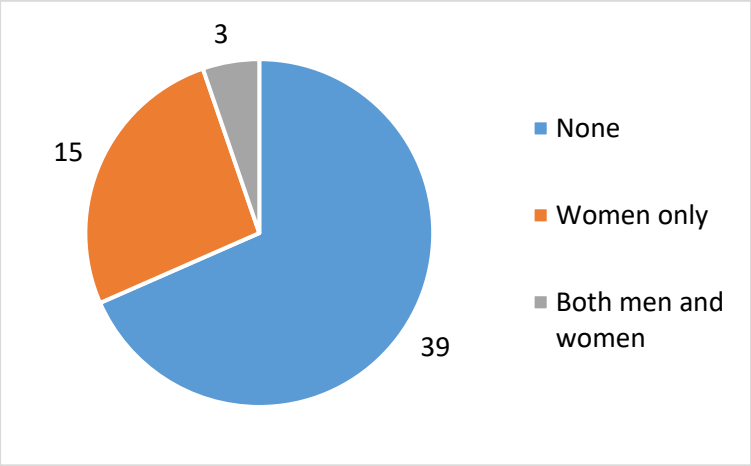
Serial number	Question	Percent of participants who responded correctly
1	Can the risk of HIV transmission be reduced by having sex with only one uninfected partner who has no other partners?	96%
2	Can a person get HIV from mosquito bites?	100%
3	Can a person reduce their risk of getting HIV by using a condom every time they have sex?	98%
4	Can a person get HIV by sharing food with someone who has HIV?	100%
5	Can a healthy-looking person have HIV?	100%

7.1.4. Risk behaviours among PWID

The median age of sexual debut among PWID participants was 19 years, with a minimum age of 10 years and a maximum age of 35 years. The majority of PWID participant (68.4%; n=39) had no sexual partners in the past three months (Figure 18). Among the 18 participants who reported having sex in the past three months (n=18), two-thirds (n=12) reported having only one sexual partner. The

maximum number of sexual partners reported was five. Condom use among PWID participants at last sex with a non-steady sexual partner was only 26.3% (n=15).

Figure 18: Number of sexual partners of PWID participants in past three months, by sex of partner, Pemba RA 2018

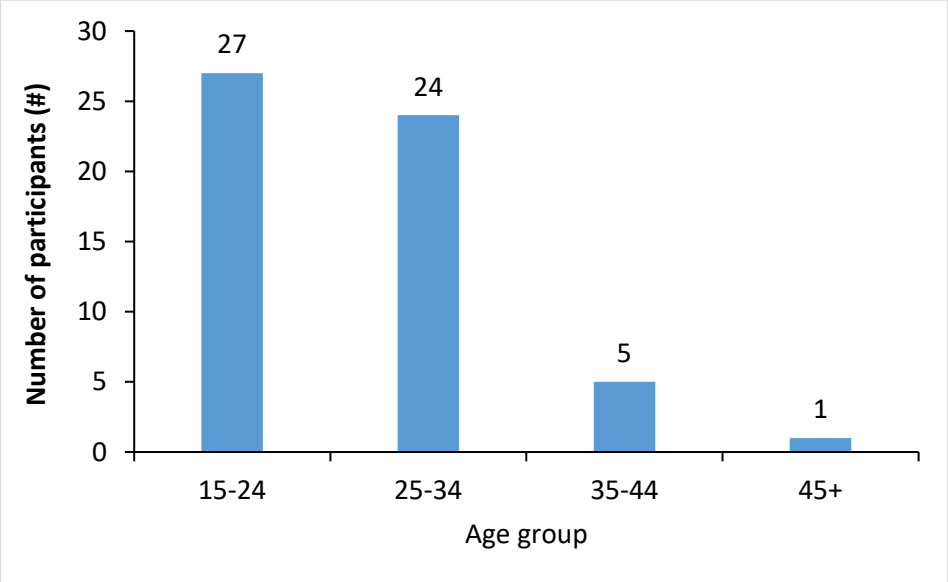


Among PWID participants who had sex in the past three months, 38.9% (n=7) had exchanged sex for money or drugs in the past 30 days. Five of these participants reported selling sex to women, while two reported selling sex to men. The median age at first selling sex among participants who reported ever exchanging sex for money or drugs was 20 years. The minimum age at first selling sex was 16 years and the maximum was 30 years.

Participants reported selling sex an average of 3 times per month. The amount of money that participants received the last time they sold sex ranged from TZS 3,000 to 30,000, with a median of TZS 10,000 ($1 was equivalent to approximately TZS 2,300 at the time of this report).

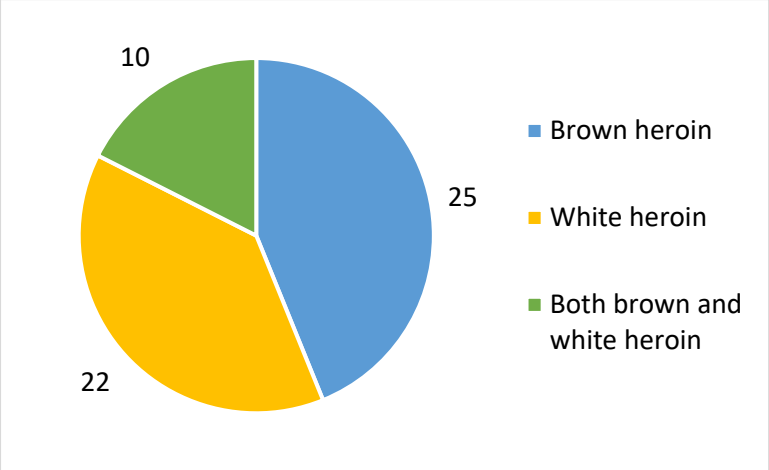
The majority of PWID participants (89.5%; n=51) started injecting drugs before the age of 35 years (Figure 19). Nearly half (47.4%; n=27) were under the age of 25 years.

Figure 19: Age of PWID RA participants at first injection, Pemba 2018



Three-quarters of PWID participants (75.4%; n=43) reported that they inject three times in a day. It was reported that both white and brown heroin are commonly used by PWID participants (Figure 20).

Figure 20: Types of heroin injected by PWID participants, Pemba 2018



More than half of PWID participants reported that sharing of needles and syringes is not commonly practiced among PWID in Pemba. The few who share needles do so because of limited knowledge of the risks of sharing or difficulties in accessing needles and syringes from pharmacies or health facilities. Among the PWID interviewed, only seven (12.3%) reported using an already used needle in the past three months.

7.1.5. Access to HIV services, stigma, and HIV/STI positivity among RA participants

Almost all participants mentioned institutions that are providing HIV-related services to PWID in Pemba, including government institutions (ZIHHTLP and the Zanzibar AIDS Commission (ZAC)), health facilities, sober houses, and a number of NGOs (the Zanzibar Association of People Living with HIV/AIDS (ZAPHA+), Zanzibar Youth Forum (ZYF), JUKAMKUM, the Zanzibar Youth Education Development Support Association (ZAYEDESA), Chama cha Uzazi na Malezi Bora Tanzania (UMATI), and TUNAJALI). These are organizations that target key and vulnerable populations in Pemba with a wide range of HIV and STI prevention, care and treatment services. Available services reported by participants include HIV testing services; HIV prevention education; TB screening; recovery, abstinence and rehabilitation programmes; referrals to CTC; condoms; IEC/BCC materials; harm reduction programmes; STI and RCH services; and nutrition education. A more detailed description of the organizations providing services to KPs in Pemba can be found in Appendix A.

Key informants mentioned that they provide services during normal working hours for facility-based services, while outreach services are provided at 10:00 hours and 15:00 hours, which are convenient times for PWID to receive services. Key informants reported that their organizations serve PWID of all ages and that few PWID refuse services. However, the PWID served by their organizations change from time to time, with new PWID being enrolled and long-term PWID moving to other places. Key informants reported that the few who refuse services do so because of stigma and discrimination, the loss of hope, or a misconception that peers and NGOs withhold funds that PWID are supposed to get.

According to PWID participants, services that are needed by PWID but are not available in Pemba include MAT, HBV and HCV services, more sober houses, harm reduction packages, consistent access to needles and syringes, and economic empowerment.

The majority of PWID participants (93.0%; n=53) reported that they have tested for HIV. Thirty-seven (64.9%) reported testing in the past 12 months. Five participants disclosed that they are HIV-infected, of whom four reported that they are currently on ART.

Key informants reported that law enforcement officers harass and arrest PWID, making it difficult to provide outreach services. They also reported that religious leaders have a negative attitude towards interventions that target PWID, thinking that by providing services to PWID the services providers are encouraging substance use behaviours. Furthermore, PWID reported that pharmacies sometimes refuse to sell them needles and syringes, HCWs discriminate against them due to their untidiness, police ignore their rights by beating and harassing them, and they experience discrimination by the broader community that results in their being denied employment and paid less than others.

7.1.6. HIV and STI positivity

Seven out of 57 participants tested positive for HIV (12.3%), five of whom had already disclosed their HIV positive status. The proportion of PWID participants who tested positive for HBV and HCV infection was 12.3% (n=7) and 19.3% (n=11), respectively. No PWID participants tested positive for active syphilis. One participant was co-infected with HIV and HBV, three with HIV and HCV, and one with HIV, HBV and HCV.

7.1.7. Networking among PWID and population size estimate

PWID participants reported knowing between two and seventy-five other PWID in Pemba. Participants said that PWID commonly communicate in person, with some communicating by telephone. PWID were reported to meet frequently, not less than two times a day, depending on the availability of money for drugs. Based on data collected during the RA and expert opinion, it was estimated that there are approximately 400 PWID in Pemba, with a lower limit of 200 and upper limit of 600.

7.1.8. Comparison to previous findings

The PWID participants in this RA had similar characteristics to participants in the previous RA in that the majority were originally from Pemba, they described meeting in similar places and at the same frequencies and described similar levels of interaction and networking. However, the participants in the 2018 RA were older (median 36 years) than in 2011 (median 30 years).

Needle sharing among PWID seems to have decreased since 2011; however, high sexual risk behaviours such as having multiple sexual partners and low condom use continue to be common. As in 2011, it was reported in 2018 that there are no female PWID in Pemba.

Similar services were reported as being provided to PWID in both RAs including harm reduction, HTS, STI, IEC/BCC and condoms. One additional service, TB screening, was mentioned by participants in the 2018 RA. Furthermore, the number of NGOs working with PWID has increased since the 2011 RA, although a few were reported to no longer be active, including the Zanzibar Association of Information Against Drug Abuse and Alcohol (ZAIADA) and the Zanzibar NGO Cluster (ZANGOC).

7.1.9. Discussion and actions for consideration

PWID in Pemba know each other and interact: PWID meet frequently in hot spot areas such as drug suppliers' areas, abandoned houses and in areas where they work. The PWID population in Pemba is estimated to be 400 people (minimum 200 and maximum 600) between the ages of 15 and 60 years old. The majority originates from Pemba.

Some risky injection and sexual practices: PWID reported that sharing of needles and syringes among PWID is uncommon. However, sexual risk behaviours are prevalent as some PWID reported having multiple sexual partners and condom use with non-regular partners was reported to be low.

High HIV, HBV and HCV positivity: This RA found high HIV positivity among PWID who participated in the RA (12.3%) compared to the general population prevalence of 0.2% among those 15-49 years of age in Pemba (THIS 2016-2017). In addition, 19.3% of PWID sampled were found to be infected with HCV and 12.3% infected with HBV.

Access to HIV-related services targeting PWID: HTS and harm reduction services were reported to be accessible when needed. However, PWID participants requested methadone assisted therapy (MAT), HBV & HCV services, needle and syringes programmes, more sober houses, and economic empowerment interventions.

Actions for consideration:

- Consider the possibility of conducting an IBBS for PWID in Pemba using RDS in 3-5 years, with the addition of Micheweni district
- Sustain efforts on harm reduction programmes
- Strengthen education on safer sexual practices and condom use
- Establish MAT services, HBV/HCV services and needle and syringe programmes

7.2. Men who have sex with men (MSM)

A total of 51 MSM were recruited for six FGDs and nine IDIs in three districts of Pemba (Table 8), all of whom were eligible to participate. Of these, 50 completed the socio-demographic questionnaire (although one participant had only partial information) and 50 agreed to testing. In addition, KIIs were conducted with four people familiar with this population and with nine MSM.

Table 8: Number of MSM participants in Pemba 2018 RA by interview type and location

Location of interviews	Number of FGDs conducted	Number of FGD participants	Number of IDIs conducted	Total number of RA MSM participants
Chake Chake	2	16	4	20
Mkoani	2	13	1	14
Wete	2	13	4	17

7.2.1. Description of RA participants

The majority of MSM participants (86.0%; n=43) were less than 35 years of age, with nearly half (n=24) between 25 and 34 years of age (Table 9). Participants ranged in age from 17 to 45 with a median age of 26 years. MSM participants reported that MSM in Pemba range in age from 12 to 60 years.

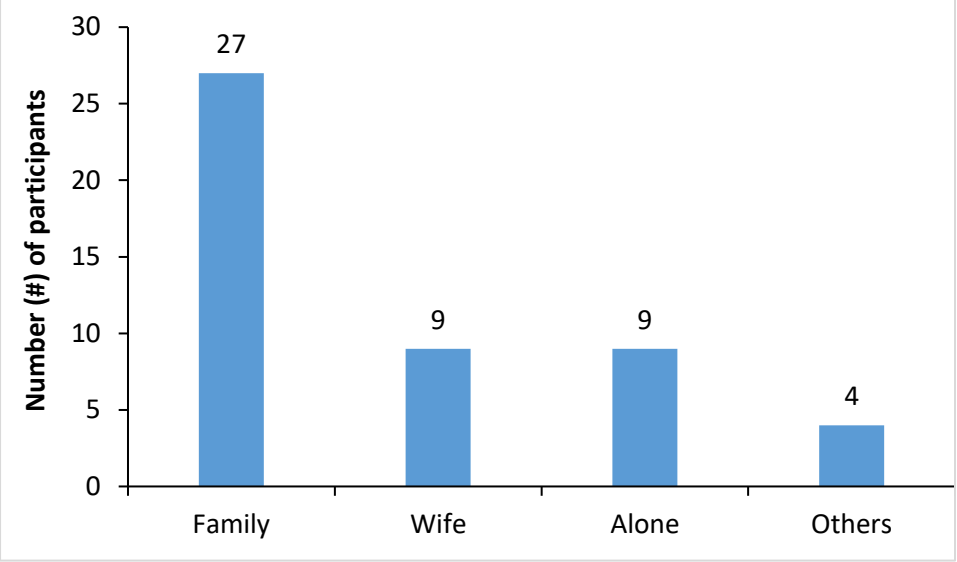
Table 9: Age distribution of MSM RA participants, Pemba RA 2018

Age group (years)	Frequency (n)	Percentage (%)
15-19	6	12.0%
20-24	13	26.0%
25-34	24	48.0%
35+	7	14.0%
Total	***50***	***100%***

Both MSM and KI participants reported that most MSM found in Pemba are originally from Pemba. The largest number of participants (40.0%; n=20) reported living in Chake Chake, followed by Wete (36.0%; n=18) and Mkoani (24.0%; n=12). Nearly three quarters of participants (n=35) reported having lived in their current district of residence their whole life. Only 5 participants had lived in their current district of residence for less than 5 years.

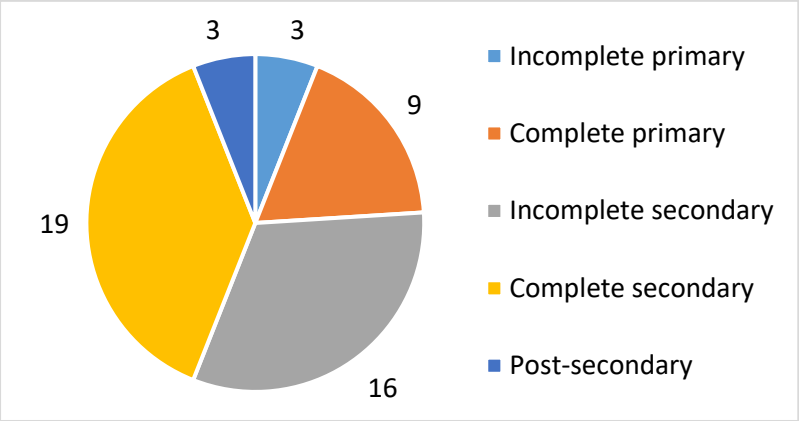
More than half of MSM (55.1%; n=27) reported that they live with their families (Figure 21). Equal numbers reported that they live with their wife (n=9) and alone (n=9).

Figure 21: Individuals with whom participants are currently living, Pemba 2018



More than two-thirds of MSM participants (70.0%; n=35) had at least some secondary education (Figure 22). A few participants (n=3) had post-secondary education.

Figure 22: Education level of MSM RA participants, Pemba 2018



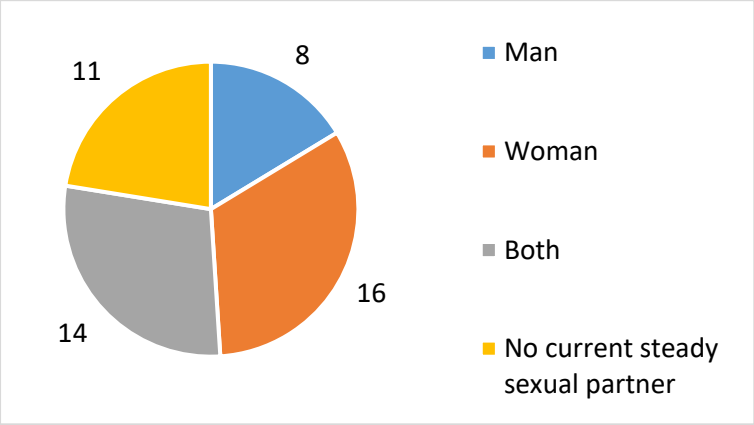
MSM participants reported being employed in a variety of occupations (Table 10). The most commonly reported were skilled labour (n=13), such as tailor, carpenter or welder, followed by employment in the private sector (n=9) and petty trade (n=8). Three participants were students.

Table 10: Occupations of MSM RA participants, Pemba 2018

Occupation	Frequency	Percentage
Skilled labour	13	26.0%
Private company	9	18.0%
Petty Trade	8	16.0%
Unemployed	7	14.0%
Government	4	8.0%
Farmer	3	6.0%
Students	3	6.0%
Unskilled labour	3	6.0%
Total	***50***	***100%***

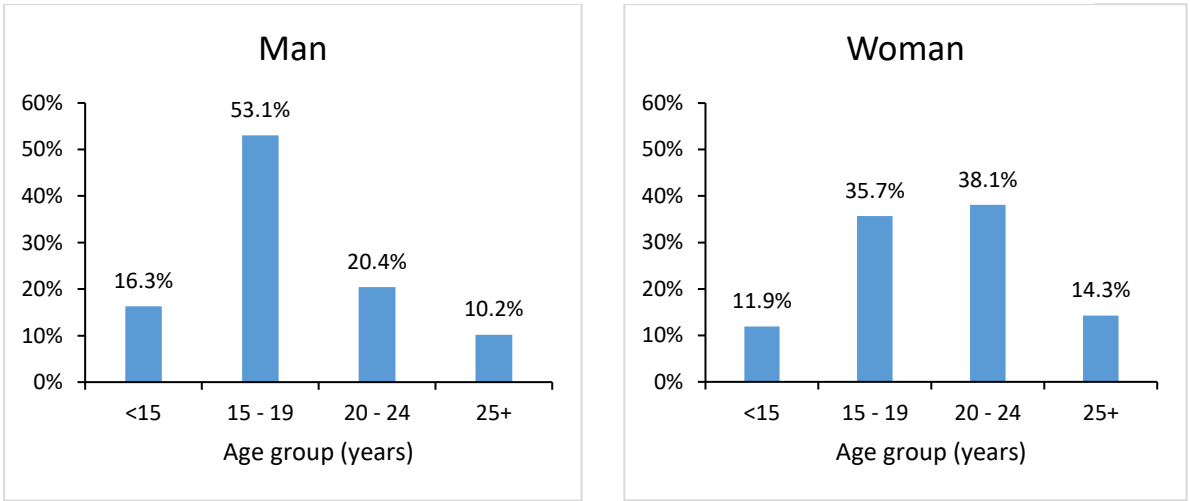
Thirty-eight MSM participants (77.6%) reported that they are currently in a steady sexual relationship with either a woman, another man or both (Figure 23). The majority of these (n=30) reported being in a steady sexual relationship with a woman; of these, nearly half (n=14) reported that they are simultaneously in a steady sexual relationship with a man. Eleven participants reported that they are married.

Figure 23: Current steady sexual relationship(s) of participants, by sex of partner, Pemba 2018



The majority of MSM participants (86.0%; n=43) reported that they have had sex with a woman; however, the median age at first sex with a woman was higher (20 years) than the median age at first sex with a man (18 years). More than two-thirds of participants (69.4%; n=34) reported that they first had sex with a man before the age of 20 years, whereas only 47.6% (n=20) had had sex with a woman by that age (Figure 24). The youngest age reported for first sex with a man was 8 years and with a woman, 12 years.

Figure 24: Age at first sex for MSM RA participants, by sex of partner, Pemba 2018



7.2.2. Description of MSM subgroups and venues where they congregate

Both MSM and KI participants described several different classifications of MSM in Pemba including subgroups based on openness (i.e., those who are open about being an MSM and those who are not), economic status (wealthy and poor), age (young and old), level of experience (newcomers and

experienced MSM), and sexual position (insertive and receptive). MSM participants also mentioned that MSM can be grouped by whether they engage in MSM activities for pleasure and for money, and whether they buy or sell sex.

According to participants, MSM seem to know each other and interact, especially MSM who are open about their behaviour. It was reported that young MSM interact with older MSM; however, some mentioned that wealthy MSM do not interact with poor MSM. However, hidden (secret) MSM were reported to interact only with their insertive partners and it was reported that newcomers to the MSM community often do not know the more experienced MSM.

Participants reported that MSM often congregate at bars and venues where local alcoholic beverages are sold and that most MSM meet each other socially late in the evening or at night. MSM participants also mentioned beaches, urban areas, dala dala stands, hotels and guest houses as common meeting places for MSM.

It was reported that some MSM travel both within Pemba and outside Pemba, most commonly to Tanga, Dar, Dodoma and Unguja. This movement can be to search for their day to day needs or to look for sexual partners.

7.2.3. HIV knowledge among MSM

MSM participants reported that HIV education is provided by peer educators, NGOs that target key and vulnerable populations (ZAYEDESA, UMATI, the Association of Young People Against HIV/AIDS in Zanzibar (AYAHIZA), Walio katika Mapambano na AIDS Tanzania (WAMATA), JUKAMKUM), youth councils, facilities and stand-alone centres offering youth-friendly health services (YFS), ZAC, and ZIHHTLP. More information about the services offered by these organizations can be found in Appendix A.

HIV knowledge among participants was relatively high in spite of participants reporting that few MSM in Pemba have high levels of knowledge on HIV (Table 11). Although one-fourth of participants could not respond correctly when asked “Can a person reduce their risk of getting HIV by using a condom every time they have sex?”, more than 85% of the participants correctly responded to each of the other questions. However, because these questions were asked in a group interview setting (i.e., during FGDs), the level of knowledge may have been inflated by those who did not know or were unsure opting to respond in the same way as the majority of the other participants.

Table 11: HIV knowledge questions asked during RA and percent of MSM participants who responded correctly, Pemba 2018

Serial number	Question	Percent of participants who responded correctly
1	Can the risk of HIV transmission be reduced by having sex with only one uninfected partner who has no other partners?	86%
2	Can a person get HIV from mosquito bites?	94%
3	Can a person reduce their risk of getting HIV by using a condom every time they have sex?	76%
4	Can a person get HIV by sharing food with someone who has HIV?	98%

5	Can a healthy-looking person have HIV?	94%

7.2.4. Risk behaviours among MSM

MSM participants reported that most MSM in Pemba have multiple sexual partners, ranging from 2 to 10 at a time.

Most MSM participants reported that it is difficult to access condoms in Pemba. This was corroborated by KI participants, most of whom said that few MSM use condoms. Only half of the MSM participants (57.1%; n=28) reported that they used a condom at last anal sex with a man.

Condoms are reportedly available during big occasions such as “mbio za mwenge” (the annual rally of the national Uhuru torch which attracts overnight gatherings), during mass campaigns on HIV testing, and from pharmacies, ZAPHA+, youth friendly service centres, ZAYEDESA and health facilities that conduct HIV testing. Some participants reported that although peers and some service providers distribute condoms, you need to have a connection with them in order to get condoms. The main reasons that MSM in Pemba do not use condoms were reported to be: because they trust their sexual partners, condoms reduce sexual pleasure, and condoms are not widely available.

Participants reported that MSM in Pemba sell sex. Most MSM participants said that receptive MSM are more likely to buy sex compared to insertive MSM. When interviewed individually, nearly half of the participants (46.9%; n=23) reported that they had exchanged sex for money with other men in the last 30 days. The age that participants reported first exchanging sex for money varied from 15 to 31 years, with a median age of 21 years (Table 12). The median number of times that participants reported selling sex per month was three and ranged from one to twenty. Participants reported receiving between TZS 5,000 and TZS 150,000 the last time they sold sex, with a median value of TZS 30,000 ($1 was equivalent to approximately TZS 2,300 at the time of this report).

Table 12: Age at first selling sex*, Pemba 2018

Age group (years)	Frequency	Percentage
15 – 19	8	34.8%
20 – 24	10	43.5%
25+	5	21.7%

**Among participants who sold sex in the last 30 days*

7.2.5. Access to HIV services, stigma, and HIV/STI proportions

MSM participants mentioned several institutions where MSM access services, such as health facilities, NGOs (UMATI, ZAYEDESA, AYAHIZA, WAMATA, JUKAMKUM, ZAPHA+), government institutions (ZAC, ZIHHTLP) and sites providing youth friendly services (YFS). Most key informants reported that their organizations serve MSM aged 14 – 45 years and that they serve all groups of MSM regardless of class or subgroup. However, they reported that some MSM refuse their services, particularly those who are new to the community as they do not want to be identified as MSM.

MSM participants reported that the most commonly available services are health education on HIV and sexual and reproductive health, HIV counselling and testing, and provision of condoms. Key informants also mentioned that their organizations provide IEC materials, and referrals to other

services. MSM services are provided through outreach (during evening or night), at NGO offices, and at health facilities (during office hours).

MSM participants reported that the majority of MSM have tested for HIV and know their HIV status, and nearly all participants (95.9%; n=47) reported that they had ever tested for HIV. Of those, two-thirds (66.0%; n=31) had tested for HIV and received their results within the past 1 year, while an additional nine had tested and received their results between one and two years prior to the interview. MSM participants requested that condoms be made more widely available, and that lubricants and STI services be provided. A few participants requested education on how to stop being an MSM.

The majority of MSM participants said that they do not experience discrimination when accessing health services. However, some mentioned that MSM do experience stigma and discrimination or breaches of confidentiality on the part of health care providers who may disclose their HIV status to others or reveal individuals as MSM. Some participants reported that in the community stigma is higher towards receptive than insertive MSM. While the majority of key informants said that they do not experience stigma from providing services to MSM, some mentioned that they experience discrimination as the community perceives them as promoting MSM behaviours.

7.2.6. HIV and STI positivity

No MSM participants tested positive for HIV. One participant tested positive for HBV (2.0%), one tested positive for HCV (2.0%), and one tested positive for active syphilis infection (2.0%).

7.2.7. Networking among MSM and population size estimate

MSM participants reported that they know between 2 and 200 other MSM living in Pemba. They said that MSM connect mainly via cell phone and through different social events.

It is difficult to estimate the actual population size, as many MSM have not publicly disclosed their sexual orientation; however, MSM and key informants were asked to give their best estimates of the number of MSM in four districts in Pemba. Chake Chake was estimated to have the highest number of MSM while much smaller numbers were reported for the other districts.

Based on the estimates provided by both MSM and KI participants and their own knowledge and experience, the RA team estimates that there are 300 (200-400) MSM in Pemba.

7.2.8. Comparison to previous findings

As in the 2011 rapid assessment, the 2018 RA confirmed that there are MSM living in Pemba and that many of them continue to be hidden. However, the 2018 RA found that many MSM seem to be more open about their behaviour and more networked than they were in the past. When asked how many other MSM they know, the largest number mentioned by participants in this RA was 200 compared to a maximum of 40 in the previous RA. As in the previous RA, the majority of MSM living in Pemba were reported to be originally from Pemba, they communicate by phone and see each other multiple times per day at places like bars, beaches and urban centres, and they commonly travel to Unguja, Dar es Salaam and Tanga.

In both RAs, condom use was reported to be uncommon among MSM in Pemba, with trust and unavailability of condoms mentioned as the main factors influencing condom use in both assessments. Sex work among MSM still seems to be relatively common as almost half of the

participants in this RA (46.9%; n=23) reported having engaged in sex work in the past 30 days. A larger proportion of participants in the 2011 RA reported their first sexual encounter with a man before the age of 20 compared to the 2018 RA.

As in the 2011 RA, MSM continue to be reached primarily through outreach services provided by NGOs.

7.2.9. Discussion and actions for consideration

MSM in Pemba appear to be networked but difficult to reach: While many MSM seem to be more open about their behaviour and more networked than they were in the past, this RA suggests that many continue to remain hidden. Receptive MSM seem to be more stigmatized than insertive MSM and more difficult to reach. The report from the previous RA cited the conservative culture in Pemba and the fact that there is very little outside influence on the social, religious and cultural norms of the island as possible reasons that MSM remain hidden. The fact that this RA primarily recruited what the survey team believed to be insertive MSM supports the idea that many MSM continue to hide.

The MSM population in Pemba is estimated to be 300 people (minimum 200 and maximum 400). The majority originates from Pemba.

High levels of HIV knowledge and risky sexual practices: Although HIV knowledge among MSM participants was generally good, high levels of risky sexual practices were described. Multiple concurrent partnerships were reported to be common, including concurrent relationships with both men and women. Exchanging sex for money was also reported to be common among MSM, while condom use among MSM was reported to be low.

Access to HIV-related services targeting MSM: Although some organisations were mentioned as providing MSM with services, it seems there are limited outreach services targeting MSM specifically. In addition, the stigmatizing nature of being exposed as an MSM, especially by health care providers in Pemba, impacts this population's ability to access health services. However, MSM do seem to be accessing some HIV services as it was reported that the majority of MSM in Pemba have tested for HIV and know their status.

Actions for consideration:

- Consider conducting another rapid assessment among MSM in 3-5 years as MSM do not appear to be well networked enough to meet the assumptions for RDS. A more in-depth survey that includes a peer-referral component may be considered. The survey can collect more detailed information on HIV risk behaviours, experiences of stigma and violence, and uptake of HIV prevention, care and treatment services.
- Scale up condom outlets in Pemba, considering both public and private sectors
- Encourage and support organizations working with KPs in Pemba to expand their services to include MSM, including outreach services
- Strengthen peer education and outreach programmes to disseminate HIV prevention messages and to promote condom use among MSM
- Strengthen KP interventions into general health services to reduce stigma and increase access to services

7.3. Female sex workers/Sexually Exploited Children (FSW/SEC)

A total of 57 FSW/SEC were recruited for six FGDs and six IDIs in three districts of Pemba (Table 13). All recruits were eligible to participate. All participants completed the socio-demographic questionnaire and 56 were tested. In addition, KIIs were conducted with six people familiar with this population and with six FSW/SEC.

Table 13: Number of FSW/SEC participants in Pemba 2018 RA by interview type and location

Location of interviews	Number of FGDs conducted	Number of FGD participants	Number of IDIs conducted	Total number of RA FSW/SEC participants
Chake Chake	2	20	1	21
Mkoani	2	14	1	15
Wete	2	17	4	21

7.3.1. Description of RA participants

Participant ages among FSW/SEC ranged from 15 to 50 years, with a median age of 29 years. Half of the participants (50.9%; n=29) were between the ages of 25 and 34 years (Table 14).

Table 14: Age distribution of FSW/SEC RA participants, Pemba 2018

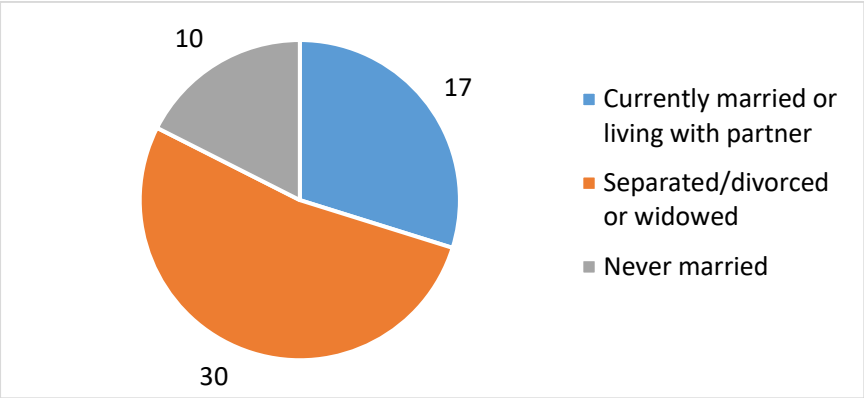
Age group (years)	Frequency (n)	Percentage (%)
15-19	6	10.5%
20-24	9	15.8%
25-34	29	50.9%
35+	13	22.8%
Total	***57***	***100%***

Almost three-quarters of FSW/SEC participants reported living

in Chake Chake (n=21) or Wete (n=21). The majority of participants (70.2%; n=40) have been living in their current district of residence their whole life. Only one person reported living in Pemba for less than a year. This was confirmed by the qualitative interviews, during which participants reported that the majority of FSW/SEC in Pemba are coming from Pemba. The few from outside of Pemba were reported to be from Unguja, Mainland Tanzania and Mombasa.

Just over half of FSW/SEC participants, 52.6% (n=30), were previously married (i.e., separated/divorced or widowed), 29.8% (n=17) were currently married or living with a partner, and 17.5% (n=10) were never married (Figure 25). Of those who were not currently married, nearly half (n=18) reported that they are currently in a steady sexual relationship with a man.

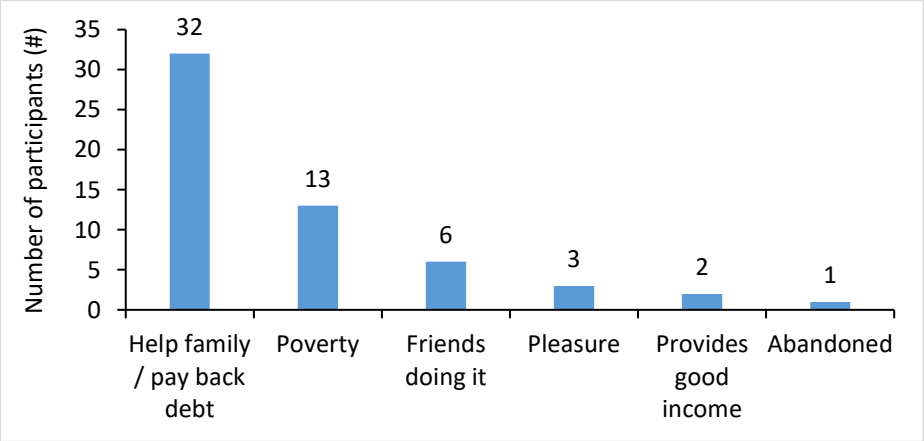
Figure 25: Marital status of FSW/SEC RA participants, Pemba 2018



Just over half of FSW/SEC participants (50.9%; n=29) had partially or fully completed secondary education, while 40.4% (n=23) had partially or fully completed primary education. Four participants reported having no education, while one had post-secondary education.

Of all FSW/SEC participants, 36 (63.2%; n=36) reported that sex work was a steady source of income, while the rest (36.8%; n=21) reported that selling sex was an irregular source of income. More than a third of participants (35.1%; n=20) reported earning additional income from another source, with trade being the most common (n=14). Just over half of participants (56.1%; n=32) reported that their most important reason for entering sex work was to help family or pay back debt. Poverty was also a commonly cited reason (n=13) (Figure 26).

Figure 26: Primary reason for entering sex work among FSW/SEC RA participants, Pemba 2018



7.3.2. Description of FSW/SEC subgroups and venues where they congregate

FSW/SEC participants and KIs reported that FSW/SEC in Pemba are grouped according to the following characteristics: income (VIP/highly paid, normal/low paid), experience (less experienced and experienced), age (young (17-35 years) and old (36-50 years)), where they are from (locals and outsiders), and where they work (street-based and home-based).

FSW/SEC participants said that FSW/SEC regularly meet during weekends, especially at social and public events like wedding ceremonies and income generating activities through Savings and Credit Cooperative Societies (SACCOS). FSW/SEC were also reported to meet in ghettos or hangout areas, at bars, at beaches, on the streets, at guest houses, at low-cost rooms that are rented for short time

periods primarily for sex work and are found near local bars, at road construction sites and fishing camps, during interventions that provide group education, and in their homes.

Most of the FSW/SEC participants reported that FSW/SEC move from one place to another within Pemba depending on availability of clients. Others reported FSW/SEC moving outside Pemba to Tanga, Dar es salaam, Unguja, Dodoma and Mwanza, either to search for clients or sometimes because they have been invited by their clients. Participants explained that FSW/SEC who travel are considered to be even more desirable when they return and are highly valued by clients.

7.3.3. HIV knowledge among FSW/SEC

Generally, the level of HIV knowledge among FSW/SEC participants was high as the majority were able to correctly answer questions about HIV transmission (Table 15). However, only half responded correctly when asked whether a healthy-looking person can have HIV. Because these questions were asked in a group interview setting (i.e., during FGDs), the level of knowledge may have been inflated by those who did not know or were unsure opting to respond in the same way as the majority of the other participants.

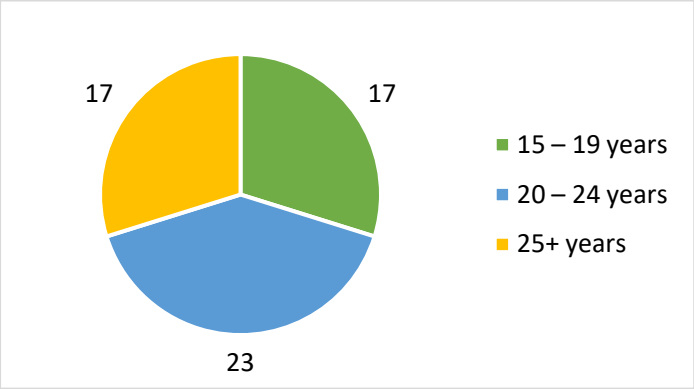
Table 15: HIV knowledge questions asked during RA and percent of FSW/SEC participants who responded correctly, Pemba 2018

Serial number	Question	Percent of participants who responded correctly
1	Can the risk of HIV transmission be reduced by having sex with only one uninfected partner who has no other partners?	88%
2	Can a person get HIV from mosquito bites?	100%
3	Can a person reduce their risk of getting HIV by using a condom every time they have sex?	88%
4	Can a person get HIV by sharing food with someone who has HIV?	98%
5	Can a healthy-looking person have HIV?	53%

7.3.4. Risk behaviours among FSW/SEC

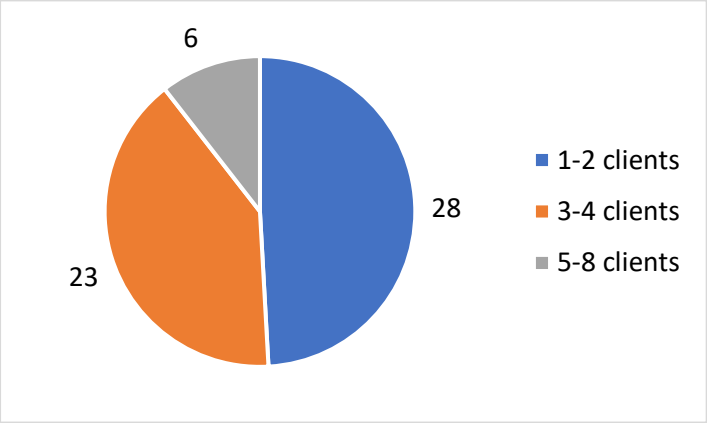
The median age at sexual debut was 16 years, with a minimum age of 12 years. The majority of FSW/SEC participants (84.2%; n=48) first had sex before the age of 20 years. The median age at first selling sex was 20 years with a minimum age of 15 years (Figure 27).

Figure 27: Age at first selling sex among FSW/SEC RA participants, Pemba 2018



FSW/SEC participants reported seeing between one and eight clients per day, with an average of three clients per day (Figure 28). On average, participants reported working four days per week.

Figure 28: Average number of clients seen on days worked, among FSW/SEC RA participants, Pemba 2018



The majority of FSW/SEC participants reported that FSW/SEC in Pemba use condoms although they are not widely accessible, and 71.9% (n=41) of participants reporting that they used a condom with their last client during the sociodemographic survey. Participants cited few condom outlets as the main reason that condoms are difficult to access; however, FSW/SEC from Mkoani district reported that they are able to access condoms through ZAYEDESA, an NGO that provides a variety of HIV prevention, care and treatment services, and psychosocial support particularly targeting KPs. The most commonly cited reasons for not using condoms were that clients do not like using them and refuse, and that they reduce sexual pleasure or cause discomfort. Other reasons included: condom use reduces payment, alcohol consumption by themselves or their clients, unavailability of condoms, condoms reduce trust for permanent clients, disturbance caused by using a new condom for every sexual act, and not seeing the importance of using condoms.

FSW/SEC participants reported earning a minimum of TZS 2,000 and a maximum of TZS 200,000 per day through sex work. The median income reported from an average day of sex work was TZS 40,000 ($1 was equivalent to approximately TZS 2,300 at the time of this report).

7.3.5. Access to HIV services and stigma

FSW/SEC participants named several institutions providing services to FSW/SEC in Pemba, including NGOs (UMATI, ZANGOC, AYAHIZA, HERO, the Pemba Island Relief Organization (PIRO), the Zanzibar Youth Empowerment Association (ZAYEA), ZAYEDESA and ZAPHA+), and government institutions (ZIHHTLP and ZAC). Services reported by participants included condom distribution, STI and HIV prevention education, reproductive health education, HBV and HCV education, HIV counselling and testing services, distribution of IEC/BCC materials, TB screening, referral to health facilities, and RCH. Religious institutions and groups were reported to provide spiritual counselling for behaviour change, as sex work is not accepted in the religious community. A more detailed description of the organizations providing services to KPs in Pemba can be found in Appendix A.

The majority of FSW/SEC participants reported that most FSW/SEC in Pemba have tested for HIV. This was supported by the fact that nearly all participants (96.5%; n=55) reported to have tested for HIV during the sociodemographic survey. Of these, 72.7% (n=40) had tested and received their results in the last 12 months. Only one participant disclosed an HIV positive status. She confirmed that she is on ART. Moreover, the same person was confirmed to be HIV positive during the RA.

Services that were reported to be needed but are currently not available were education to stop sex work, economic empowerment and more friendly condom outlets.

The majority of FSW/SEC reported that they have not experienced stigma in accessing health services, although a few reported experiencing stigma in the community.

7.3.6. HIV and STI positivity

Of the 56 FSW/SEC participants tested, three (5.4%) tested positive for HIV (including one participant who had disclosed her HIV positive status) and one (1.8%) tested positive for HBV. There was no HIV and HBV co-infection, and no FSW/SEC participants tested positive for HCV or active syphilis.

7.3.7. Networking among FSW/SEC and population size estimate

During the assessment, FSW/SEC participants reported that FSW/SEC in Pemba know each other and interact regularly, particularly with those living nearby. However, interactions among FSW from one district to another seem to be limited. FSW/SEC participants reported knowing between 1 and 200 other FSW/SEC, with a median value of 10. Some FSW/SEC participants reported that FSW/SEC interact through their mobile phones and sometimes through a middleman.

FSW/SEC and key informants were asked to estimate the number of FSW/SEC in four districts in Pemba. Chake Chake was estimated to have the highest number of female sex workers, followed by Wete and Mkoani, while Micheweni was reported to have the lowest number of FSW/SEC. Based on the information collected during the assessment and expert knowledge, it was estimated that there are 700 FSW/SEC in Pemba, with a lower limit of 400 and an upper limit of 800.

7.3.8. Comparison to previous findings

The findings in the 2018 RA were similar to the findings in the 2011 RA. In both assessments, FSW/SEC were reported to be originally from Pemba and well networked within their districts. The

areas and types of venues where FSW/SEC meet their clients were the same in both assessments, and both studies registered high HIV knowledge.

Although condoms continue to be difficult to access, the majority of FSW/SEC participants in this RA reported using a condom with their last client, while in 2011 the opposite was true. In addition, a larger proportion of the RA participants in 2018 reported having tested for HIV and received their result in the past 12 months.

7.3.9. Discussion and actions for consideration

FSW/SEC know each other and interact: We concluded that FSW/SEC in Pemba are well networked within districts, although not across districts, and interact frequently. The FSW population in Pemba is estimated to be 700 people (minimum 400 and maximum 800) between the ages of 15 and 50 years. The majority are from Pemba, although FSW were reported to move both within and outside of Pemba to search for clients.

High levels of HIV knowledge and risky sexual practices: Although HIV knowledge was relatively high among FSW/SEC participants, there was limited understanding that a health-looking person can have HIV. Participants reported that many FSW/SEC use condoms; however, access to condoms by FSW is limited. The island has few condom outlets and those were reported to be unfriendly to FSW/SEC.

Access to HIV-related services targeting FSW/SEC: Participants named several institutions providing services to FSW/SEC in Pemba, and HIV testing was reported to be common among FSW/SEC. FSW/SEC were reported to face stigma in the community but not from health care workers.

Actions for consideration:

- Continue providing friendly health care services (STI and HIV prevention education) to FSW/SEC
- Increase friendly condom outlets
- Increase coverage of economic empowerment programmes
- Consider conducting a more in-depth survey that includes a peer-referral component, possibly in combination with HIV/STI-related service delivery, among FSW/SEC in Pemba after 3-5 years. The survey may collect more detailed information on HIV risk behaviours, experiences of stigma and violence, and uptake of HIV prevention, care and treatment services. Micheweni could be considered for inclusion in the next survey. Due to the fact that FSW/SEC do not appear to be networked across districts, RDS would be unlikely to succeed. A venue-based sampling approach is also less likely to succeed as the majority of FSW/SEC in Pemba are not venue-based.

8.0 RESULTS FOR UNGUJA – OVERVIEW

Chapters 9-11 present biological and behavioural findings for PWID, MSM and FSW/SEC in Unguja. Each chapter presents the findings for one population and is divided into separate sub-sections for each of the following topics:

- Population size estimate
- Socio-demographic characteristics
- Risk behaviours including sexual risks, alcohol, and drug use
- Experiences with stigma, violence and incarceration
- HIV knowledge and risk perception
- STI symptoms and HIV testing history
- Access to and uptake of HIV prevention and other HIV-related services
- Hepatitis testing and uptake of hepatitis B vaccine
- Prevalence of HIV, HBV, HCV and syphilis, UNAIDS 90-90-90 cascade
- Risk factors associated with HIV
- Comparison of findings across three RDS surveys (2007, 2011/12, 2018/19)
- A brief discussion of the findings and their programmatic and policy implications for HIV prevention, care and treatment services among KPs in Zanzibar

Results of recency testing were not available at the time of this report.

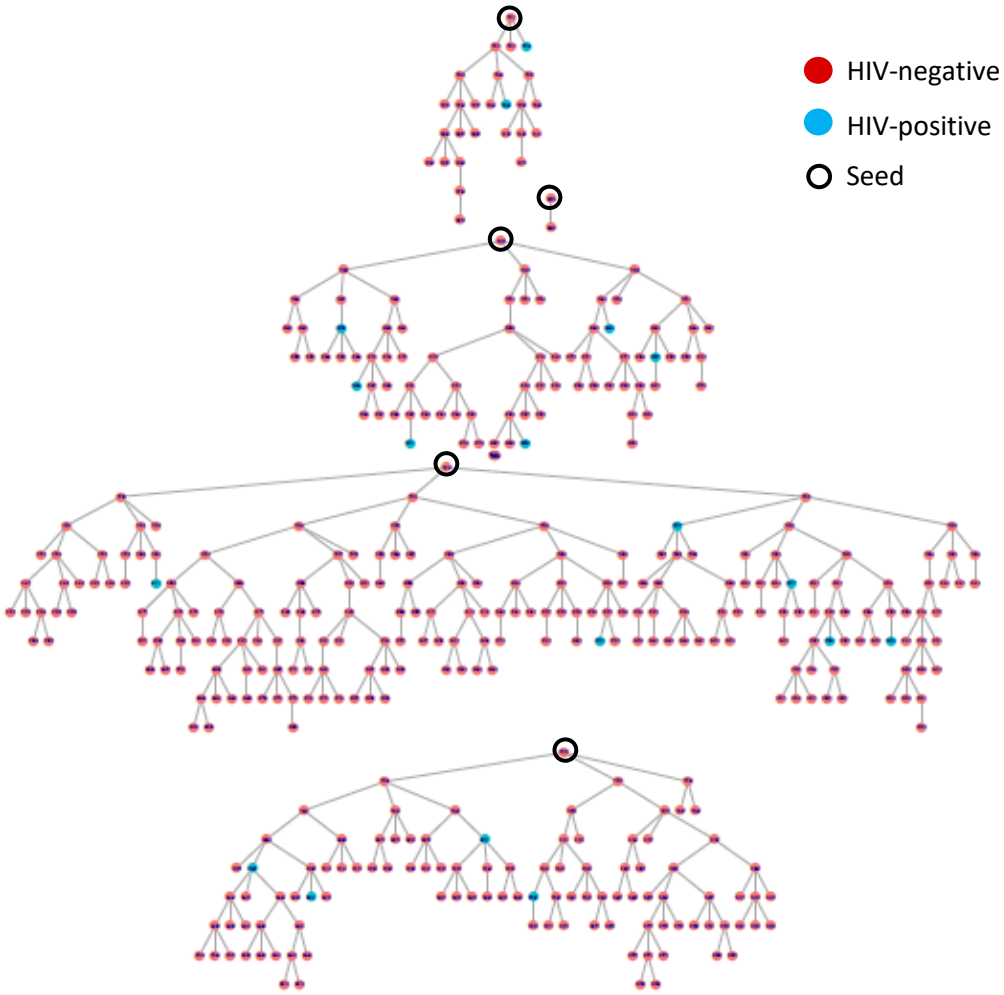
The text and figures provide the weighted point estimates as percentages, while tables additionally show the crude number of participants and 95% confidence intervals around each weighted point estimate.

9.0 PEOPLE WHO INJECT DRUGS (PWID)

From March to April 2019, 419 PWID enrolled in the survey. Of these, only 5 (0.9%) were female. Unless otherwise stated, results presented in this section combine responses from both male and female participants.

A total of 523 individuals presented survey coupons at the survey site, of whom 19.9% were ineligible to participate. The most common reason for ineligibility was that recruits were using, but not injecting, drugs. Figure 29 shows the pattern of recruitment among survey participants.

Figure 29: RDS recruitment tree by HIV status, PWID, Unguja, 2019



9.1. Population size estimate

Table 16 presents the different methods used to estimate the size of the PWID population in Unguja in 2019 (including recaptures from previous surveys, unique object multiplier, service multiplier, estimates from published literature) and estimates for 2019 and from other available time points before the 2019 IBBS (arranged from order of highest to lowest estimate). Using a modified Delphi approach, a panel of experts agreed to adopt the median of the third round of estimates (2,200) as the most plausible estimate for the number of PWID in Unguja. The estimate translates to 0.3% of the adult population 15 years and older.

Table 16: Results of population size estimation for PWID in Unguja, 2019

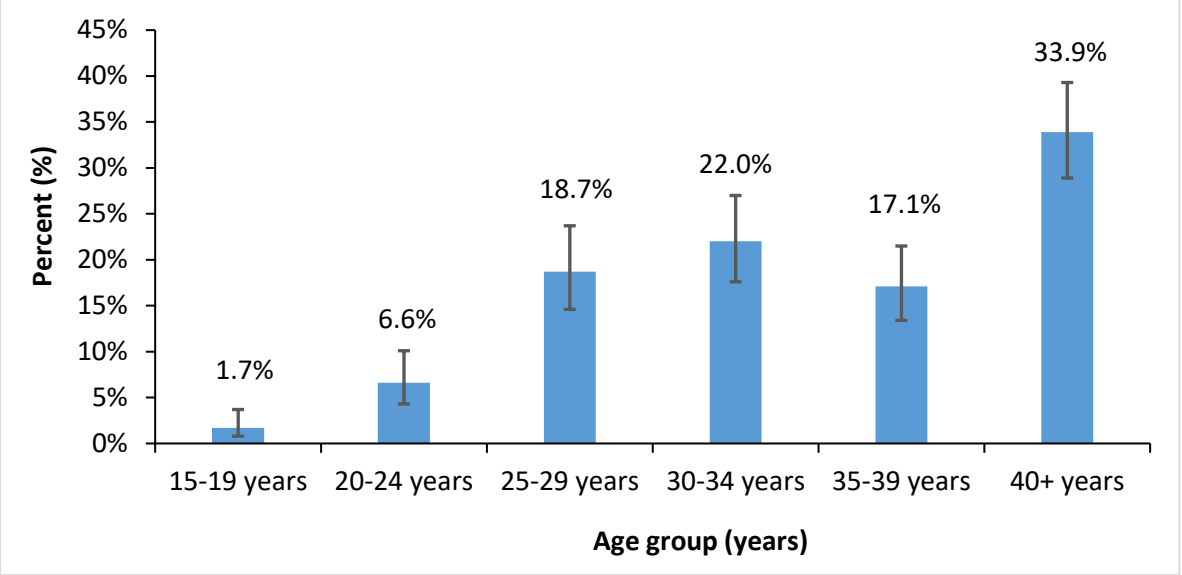
Methods	Estimate	Notes
2019 Capture-Recapture of 2007 RDS survey participants	8,042	• 5.4% (RDSA-adjusted) reported during the 2018/19 survey that they had participated in the 2007 survey
2019 Unique object multiplier	6,500	• 95% CI: 4,595 – 9,190 • 534 green key chains distributed • 8.2% (RDSA-adjusted) reported receiving a key chain during the timeframe of distribution
2019 Capture-Recapture of 2011/12 RDS survey participants	3,419	• 11.4% (RDSA-adjusted) reported during the 2018/19 survey that they had participated in the 2011/12 survey
2011/12 size estimate using Delphi method (following RDS)	3,000	• Min = 200 • Max = 5,000
2017 Delphi following Formative Assessment	2,500	• Min = 310 • Max = 3,000
2019 Modified Delphi	2,200	• Min = 600 • Max = 3,000
2016 Published estimate	2,142	• UNODC estimate (2016 report) = 0.34% of adult population for Africa
2019 Service multiplier	1,730	• 95% CI 1,370 – 2,210 • 263 PWID received services at ZAYEDESA facility in the year prior to the survey • 15.2% (RDSA-adjusted) reported receiving services from ZAYEDESA in the same time period

95% CI= 95% Confidence Interval

9.2. Socio-demographic characteristics

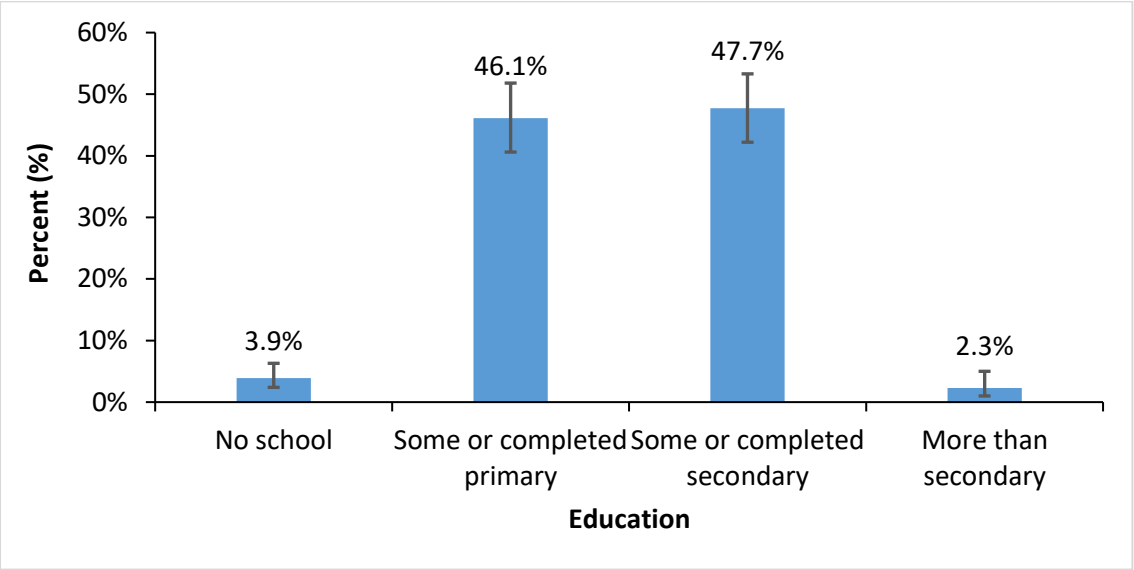
PWID were overwhelmingly male (99.1%) with a median age of 35 years. Survey participants ranged in age from a minimum of 17 to a maximum of 60 years. A third of PWID (33.9%) were 40 years or older. The age distribution of PWID in Unguja is show in Figure 30.

Figure 30: Age distribution of PWID in Unguja, 2019



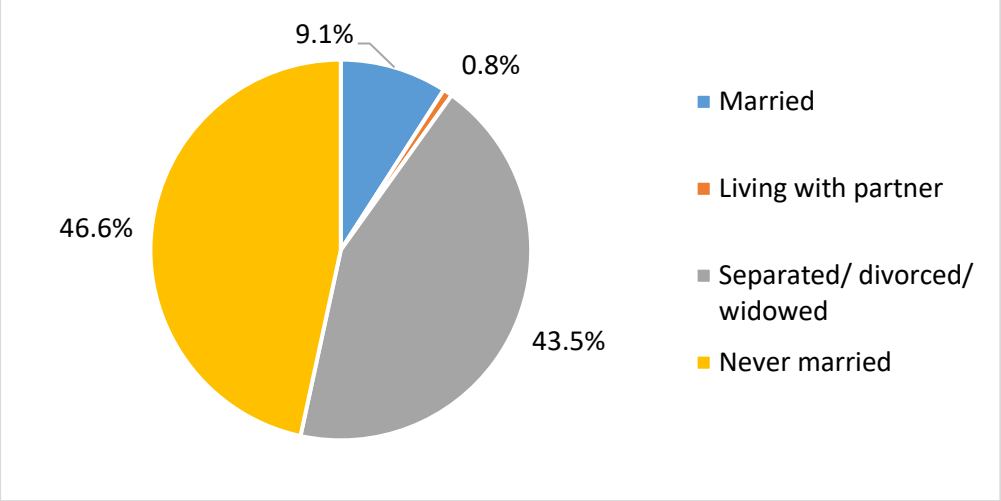
Nearly all PWID had at least some education (96.1%), with half (50.0%) having completed some or all of secondary level education. Very few (2.3%) had more than secondary education (Figure 31).

Figure 31: Education levels among PWID, Unguja, 2019



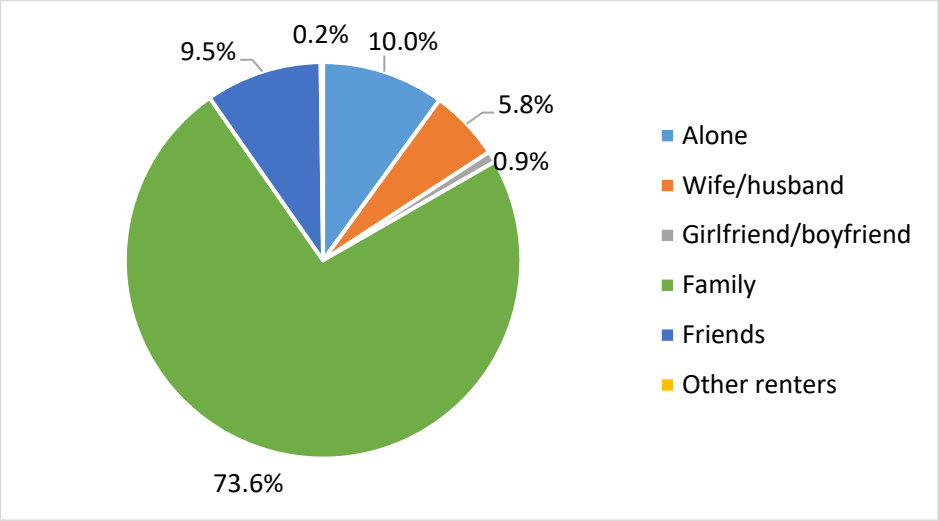
Almost half of PWID (46.6%) have never been married while 43.5% are separated, divorced or widowed (Figure 32).

Figure 32: Marital status of PWID, Unguja, 2019



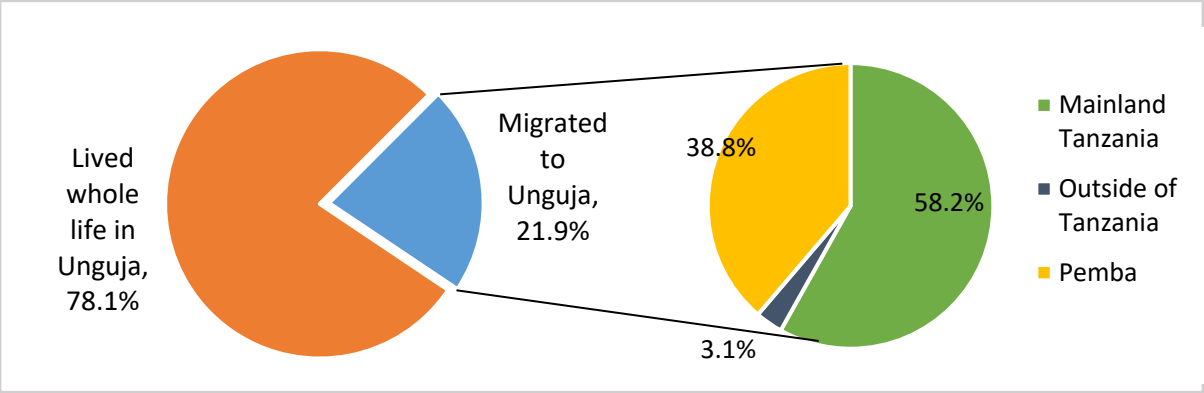
The majority of PWID live with their families (73.6%), whereas 10.0% live alone and a similar proportion live with friends (9.5%). Just under one percent (0.9%) live with a boyfriend or girlfriend (Figure 33).

Figure 33: Living situation among PWID, Unguja, 2019



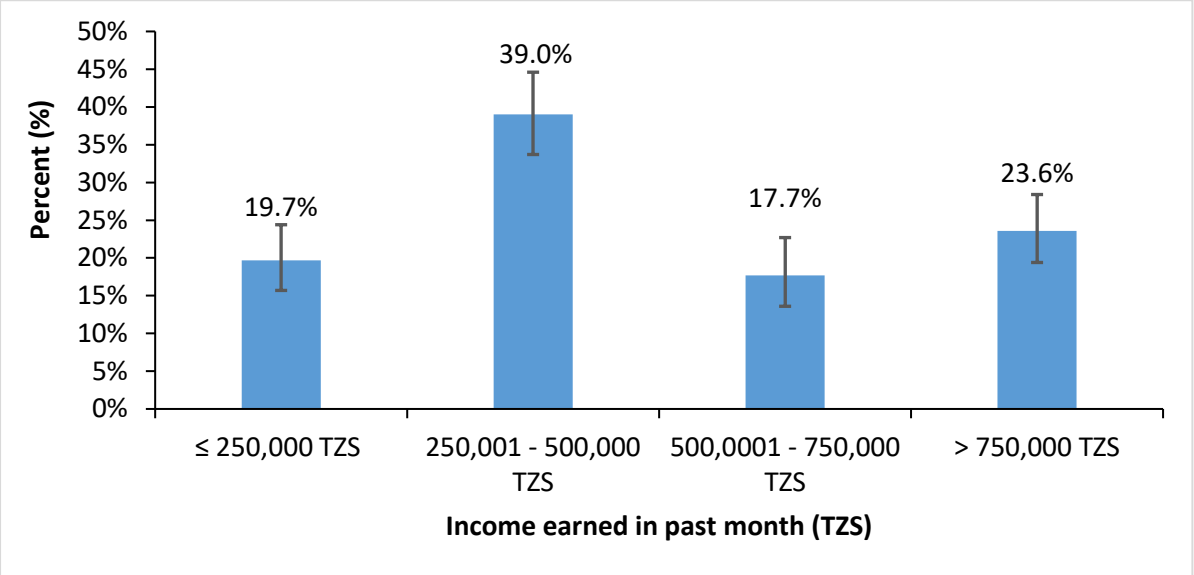
More than three-quarters of PWID (78.1%) have lived their whole life in Unguja. Among those who have migrated to Unguja, just over half (58.2%) have come from Tanzania mainland, with the second largest proportion coming from Pemba (38.8%) and the smallest proportion from outside of Tanzania (3.1%) (Figure 34).

Figure 34: Migration of PWID to Unguja, 2018/19



The median income earned by PWID in the past month was 450,000 Tanzanian Shillings (TZS), ranging from 6,000 TZS to 7,500,000 TZS ($1 was equivalent to approximately TZS 2,300 at the time of this report) (Figure 35).

Figure 35: Income earned in past month among PWID, Unguja, 2019



The majority of PWID (87.1%) reported earning money through self-employment (e.g., petty trader, porter, fisherman, private business, service or tourism worker, driver, musician, farmer/gardener). Less than ten per cent (7.0%) of PWID are formally employed in government or parastatal organizations or in the private sector, 4.2% of PWID earn money through illegal activities (e.g., selling drugs, selling sex, stealing, etc.) and 3.6% are unemployed (Table 17).

Table 17: Socio-demographic characteristics of PWID, Unguja, 2019

	Crude n	Weighted percent (%)	Weighted 95% CI
Sex [N=419]			
Female	5	0.9%	[0.4-2.4]
Male	414	99.1%	[97.6-99.6]
Age group (years) [N=419]			
15-19	7	1.7%	[0.8-3.7]

	Crude n	Weighted percent (%)	Weighted 95% CI
20-24	26	6.6%	[4.3-10.1]
25-29	78	18.7%	[14.6-23.7]
30-34	88	22.0%	[17.6-27.0]
35-39	73	17.1%	[13.4-21.5]
40+	147	33.9%	[28.9-39.3]
Median age in years (inter-quartile range (IQR))	35 years (IQR: 29-42) Min. 17 – Max. 60 years		
Education level [N=419]			
No school	21	3.9%	[2.4-6.3]
Some or completed primary	184	46.1%	[40.6-51.8]
Some or completed secondary	205	47.7%	[42.2-53.3]
More than secondary	9	2.3%	[1.0-5.0]
Marital status [N=419]			
Married	38	9.1%	[6.4-12.7]
Living with partner	4	0.8%	[0.3-2.4]
Separated/divorced/widowed	182	43.5%	[38.1-49.1]
Never married	195	46.6%	[41.1-52.2]
Current living situation [N=419]			
Alone	45	10.0%	[7.2-13.6]
Wife/husband	24	5.8%	[3.7-9.0]
Girlfriend/boyfriend	5	0.9%	[0.3-2.5]
Family	307	73.6%	[68.5-78.2]
Friends	37	9.5%	[6.7-13.3]
Other renters	1	0.2%	[0.0-1.5]
Number of years living in Unguja [N=419]			
<1 year	3	0.8%	[0.2-2.5]
1-5 years	40	8.6%	[6.1-12.1]
>5 years	54	12.6%	[9.3-16.7]
Whole life	322	78.1%	[73.2-82.3]
Migrated to Unguja [N=419]			
Migrated to Unguja	97	21.9%	[17.7-26.8]
Lived whole life in Unguja	322	78.1%	[73.2-82.3]
Where lived prior to Unguja [N=97]			
Mainland Tanzania	57	58.2%	[46.5-69.1]
Outside of Tanzania	3	3.1%	[0.7-12.1]
Pemba	37	38.8%	[28.2-50.5]
Income earned in past month (TZS) [N=419]			
≤ 250,000	81	19.7%	[15.7-24.4]
250,001-500,000	156	39.0%	[33.7-44.6]
500,0001-750,000	74	17.7%	[13.6-22.7]
> 750,000	108	23.6%	[19.4-28.4]
Median amount earned in past month (TZS) (IQR)	TZS 450,000 (IQR: 300,000-900,000) Min. 6,000 – Max. 7,500,000		
Ways of earning money[¥]			

	Crude n	Weighted percent (%)	Weighted 95% CI
Self-employment	375	87.1%	[82.4-90.6]
Formal employment	23	7.0%	[4.4-11.1]
Illegal activities	21	4.2%	[2.6-6.9]
Currently unemployed	12	3.6%	[2.0-6.7]

[¥] *Denotes variable for which multiple responses were possible*
95% CI= 95% Confidence Interval

9.3. Alcohol and non-injection drug use among PWID

Nearly half of PWID (48.3%) reported using alcohol in the past month. Nearly two-thirds (65.2%) used non-injection drugs other than alcohol in the past three months. The drugs and modes of use most commonly reported were smoking marijuana or hashish (44.0%), smoking mixed cocktail (26.1%), inhaling heroin vapour (chase the dragon) (22.5%), ingesting Valium 17.0%, and sniffing heroin powder (7.0%; Table 18).

Table 18: Alcohol and non-injection drug use among PWID, Unguja, 2019

	Crude n	Weighted percent (%)	Weighted 95% CI
Alcohol use in past month			
Consumed alcohol in past month [N=418][3]	202	48.3%	[42.8-53.9]
Frequency of consuming alcohol in past month [N=419]			
4 or more times a week	38	7.8%	[5.4-11.0]
2-3 times a week	26	6.9%	[4.3-10.8]
2-4 times a month	82	19.1%	[15.2-23.7]
Once a month or less	56	14.6%	[11.0-19.0]
Never	216	51.6%	[46.0-57.1]
Does not remember	1	0.1%	[0.0-0.8]
Non-injection drug use			
Used non-injection drugs other than alcohol in past three months [N=419]	273	65.2%	[59.7-70.3]
Types of non-injected drugs used in past 3 months[¥] [N=419]			
Smoked hashish/marijuana	181	44.0%	[38.5-49.6]
Smoked mixed cocktail	103	26.1%	[21.3-31.6]
Chase the dragon	92	22.5%	[18.1-27.6]
Ingested Valium	74	17.0%	[13-21.9]
Sniffed heroin	28	7.0%	[4.6-10.6]
Ingested other pain killers	23	5.1%	[3.2-8.1]
Smoked heroin	22	5.1%	[3.2-7.9]
Sniffed cocaine	6	1.5%	[0.6-3.7]
Chewed khat	5	1.4%	[0.5-3.5]
Smoked crack-cocaine	5	1.2%	[0.5-2.9]

[3] Excludes response of "Does not remember" when asked about frequency of alcohol consumption in past month. *95% CI= 95% Confidence Interval*

	Crude n	Weighted percent (%)	Weighted 95% CI
Sniffed glue/petrol	2	0.4%	[0.1-1.8]

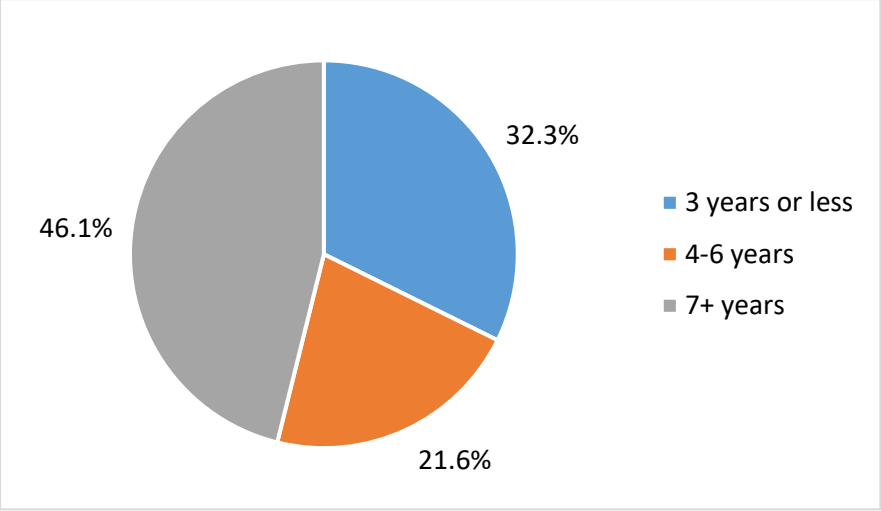
¥ *Denotes variable for which multiple responses were possible*

9.4. Injection drug use and injection practices among PWID

9.4.1. Initiation and duration of injection drug use

The median age at first injection among PWID was 26 years, with the age at first injection as young as 10 and as old as 57 years. Although nearly two-thirds of PWID (64.1%) reported that they did not start injecting until at least 25 years of age, 15.4% began before the age of 20. The majority of PWID (69.8%) were introduced to injecting drugs by a friend, while 9.3% were introduced by another drug user and 7.6% decided on their own to begin injecting. At the time of the survey, almost half of PWID (46.1%) had been injecting for 7 years or more, 21.6% had been injecting for 4-6 years, and 32.3% had been injecting for 3 years or less (Figure 36). Just over two-thirds of PWID (67.9%) have at least one family member who knows of their injection drug use behaviour (Table 19).

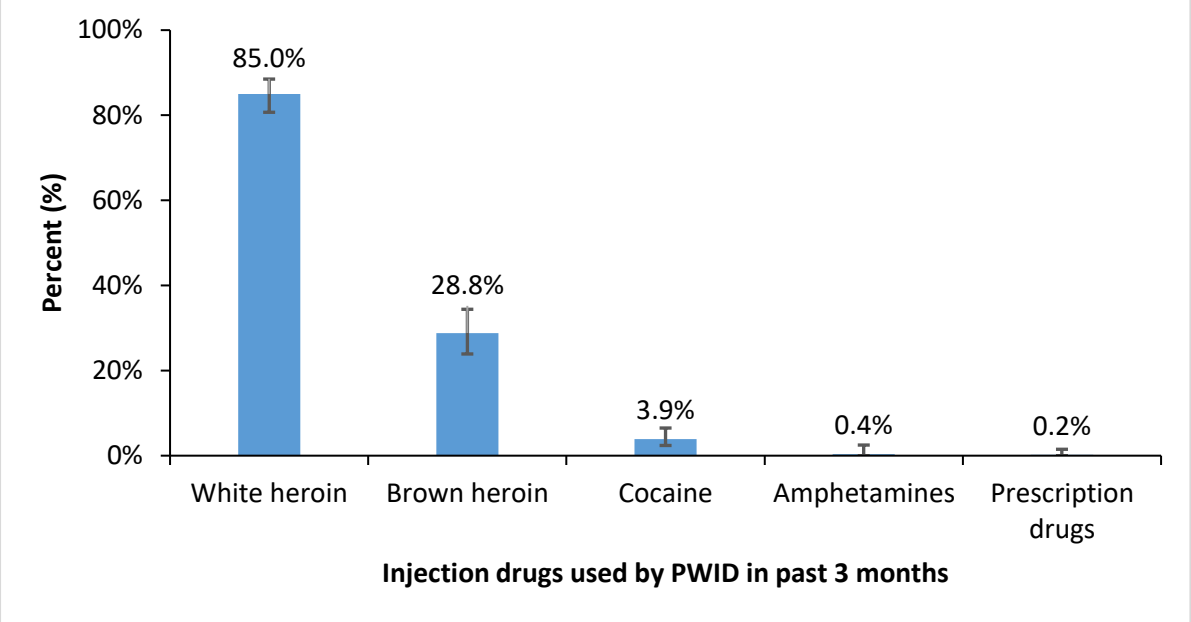
Figure 36: Duration of injection drug use among PWID, Unguja, 2019



9.4.2. Injection drug use practices

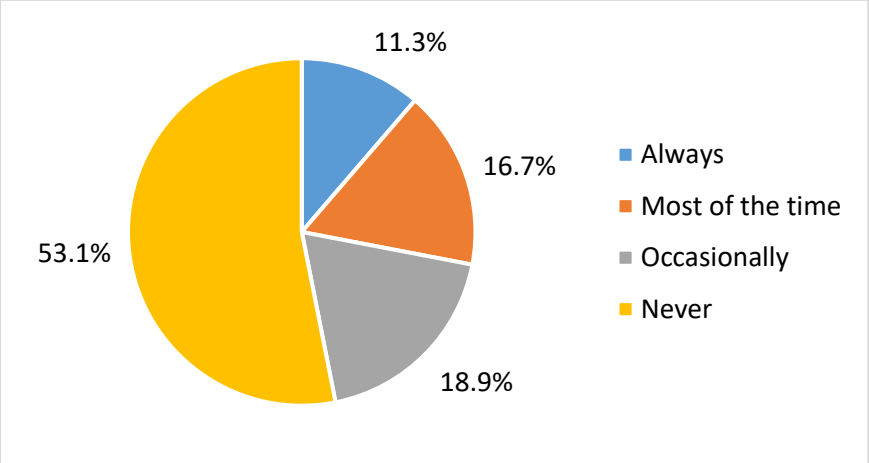
Most PWID (85.0%) reported that they injected white heroin in the past three months, while less than one-third (28.8%) injected brown heroin. A small proportion of PWID (3.9%) injected cocaine in the past three months, which has not been seen in previous PWID surveys (Figure 37). Although heroin is the most commonly injected drug in Unguja, some PWID (3.8%) reported only injecting drugs other than heroin the past three months.

Figure 37: Injection drugs used by PWID in past 3 months, Unguja, 2019



Most PWID (90.1%) reported injecting drugs several times a day with 6.6% injecting once per day and the remainder injecting less frequently. Almost half of PWID (46.9%) asked or paid an individual known as a "doctor" to inject them in the past month, either always (11.3%), most of the time (16.7%) or occasionally (18.9%) (Figure 38). "Doctors" in this context are not health care providers but are individuals who help PWID to inject – usually for payment of either drugs or money – if the person does not know how or is otherwise unable to inject themselves. "Doctors" have been anecdotally reported to be found throughout Zanzibar.

Figure 38: Frequency of asking or paying a "doctor" to inject them in the past month, among PWID, Unguja, 2019



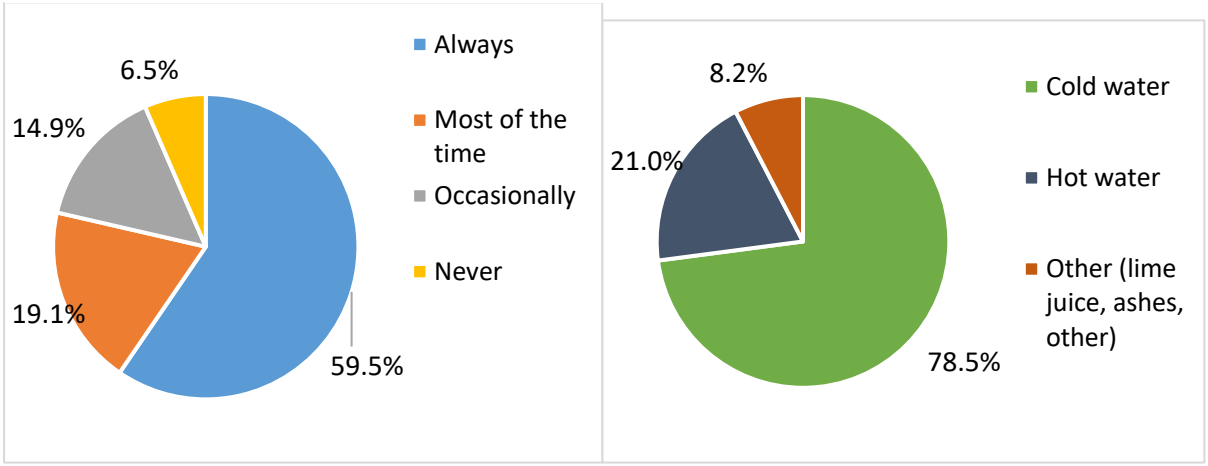
Only 2.2% of PWID reported that they have practiced "flashblood" or injecting the blood of another user who has drugs in their bloodstream, in the past month (Table 19). Flashblood is done by someone who does not have enough money to buy their own drugs in an effort to get high off of the drugs circulating in another PWID's blood.

9.4.3. Using non-sterile needles and access to clean needles

Less than half of PWID (38.4%) reported ever sharing a needle with another PWID, and less than one in five (18.7%) used a needle previously used by someone else in the past month. Among PWID who injected with non-sterile needles in the past month, only 3.7% reported using a previously used needle at every injection, while 33.8% used a previously used needle most of the time and more than half (62.5%) used a non-sterile needle occasionally.

More than half (59.5%) reported always cleaning non-sterile needles prior to use, while one-third (33.9%) cleaned non-sterile needles most of the time or occasionally prior to use and 6.5% never cleaned used needles. The substance used most frequently to clean non-sterile needles prior to use was cold water (78.5%), followed by hot water (21.0%) (Figure 39) (Table 19).

Figure 39: Frequency of cleaning used needles before using them in the past month and substance used to clean the needle at last use of a non-sterile needle among PWID who used a previously used needle in the past month, Unguja, 2019



The majority of PWID (86.6%) reported that they can obtain a clean needle and syringe whenever needed. In the past month, PWID most commonly obtained needles from pharmacies (81.4%) and private homes known to have clean needles available (10.7%). The most common barriers to obtaining clean needles are: retailers refusing to sell syringes/needles to PWID (62.0%), cost (17.6%), vendors being closed or not around when a needle is needed (17.2%), vendors being too far away (10.5%) and not being able to go out looking for a clean needle/syringe when in withdrawal (5.9%) (Figure 40).

Figure 40: Barriers to obtaining clean needles among PWID who cannot always access clean needles when needed, Unguja, 2019

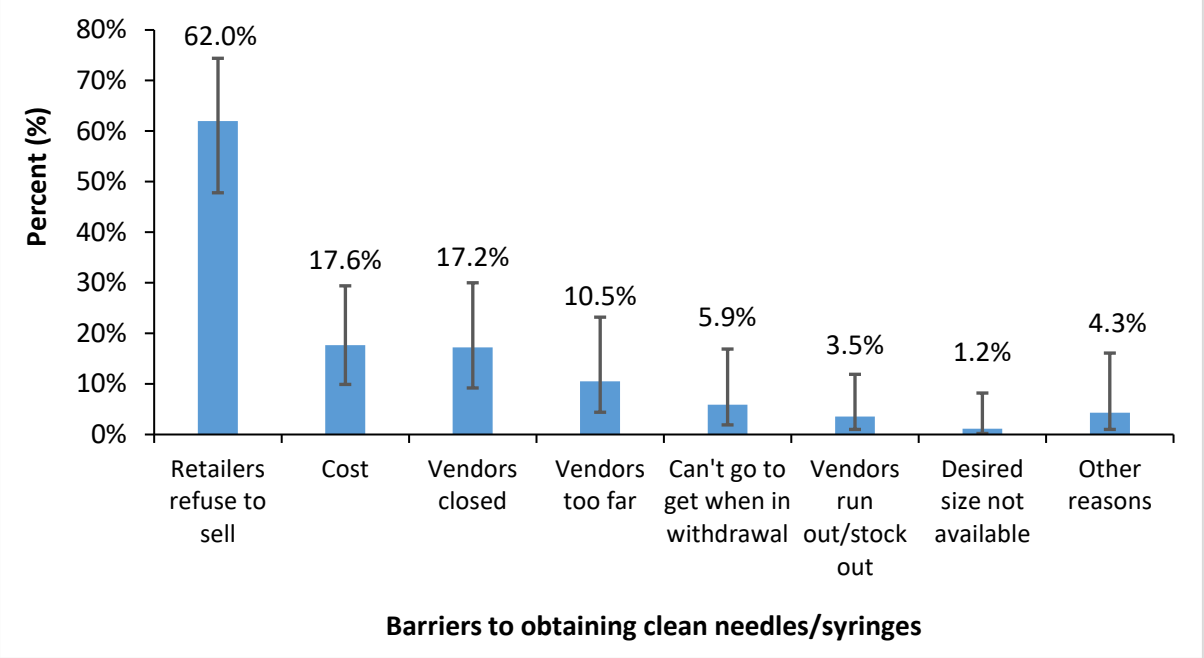


Table 19: Injection drug use and injection practices among PWID, Unguja, 2019

	Crude n	Weighted percent (%)	Weighted 95% CI
Age (years) at first injection [N=417][4]			
<15	10	2.0%	[1.1-3.9]
15-19	53	13.3%	[9.9-17.7]
20-24	88	20.6%	[16.5-25.4]
25-29	115	28.8%	[23.9-34.4]
30-34	66	14.8%	[11.4-19]
35+	85	20.4%	[16.4-25.2]
Median age in years (IQR)	26 years (IQR: 22-32) Min. 10 – Max. 57 years		
Number of years injecting [N=417][5]			
3 years or less	131	32.3%	[27.2-37.9]
4-6 years	86	21.6%	[17.3-26.6]
7+ years	200	46.1%	[40.7-51.7]
Median number of years injecting (IQR)	6 years (IQR: 3-12) Min. 0 – Max. 42 years		
Introduced to injection drug use by [N=419]			
Friend	291	69.8%	[64.6-74.7]
Another drug user	49	9.3%	[6.8-12.8]
No one – decided to inject myself	28	7.6%	[5-11.3]
Family member	26	5.4%	[3.6-8.1]
Boyfriend/girlfriend	14	4.0%	[2.3-6.9]

[4] Two values excluded that were deemed to be data entry errors. 95% CI= 95% Confidence Interval

	Crude n	Weighted percent (%)	Weighted 95% CI
Drug seller	5	2.0%	[0.8-5.1]
Neighbour	4	1.1%	[0.4-3.2]
Other	2	0.6%	[0.2-2.6]
Someone in family knows participant injects [N=419]			
Yes	297	67.9%	[62.4-72.9]
No	120	31.5%	[26.5-36.9]
Does not know	2	0.6%	[0.2-2.6]
Types of drugs injected in past 3 months¥ [N=419]			
White heroin	354	85.0%	[80.7-88.5]
Brown heroin	112	28.8%	[23.9-34.4]
Cocaine	18	3.9%	[2.4-6.5]
Prescription drugs	1	0.2%	[0.0-1.5]
Amphetamines	1	0.4%	[0.0-2.5]
Most common place for obtaining needles/syringes in past month [N=419]			
Pharmacy	335	81.4%	[76.4-85.5]
Private home known to have clean needles	46	10.7%	[7.4-15.2]
Health facility	19	3.8%	[2.2-6.6]
Another drug user	12	2.4%	[1.3-4.3]
Outreach worker	3	0.5%	[0.1-2.1]
Other	4	1.2%	[0.5-3.2]
Can get a clean needle/syringe anytime needed [N=419]			
Yes	358	86.6%	[82.7-89.8]
No	61	13.4%	[10.2-17.3]
Barriers to obtaining clean needles/syringes (among those who said they cannot always access clean needles when needed)¥ [N=61]			
Retailers refuse to sell	36	62.0%	[47.8-74.4]
Cost	13	17.6%	[9.9-29.4]
Vendors are closed when needle needed	11	17.2%	[9.2-30]
Vendors are too far away	7	10.5%	[4.4-23.2]
Cannot go to find when in withdrawal	4	5.9%	[1.9-16.9]
Vendors run out/stock out	3	3.5%	[1-11.9]
The size I want is not available	1	1.2%	[0.2-8.2]
Other reasons	2	4.3%	[1-16.1]
How often asked or paid a 'dokta' to inject them in past month [N=419]			
Always	44	11.3%	[8.2-15.5]
Most of the time	79	16.7%	[13.1-21.1]
Occasionally	79	18.9%	[15-23.5]
Never	217	53.1%	[47.5-58.6]
Injected blood from someone who had taken drugs (flashblood) in past month [N=419]			
Yes	8	2.2%	[0.9-5.1]
No	410	97.4%	[94.5-98.8]
Does not know	1	0.4%	[0-2.5]
Needle sharing [N=419]			
Has ever shared a needle	167	38.4%	[33.1-43.9]

	Crude n	Weighted percent (%)	Weighted 95% CI
Used a needle previously used by someone else in past month	84	18.7%	[14.7-23.7]
Among those who used a previously used needle in past month [N=84]			
Frequency of using a previously used needle in past month			
Always	4	3.7%	[1.2-10.4]
Most of the time	32	33.8%	[23-46.5]
Occasionally	48	62.5%	[49.6-73.9]
Frequency of cleaning the used needle before using			
Always	48	59.5%	[46.4-71.5]
Most of the time	18	19.1%	[11.2-30.5]
Occasionally	13	14.9%	[8.2-25.5]
Never	5	6.5%	[2.6-15.5]
Substance used to clean needle at last use of a non-sterile needle [N=79]			
Cold water	63	78.5%	[65.8-87.4]
Hot water	15	21.0%	[12.2-33.7]
Other (lime juice, ashes, other)	5	8.2%	[3.1-19.9]
Frequency of preparing drugs with someone else before injecting in past month			
Always	1	0.6%	[0.1-4.3]
Most of the time	24	23.2%	[14.8-34.6]
Occasionally	29	45.0%	[31.6-59.1]
Never	30	31.2%	[20.9-43.8]

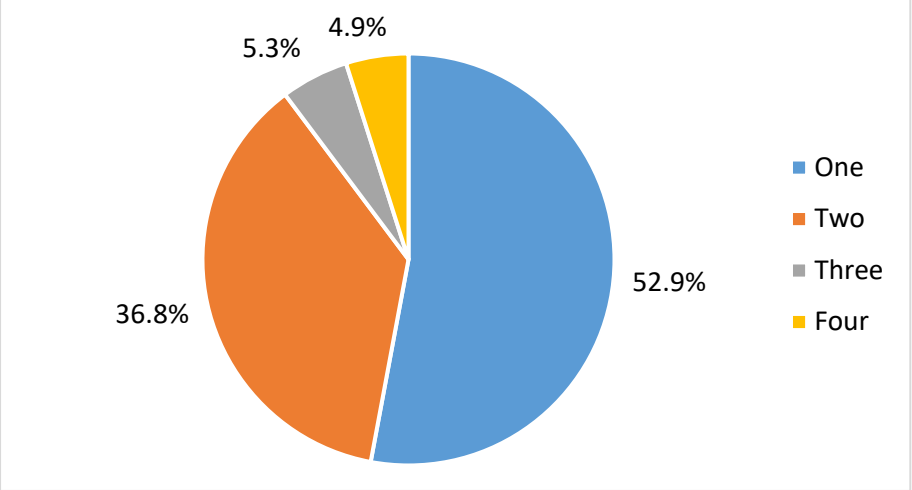
¥ *Denotes variable for which multiple responses were possible.* *95% CI= 95% Confidence Interval*

9.4.4. Practices at last injection and last time sharing a needle among PWID

More than three quarters of PWID (77.6%) reported using white heroin at last injection, while 18.2% used brown heroin and 3.7% used cocaine. Use of amphetamine and prescription drugs was reported by fewer than 1% (0.4% and 0.2%, respectively). The median amount spent on drugs at last injection was TZS 5,000 with a minimum of TZS 1,250 and a maximum of TZS 8,500 ($1 was equivalent to approximately TZS 2,300 at the time of this report).

Only 8.9% of PWID reported using a previously used needle/syringe at last injection, and even fewer (3.4%) passed their needle/syringe to another PWID after using it. Among those who shared a needle at last injection, half (52.9%) reported sharing the same needle/syringe with only one other individual, although this number went up to a maximum of four (Figure 41).

Figure 41: Number of other PWID who shared the same needle/syringe at last injection among PWID who shared a needle/syringe at last injection, Unguja, 2019



Among PWID who have ever shared a needle/syringe, the most reported reason for sharing needles/syringes the last time they shared was that they did not have enough money to inject alone (37.0%), followed by needles/syringes not being available (36.0%). The majority of PWID (78.3%) cleaned needles/syringes between users the last time they shared, although 82.3% used only cold water for cleaning (Table 20).

Table 20: Practices at last injection and last time sharing a needle among PWID, Unguja, 2019

	Crude n	Weighted percent (%)	Weighted 95% CI
Drug used at last injection [N=419]			
White heroin	330	77.6%	[72.6-81.9]
Brown heroin	70	18.2%	[14.2-23]
Cocaine	17	3.7%	[2.2-6.2]
Amphetamine	1	0.4%	[0.0-2.5]
Prescription drugs	1	0.2%	[0.0-1.5]
Needle sharing at last injection [N=419]			
Used a needle/syringe after someone else had used it	39	8.9%	[6.2-12.7]
Passed needle/syringe to another PWID after using	18	3.4%	[2.1-5.6]
Did not share a needle at last injection	370	89.0%	[85.1-92.0]
Number of PWID who shared the same needle/syringe at last injection [N=47]			
One	24	52.9%	[35.9-69.3]
Two	17	36.8%	[22.0-54.6]
Three	4	5.3%	[1.6-16.4]
Four	2	4.9%	[1.2-18.6]
Main reason for sharing needles/syringes last time shared [N=167]			
Did not have enough money to inject alone	57	37.0%	[28.3-46.7]
Needles/syringes were not available	63	36.0%	[28.0-44.9]
Needle/syringe was broken, stolen or lost	10	5.8%	[2.9-11.2]
Needles/syringes too expensive/did not have money	8	4.4%	[2.0-9.6]
Was in withdrawal	7	4.2%	[1.8-9.9]
Another PWID wanted me to	7	4.1%	[1.8-9.2]

	Crude n	Weighted percent (%)	Weighted 95% CI
Cannot inject myself	6	2.6%	[1.1-6.0]
Prefer to share with a friend	6	2.4%	[0.9-6.1]
Other	3	3.4%	[1.0-11.0]
Needle/syringe cleaning last time shared a needle/syringe [N=167]			
Last time shared needles/syringes, needle/syringe was cleaned between users	130	78.3%	[70.0-84.8]
Substance used to clean needle/syringe between users, last time shared¥			
Cold water	108	82.3%	[73.8-88.5]
Hot water	12	10.2%	[5.6-17.9]
Bleach	4	2.7%	[1.0-7.3]
Other	6	4.8%	[2.1-10.7]

¥ *Denotes variable for which multiple responses were possible.* *95% CI= 95% Confidence Interval*

9.5. Sexual risk behaviours

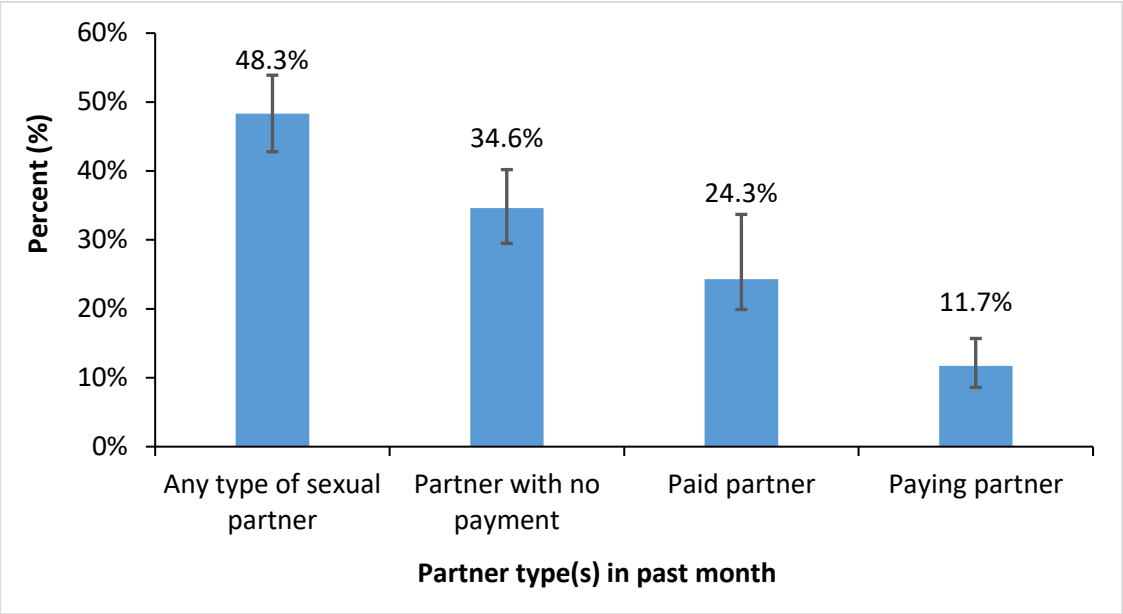
PWID were asked about their sexual behaviours with three different types of partners: partners with whom there was no payment involved, partners they paid, and partners who paid them. Questions about sexual risk behaviours were asked about anal and vaginal sex with male and/or female partners; therefore, responses were not disaggregated by gender or sexual preference.

9.5.1. Sexual partners

Just under half of PWID (47.7%) reported that they had a sexual partner of any type in the past month. While nearly all PWID (85.3%) reported ever having sex where no payment was involved, only one-third (34.6%) reported sex with a partner without payment in the past month. The median number of partners with no payment in the past month was one, ranging from one to eight. Among those who had sex with a steady partner in the past month, more than one-third (35.9%) also paid for sex and one in five (21.4%) also sold sex in the past month (Table 21).

Two-thirds of PWID (66.2%) reported ever paying someone for sex, while 24.3% paid someone for sex in the past month. Male PWID most commonly paid women for sex; however, a small proportion (2.1%) reported paying other men for sex. No female PWID reported paying for sex. One-third of PWID (32.8%) reported that they have ever sold sex, while 11.7% sold sex in the past month to both male and female partners (Figure 42). Nearly all (90.3%; n=4 of 5) female PWID reported ever selling sex, of whom 77.4% (n=3 of 4) reported selling sex in the past month.

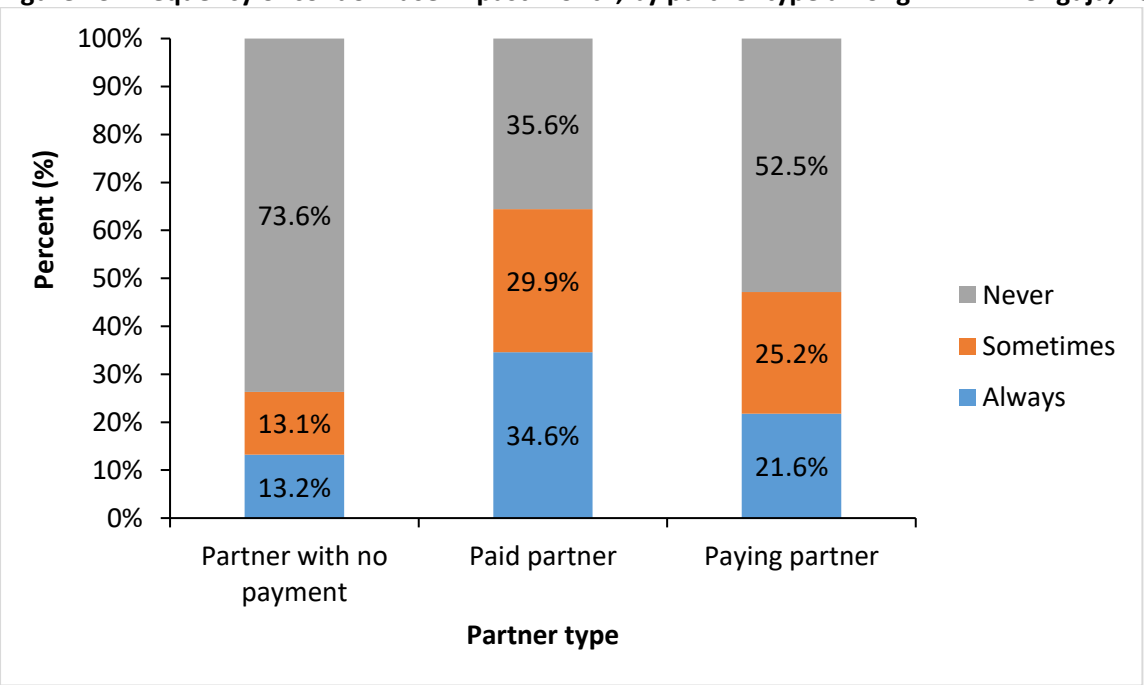
Figure 42: Types of sexual partners among PWID in past month, Unguja, 2019



9.5.2. Condom use

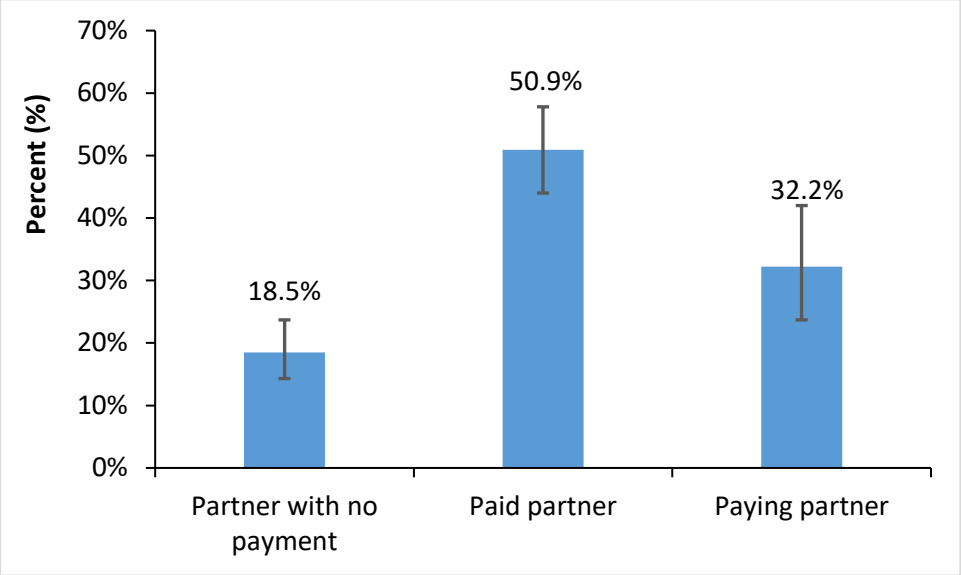
Frequency of condom use among PWID varies by partner type (Table 21). The proportion of PWID who reported always using condoms in the past month was greatest with paid partners (34.6%) and paying partners (21.6%) and lowest with partners where no payment was involved (13.2%). The majority of PWID (73.6%) who had sex with a partner without payment in the past month reported that they never used a condom with that partner type in the past month. Half of PWID (52.5%) who sold sex in the past month never used condoms with paying partners in that time period (Figure 43).

Figure 43: Frequency of condom use in past month, by partner type among PWID in Unguja, 2019



Half of PWID (50.9%) who ever paid a partner for sex reported using a condom at last sex with a paid partner. One-third of PWID (32.2%) who had ever sold sex used a condom with their last paying partner, and only 18.5% of PWID used a condom at last sex with a partner where no payment was involved (Figure 44).

Figure 44: Condom use at last sex, by partner type, among PWID in Unguja, 2019



The reasons cited for not using condoms at last sex are similar across partner types. The two most common reasons across all partner types were trusting one's partner and not liking the feel of using condoms (Figure 45).

Figure 45: Reasons for not using a condom with most recent partner, by partner type, among PWID in Unguja, 2019

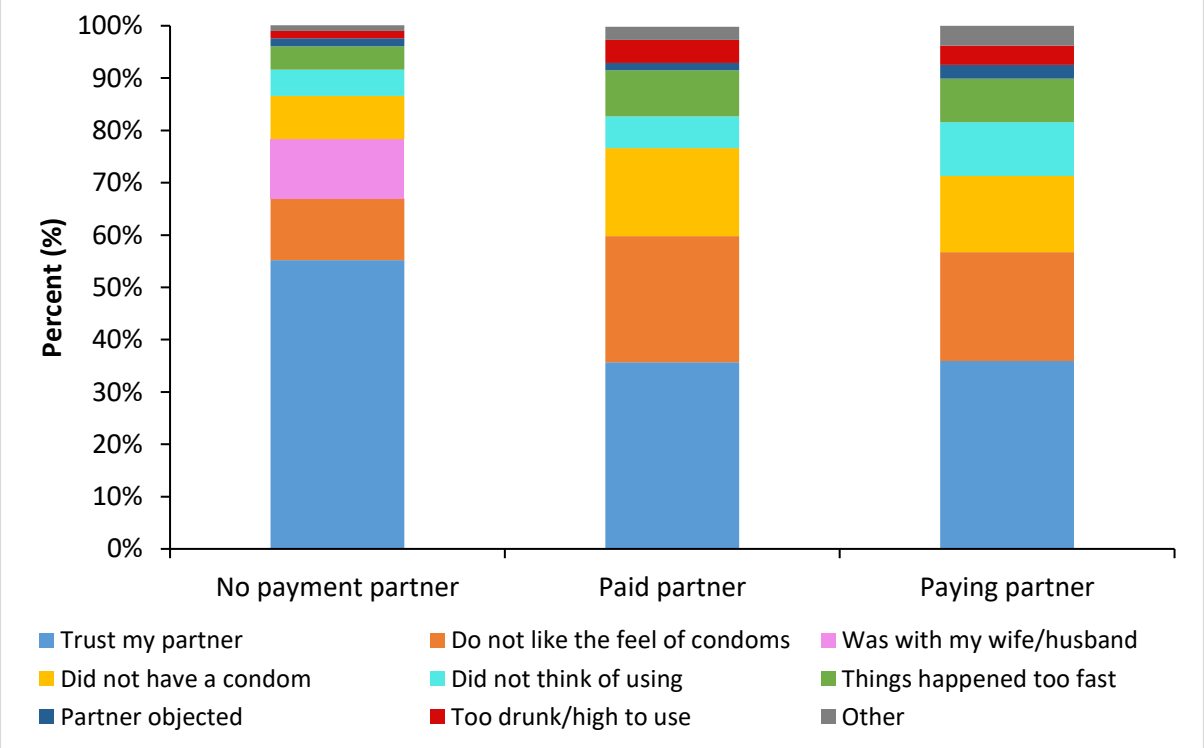


Table 21: Sexual risk behaviours with various partner types among PWID in Unguja, 2019

	Crude n	Weighted percent (%)	Weighted 95% CI
Sex where no payment was involved [N=419]			
Ever had sex where no payment was involved	357	85.3%	[81.1-88.7]
Had sex in the past month where no payment was involved	150	34.6%	[29.5-40.2]
Among PWID who ever had a sexual partner where no payment was involved			
Number of sexual partners in past month without any payment [N=357]			
None	207	59.4%	[53.3-65.3]
One partner	93	27.2%	[21.9-33.2]
Two or more partners	57	13.4%	[10.0-17.7]
Median number of partners without payment in past month		1 partner (IQR: 1-2) min 1 - max 8	
Used condom at last sex with a partner without payment [N=357]			
Yes	65	18.5%	[14.3-23.7]
No	289	80.6%	[75.4-84.9]
Does not remember	3	0.9%	[0.3-2.8]
Why did not use a condom at last sex with a partner where no payment was involved [N=289]			
Trust my partner	153	55.2%	[48.3-61.8]
Do not like the feel of condoms	36	11.8%	[8.2-16.8]
Was with my wife/husband	32	11.3%	[7.6-16.4]
Did not have a condom	31	8.3%	[5.4-12.5]
Did not think of using	14	5.0%	[2.8-8.7]
Things happened too fast	10	4.5%	[1.7-11.0]
Partner objected	5	1.5%	[0.5-4.3]
Too drunk/high to use	4	1.4%	[0.4-4.4]
Condoms do not work	1	0.5%	[0.1-3.6]
Other	3	0.6%	[0.2-2.1]
Frequency of condom use with partners without payment in past month (among those who had sex with this partner type in past month) [N=150]			
Always	19	13.2%	[7.9-21.2]
Most of the time	7	4.1%	[1.7-9.5]
Occasionally	18	9.0%	[5.1-15.4]
Never	106	73.6%	[64.6-81.1]
Among those who had sex with a steady partner in the past month [N=150]			
Also paid for sex	58	35.9%	[27.4-45.4]
Also sold sex	35	21.4%	[14.8-29.9]
Paying for sex (i.e., paid sexual partners) [N=419]			
Ever paid someone for sex	283	66.2%	[60.7-71.2]
Paid someone for sex in the past month	106	24.3%	[19.9-29.3]
Number of paid female sexual partner in past month (among male PWID) [N=414]			

	Crude n	Weighted percent (%)	Weighted 95% CI
None	308	75.5%	[70.4-80]
1	53	12.2%	[9.0-16.2]
2 or more	53	12.3%	[9.1-16.4]
Number of paid male sexual partners in past month [N=419]			
None	410	97.9%	[95.5-99.0]
1	6	1.5%	[0.6-3.8]
2 or more	3	0.6%	[0.2-2.1]
Frequency of condom use with paid partners in past month among those who paid for sex in past month [N=106]			
Always	32	34.6%	[24.5-46.2]
Sometimes	30	29.9%	[20.6-41.3]
Never	44	35.6%	[26.0-46.5]
Used condom last time paid for sex [N=281][5]			
Yes	142	50.9%	[44.0-57.8]
No	134	46.7%	[39.9-53.7]
Does not remember	5	2.4%	[1.0-5.9]
Why did not use a condom last time paid for sex [N=134]			
Trust my partner	49	35.7%	[26.8-45.7]
Do not like the feel of condoms	34	24.1%	[16.5-33.7]
Did not have a condom	23	16.8%	[10.6-25.6]
Did not think of using	9	6.1%	[2.9-12.4]
Things happened too fast	8	8.8%	[3.0-22.8]
Partner objected	3	1.4%	[0.4-4.9]
Too drunk/high to use	4	4.4%	[1.3-13.3]
Condoms do not work	2	1.7%	[0.4-7.2]
Other	1	0.8%	[0.1-5.6]
No response	1	0.3%	[0.0-2.1]
Selling sex (i.e., paying sexual partners) [N=419]			
Ever sold sex	152	32.8%	[27.9-38.0]
Sold sex in the past month	52	11.7%	[8.6-15.7]
Number of women who paid PWID for sex in past month (among male participants) [N=414]			
None	374	90.7%	[86.9-93.5]
1	30	6.9%	[4.6-10.4]
2 or more	10	2.4%	[1.2-4.7]
Number of men who paid PWID for sex in past month [N=419]			
None	397	95.4%	[92.6-97.1]
1	14	2.9%	[1.6-5.3]
2 or more	8	1.7%	[0.8-3.8]
Frequency of condom use with paying partners in past month [N=52]			
Always	10	21.6%	[10.9-38.4]
Sometimes	14	25.2%	[13.6-41.7]
Never	27	52.5%	[36.4-68.0]

[5] Two values dropped due to inconsistent responses. 95% CI= 95% Confidence Interval

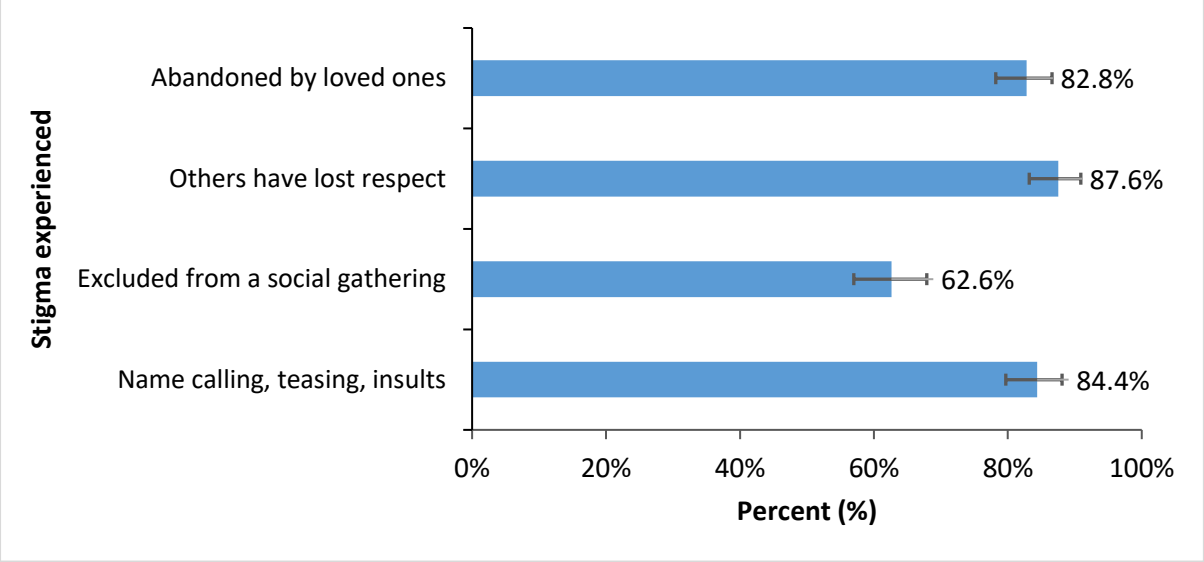
	Crude n	Weighted percent (%)	Weighted 95% CI
No response	1	0.8%	[0.0-5.6]
Used condom last time was paid for sex [N=127][6]			
Yes	42	32.2%	[23.7-42]
No	84	67.3%	[57.4-75.9]
Does not remember	1	0.5%	[0.1-3.8]
Why did not use a condom last time was paid for sex [N=84]			
Trust my partner	24	35.9%	[24.4-49.2]
Do not like the feel of condoms	20	20.8%	[12.9-31.8]
Did not have a condom	14	14.6%	[8.2-24.6]
Did not think of using	10	10.3%	[5.1-19.5]
Things happened too fast	7	8.3%	[3.7-17.7]
Partner objected	4	2.6%	[0.9-7.6]
Too drunk/high to use	4	3.7%	[1.3-10.2]
Other	1	3.8%	[0.5-22.8]

95% CI= 95% Confidence Interval

9.6. Stigma, violence and incarceration among PWID

PWID are commonly stigmatized. Most PWID believe that others have lost respect for them (87.6%), have experienced name calling, teasing and insults (84.4%) and have been abandoned by loved ones (82.8%) as a result of their drug use (Figure 46).

Figure 46: Forms of stigma experienced by PWID in Unguja, 2019

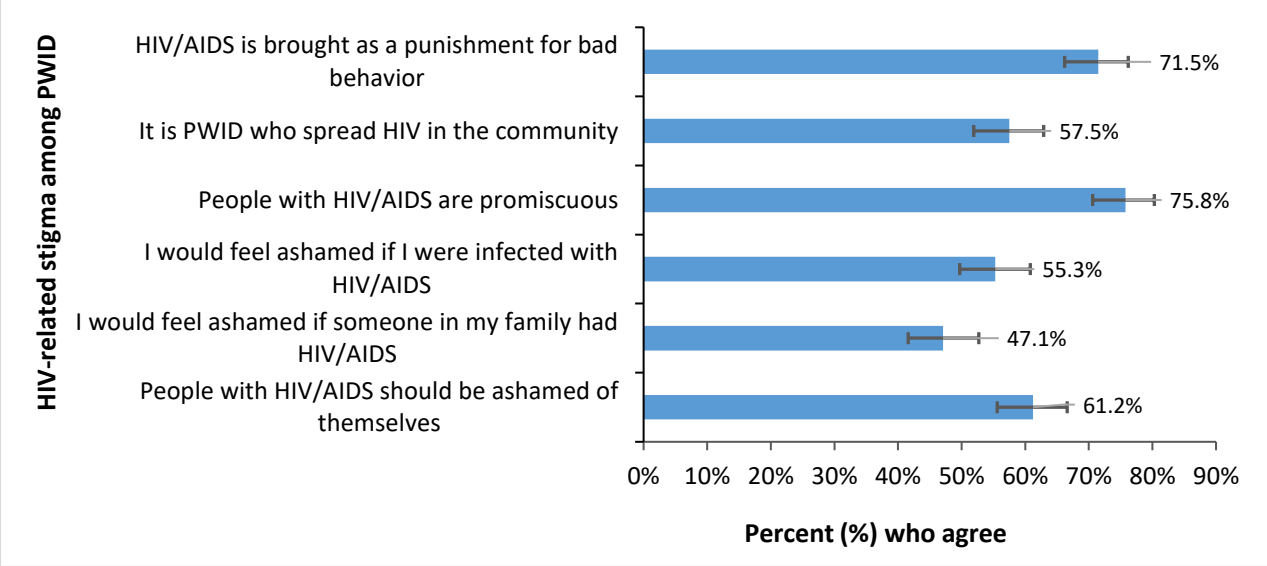


PWID also hold stigmatizing beliefs about HIV and people living with HIV and AIDS. Three-quarters (75.8%) agreed that people with HIV are promiscuous, and nearly as many (71.5%) agreed that HIV and AIDS is a punishment for bad behaviour. More than half of PWID agreed that PLHIV should be

[6] Missing values due to an error in skip pattern programming

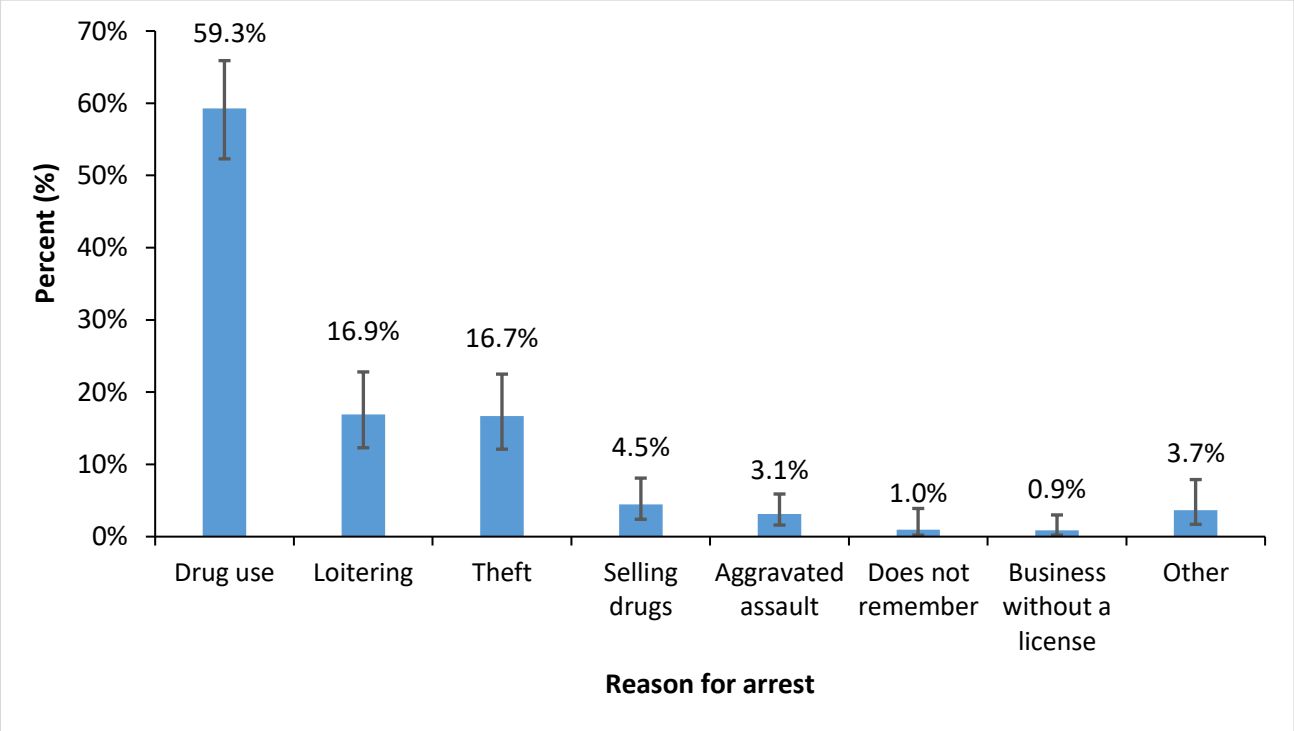
ashamed of themselves (61.2%), that PWID are the ones spreading HIV in the community (57.5%) and would feel ashamed if they were infected with HIV (55.3%) (Figure 47).

Figure 47: Stigma/beliefs among PWID about HIV and PLHIV, Unguja, 2019



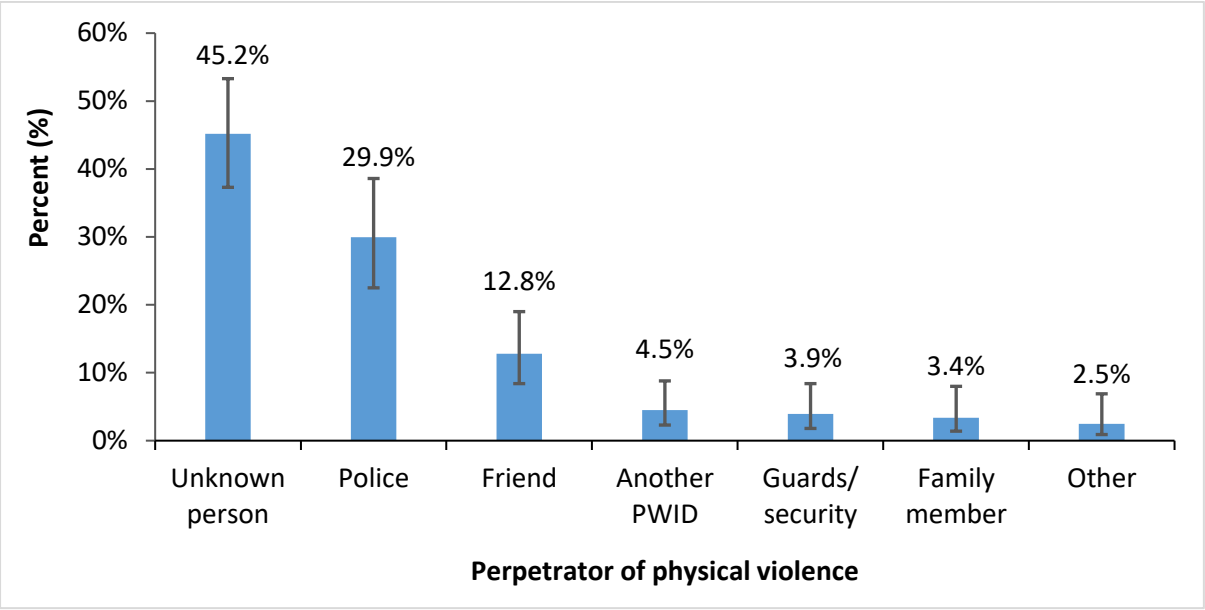
More than half of PWID (62.1%) reported that they were arrested in the 12 months prior to the survey. Among those who were arrested, the most common reasons for arrest were: drug use (59.3%), loitering (16.9%) and theft (16.7%) (Figure 48).

Figure 48: Reason for arrest among PWID arrested in the past year, Unguja, 2019



Nearly half of PWID (46.0%) reported that they had experienced physical violence in the 12 months prior to the survey. Among those, 45.2% were beaten by an unknown person, 29.9% were beaten by police and 12.8% by friends (Figure 49).

Figure 49: Proportion of PWID who were physically abused, by perpetrator type, Unguja, 2019



One in ten PWID (10.2%) reported being forced to have sex in the twelve months prior to the survey. Among these, the majority were forced by their steady partner (64.6%) while 16.2% were forced by an unknown person or someone on the street (Table 22).

Table 22: Stigma, violence and incarceration among PWID, Unguja, 2019

	Crude n	Weighted percent (%)	Weighted 95% CI
Experiences of stigma as a PWID (% yes) [N=419]			
Experienced name calling, teasing and insults	363	84.4%	[79.7-88.1]
Excluded from a social gathering	281	62.6%	[57.0-67.9]
Others have lost respect for him/her	373	87.6%	[83.2-90.9]
Abandoned by loved ones	350	82.8%	[78.2-86.6]
Stigma among PWID towards those with HIV (% who agree) [N=419]			
People with HIV/AIDS should be ashamed of themselves	262	61.2%	[55.6-66.6]
I would feel ashamed if someone in my family had HIV/AIDS	204	47.1%	[41.6-52.7]
I would feel ashamed if I were infected with HIV/AIDS	236	55.3%	[49.7-60.8]
People with HIV/AIDS are promiscuous	325	75.8%	[70.6-80.3]
It is PWID who spread HIV in the community	251	57.5%	[51.9-62.9]
HIV/AIDS is brought as a punishment for bad behaviour	300	71.5%	[66.2-76.2]
Was arrested in past 12 months [N=419]			
Yes	273	62.1%	[56.4-67.4]
No	146	37.9%	[32.6-43.6]
Reason(s) for arrest in past 12 months (among those who were arrested)¥ [N=273]			
Drug use	167	59.3%	[52.3-65.9]
Loitering	43	16.9%	[12.3-22.8]
Theft	43	16.7%	[12.1-22.5]
Selling drugs	11	4.5%	[2.4-8.1]
Aggravated assault	11	3.1%	[1.6-5.9]
Does not remember/no response	2	1.0%	[0.2-3.9]

	Crude n	Weighted percent (%)	Weighted 95% CI
Doing business without a license	3	0.9%	[0.2-3.0]
Other	9	3.7%	[1.7-7.9]
Experienced physical violence in past 12 months [N=419]			
Yes	199	46.0%	[40.5-51.6]
No	220	54.0%	[48.4-59.5]
Perpetrator(s) of physical violence in past 12 months, among those who experienced physical violence[¥] [N=199]			
Unknown person/person on the street	97	45.2%	[37.3-53.3]
Police	57	29.9%	[22.5-38.6]
Friend	25	12.8%	[8.4-19.0]
Another PWID	11	4.5%	[2.3-8.8]
Guards/community security	8	3.9%	[1.8-8.4]
Family member	5	3.4%	[1.4-8.0]
Other	4	2.5%	[0.9-6.9]
Forced to have sex in past 12 months [N=419]			
Yes	45	10.2%	[7.4-13.9]
No	373	89.4%	[85.7-92.3]
No response	1	0.4%	[0.0-2.5]
Perpetrator of sexual violence (among those forced to have sex in past 12 months)[¥] [N=45]			
Steady partner (boyfriend/husband or wife/girlfriend)	26	64.6%	[48.1-78.3]
Unknown person/person on the street	7	16.2%	[7.4-31.7]
Another PWID	3	4.7%	[1.3-15.6]
One-time sex partner	3	4.1%	[1.1-14.5]
Friend	1	3.5%	[0.5-22.1]
Police	1	1.8%	[0.2-12.8]
Drug dealer	1	0.9%	[0.1-6.5]
Other	4	6.0%	[2.1-16.3]

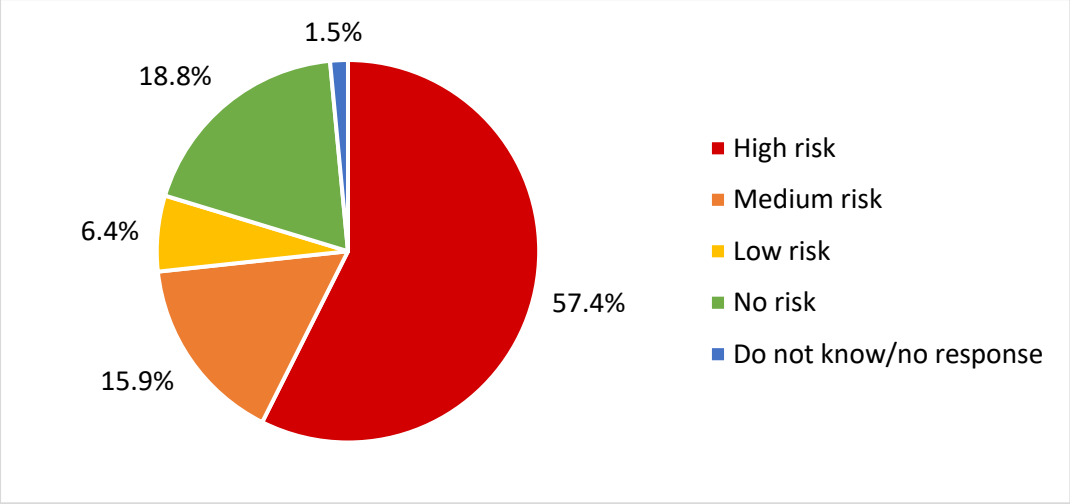
[¥] *Denotes variable for which multiple responses were possible.* *95% CI= 95% Confidence Interval*

9.7. HIV knowledge and risk perception

Participants were asked five standard knowledge questions related to HIV (Table 23). Those who were able to respond correctly to all five questions were considered to have comprehensive knowledge of HIV, as per the UNAIDS definition. Comprehensive knowledge of HIV among PWID was low at 34.4%. Knowledge about sexual risks factors for HIV transmission varied: 85.8% of PWID knew that having one faithful, uninfected partner reduces the risk of HIV and 75.4% knew that using condoms every time can reduce the risk of HIV. However, 37.2% of PWID believed that a person can get HIV from mosquito bites and 14.4% believed that a person can get HIV by sharing food with someone who has HIV. Almost all PWID (96.1%) knew that sharing needles increases HIV risk but only half of them (52.1%) knew that cleaning needles reduces HIV risk (Table 23).

More than half of PWID (57.4%) believed themselves to be at high risk for HIV infection based on their current behaviours. However, 18.8% and 6.4% reported themselves to be at no and low risk for HIV infection, respectively (Figure 50).

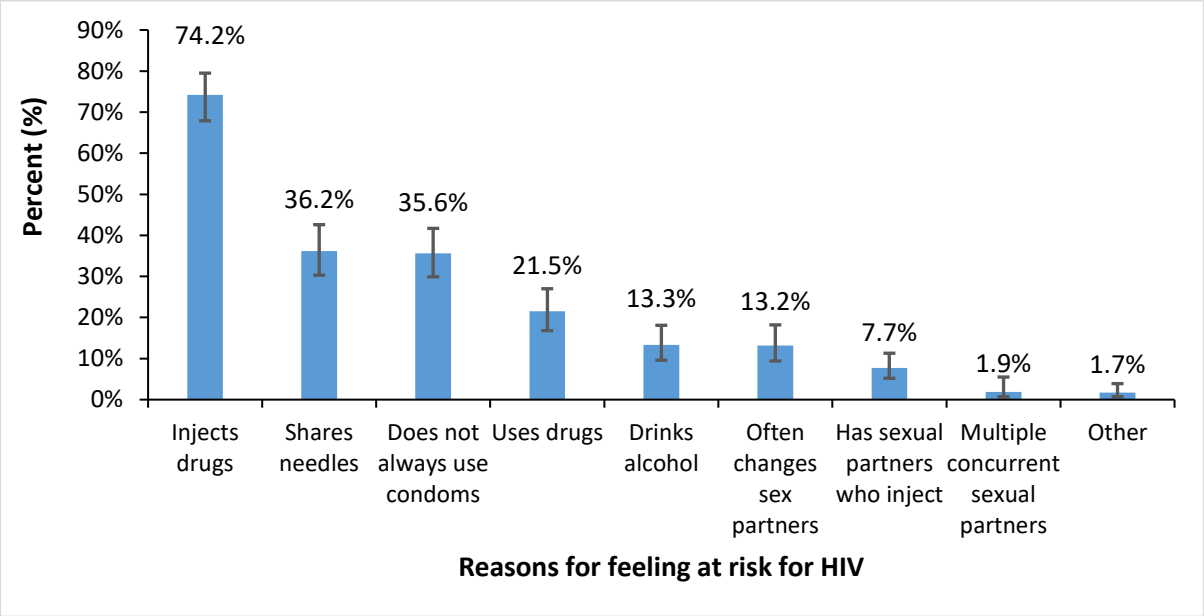
Figure 50: Perception of HIV risk among PWID, Unguja, 2019



Among those who believed themselves to have some level of HIV risk, the majority (73.5%) perceived their risk was because they inject drugs while 35.9% perceived that they are at HIV risk because they share needles.

Fewer PWID perceived themselves to be at risk for HIV because of their sexual behaviours: 35.6% felt they were at risk of HIV infection because they do not always use a condom, 13.2% attributed their risk to frequently changing sex partners and 7.7% attributed their HIV risk to having sexual partner(s) who inject drugs (Figure 51).

Figure 51: Reasons for feeling at risk of HIV infection among PWID who felt they had some risk, Unguja, 2019



Among PWID who did not believe themselves to be at risk of HIV infection, 73.1% believed they are not at risk because they do not share needles and 33.7% attribute their lack of risk to always

injecting with new needles. Fewer PWID attributed their lack of risk to a lack of sexual risk behaviours: 43.9% believe they are not at risk because they are faithful, 9.2% because they do not have sex with sex workers, 6.2% because they always use condoms and 1.9% because they do not have anal sex (Figure 52).

Figure 52: Reasons for not feeling at risk of HIV infection among PWID who feel they have no risk, Unguja, 2019

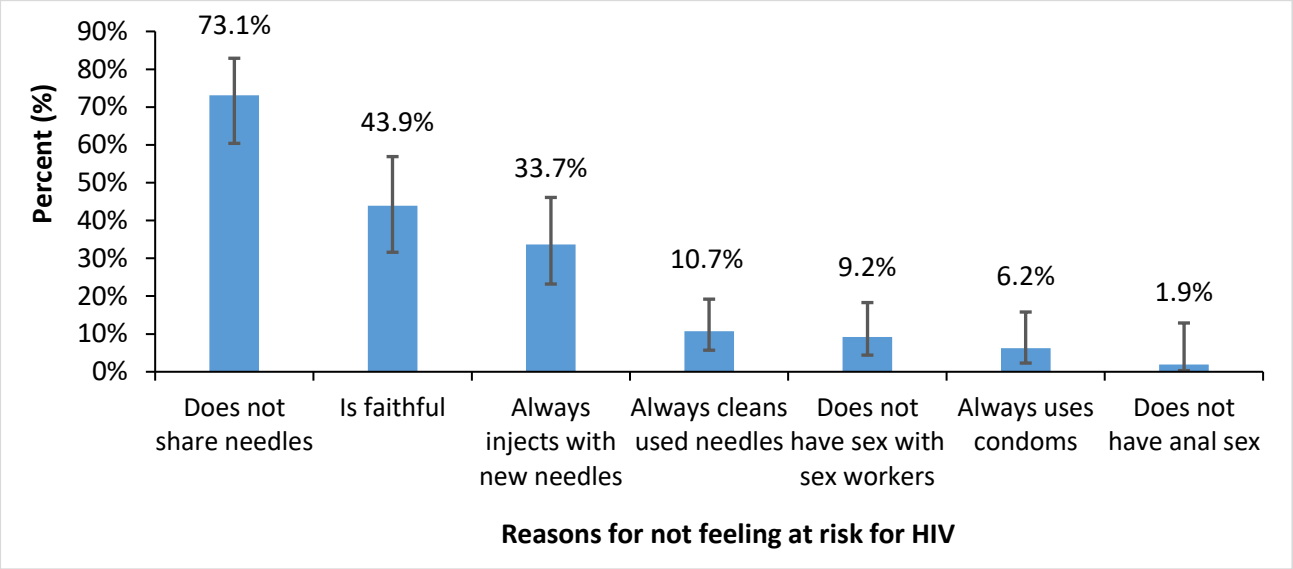


Table 23: HIV knowledge and risk perception among PWID, Unguja, 2019

	Crude n	Weighted percent (%)	Weighted 95% CI
HIV knowledge [N=419]			
Agrees having one uninfected, faithful partner reduces risk of HIV transmission	364	85.8%	[80.7-89.6]
Agrees using a condom every time you have sex reduces risk of HIV transmission	318	75.4%	[70.4-79.9]
Agrees a healthy-looking person can have HIV	386	90.8%	[86.8-93.8]
Disagrees that you can get HIV from a mosquito bite	260	62.8%	[57.2-68.1]
Disagrees that you can get HIV by sharing food with someone who is HIV+	358	85.6%	[81.2-89.1]
Has comprehensive HIV knowledge [N=419]*			
Yes	147	34.4%	[29.4-39.8]
No	272	65.6%	[60.2-70.6]
Injection-related HIV knowledge [N=419]			
Agrees that sharing needles when injecting drugs increases risk of HIV infection	403	96.1%	[93.4-97.8]
Agrees that cleaning needles/syringes between injections reduces HIV risk	214	52.1%	[46.5-57.6]
Perceived HIV risk (excluding known positives) [N=411]			
High risk	249	57.4%	[51.6-62.9]
Medium risk	58	15.9%	[12.0-20.9]

	Crude n	Weighted percent (%)	Weighted 95% CI
Low risk	21	6.4%	[3.9-10.2]
No risk	78	18.8%	[14.9-23.6]
Do not know/no response	5	1.5%	[0.6-3.9]
Reason(s) for feeling at risk of HIV infection among those who felt at risk[¥] [N=328]			
Injects drugs	240	74.2%	[67.9-79.5]
Shares needles	126	36.2%	[30.3-42.6]
Does not always use condoms	128	35.6%	[29.9-41.7]
Uses drugs	73	21.5%	[16.8-27.0]
Drinks alcohol	43	13.3%	[9.9-18.1]
Often changes sex partners	43	13.2%	[9.4-18.2]
Has sexual partners who inject drugs	30	7.7%	[5.2-11.3]
Has multiple concurrent sexual partners	6	1.9%	[0.7-5.5]
Other	7	1.7%	[0.7-3.9]
Reason(s) for not feeling at risk of HIV infection among those who felt they are not at risk[¥] [N=78]			
Does not share needles	57	73.1%	[60.4-82.9]
Is faithful	34	43.9%	[31.6-56.9]
Always injects with new needles	31	33.7%	[23.2-46.1]
Always cleans needles before injecting	12	10.7%	[5.7-19.2]
Does not have sex with sex workers	8	9.2%	[4.4-18.3]
Always uses condoms	6	6.2%	[2.3-15.8]
Does not have anal sex	1	1.9%	[0.3-12.9]

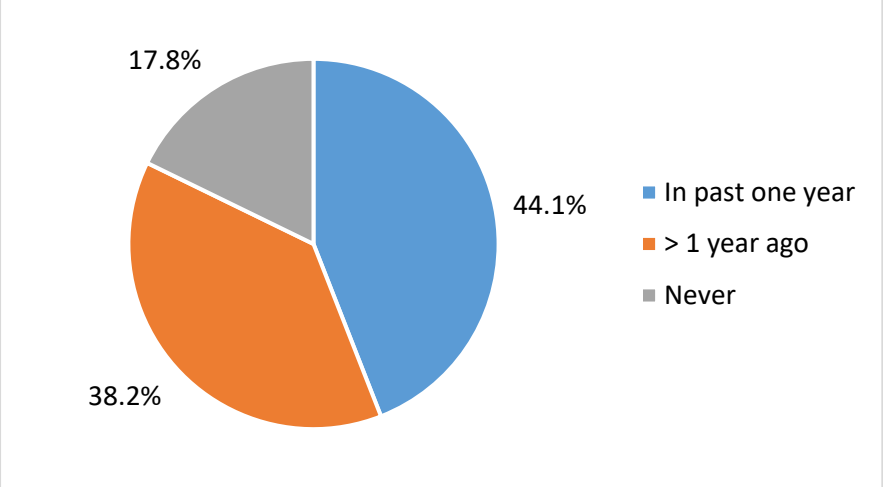
**Those who correctly responded to all five questions in the HIV knowledge section of this table were categorized as having comprehensive knowledge.*
[¥] Denotes variable for which multiple responses were possible
95% CI= 95% Confidence Interval

9.8. STI symptoms and HIV testing history

Only 15.1% of PWID reported experiencing symptoms of an STI (unusual genital discharge or genital sores or ulcers) in the six months prior to the survey. Of those, approximately one-quarter reported that they went to a government health facility (26.5%), treated themselves at home (24.6%), and went to a private health facility (22.6%). Very few stopped having sex (3.4%), told their partner (1.6%), or used condoms during sex (0.6%) (results not in the table)).

The majority of PWID 83.7% know where to go for a confidential HIV test. About four in five (82.2%) reported ever being tested for HIV prior to the survey and 44.1% of PWID reported that they had tested for HIV and received their results in the past one year (Figure 53). Only 2.1% reported a positive result from their last HIV test (n=5).

Figure 53: When last tested for HIV and received results, PWID, Unguja, 2019



Among those who have never been tested for HIV, 37.9% did not feel they are at risk, 29.8% did not think it is important to test and 22.5% were afraid of learning their HIV status (Table 24).

Among PWID who had ever tested for HIV prior to the survey, approximately one-third (32.9%) had attended HIV counselling and testing with a steady partner and 59.0% had talked to their steady partner about their HIV test results (Table 24).

Table 24: STI symptoms and HIV testing history among PWID, Unguja, 2019

	Crude n	Weighted percent (%)	Weighted 95% CI
Experienced STI symptoms in past 6 months [N=419]			
Yes	66	15.1%	[11.6-19.4]
No	353	84.9%	[80.6-88.4]
HIV testing history [N=419]			
Knows where to get a confidential HIV test	355	83.7%	[79.1-87.4]
Ever had an HIV test	349	82.2%	[77.4-86.2]
Last tested for HIV and received results [N=419]			
In past one year	188	44.1%	[38.6-49.7]
>1 year ago	161	38.2%	[33.0-43.6]
Never	70	17.8%	[13.8-22.6]
Why never tested for HIV¥ [N=70]			
Does not feel at risk	29	37.9%	[25.8-51.6]
It is not important	16	29.8%	[18.1-44.9]
Is afraid of learning status	20	22.5%	[13.9-34.3]
Does not know where to go	6	9.8%	[3.8-23.2]
Is too busy	5	7.6%	[2.8-18.9]
Concerned about confidentiality	1	1.1%	[0.1-7.5]
Testing with sexual partners and disclosure [N=349]			
Has ever tested for HIV with steady partner	108	32.9%	[27.4-38.9]
Has ever discussed HIV test results with steady partner	211	59.0%	[52.8-65.0]
Result of last HIV test [N=349]			

	Crude n	Weighted percent (%)	Weighted 95% CI
Positive	5	2.1%	[0.7-5.7]
Negative	340	97.0%	[93.3-98.6]
Don't know/remember / no response	4	1.0%	[0.3-3.3]

¥ *Denotes variable for which multiple responses were possible. 95% CI= 95% Confidence Interval*

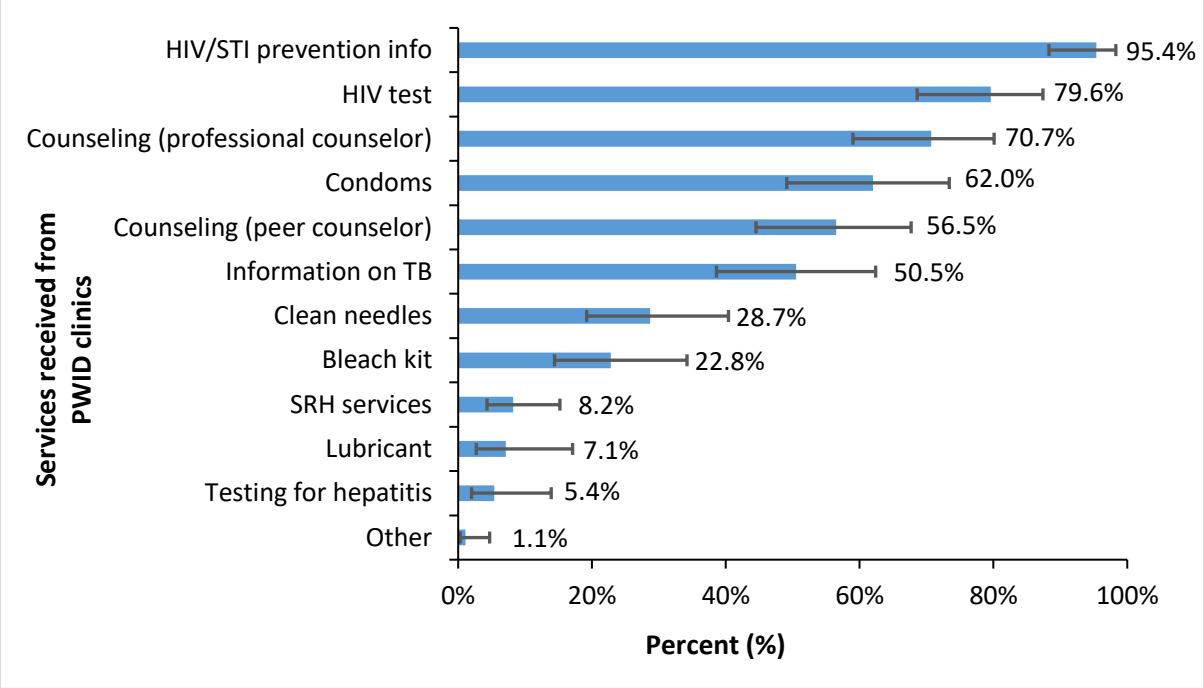
9.9. Access to health services among PWID

Nearly two-thirds of PWID (63.2%) reported receiving health services either at a clinic or drop-in centre for PWID or from a peer educator in the 12 months prior to the survey.

Less than one-quarter (23.3%) of PWID reported that they had received facility-based health services in the 12 months prior to the survey. Among these, the majority received services from NGOs that specifically provide services to PWID, with ZAYEDESA mentioned by 65.0% of PWID. A quarter (25.3%) visited a regular hospital or health facility (i.e., not specifically targeting PWID). In addition, 15.3% received services at a sober house while 4.3% received services at a MAT clinic (although those currently in MAT were not eligible to participate in the survey). Based on how they were treated by clinic staff, nearly all (96.8%) would return to the facility.

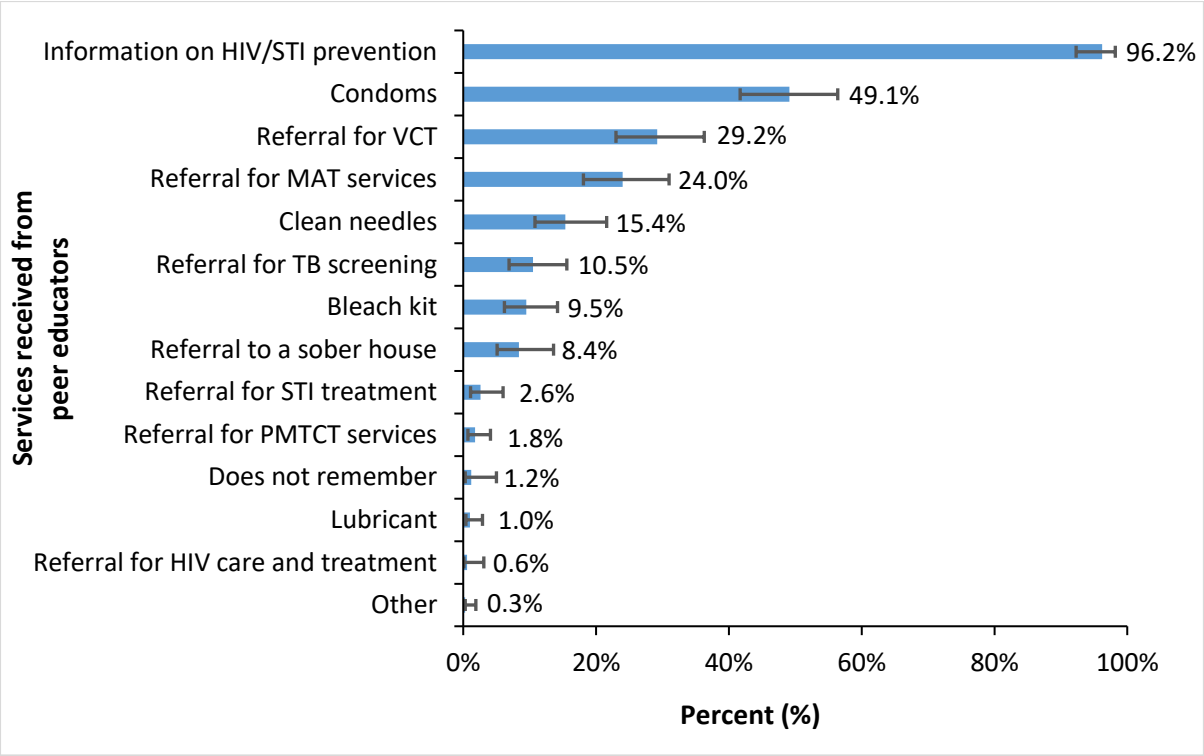
The services most commonly received by PWID from a health facility or PWID-focused clinic in the 12 months prior to the survey, among those who accessed facility or clinic-based services, were: information on HIV/STI prevention (95.4%), HIV testing (79.6%), counselling from a professional counsellor (70.7%), condoms (62.0%) and counselling from a peer counsellor (56.5%). Few PWID received services related to injection drug use – 28.7% received clean needles and 22.8% received bleach kits (Figure 54; Table 25).

Figure 54: Services received by PWID from health facilities or PWID-focused clinics, Unguja, 2019



More than half of PWID (57.8%) reported that they had contact with a peer educator in the 12 months prior to the survey. Of those, 75.8% had only one, two or three contacts with peer educators in the same time period. Nearly all (96.2%) who had contact with a peer educator in the 12 months prior to the survey received information on STI or HIV prevention. However, other services were provided to fewer than half of PWID who received services from peers, with condoms (49.1%), referral for VCT (29.2%) and referral for MAT services (24.0%) being the other most commonly received services. Nearly all PWID (96.9%) who had contact with peer educators found them to be non-judgmental (Figure 55; Table 25).

Figure 55: Services received by PWID from peer educators, Unguja, 2019



Nearly 1 in 10 PWID (8.9%) who are currently injecting reported having ever received opioid substitution therapy (MAT). Among those, 29.8% had been on MAT for 6 months or longer (Table 25).

Access to condoms is widespread among PWID as nearly four out of five PWID (78.0%) reported having ever used a male condom and 88.6% reported being able to get a male condom every time they need one. In the month prior to the survey PWID most commonly obtained condoms from shops (23.4%) and friends, (20.6%). The main barriers to getting condoms when needed (among those who are not able to get condoms every time they need one) were not knowing where to get condoms (35.6%), shops or pharmacies are too far away (16.4%), they are embarrassed to buy (14.8%) or shops or pharmacies are closed (14.3%). Although condoms are freely accessible from a variety of locations in Unguja, 43.2% of PWID reported purchasing condoms the last time they got them (Table 25).

Table 25: Access to health services, including condoms, among PWID, Unguja, 2019

	Crude n	Weighted percent (%)	Weighted 95% CI
Received health services either at a facility or from a peer in past 12 months [N=419]			
Yes	276	63.2%	[57.6-68.4]
No	143	36.8%	[31.6-42.4]
Visited a clinic providing services to PWID in past 12 months [N=419]			
Yes	105	23.3%	[18.8-28.5]
No	314	76.7%	[71.5-81.2]
Service(s) received at health facility or PWID-focused clinic¥ [N=105]			
Information on HIV/STI prevention	100	95.4%	[88.3-98.3]
HIV test	83	79.6%	[68.6-87.4]
Counselling from a professional counsellor	75	70.7%	[59.0-80.1]
Condoms	67	62.0%	[49.1-73.4]
Counselling from a peer counsellor	54	56.5%	[44.5-67.7]
Information on TB	48	50.5%	[38.6-62.4]
Clean needles	28	28.7%	[19.2-40.4]
Bleach kit	22	22.8%	[14.4-34.2]
SRH services	11	8.2%	[4.3-15.2]
Lubricant	8	7.1%	[2.7-17.1]
Testing for hepatitis	5	5.4%	[2.0-13.9]
Other	2	1.1%	[0.3-4.7]
Has ever received opioid substitution therapy/methadone treatment (MAT) [N=419]			
Yes	42	8.9%	[6.4-12.3]
No	377	91.1%	[87.7-93.6]
Length of time in opioid substitution therapy [N=42]			
Less than 6 months	27	70.2%	[52.5-83.3]
6 months or longer	15	29.8%	[16.7-47.5]
Had contact with a peer educator in past 12 months [N=419]			
Yes	249	57.8%	[52.2-63.2]
No	170	42.2%	[36.8-47.8]
Service(s) received from a peer educator in past year¥ [N=249]			
Information on HIV/STI prevention	240	96.2%	[92.3-98.2]
Condoms	124	49.1%	[41.7-56.4]
Referral for VCT	71	29.2%	[23.0-36.3]
Referral for MAT services	55	24.0%	[18.1-31.0]
Clean needles	39	15.4%	[10.8-21.6]
Referral for TB screening	26	10.5%	[6.9-15.6]
Bleach kit	28	9.5%	[6.2-14.2]
Referral to a sober house	21	8.4%	[5.1-13.6]
Referral for STI treatment	6	2.6%	[1.1-6.0]
Referral for PMTCT services	6	1.8%	[0.7-4.1]
Does not remember	2	1.2%	[0.3-5.0]
Lubricant	4	1.0%	[0.4-2.9]
Referral for HIV care and treatment	2	0.6%	[0.1-3.1]
Other	1	0.3%	[0.1-9.0]

	Crude n	Weighted percent (%)	Weighted 95% CI
Peer educator was non-judgemental [N=249]			
Yes	241	96.9%	[93.2-98.6]
No	7	2.7%	[1.1-6.4]
No response	1	0.4%	[0.1-3.0]
Access to condoms and condom use			
Ever used a male condom [N=419]			
Yes	325	78.0%	[73.1-82.3]
No	93	21.8%	[17.6-26.7]
Does not remember	1	0.2%	[0.0-1.1]
Can get a male condom every time needs one [N=325]			
Yes	289	88.6%	[83.9-92.1]
No	36	11.4%	[7.9-16.1]
Where obtained condoms in past month[¥] [N=325]			
Did not buy/get condoms in past month	112	32.9%	[27.2-39.2]
Shops	77	23.4%	[18.5-29.0]
Friends	65	20.6%	[15.9-26.2]
Pharmacy	31	9.0%	[6-13.3]
Bar/guesthouse/hotel	23	7.8%	[4.9-11.9]
NGO	23	6.5%	[4.2-9.9]
Health facility	6	2.4%	[0.9-6.1]
Peer educator	4	1.9%	[0.6-5.6]
Other	4	1.8%	[0.7-5]
Saloon	1	0.4%	[0.1-2.6]

[¥] *Denotes variable for which multiple responses were possible. 95% CI= 95% Confidence Interval*

9.10. Hepatitis testing and hepatitis B vaccine uptake

Prior to this survey only 11.8% of PWIDs reported that they had ever been tested for hepatitis. The majority of those previously tested did not know which type of hepatitis they had been tested for (70.5%). Of those who had been tested for hepatitis B, 65.6% reported receiving a negative result. Of those who had been tested for hepatitis C, 65.0% reported receiving a negative result.

Of the eight PWID who reported having tested negative for hepatitis B, half had received the hepatitis B vaccine but only one of those had received all three doses (Table 26).

Table 26: Hepatitis testing and hepatitis B vaccine uptake among PWID, Unguja, 2019

	Crude n	Weighted percent (%)	Weighted 95% CI
Hepatitis testing prior to survey [N=419]			
Has ever been tested for hepatitis	46	11.8%	[8.6-16.1]
Type of hepatitis testing done [N=46]			
Hepatitis B only	5	10.0%	[3.7-24.4]
Hepatitis C only	3	5.3%	[1.4-18.1]
Hepatitis B and hepatitis C	6	14.1%	[5.3-32.5]

	Crude n	Weighted percent (%)	Weighted 95% CI
Does not know / no response	32	70.5%	[52.8-83.7]
Among those previously tested for hepatitis B			
Result of previous hepatitis B test [N=11]			
Positive	2	18.1%	[2.2-68.7]
Negative	8	65.6%	[23.3-92.3]
Don't know/remember	1	16.3%	[1.6-70.2]
Was vaccinated for hepatitis B [N=8]			
Yes	4	51.8%	[12.2-89.3]
No	4	48.2%	[10.7-87.8]
Received all 3 doses of hepatitis B vaccine [N=4]			
Yes	1	15.8%	[0.2-94.0]
No	3	84.2%	[6.0-99.8]
Why did not receive all three doses of hepatitis B vaccine [N=3]			
Did not have time	2	65.0%	[0.2-100]
Lost vaccination card	1	35.0%	[0.0-99.8]
Among those previously tested for hepatitis C [N=9]			
Result of previous hepatitis C test			
Positive	2	14.7%	[1.6-64.9]
Negative	6	65.0%	[19.1-93.6]
Does not know/remember	1	20.3%	[1.7-78.5]

95% CI= 95% Confidence Interval

9.11. Access to care and treatment and KP services among HIV-infected PWID

Only five PWID disclosed an HIV-positive status during the survey. Only one was not currently on ART. Three PWID had been on ART for more than six months and confirmed that they had a viral load test done (Table 27).

Of the five PWID who disclosed an HIV-positive status during the survey, three reported accessing health services at a PWID-focused clinic in the 12 months prior to the survey, with the most commonly reported services being counselling from a peer educator, condoms, and information on TB. Four of the five self-reported HIV positive PWID reported receiving services from a peer educator in the 12 months prior to the survey. The most commonly reported services were condoms and referral for MAT services.

Table 27: Access to and uptake of care and treatment services among HIV-infected PWID, Unguja, 2019

	Crude n	Weighted percent (%)	Weighted 95% CI
Currently on anti-retroviral therapy (ART) [N=5]			
Yes	4	83.2%	[11.6-99.5]
No	1	16.8%	[0.5-88.4]
Time on ART [N=4]			
Less than 6 months	1	3.6%	[0.0-74.3]

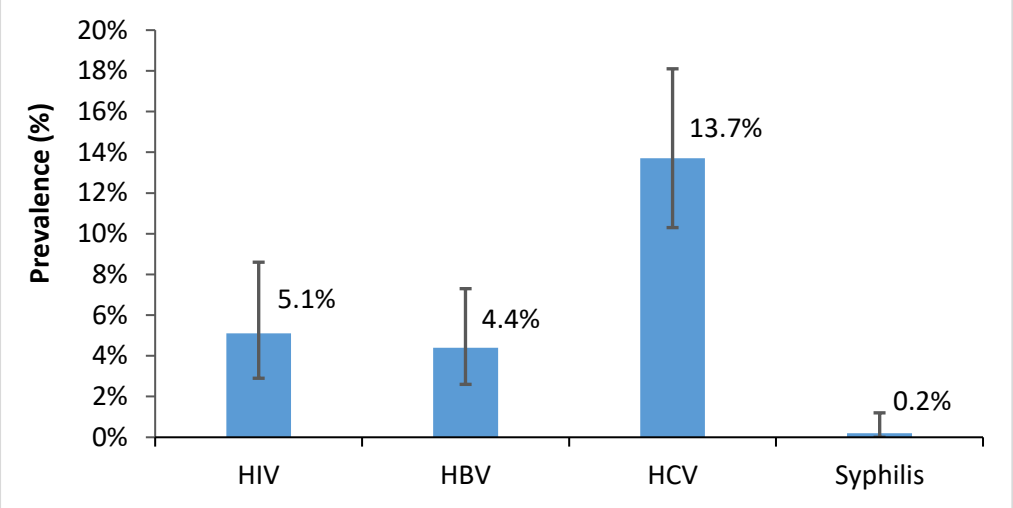
More than 6 months	3	96.4%	[25.7-100.0]
Has had VL test done [N=4]			
Yes	3	85.2%	[6.2-99.8]
Does not know/remember	1	14.8%	[0.2-93.8]

95% CI= 95% Confidence Interval

9.12. HIV, HBV, HCV, and active syphilis prevalence, UNAIDS 90-90-90 cascade and HIV risk factors

HIV prevalence among PWID was 5.1% (95% CI: 2.9-8.6); HBV prevalence was 4.4% (95% CI: 2.6-7.3); HCV prevalence was 13.7% (95% CI: 10.3-18.1) and active syphilis prevalence was 0.2% (95% CI: 0.0-1.2). In addition, 3.4% (95% CI: 1.6-6.9) of PWID were infected with both HIV and HCV. Among the 18 PWID infected with HIV, 56.7% (95% CI: 27.6-81.8) were virally suppressed (Figure 56; Table 28).

Figure 56: Prevalence of HIV, HBV, HCV and active syphilis among PWID in Unguja, 2019



The UNAIDS 90-90-90 targets were assessed among PWID. Less than half (47.5%; 95% CI: 20.8-75.6; n=8) of PWID who are living with HIV had been previously diagnosed. PWID who did not disclose an HIV-positive status during the survey but were found to be virally suppressed (n=3), in the absence of a test for the presence of ARV metabolites in the blood, were assumed to be already diagnosed and already on ART. Of those diagnosed, 88.1% (95% CI: 31.5-99.2; n=7) were on ART. Of those on ART, 97.6% (95% CI: 68.4-99.9; n=6) were virally suppressed (Figure 57; Table 28).

Figure 57: Progress towards UNAIDS 90-90-90 targets among PWID, Unguja, 2019

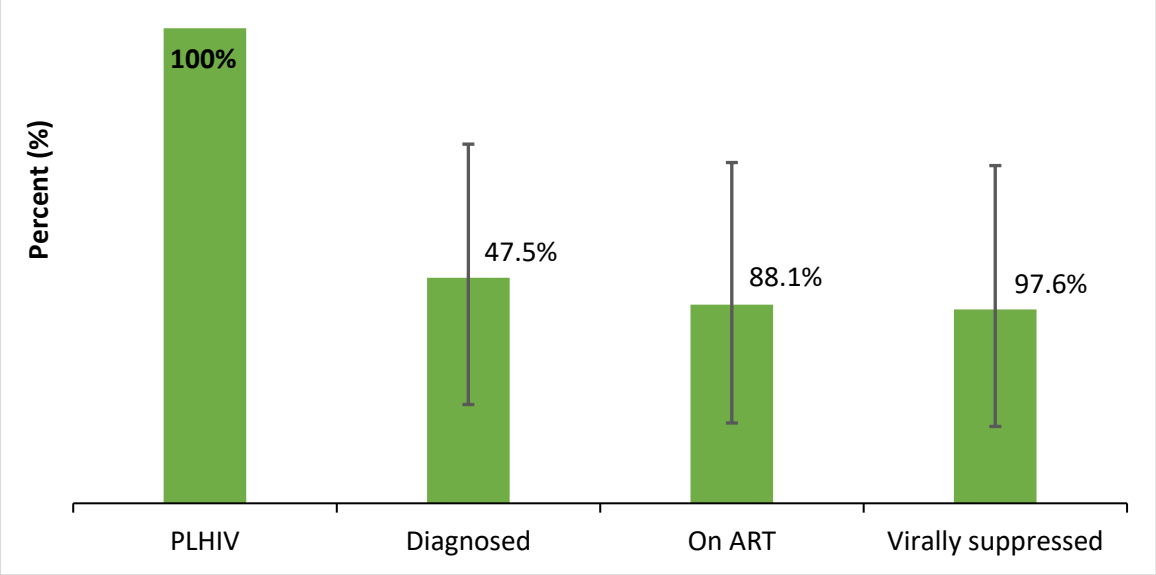


Table 28: Prevalence of HIV, HBV, HCV and active syphilis among PWID in Unguja, 2019

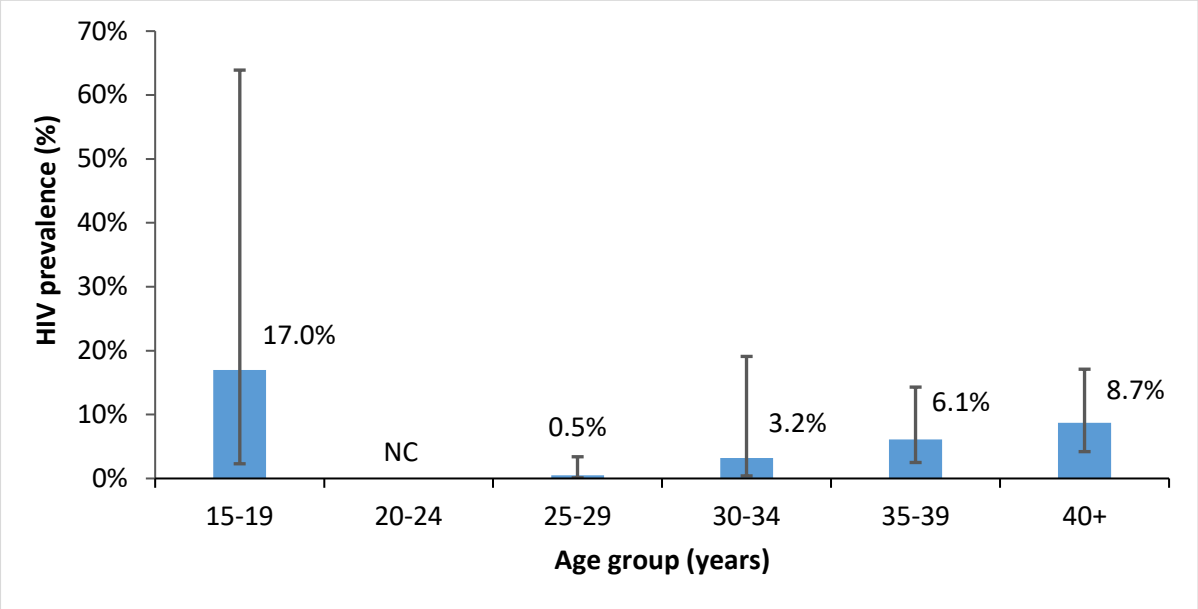
	Crude n	Weighted percent (%)	Weighted 95% CI
HIV test results [N=419]			
Positive	18	5.1%	[2.9-8.6]
Negative	401	94.9%	[91.4-97.1]
Viral suppression [N=18]			
Virally suppressed	9	56.7%	[27.6-81.8]
Not suppressed	9	43.3%	[18.2-72.4]
Hepatitis B results [N=419]			
Positive	20	4.4%	[2.6-7.3]
Negative	399	95.6%	[92.7-97.4]
Hepatitis C results [N=419]			
Positive	55	13.7%	[10.3-18.1]
Negative	364	86.3%	[81.9-89.7]
HIV / HCV co-infection [N=419]			
Infected with HIV and HCV	10	3.4%	[1.6-6.9]
Syphilis test results [N=419]			
Positive	1	0.2%	[0.0-1.2]
Negative	418	99.8%	[98.8-100]
90-90-90 cascade			
PWID living with HIV who have been diagnosed [N=18]	8	47.5%	[20.8-75.6]
Current on ART (of those already diagnosed) [N=8]	7	88.1%	[31.5-99.2]
Virally suppressed (of those on ART) [N=7]	6	97.6%	[68.4-99.9]

95% CI= 95% Confidence Interval

9.12.1.HIV prevalence by socio-demographic characteristics

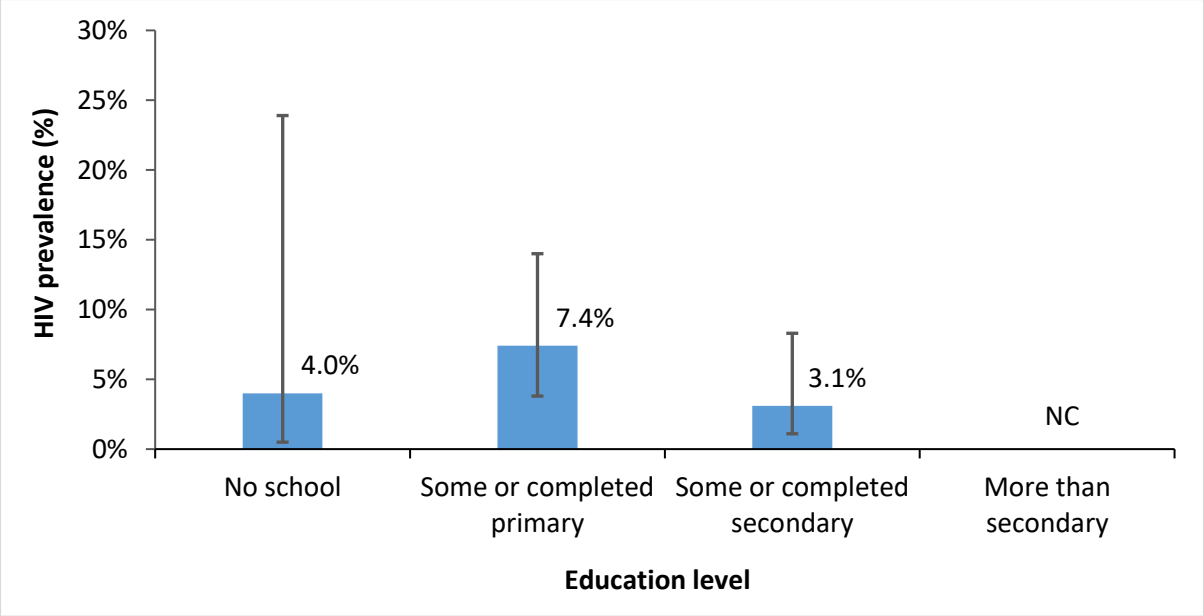
There were minimal differences in HIV prevalence among PWID by most socio-demographic characteristics. With the exception of the youngest PWID age group, HIV prevalence increased with age with the highest prevalence found among the oldest PWID (8.7%; 95% CI: 4.2-17.1) (Figure 58). However, given the small numbers of respondents in many of these age groups, the values should be interpreted with caution.

Figure 58: HIV prevalence among PWID by age group, Unguja, 2019



HIV prevalence was similar among PWID regardless of their reported level of education (Figure 59).

Figure 59: HIV prevalence among PWID by education level, Unguja, 2019



A higher HIV prevalence was found among PWID who migrated to Unguja (9.6%; 95% CI: 4.7-18.6) compared to those who had lived in Unguja their whole lives (3.8%; 95% CI: 1.7-8.1) (Table 29), with those who had most recently migrated to Zanzibar having the highest HIV prevalence (20.4%; 95%

CI: 2.2-74.4), although this is based on only one participants and so should be interpreted with caution (Figure 60).

Figure 60: HIV prevalence among PWID by number of years lived in Unguja, 2019

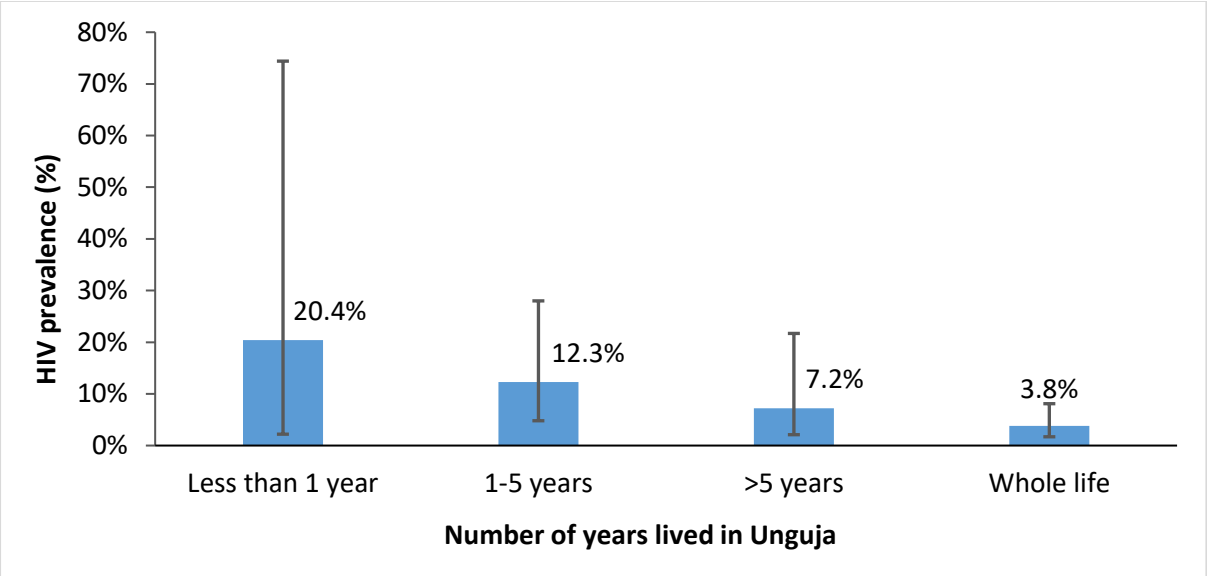


Table 29: HIV prevalence among PWID by socio-demographic characteristics, Unguja, 2019

	Crude HIV-positive (n)	HIV prevalence (%)	95% CI
Sex			
Female	1	31.3%	[4.6-80.9]
Male	17	4.8%	[2.7-8.4]
Age group			
15-19	1	17.0%	[2.3-63.9]
20-24	0	0.0%	NC
25-29	1	0.5%	[0.1-3.4]
30-34	1	3.2%	[0.4-19.1]
35-39	5	6.1%	[2.5-14.3]
40+	10	8.7%	[4.2-17.1]
Marital status			
Married	2	5.7%	[1.0-27.2]
Living with partner	0	0.0%	NC
Separated/divorced/widowed	9	7.0%	[3.4-13.6]
Never married	7	3.3%	[1.2-8.6]
Level of education			
No school	1	4.0%	[0.5-23.9]
Some or completed primary	13	7.4%	[3.8-14.0]
Some or completed secondary	4	3.1%	[1.1-8.3]
More than secondary	0	0.0%	NC
Number of years lived in Unguja			
Less than 1 year	1	20.4%	[2.2-74.4]

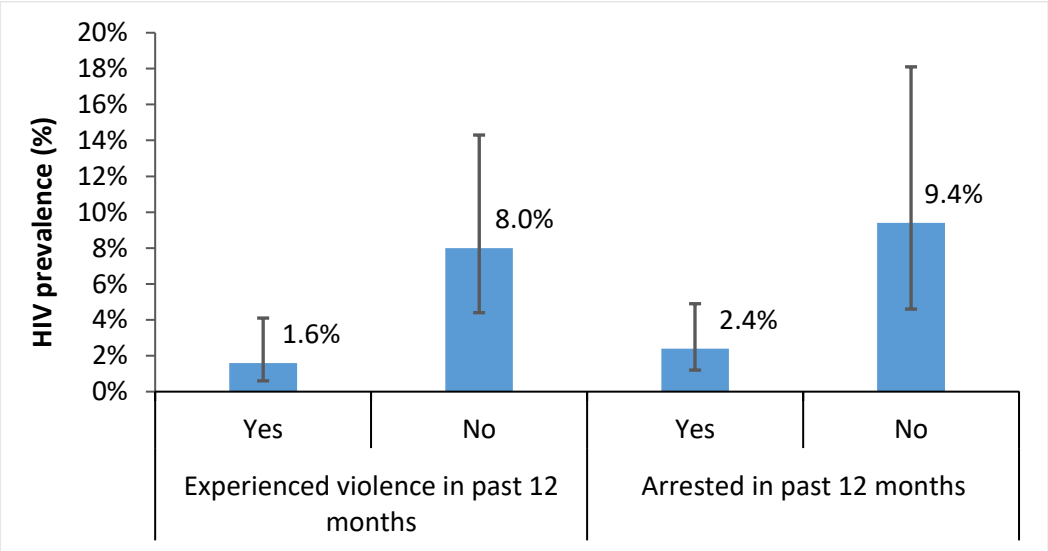
	Crude HIV-positive (n)	HIV prevalence (%)	95% CI
1-5 years	5	12.3%	[4.8-28.0]
>5 years	3	7.2%	[2.1-21.7]
Whole life	9	3.8%	[1.7-8.1]
Migration			
Migrated to Unguja	9	9.6%	[4.7-18.6]
Lived whole life in Unguja	9	3.8%	[1.7-8.1]
Income earned in past month (TZS)			
≤ 250,000	5	10.4%	[4.2-23.5]
250,001-500,000	7	5.2%	[2.1-12.2]
500,0001-750,000	0	0.0%	NC
> 750,000	6	4.2%	[1.7-10.2]
Ways of earning money			
Formal employment	2	16.5%	[4.2-47.2]
Self-employment	14	3.7%	[2.0-6.9]
Currently unemployed	1	12.8%	[1.8-53.8]
Illegal activities, including selling sex	2	7.0%	[1.5-27.1]

95% CI= 95% Confidence Interval

9.12.2.HIV prevalence by vulnerability factors

PWID who had been arrested in the 12 months preceding the survey had a lower HIV prevalence (2.4%; 95% CI: 1.2-4.9) than those who had not (9.4%; 95% CI: 4.6-18.1). Those who had experienced physical violence in the 12 months prior to the survey also had a lower HIV prevalence (1.6%; 95% CI: 0.6-4.1) than those who had not (8.0%; 95% CI: 4.4-14.3) (Figure 61).

Figure 61: HIV prevalence among PWID by experiences of violence and arrest in past 12 months, Unguja, 2019



HIV prevalence was lower among PWID who reported being excluded from social gatherings (1.5%; 95% CI: 0.7-3.4) compared to those who had not (11.0%; 95% CI: 5.9-19.8). HIV prevalence was not

found to have statistically significant differences related to other vulnerability factors, including having comprehensive HIV knowledge (Table 30).

Table 30: HIV prevalence among PWID by vulnerability factors, Unguja, 2019

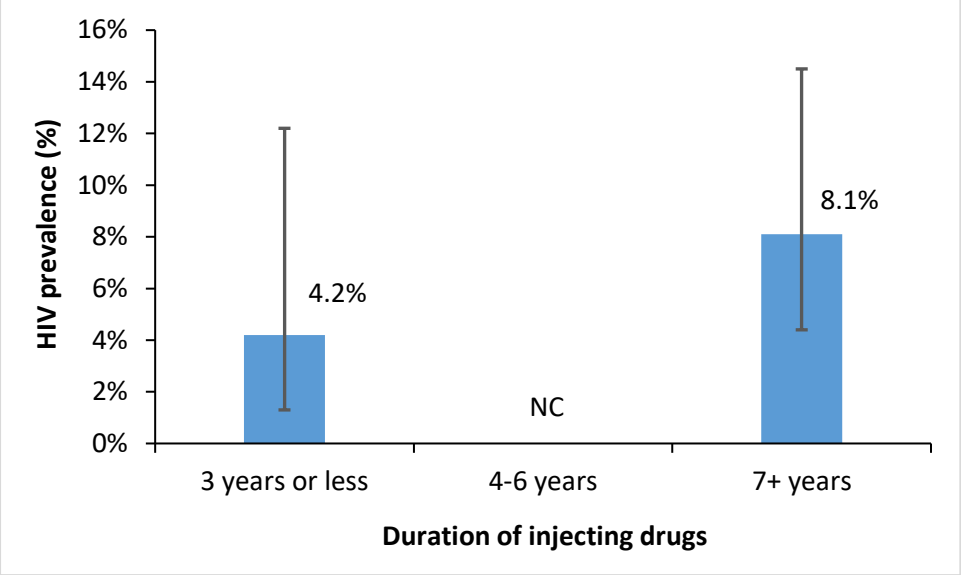
	Crude HIV-positive (n)	HIV prevalence (%)	95% CI
Arrested in past 12 months			
Yes	9	2.4%	[1.2-4.9]
No	9	9.4%	[4.6-18.1]
Experienced physical violence in past 12 months			
Yes	5	1.6%	[0.6-4.1]
No	13	8.0%	[4.4-14.3]
Forced to have sex in past 12 months			
Yes	0	0.0%	NC
No	18	5.7%	[3.3-9.6]
No response	0	0.0%	NC
Has experienced name calling, teasing or insults			
Yes	15	4.4%	[2.4-8.0]
No	3	8.5%	[2.6-24.8]
Has been excluded from a social gathering			
Yes	7	1.5%	[0.7-3.4]
No	11	11.0%	[5.9-19.8]
Has been abandoned by loved ones			
Yes	14	4.5%	[2.4-8.5]
No	4	7.8%	[2.8-19.6]
Does not know	0	0.0%	NC
Others have lost respect for him/her			
Yes	15	4.1%	[2.3-7.5]
No	3	11.6%	[3.6-31.4]
Has comprehensive HIV knowledge			
Yes	7	4.8%	[2.0-10.9]
No	11	5.2%	[2.6-10.2]
Perceived risk of HIV infection (excluding known positives)			
High risk	7	3.7%	[1.5-8.6]
Medium or low risk	2	2.3%	[0.5-9.9]
No risk	0	0.0%	NC
Does not know/no response	1	6.0%	[0.7-36.7]

95% CI= 95% Confidence Interval

9.12.3.HIV prevalence by risk behaviours

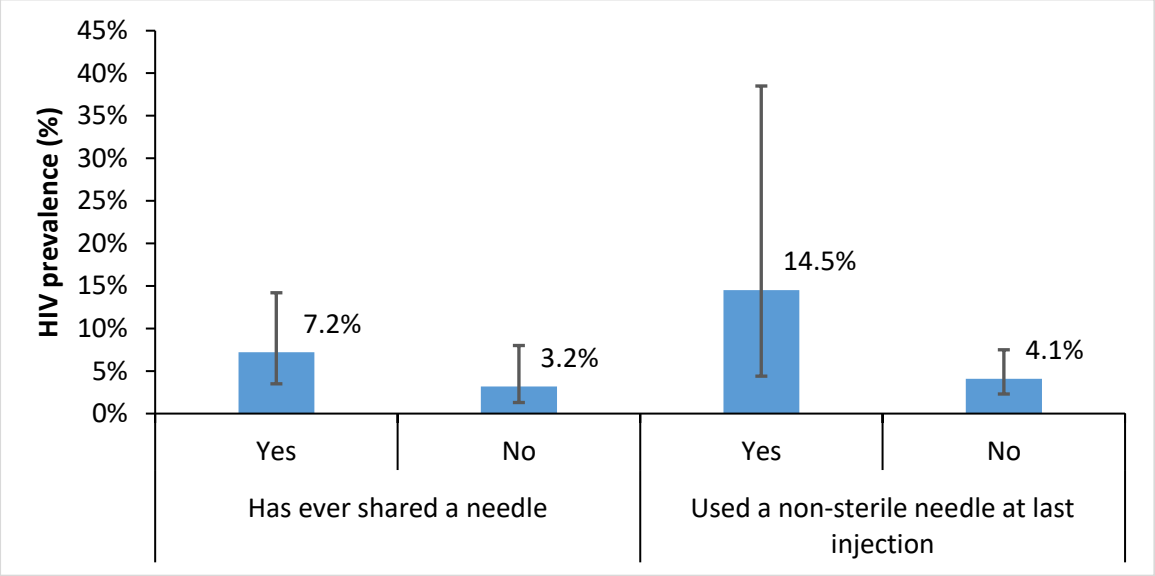
PWID who reported injecting drugs for 3 years or less had a lower HIV prevalence (4.2%; 95% CI: 1.3-12.2) compared to those who had been injecting 7 years or more (8.1%; 95% CI: 4.4-14.5). No HIV infection was found among those who had been injecting drugs for 4-6 years (Figure 62).

Figure 62: HIV prevalence among PWID by duration of injecting drugs, Unguja, 2019



HIV prevalence was higher among those who reported having ever shared a needle (7.2%; 95% CI: 3.5-14.2) than those who had not (3.2%; 95% CI: 1.3-8.0). Those who reported using a non-sterile needle at last injection (14.5%; 95% CI: 4.4-38.5) had higher prevalence than those who had not (4.1%; 95% CI: 2.3-7.5) (Figure 63; Table 31).

Figure 63: HIV prevalence among PWID by use of non-sterile needles, Unguja, 2019



No statistically significant differences were found in HIV prevalence among PWID who reported buying and selling sex in the past month when compared with those who had not (Figure 64).

Figure 64: HIV prevalence and buying and selling sex among PWID, Unguja, 2019

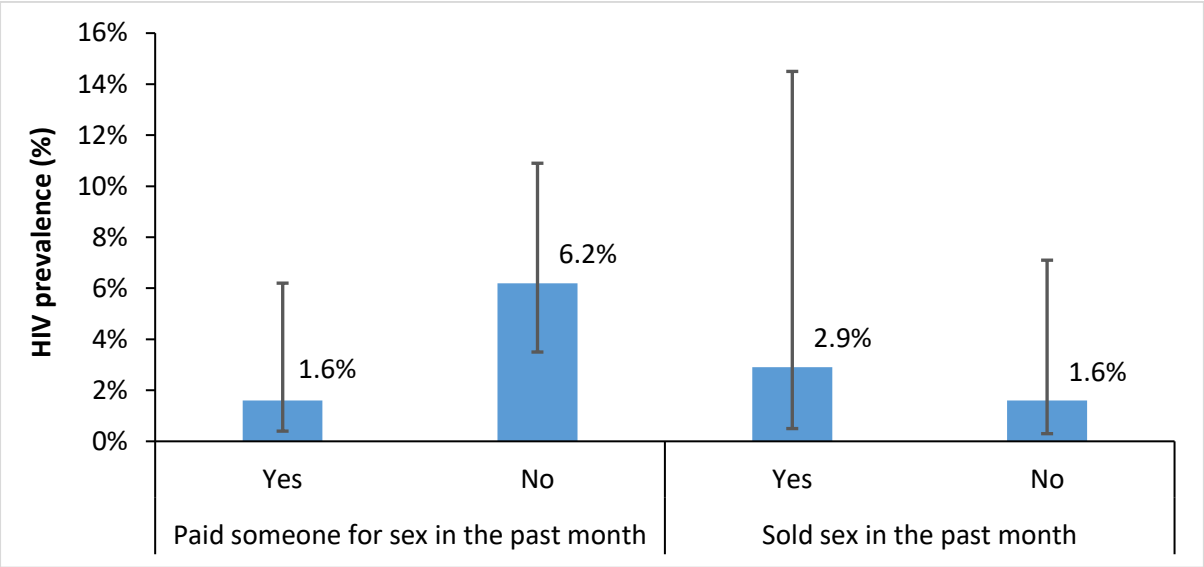


Table 31: HIV prevalence among PWID by injection and sexual risk behaviours, Unguja, 2019

	Crude HIV-positive (n)	HIV prevalence (%)	95% CI
Used non-injection drugs other than alcohol in the last three months			
Yes	10	3.8%	[1.8-7.8]
No	8	7.5%	[3.4-15.7]
Age (years) at first injection			
≤ 19	3	4.1%	[1.3-12.5]
20-24	4	6.8%	[2.1-19.5]
25-29	6	6.3%	[2.4-15.6]
≥ 30	5	3.6%	[1.3-9.3]
Number of years injecting			
3 years or less	5	4.2%	[1.3-12.2]
4-6 years	0	0.0%	NC
7+ years	13	8.1%	[4.4-14.5]
Types of drugs injected in past 3 months			
White heroin	18	6.0%	[3.5-10.1]
Brown heroin	2	1.0%	[0.2-5.2]
Drugs other than heroin	0	0.0%	NC
Can get a clean needle/syringe anytime needed			
Yes	16	5.1%	[2.8-9.0]
No	2	4.8%	[1.0-19.2]
Has ever shared a needle			
Yes	11	7.2%	[3.5-14.2]
No	6	3.2%	[1.3-8.0]
Does not know/remember	1	27.6%	[3.3-80.9]
Used a needle previously used by someone else in past month			
Yes	1	1.3%	[0.2-8.7]
No	17	5.9%	[3.4-10.2]

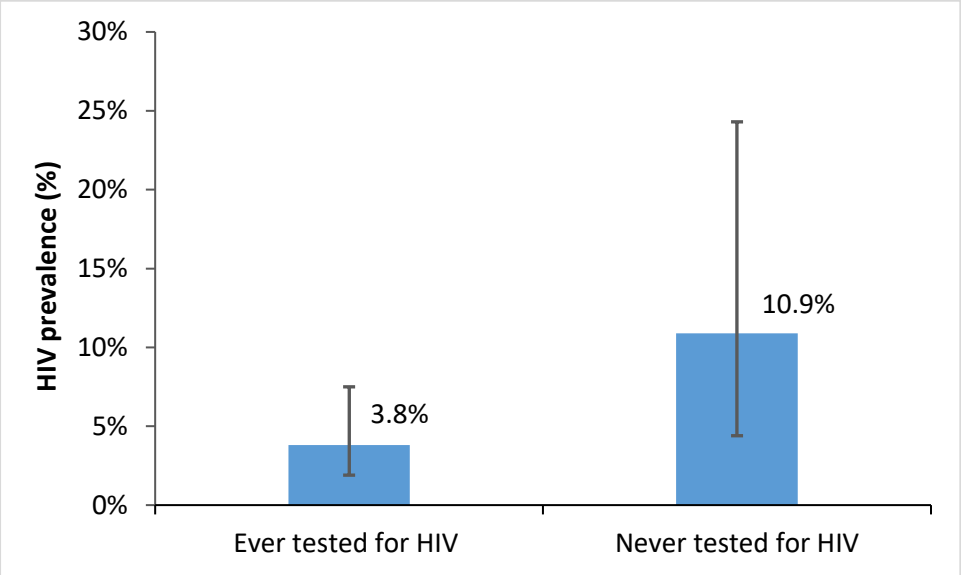
	Crude HIV-positive (n)	HIV prevalence (%)	95% CI
Used a needle/syringe after someone else had used it at last injection			
Yes	3	14.5%	[4.4-38.5]
No	15	4.1%	[2.3-7.5]
How often asked or paid a 'dokta' to inject them in past month			
Always	1	6.1%	[0.9-32.5]
Sometimes	3	1.7%	[0.5-5.8]
Never	14	7.1%	[3.8-12.7]
Had any type of sexual partner in past month			
Yes	7	4.3%	[1.8-10.1]
No	11	5.8%	[2.9-11.3]
Had sex in the past month where no payment was involved			
Yes	5	4.5%	[1.5-12.6]
No	13	5.4%	[2.9-9.8]
Number of sexual partners in past month without any payment			
None	11	6.0%	[3.0-11.7]
One partner	4	5.9%	[1.8-17.9]
Two or more partners	1	1.6%	[0.2-10.9]
Frequency of condom use with partners where no payment was involved in past month			
Always	0	0.0%	NC
Sometimes	1	4.1%	[0.6-24.8]
Never	4	5.3%	[1.6-16.6]
Paid someone for sex in the past month			
Yes	2	1.6%	[0.4-6.2]
No	16	6.2%	[3.5-10.9]
Frequency of condom use with paid partners in past month			
Always	0	0.0%	NC
Sometimes	1	2.6%	[0.3-16.9]
Never	1	2.4%	[0.3-15.9]
No response	0	0.0%	NC
Used a condom last time paid for sex			
Yes	5	4.7%	[1.6-13.1]
No	6	3.9%	[1.6-9.2]
Does not remember	2	51.9%	[14.9-87.0]
Sold sex in the past month			
Yes	2	2.9%	[0.5-14.5]
No	2	1.6%	[0.3-7.1]
Frequency of condom use with paying partners in past month			
Always	0	0.0%	NC
Sometimes	0	0.0%	NC
Never	2	5.5%	[1.0-26.2]
Does not remember	0	0.0%	NC
Used a condom last time was paid for sex			
Yes	0	0.0%	NC
No	4	3.7%	[1.1-11.0]

95% CI= 95% Confidence Interval

9.12.4.HIV prevalence by access to/uptake of services and disease co-infection

HIV prevalence was higher among PWID who reported never having an HIV test prior to the survey (10.9%; 95% CI: 4.4-24.3) compared to those who reported ever testing for HIV (3.8%; 95% CI: 1.9-7.5) (Figure 65; Table 33). HIV prevalence was also higher among PWID who reported experiencing sexually transmitted infection (STI) symptoms in the six months preceding the survey (9.1%; 95% CI: 2.9-24.9) compared to those who had not (4.4%; 95% CI: 2.3-8.0). Although PWID currently receiving opioid substitution therapy (OST) were excluded from the survey, HIV prevalence was higher among PWID who reported ever receiving OST (10.8%; 95% CI: 3.4-29.1) compared to those who had not (4.5%; 95% CI: 2.4-8.2) (Table 33).

Figure 65: HIV prevalence among PWID by HIV testing history, Unguja, 2019



PWID who had contact with a peer educator in past 12 months had lower HIV prevalence (3.0%; 95% CI: 1.2-7.4) compared to those who did not (7.9%; 95% CI: 4.0-14.9).

HIV prevalence was higher among PWID co-infected with HCV (24.6%; 95% CI: 12.7-42.2) than those without HCV (2.0%; 95% CI: 0.9-4.3). HIV prevalence was also higher among PWID co-infected with HBV (11.0%; 95% CI: 3.1-32.3) compared to those without HBV (4.8%; 95% CI: 2.7-8.5) There was no HIV/syphilis co-infection (Figure 66; Table 33).

Figure 66: Disease co-infection among HIV-infected PWID in Unguja, 2019

Table 32: HIV prevalence among

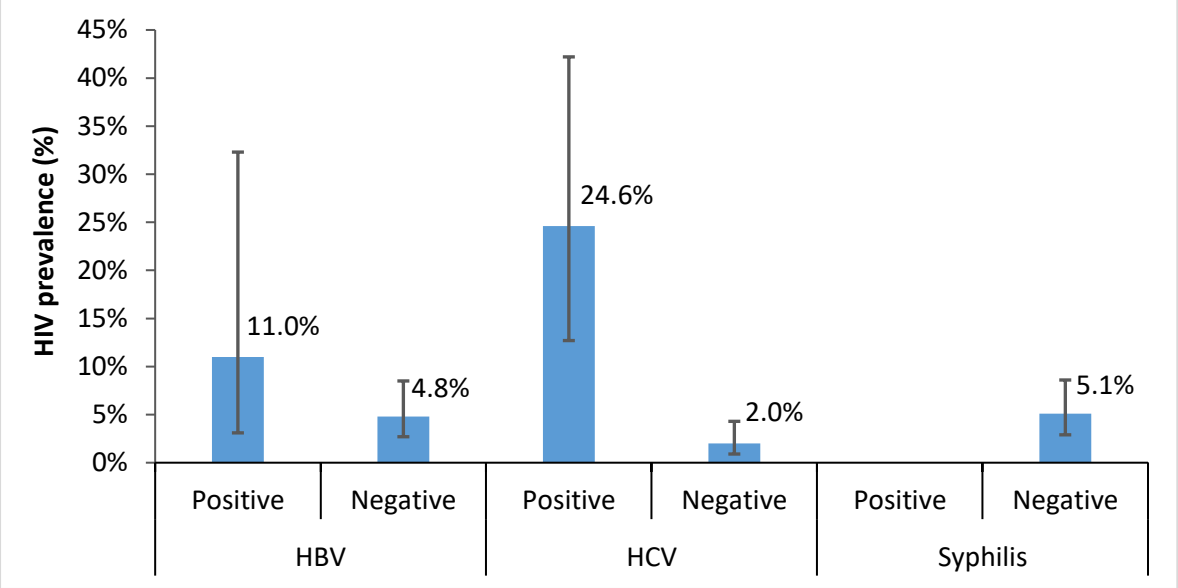


Table 33: HIV prevalence among PWID by uptake of services and disease co-infection, Unguja, 2019

	Crude HIV-positive (n)	HIV prevalence (%)	95% CI
Ever had an HIV test			
Yes	11	3.8%	[1.9-7.5]
No	7	10.9%	[4.4-24.3]
Experienced STI symptoms in past 6 months			
Yes	4	9.1%	[2.9-24.9]
No	14	4.4%	[2.3-8.0]
Visited clinic providing services to PWID in past 12 months			
Yes	5	7.3%	[2.6-18.8]
No	13	4.4%	[2.3-8.2]
Would return to PWID clinic or health facility based on how was treated			
Yes	4	5.5%	[1.6-17.3]
No	1	61.9%	[8.9-96.5]
Has ever received opioid substitution therapy/methadone treatment			
Yes	4	10.8%	[3.4-29.1]
No	14	4.5%	[2.4-8.2]
Had contact with a peer educator in past 12 months			
Yes	8	3.0%	[1.2-7.4]
No	10	7.9%	[4.0-14.9]
Received health services either at a facility or from a peer in past 12 months			
Yes	10	3.9%	[1.8-8.3]
No	8	7.0%	[3.2-14.6]
HBV test results			
Positive	3	11.0%	[3.1-32.3]
Negative	15	4.8%	[2.7-8.5]

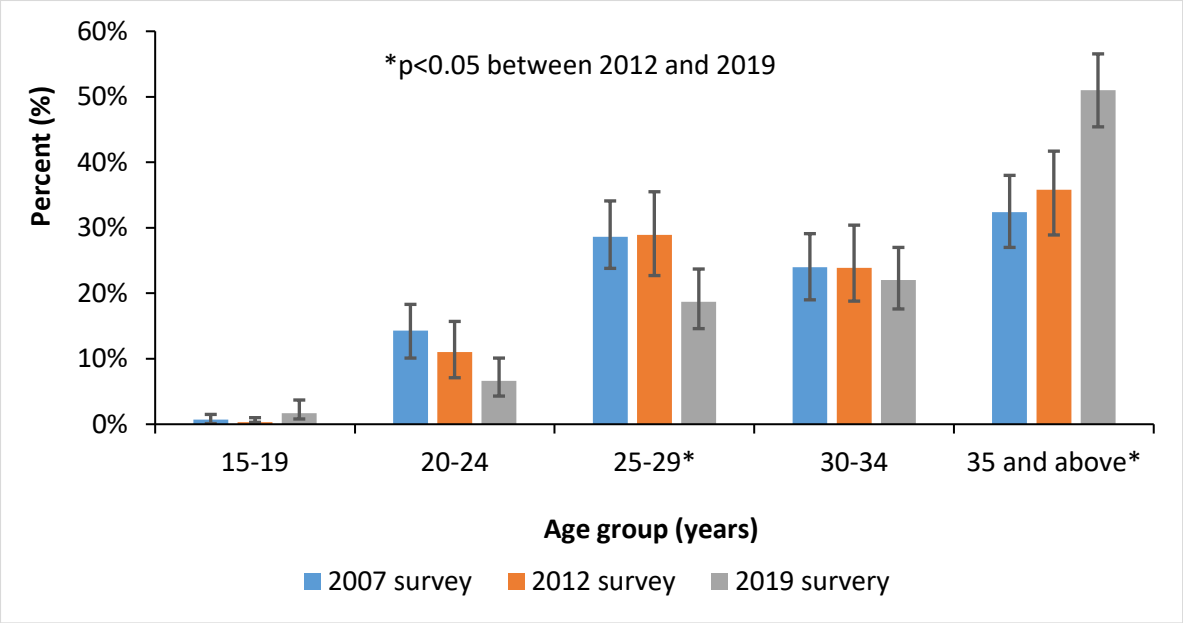
	Crude HIV-positive (n)	HIV prevalence (%)	95% CI
HCV test results			
Positive	10	24.6%	[12.7-42.2]
Negative	8	2.0%	[0.9-4.3]
Syphilis test results			
Positive	0	0.0%	NC
Negative	18	5.1%	[2.9-8.6]

95% CI= 95% Confidence Interval

9.13. Comparison of key findings from 2007, 2012 and 2019 surveys

The proportion of enrolled PWID aged 25-29 decreased significantly between the 2012 and 2019 RDS surveys from 28.9% to 18.7% (p=0.020), while those aged 35+ increased from 35.8% in 2012 to 51.0% in the 2019 RDS survey (p<0.001) (Figure 67). The median age of RDS survey participants increased from 32 years in 2012 to 35 years in 2019 (Table 34).

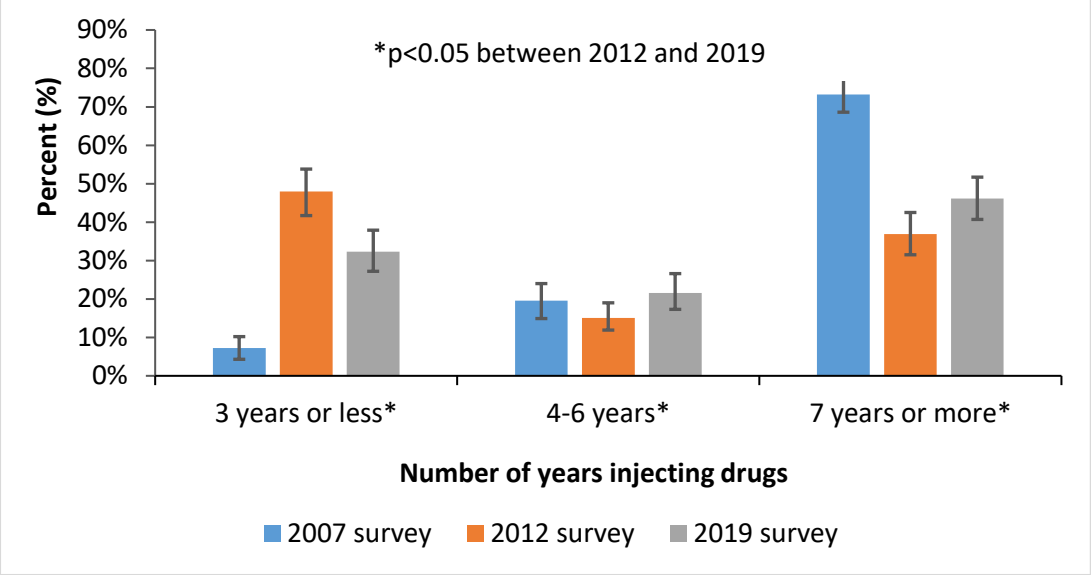
Figure 67: Age distribution of PWID in 2012 and 2019 surveys, Unguja



Education levels increased among PWID between the 2012 and 2019 surveys, with a higher proportion having at least some or having completed (but not more than) secondary education in 2019 (39.2% versus 47.7%; p=0.040). The proportion of PWID engaged in illegal activities, including selling sex, as a means of earning money decreased significantly from 9.4% in 2012 to 4.2% in 2019 (p=0.020).

Almost half of PWID (46.1%) reported injecting drugs for seven years or more in 2019, while 21.6% and 32.3% had been injecting for four to six years, and for three years or less, respectively. This is different from 2012, when almost half (48.0%; p<0.001) had been injecting for three years or less and only 36.9% (p=0.020) for seven years or more (Figure 68). The median age at first injection is 26 years, which is the same it was in 2012.

Figure 68: Comparison of duration of injection drug use among PWID in Unguja, 2012 and 2019 surveys



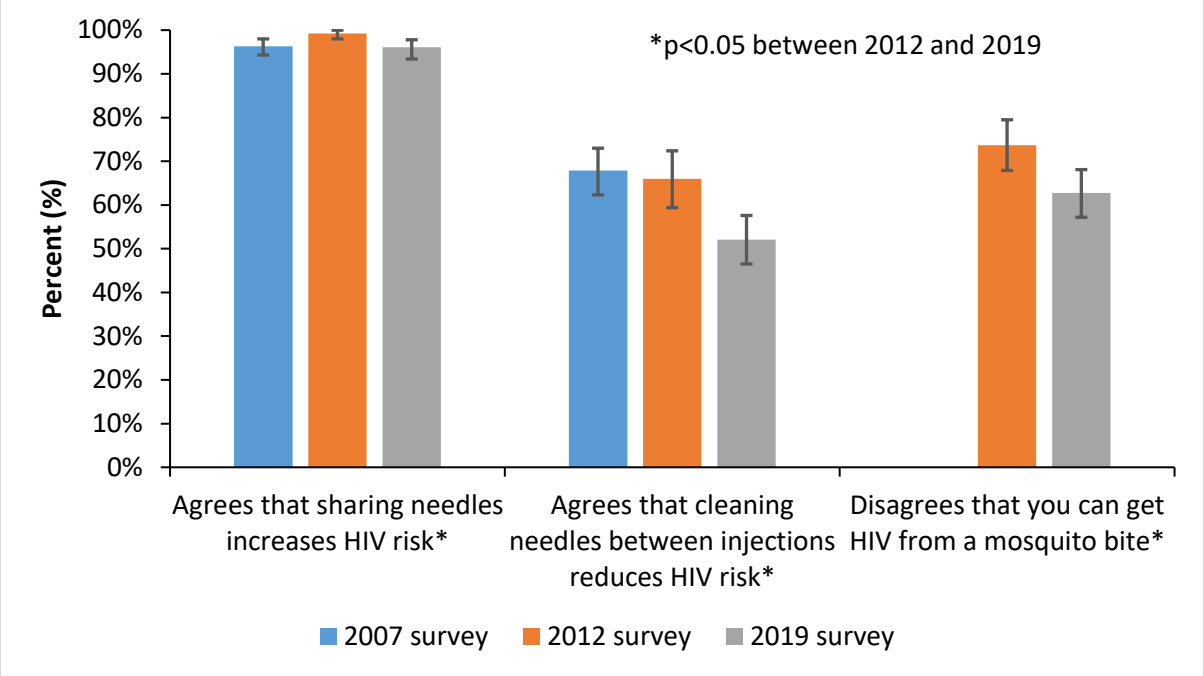
Heroin remains the most commonly injected drug among PWID in Unguja; however, the proportions of PWID injecting different types of heroin changed from 2012 to 2019. Although white heroin was the most commonly injected drug in both 2012 and 2019, there was a decrease in the percentage of PWID who reported injecting white heroin in the three months prior to the survey in 2019 (99.4% versus 85.0%; p<0.001), while injecting brown heroin increased from 11.2% in 2012 to 28.8% in 2019 (p<0.001). Cocaine and amphetamines were reported to be used for injection for the first time in 2019, with 3.9% and 0.4% of PWID reporting injecting cocaine and amphetamines, respectively, in the past three months (Table 34).

The proportion of PWID who reported being able to get a clean needle anytime increased from 52.1% in 2012 to 86.6% in 2019 (p<0.001). Furthermore, the number of PWID who used a needle already used by someone else in past month decreased from 29.1% in 2012 to 18.7% in 2019 (p<0.001). Additionally, there was an increase in the reported use of a clean needle at last injection from 71.4% in 2012 to 91.1% in 2019 (p<0.001) (Figure 70).

The proportion of PWID who experienced physical violence in the 12 months prior to the survey decreased between the two surveys, from 59.7% in 2012 to 46.0% in 2019 (p<0.001). There was little difference in the proportion of PWID who reported arrest in the 12 months prior to the survey (66.1% in 2012 versus 62.1% in 2019; p=0.340).

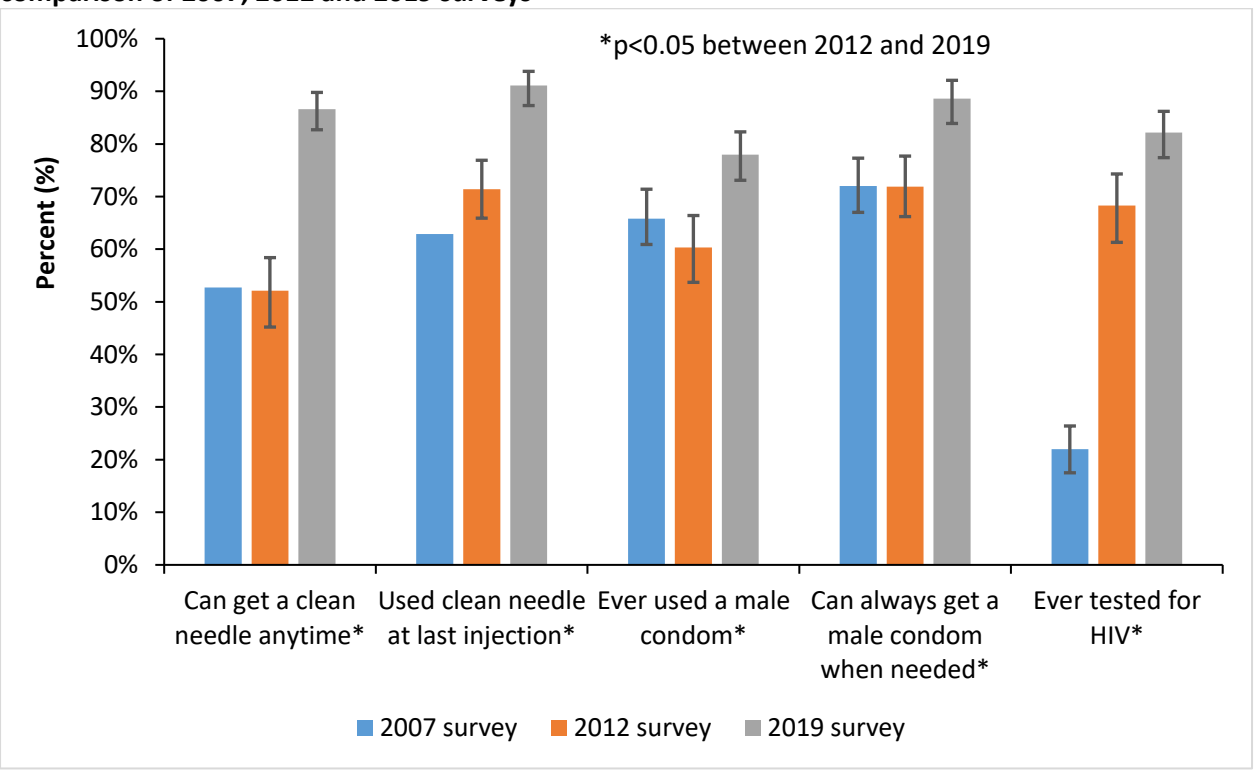
The overall perception of risk for HIV infection increased among PWID from 2012 to 2019. The proportion of PWID who perceived themselves to be at no risk of HIV decreased from 30.1% in 2012 to 18.8% in 2019 (p<0.001) while the proportion who believed themselves to be at medium risk increased from 7.3% to 15.9% (p<0.001). Decreases were seen from 2012 to 2019 in PWID who agreed that sharing needles when injecting drugs increases the risk of HIV infection (99.2% to 96.1%; p=0.020), cleaning needles between injections decreases the risk of HIV infection (66.0% to 52.1%; p<0.001), and disagreed that mosquitoes can transmit HIV(73.7% to 62.8%; p<0.001) (Figure 69).

Figure 69: HIV knowledge among PWID in Unguja, comparison of 2007, 2012 and 2019 surveys



PWID who reported having ever used a male condom, being able to get male condoms when needed, and having ever tested for HIV increased from 2012 to 2019 (p<0.001 for all three variables) (Figure 70). However, PWID who reported having contact with a peer educator in the year prior to the survey decreased from 70.8% in 2012 to 57.8% in 2019 (p<0.001) (Table 34).

Figure 70: Access to and uptake of HIV prevention and testing services among PWID in Unguja, comparison of 2007, 2012 and 2019 surveys



There was a decrease in HIV prevalence among PWID from 11.3% in 2011 to 5.1% in 2019 (p<0.001). Similarly, HCV prevalence among PWID decreased from 25.4% in 2012 to 13.7% in 2019 (p<0.001). A slight decrease was seen in the prevalence of HBV (5.9% in 2012 versus 4.4% in 2019; p=0.400) among PWID between the two surveys (Figure 71). No direct comparison can be made for syphilis.

Figure 71: HIV, HCV, and HBV prevalence among PWID in Unguja, comparison of 2007, 2012 and 2019 surveys

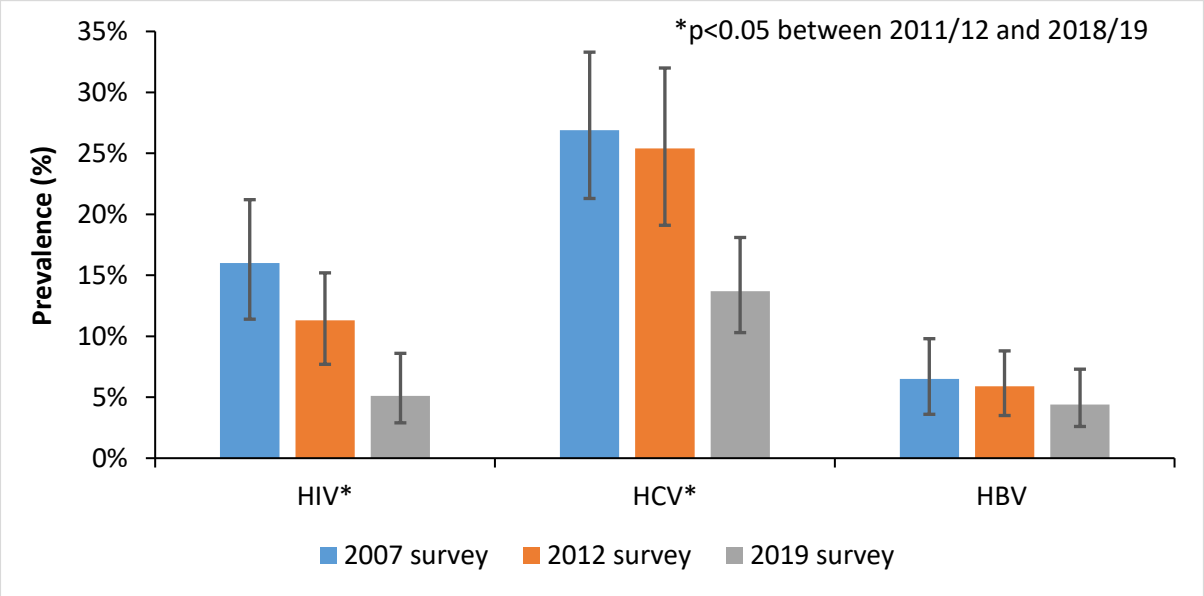


Table 34: Key findings among PWID in Unguja, 2007, 2012, and 2019

	2007	2011/12	2019	p-value 2011/12 vs 2019
SOCIO-DEMOGRAPHIC CHARACTERISTICS				
Age (years)				
15-19	0.7%	0.3%	1.7%	0.080
20-24	14.3%	11.0%	6.6%	0.100
25-29	28.6%	28.9%	18.7%	**0.020**
30-34	24.0%	23.9%	22.0%	0.620
35+	32.4%	35.8%	51.0%	**< 0.001**
Median age of sample	31 years	32 years	35 years	
Sex				
Female	3.0%	1.5%	0.9%	**0.024**
Level of education				
No school		3.2%	3.9%	0.660
Some or completed primary		55.7%	46.1%	**0.020**
Some or completed secondary		39.2%	47.7%	**0.040**
More than secondary		1.8%	2.3%	0.720
Ways of earning money				
Formally employed	13.2%	5.4%	7.0%	0.460

	2007	2011/12	2019	p-value 2011/12 vs 2019
Self-employed / non-formal		89.9%	87.1%	0.320
Studying or not currently working		1.2%	3.6%	0.600
Engaged in illegal activities, including selling sex	14.1%	9.4%	4.2%	**0.020**
INJECTION RISK BEHAVIORS				
Median age at first injection	20 years	26 years	26 years	
Duration of injection drug use				
3 years or less	7.2%	48.0%	32.3%	**< 0.001**
4-6 years	19.6%	15.1%	21.6%	**0.020**
7 years or more	73.2%	36.9%	46.1%	**0.020**
Types of drugs injected in past 3 months				
White heroin	96.9%	99.4%	85.0%	**< 0.001**
Brown heroin	2.3%	11.2%	28.8%	**< 0.001**
Cocaine			3.9%	
Amphetamines			0.4%	
Prescription drugs		0.3%	0.2%	0.940
Access to clean needles and needle sharing				
Able to get a clean needle anytime	52.7%	52.1%	86.6%	**< 0.001**
Used a needle already used by someone else in past month	53.8%	29.1%	18.7%	**< 0.001**
Always cleaned the needle before using among those who used a non-sterile needle in past month	30.0%	52.2%	59.5%	0.420
Used a clean needle at last injection	62.9%	71.4%	91.1%	**< 0.001**
SEXUAL RISK BEHAVIORS				
Paid someone for sex in the past month		22.2%	24.3%	0.560
Sold sex in past month		8.4%	11.7%	0.200
VULNERABILITY FACTORS				
Experienced physical violence in past 12 months	57.1%	59.7%	46.0%	**< 0.001**
Arrested in past 12 months	73.9%	66.1%	62.1%	0.340
Perceived risk for HIV				
High risk	91.0%	56.9%	57.4%	0.920
Medium risk	1.9%	7.3%	15.9%	**< 0.001**
Low risk	0.5%	5.7%	6.4%	0.720
No risk	6.6%	30.1%	18.8%	**< 0.001**
HIV knowledge				
Agrees that HIV risk can be reduced by having sex with one uninfected partner	93.1%	88.0%	85.8%	0.480
Agrees that sharing needles when injecting drugs increases the risk of HIV infection	96.3%	99.2%	96.1%	**0.020**

		2007	2011/12	2019	p-value 2011/12 vs 2019
Agrees that cleaning needles/syringes between injections reduces HIV risk		67.9%	66.0%	52.1%	**< 0.001**
Disagrees that you can get HIV from a mosquito bite			73.7%	62.8%	**< 0.001**
ACCESS TO AND UPTAKE OF SERVICES					
Ever used a male condom		65.8%	60.3%	78.0%	**< 0.001**
Can always get a male condom when needed		72.0%	71.9%	88.6%	**< 0.001**
Ever tested for HIV		22.0%	68.3%	82.2%	**< 0.001**
Tested for HIV and received results in past 12 months			38.0%	44.1%	0.180
Visited drop-in centre/clinic for PWID services		--	28.1%	23.3%	0.240
Contact with a peer educator in past year		--	70.8%	57.8%	**< 0.001**
DISEASE PREVALENCE					
Experienced STI symptoms in past 6 months			16.8%	15.1%	0.580
HIV		16.0%	11.3%	5.1%	**< 0.001**
HCV		26.9%	25.4%	13.7%	**< 0.001**
HBV		6.5%	5.9%	4.4%	0.400
Syphilis	Lifetime infection	0.3%	0.8%		
	Active infection			0.2%	

9.14. Discussion and actions for consideration: PWID

9.14.1. Socio-demographic characteristics

Use of injection drugs continues to be a male dominated behaviour and most PWID are aged 35 years and above. This age group has grown as a proportion of the PWID population since 2012, and at the same time there has been a reduction in the proportion of PWID who have been injecting for three years or less. These finding may reflect an aging injecting population and effective prevention programs that prevent younger people from starting to inject; however, an alternative hypothesis could be that the political environment has led to more crackdowns and more underground behaviour, particularly on the part of younger and more inexperienced PWID. While it is impossible to conclude from this survey why the composition of the PWID population has changed over time, the increase in access to services and the number of PWID being reached are promising signs of effective programmes for PWID.

While most PWID were found to be native to Unguja, HIV infection was more common among those who migrated to Unguja, possibly a reflection of the higher population prevalence at their locations of origin.

9.14.2. Risk behaviours and vulnerability factors among PWID

Injection risk behaviours

Overall, risky injection practices among PWID have decreased as indicated by the reduction in needle sharing in the past month as well as at last injection. Similarly, access to clean needles has improved significantly, although barriers remain, with retailers' reluctance to sell to known PWID being the most commonly cited barrier among PWID who reported that they cannot always access clean needles when needed.

Sexual risk behaviours

Buying and selling sex is relatively common among PWID despite also having steady relationships. Although access to condoms appears to be widespread and gains were found in access to male condoms, consistent condom use was uncommon, with trusting one's partner being the most common reason followed by disliking the feel of condoms and not having a condom.

Vulnerability factors

Knowledge on HIV is low and has declined compared to previous surveys. Despite this, the perception of having no risk for HIV infection has dropped among PWID. The majority of PWID experience stigma and exhibit stigma towards PLHIV. Limitations in knowledge may be drivers of HIV-related stigma. More than half of the PWID population continue to experience incarceration due to drug use followed by loitering and theft. There has been a reduction in the experience of physical violence among PWID; however, HIV prevalence was high among PWID who had not experienced physical violence in the preceding year.

Actions for consideration:

- Strategically target adult PWID with harm reduction efforts, including needle exchange programmes that are currently in the planning phase.
- Rapid acceleration of needle-syringe access for PWID to overcome barriers to obtaining clean needles, including collaborating with pharmacy owners.
- Comprehensive condom programming targeting PWID and their sexual networks.
- Implement widespread stigma-reduction efforts and wider stakeholder engagement to minimize vulnerabilities among PWID.

9.14.3. Access to and uptake of HIV prevention and other HIV-related services

Just over half of PWID are reached by peer educators, which is lower than in previous surveys, and targeted facility-based services for PWID are accessed by fewer than a quarter of PWID. Among those accessing facility-based services, only a small proportion received clean needles or needle cleaning kits. HIV testing within the past year remains relatively low.

Insufficient gains have been made in recent HIV testing among PWID and the first of the 90-90-90 targets remains a major challenge.

Actions for consideration:

- Revamp targeted community and facility-based services to improve access to and uptake of services among PWID.
- Increase the reach and availability of MAT services throughout Unguja.
- Improve coverage of HIV testing among PWID to improve diagnosis of those living with HIV.

9.14.4. Prevalence of HIV, HBV, HCV and syphilis among PWID

There was a significant decrease of HIV and HCV infections among PWID compared to the previous surveys. The findings may reflect that preventive interventions targeting PWID are showing some success.

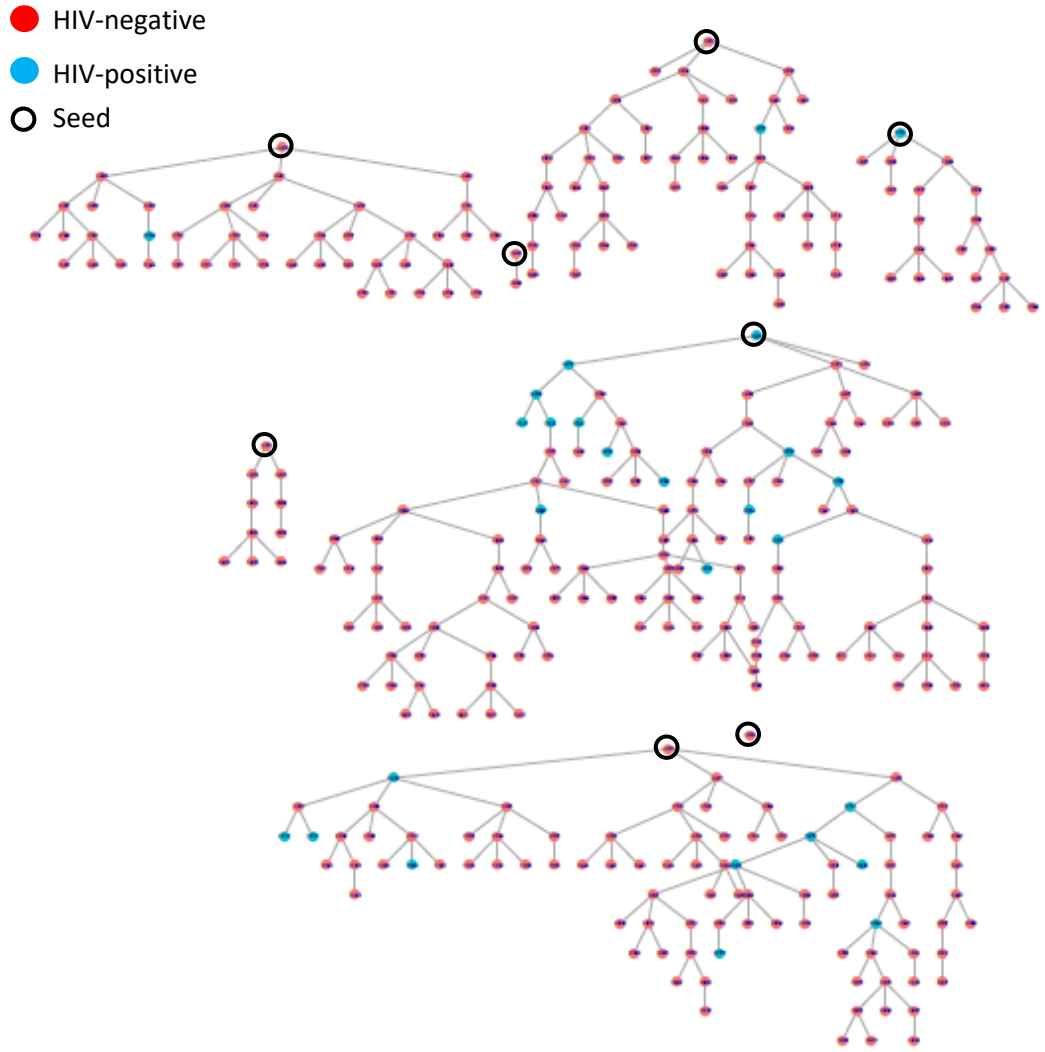
Actions for consideration:

- Comprehensive harm reduction services targeting PWID could be continued and be expanded to reach the wider PWID community in Zanzibar
- Scale up hepatitis B and C testing, coverage of hepatitis B vaccination
- Scale up comprehensive STI screening
- Another round of RDS may be conducted in 3-5 years to continue monitoring the epidemic

10.0 MEN WHO HAVE SEX WITH MEN (MSM)

From September to November 2018, 341 MSM were enrolled in the survey. A total of 435 individuals presented survey coupons at the survey site, of whom 21.6% were ineligible to participate. The most common reason for ineligibility was that, when screened by survey staff, recruits denied having sex with another man. Figure 72 shows the recruitment tree for the MSM RDS in 2018 by HIV status. One seed did not recruit any participants.

Figure 72: RDS recruitment tree by HIV status, MSM, Unguja, 2019



10.1. Population size estimate

The table below describes different methods used to estimate the size of the MSM population in Unguja in 2018, which included unique object multiplier, service multiplier, literature review and estimates from other available time points before the 2018 IBBS. Using a modified Delphi approach, a panel of experts agreed to adopt the median of the second round of estimates (3,000) as the most plausible estimate for the number of MSM in Unguja. The MSM population size estimate translates to 0.7% of the adult male population 15 years and older.

Table 35: Results of population size estimation for MSM in Unguja, 2018

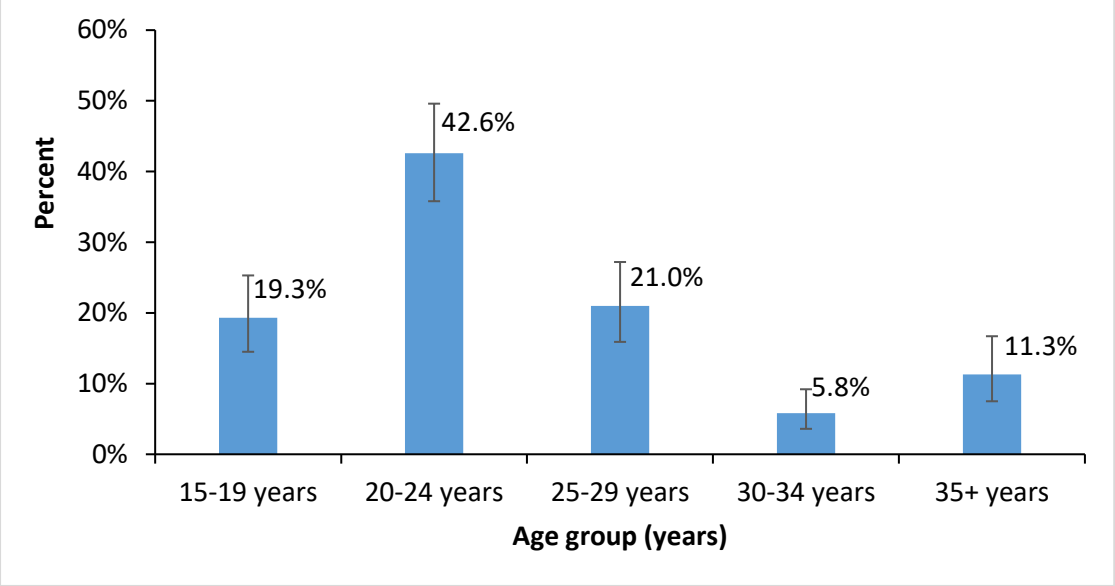
Methods	Estimate	Notes
2018 Recapture of 2007 RDS survey participants	10,210	• 4.0% (RDSA-adjusted) reported during the 2018/19 survey that they had participated in the 2007 survey
2013 published estimate	5,187	• 2013 publication estimating key population sizes in Nairobi = 1.2% of adult males
2018 Unique object multiplier	3,413	• 95% CI: 2,634 – 5,663 • 430 pink key chains distributed • 12.6% (RDSA-adjusted) reported receiving a key chain during the timeframe of distribution
2018 Modified Delphi	3,000	• Min = 2,000 • Max = 5,070
2017 Delphi following Formative Assessment	2,900	• Min = 350 • Max = 6,000
2018 Recapture of 2011/12 RDS survey participants	2,728	• 10.4% (RDSA-adjusted) reported during the 2018/19 survey that they had participated in the 2011/12 survey
2011/12 size estimate using Delphi method (following RDS)	2,157	• 95% CI 1,528 – 2,785
2018 Service multiplier	2,032	• 95% CI 1,575 – 2,864 • 315 MSM received services at ZAYEDESA facility in the year prior to the survey • 15.5% (RDSA-adjusted) reported receiving services from ZAYEDESA in the same time period

95% CI= 95% Confidence Interval

10.2. Socio-demographic characteristics

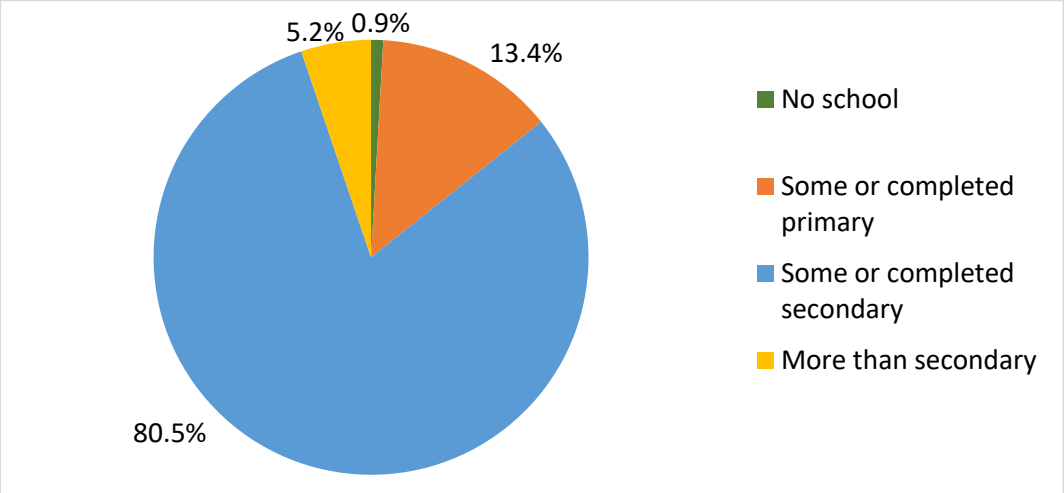
Survey participants ranged from 16 to 65 years of age with a median age of 23 years. More than half of MSM (61.9%) were less than 25 years of age while the largest percentage (42.6%) were between the ages of 20 and 24 years (Figure 73).

Figure 73: Age distribution of MSM in Unguja, 2018



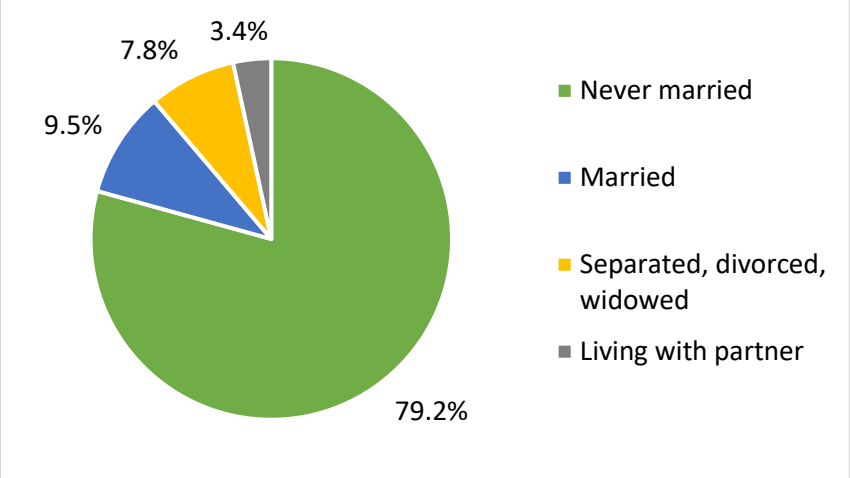
More than three-quarters of MSM (80.5%) reported to have some or completed secondary education. A small percentage (5.2%) had greater than secondary education while very few (0.9%) had no schooling at all (Figure 74).

Figure 74: Education levels among MSM, Unguja, 2018



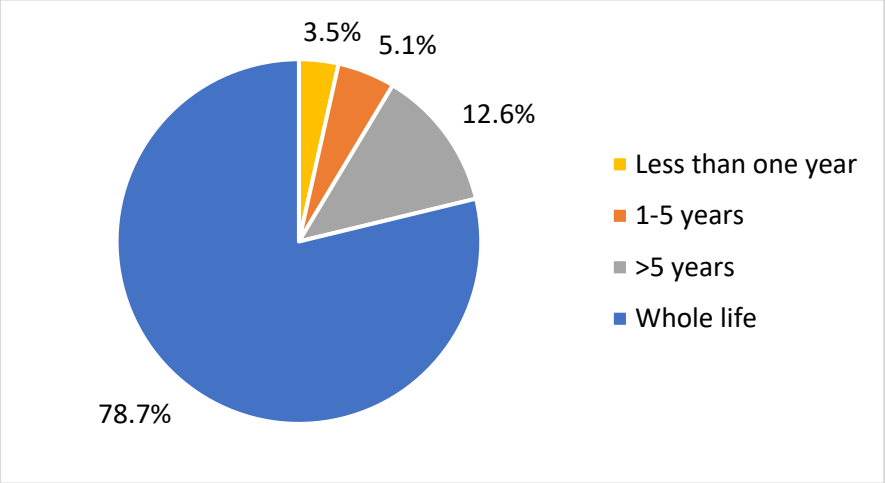
The majority of MSM (79.2%) had never been married. More than one in ten (12.9%) were either currently married or living with a sexual partner (Figure 75).

Figure 75: Marital status among MSM, Unguja, 2018



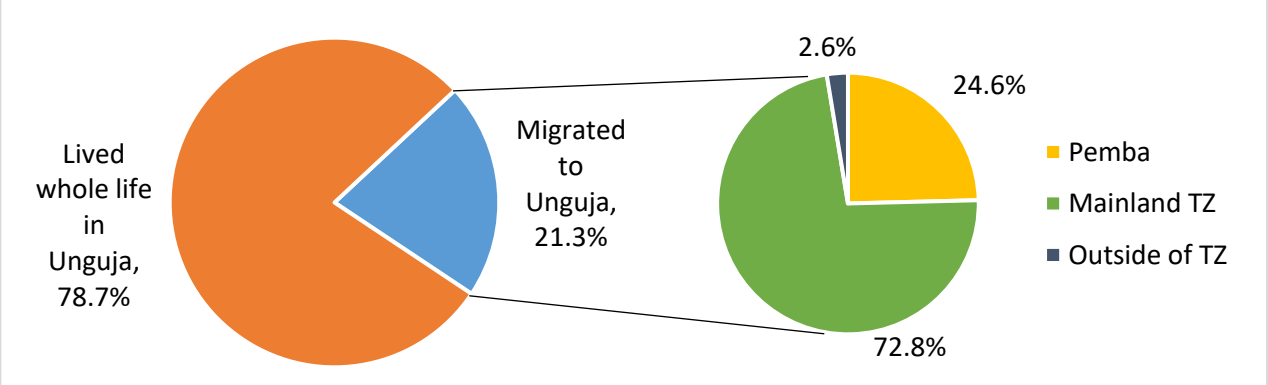
Most MSM (78.7%) reported to have lived their whole lives in Unguja, with another 12.6% reporting to have lived in Unguja for more than five years (Figure 76).

Figure 76: Length of time living in Unguja among MSM, 2018



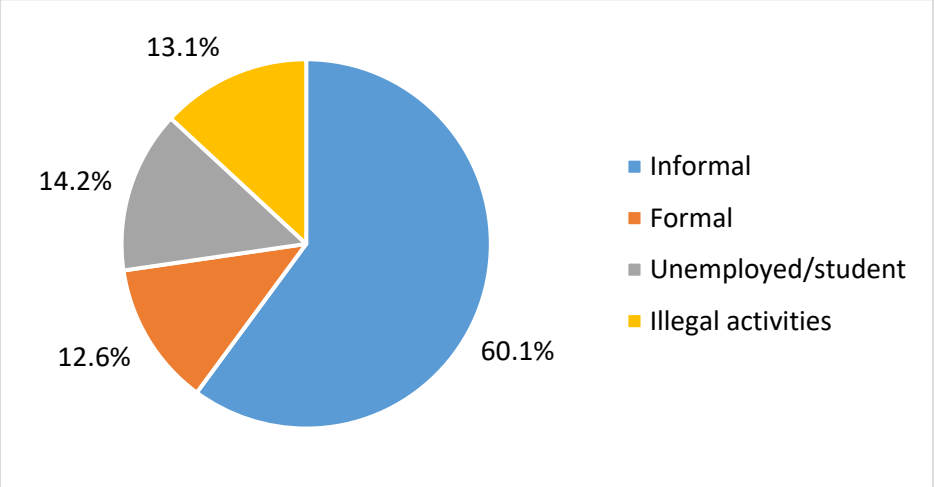
Nearly three-quarters (72.8%) of those who were not from Unguja had migrated from Mainland Tanzania, while one-quarter (24.6%) had migrated from Pemba. Very few (2.6%) migrated from outside of Tanzania (Figure 77).

Figure 77: Migration of MSM to Unguja, 2018



More than half of MSM (60.1%) were earning money through informal employment such as working at bars, as musicians, fishermen, petty traders, skilled labourers, and drivers. More than one in ten MSM (13.1%) reported earning money through illegal activities, including sex work, and 14.2% were unemployed or students (Figure 78).

Figure 78: Ways of earning money among MSM, Unguja, 2018



Just over half of MSM (55.7%) earned TZS 120,000 or more in the past month with one-third (33.5%) having earned more than TZS 200,000 ($1 was equivalent to approximately TZS 2,300 at the time of this report) (Table 36).

More than half of MSM reporting living with their families (59.3%) but only 27.0% reported that someone in their family knows they are an MSM. Although most MSM were not living with a sexual partner (81.0%), some MSM were living with a wife or girlfriend (13.1%) and 5.8% were living with a boyfriend (Table 36).

Table 36: Socio-demographic characteristics of MSM, Unguja, 2018

	Crude n	Weighted percent (%)	Weighted 95% CI
Age group (years) [N=341]			
15-19	61	19.3%	[14.5-25.3]
20-24	137	42.6%	[35.8-49.6]
25-29	75	21.0%	[15.9-27.2]
30-34	24	5.8%	[3.6-9.2]
35+	44	11.3%	[7.5-16.7]
Median age in years (inter-quartile range (IQR))	23 years (IQR: 20-28) Min. 16 - Max. 65 years		
Level of education [N=341]			
No school	2	0.9%	[0.2-3.8]
Some or completed primary	39	13.4%	[8.9-19.5]
Some or completed secondary	280	80.5%	[73.9-85.8]
More than secondary	20	5.2%	[2.7-9.6]
Marital status [N=341]			
Never married	264	79.2%	[73.1-84.3]

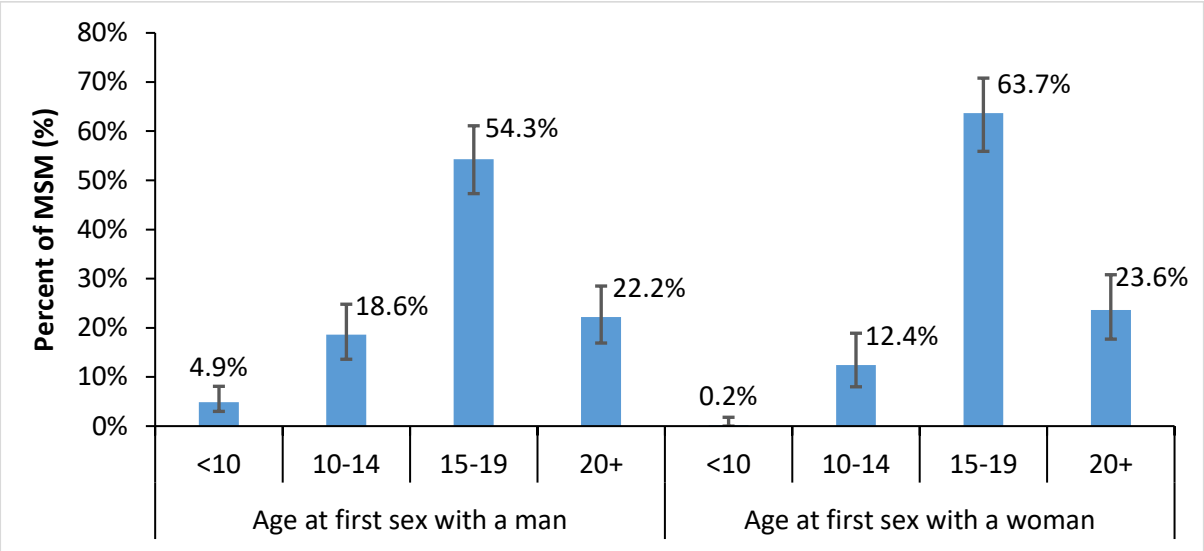
	Crude n	Weighted percent (%)	Weighted 95% CI
Married	34	9.5%	[6.1-14.3]
Separated, divorced, widowed	31	7.8%	[4.9-12.2]
Living with partner	11	3.4%	[1.5-7.4]
No response	1	0.1%	[0.0-1.0]
Number of years living in Unguja [N=341]			
Less than one year	11	3.5%	[1.8-7.0]
1-5 years	22	5.1%	[3.2-8.2]
>5 years	35	12.6%	[8.4-18.5]
Whole life	273	78.7%	[72.5-83.9]
Migrated to Unguja [N=341]			
Migrated to Unguja	68	21.3%	[16.1-27.5]
Lived whole life in Unguja	273	78.7%	[72.5-83.9]
Currently living with [N=341]			
Family	200	59.3%	[52.3-66]
Alone	57	16.2%	[11.6-22.1]
Wife	30	8.6%	[5.5-13.4]
Boyfriend	24	5.8%	[3.4-9.8]
Girlfriend	14	4.5%	[2.3-8.8]
Friends	12	3.4%	[1.8-6.5]
No fixed address / other	4	2.1%	[0.6-6.9]
Someone in his family knows he is MSM [N=341]			
Yes	124	27.0%	[21.7-33.1]
No	212	71.1%	[64.8-76.7]
Does not know	5	1.9%	[0.5-6.7]
Gender of live-in sexual partner [N=341]			
Female	44	13.2%	[9.1-18.8]
Male	24	5.8%	[3.4-9.8]
No live-in sexual partner	273	81.0%	[74.9-85.9]
Where lived prior to Unguja [N=68]			
Pemba	17	24.6%	[13.6-40.5]
Mainland TZ	49	72.8%	[57-84.4]
Outside of TZ	2	2.6%	[0.5-11.8]
Income earned in past month (TZS) [N=341]			
< 50,000 TZS	41	15.5%	[10.8-21.7]
50,001-120,000 TZS	95	28.8%	[22.7-35.7]
120,001-200,000 TZS	76	22.2%	[17.3-28.1]
> 200,000 TZS	129	33.5%	[27.4-40.3]
Median amount earned in past month (TZS) (IQR)	TZS 150,000 (60,000-300,000) Min. 0 - Max. 2,500,000		
Ways of earning money [N=341]			
Informal employment	208	60.1%	[53-66.7]
Formal employment	49	12.6%	[8.9-17.5]
Unemployed/student	40	14.2%	[9.6-20.6]
Illegal activities	44	13.1%	[9.1-18.6]

95% CI= 95% Confidence Interval

10.3. Sexual history and risk behaviours with partners where no payment is involved

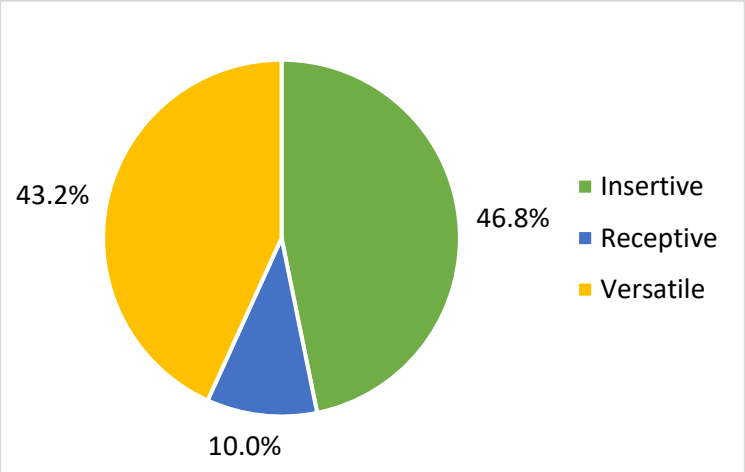
The majority of MSM reported having their first sexual encounter between ages 15-19 for both male partners (54.3%) and female partners (63.7%) (Figure 79). Almost twice as many MSM had their first sexual encounter with a male partner under the age of 15 (23.5%) compared to their first sexual encounter with a female partner (12.6%). Nearly all MSM (84.8%) reported ever having sex with a woman; however, only 62.7% of MSM reported having sex with both men and women in the year prior to the survey.

Figure 79: Age at first sex with male and female partners among MSM, Unguja, 2018



Only one in ten MSM (10.0%) reported that their typical sexual role is receptive. Nearly half of MSM (46.8%) reported their typical sexual role as insertive while 43.2% reported themselves to be versatile (Figure 80).

Figure 80: Distribution of reported typical sexual role among MSM, Unguja, 2018

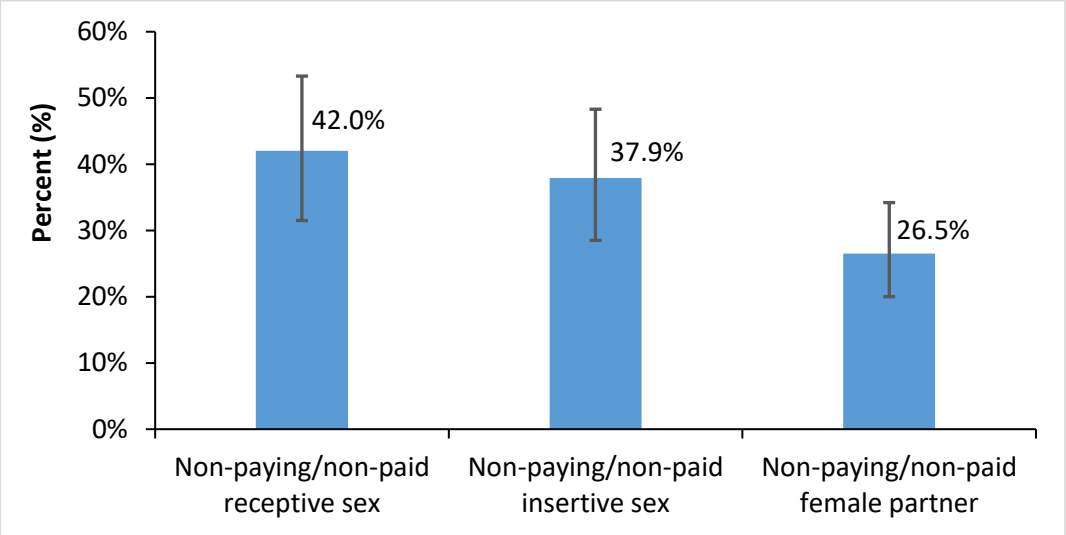


More than three-quarters of MSM (77.7%) reported ever having sex with a male partner without any payment involved (Table 37). Of those, three-quarters (75.2%) had sex with a male partner without any payment in the past month and of those, nearly half (45.6%) reported insertive sex while similar proportions reported receptive (26.5%) and versatile (27.9%) sex. The median numbers of both non-paying/non-paid receptive partners and non-paying/non-paid insertive partners in the past month was two (Table 37).

Nearly all MSM who ever had sex with a female partner (92.5%) reported ever having sex with a female partner without payment. Among these, 80.7% reported to have had sex with a female partner without payment in the past month. Just over half (55.3%) of those who had a female partner in the past month without any payment involved had two or more partners of this type.

MSM who had sex with an insertive male partner in the past month reported the highest frequency of condom use at last sex (42.0%), followed by MSM with receptive male partners (37.8%). Condom use was lowest at last sex with non-paying/non-paid female partners (26.5%), among those who had this type of sexual encounter in the past month (Figure 81).

Figure 81: Condom use at last sex among MSM with male and female partners where no payment was involved, Unguja, 2018



For all three partner types, the most common reasons for not using a condom were reported to be not liking the feel, and trusting their partner. Not having a condom, not thinking of using one, or objection from their partner were less common reasons reported.

Table 37: Sexual history and risk behaviours with partners where no payment is involved among MSM, Unguja, 2018

	Crude n	Weighted percent (%)	Weighted 95% CI
Age at first sex with a man [N=341]			
<10	25	4.9%	[3.0-8.1]
10-14	69	18.6%	[13.6-24.8]
15-19	176	54.3%	[47.3-61.1]
20+	71	22.2%	[16.9-28.5]

	Crude n	Weighted percent (%)	Weighted 95% CI
Median age in years (inter-quartile range (IQR))		17 years (IQR: 14-19) Min. 4 - Max. 30 years	
Ever had sex with a woman [N=341]			
Yes	282	84.8%	[79.5-88.9]
No	59	15.2%	[11.1-20.5]
Age at first sex with a woman [N=282]			
<10	1	0.2%	[0.0-1.8]
10-14	35	12.4%	[8.0-18.9]
15-19	183	63.7%	[55.9-70.8]
20+	63	23.6%	[17.7-30.8]
Median age in years (inter-quartile range (IQR))		18 years (IQR: 16-19) Min. 9 - Max. 35 years	
Gender(s) of sex partners in past year [N=341]			
Male and female	202	62.7%	[55.9-69.1]
Male only	139	37.3%	[30.9-44.1]
Typical sexual role [N=341]			
Insertive	131	46.8%	[39.9-53.9]
Receptive	45	10.0%	[6.8-14.5]
Versatile	165	43.2%	[36.5-50.0]
Sex with male partners without any payment			
Ever had sex with male partner without any payment [N=341]	291	77.7%	[70.4-83.7]
Had sex with male partner in past month without any payment [N=291]	229	75.2%	[68.3-81.0]
Type(s) of sex with non-paying/non-paid male partners in past month [N=229]			
Insertive	93	45.6%	[37.3-54.2]
Receptive	74	26.5%	[20.0-34.2]
Versatile	62	27.9%	[20.8-36.2]
Insertive sex with non-paying/non-paid receptive male partners in past month			
Number of non-paying/non-paid receptive partners in past month [N=229]			
None	78	28.2%	[21.5-36.0]
1	50	20.3%	[14.5-27.7]
2 or more	101	51.5%	[43.0-59.9]
Median number of receptive male partners in past 30 days without payment		2 partners (IQR: 1-3) Min. 1 – Max. 20 partners	
Frequency of condom use during insertive sex with non-paying/non-paid partners in past month [N=154][7]			
Always	36	23.5%	[15.6-33.8]
Sometimes	47	31.6%	[22.9-41.6]
Never	71	45.0%	[35.0-55.3]
Used condom at last insertive sex with non-paying/non-paid male partner [N=155]			

[7] One value excluded where participant declined to respond. 95% CI=95% confidence interval

	Crude n	Weighted percent (%)	Weighted 95% CI
Yes	59	37.8%	[28.5-48.3]
No	96	62.2%	[51.7-71.5]
Receptive sex with non-paying/non-paid insertive male partners in past month			
Number of non-paying/non-paid insertive partners in past month [N=229]			
None	93	45.6%	[37.3-54.2]
1	56	25.0%	[17.9-33.7]
2 or more	80	29.4%	[22.9-36.8]
Median number of non-paying male insertive partners in past month		2 partners (IQR: 1-4) Min. 1 – Max. 15 partners	
Frequency of condom use during receptive sex with non-paying/non-paid partners in past month [N=136]			
Always	37	25.7%	[17.8-35.6]
Sometimes	49	37.1%	[26.7-48.8]
Never	50	37.2%	[27.0-48.6]
Used condom at last receptive sex with non-paying/non-paid male partner [N=136]			
Yes	58	42.0%	[31.5-53.3]
No	78	58.0%	[46.7-68.5]
Sex with female partners without any payment among those who ever had sex with a female partner			
Ever had sex with a female partner without any payment [N=282]	265	92.5%	[86.5-96.0]
Had sex with a female partner in past month without any payment [N=193]	148	80.7%	[73.2-86.6]
Number of non-paying/non-paid female partners in past month [N=148]			
1	60	44.7%	[34.5-55.5]
2 or more	88	55.3%	[44.5-65.5]
Frequency of condom use with non-paying/non-paid female partners in past month [N=148]			
Always	23	14.1%	[8.3-22.9]
Sometimes	37	33.3%	[23.8-44.3]
Never	88	52.6%	[42.1-62.9]
Used condom with last non-paying/non-paid female partner (among those who ever had a female partner) [N=265]			
Yes	70	26.5%	[20.0-34.2]
No	195	73.5%	[65.8-80.0]

95% CI=95% confidence interval

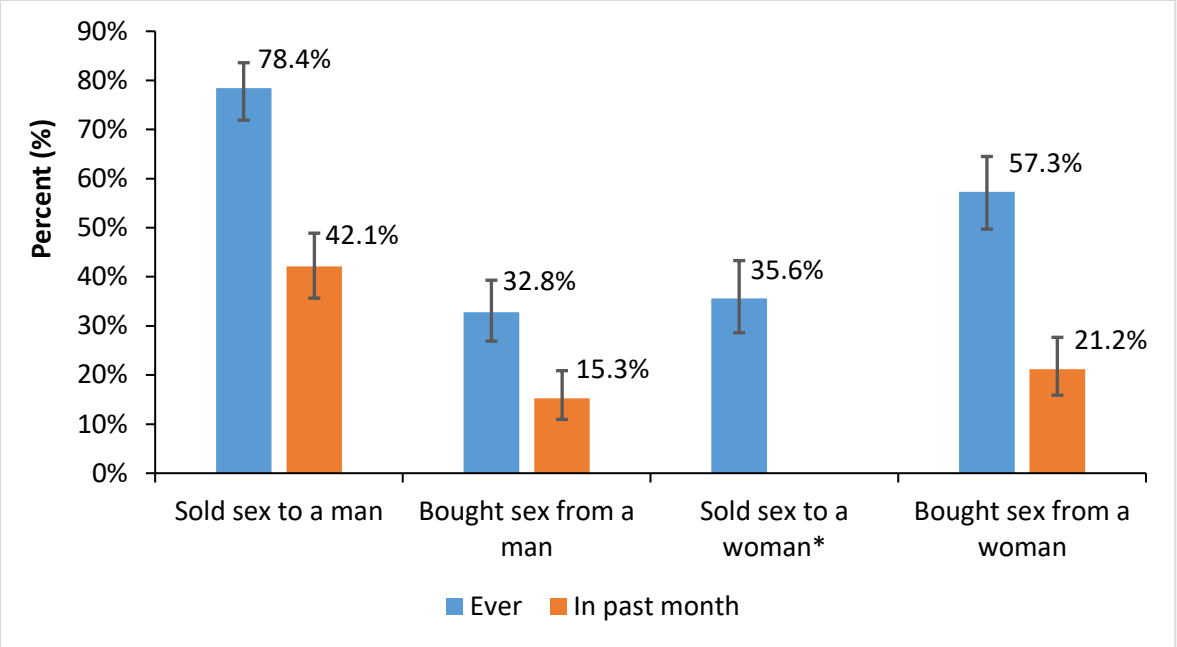
10.4. Sexual risk behaviours with paying and paid partners

The proportion of compensated sex (with either paid or paying partners) varies by partner type and by the type of transaction. More than three-quarters of MSM (78.4%) reported ever selling sex to another man, of whom 53.8% sold sex to another man in the past month with a median of two (IQR one to three) paying partners. Less than one-third of MSM (32.8%) reported ever paying another

man for sex, of whom 46.6% did so in the past month with a median of two (IQR one to three) paid partners.

More than half of MSM (57.3%) reported ever paying a woman for sex and, of these, 43.7% had done so in the past month with a median of two paid female partners. Selling sex to women was less common, with only 35.6% of MSM reporting ever having done so (Figure 82).

Figure 82: Experience of compensated sex with paying and paid male and female partners among MSM, Unguja, 2018



**Participants were not asked about selling sex to women in the past month.*

Condom use at last compensated sex was comparable across the different types of sexual encounters, ranging from 49.2% at last insertive sex with a paid male partner to 41.0% at last receptive sex with a paid male partner (Figure 83).

Figure 83: Condom use at last sex with paying and paid partners, by partner type among MSM, Unguja, 2018

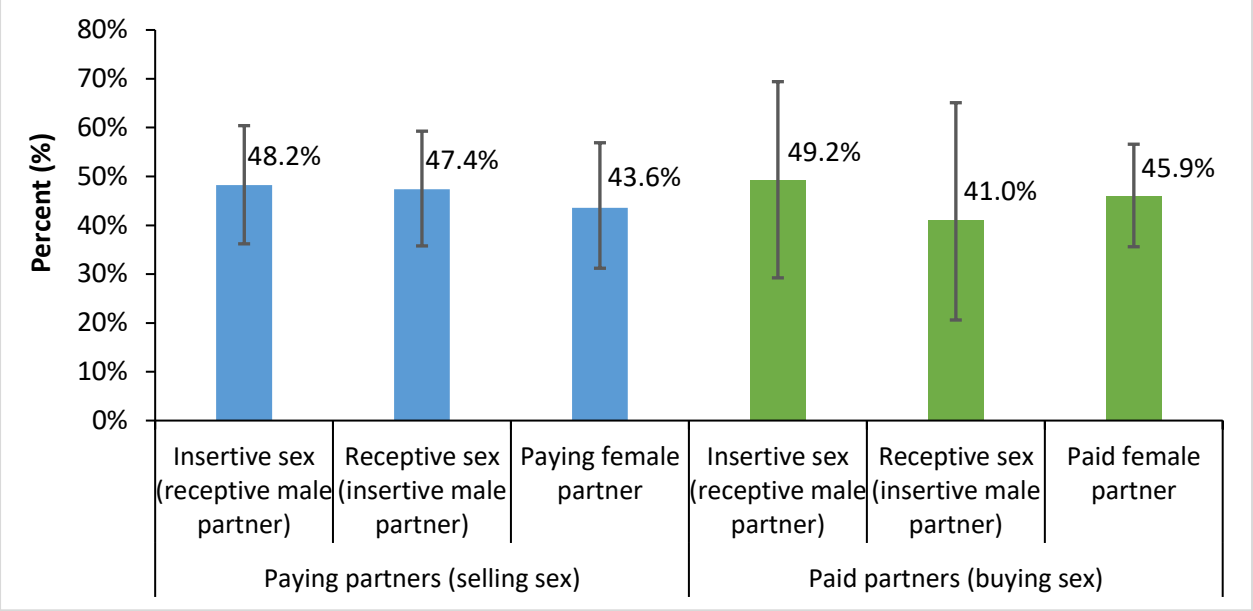


Table 38: Sexual risk behaviours with paying and paid male and female partners among MSM, Unguja, 2018

	Crude n	Weighted percent (%)	Weighted 95% CI
Selling sex to other men			
Ever sold sex to a man [N=341]	271	78.4%	[71.9-83.6]
Sold sex to a man in past month [N=271]	173	53.8%	[45.8-61.5]
Type(s) of sex with paying male partners in past month [N=173]			
Insertive	71	46.9%	[37.6-56.5]
Receptive	69	35.7%	[27.5-44.9]
Versatile	33	17.4%	[11.7-25.0]
Number of paying male sexual partners in past month [N=173]			
1	52	31.2%	[22.9-41.0]
2 or more	121	68.8%	[59.0-77.1]
Median number of paying male partners in past 30 days		2 partners (IQR: 1-3) Min. 1 – Max. 20 partners	
Frequency of condom use during insertive sex with paying male partners in past month [N=104]			
Always	37	36.9%	[25.8-49.5]
Sometimes	25	25.6%	[16.6-37.2]
Never	42	37.5%	[26.5-50.0]
Used condom at last insertive sex with paying male partner [N=104]			
Yes	46	48.2%	[36.2-60.4]
No	58	51.8%	[39.6-63.8]
Frequency of condom use during receptive sex with paying male partners in past month [N=102]			
Always	39	34.9%	[24.8-46.5]
Sometimes	30	24.6%	[16.2-35.6]
Never	33	40.5%	[29.0-53.2]

	Crude n	Weighted percent (%)	Weighted 95% CI
Used condom at last receptive sex with paying male partner [N=102]			
Yes	55	47.4%	[35.8-59.3]
No	47	52.6%	[40.7-64.2]
Selling sex to women			
Ever paid by a woman for sex [N=282]	100	35.6%	[28.6-43.3]
Used condom at last sex with paying female partner [N=100]	45	43.6%	[31.2-56.9]
Buying sex from other men			
Ever paid another man for sex [N=341]	129	32.8%	[26.9-39.3]
Paid a man for sex in past month [N=129]	56	46.6%	[35.8-57.8]
Type(s) of sex with paid male partners in past month [N=56]			
Insertive	20	35.9%	[21.5-53.3]
Receptive	23	47.1%	[30.0-64.9]
Versatile	13	17.0%	[8.7-30.8]
Number of paid male partners in past month [N=129]			
None	73	53.4%	[42.2-64.2]
1	16	14.7%	[7.7-26.2]
2	40	32.0%	[22.4-43.3]
Median number of paid male partners in past 30 days		2 partners (IQR: 1-3) Min. 1 – Max. 20 partners	
Frequency of condom use during insertive sex with paid male partners in past month [N=33]			
Always	11	36.9%	[19.5-58.6]
Sometimes	7	22.5%	[9.6-44.4]
Never	15	40.6%	[22.3-62.0]
Condom use at last insertive sex with paid male partner [N=33]			
Yes	16	49.2%	[29.2-69.4]
No	17	50.8%	[30.6-70.8]
Frequency of condom use during receptive sex with paid male partners in past month [N=36]			
Always	8	29.0%	[11.5-56.1]
Sometimes	11	15.6%	[6.7-32.1]
Never	17	55.4%	[32.1-76.6]
Condom use at last receptive sex with paid male partner [N=36]			
Yes	15	41.0%	[20.6-65.1]
No	21	59.0%	[34.9-79.4]
Buying sex from women			
Ever paid a woman for sex [N=282]	147	57.3%	[49.7-64.5]
Paid a woman for sex in past month [N=147]	61	43.7%	[33.4-54.4]
Number of paid female partners sex in past month [N=61]			
1	17	28.2%	[15.5-45.7]
2 or more	44	71.8%	[54.3-84.5]
Median number of paid female partners in past 30 days		2 partners (IQR: 1-3) Min. 1 - Max. 10 partners	
Frequency of condom use with paid female partners in past month [N=61]			
Always	18	30.3%	[17.7-46.6]

	Crude n	Weighted percent (%)	Weighted 95% CI
Sometimes	17	29.4%	[17.1-45.7]
Never	26	40.3%	[25.7-56.9]
Condom use at last sex with paid female partner [N=147]			
Yes	68	45.9%	[35.6-56.6]
No	79	54.1%	[43.4-64.4]
Total partners in past month			
Median number of female partners (among those who ever had a female partner) [N=202]		2 partners (IQR: 1-4) Min. 0 – Max. 27 partners	
Median number of male partners [N=341]		3 partners (IQR: 1-6) Min. 0 – Max. 41 partners	
Median total partners [N=341]		4 partners (IQR: 2-8) Min. 0 – Max. 69 partners	

95% CI=95% confidence interval

10.5. Sexual risk behaviours with group sex

One in five MSM (20.3%) have ever had group sex. Among those who have ever had group sex, 45.3% had this experience in the past month, which translates to approximately one in ten MSM. Among those who ever had group sex, more than half of MSM (56.2%) reported four or more partners at last group sex and half (51.4%) reported that none of the group sex partners used a condom (Table 39).

Table 39: Sexual risk behaviours with group sex among MSM, Unguja, 2018

	Crude n	Weighted percent (%)	Weighted 95% CI
Ever had group sex [N=341]			
Yes	80	20.3%	[15.4-26.2]
No	261	79.7%	[73.8-84.6]
Had group sex in past month [N=80]			
Yes	37	45.3%	[31.4-59.9]
No	43	54.7%	[40.1-68.6]
Number of partners at last group sex [N=80]			
3	35	43.8%	[30.2-58.4]
4-5	30	32.8%	[21.3-46.9]
6+	15	23.4%	[11.4-42.1]
Number of partners who used a condom at last group sex [N=80]			
None	39	51.4%	[36.8-65.7]
1-2	19	26.3%	[15.6-40.7]
3+	22	22.3%	[13.1-35.5]

95% CI=95% confidence interval

10.6. Drug and alcohol use

Nearly two-thirds of MSM (62.5%) consumed alcohol in the past month: approximately one in six MSM reported drinking alcohol four or more times per week, compared to one in twelve who reported once a month or less. Over one-third of MSM (36.9%) used drugs other than alcohol in the

past three months (Figure 84). Marijuana/hashish was by far the most common substance used (34.0% of all MSM), followed by khat (5.5%). Remaining substances and/or administration methods (smoking heroin, cocktail, "chasing the dragon," Valium, smoking crack-cocaine, or sniffing cocaine) were each less than 2%. Injection drug use was extremely uncommon – only two participants reported ever having injected drugs (Table 40).

Figure 84: Alcohol and non-injection drug use among MSM, Unguja, 2018

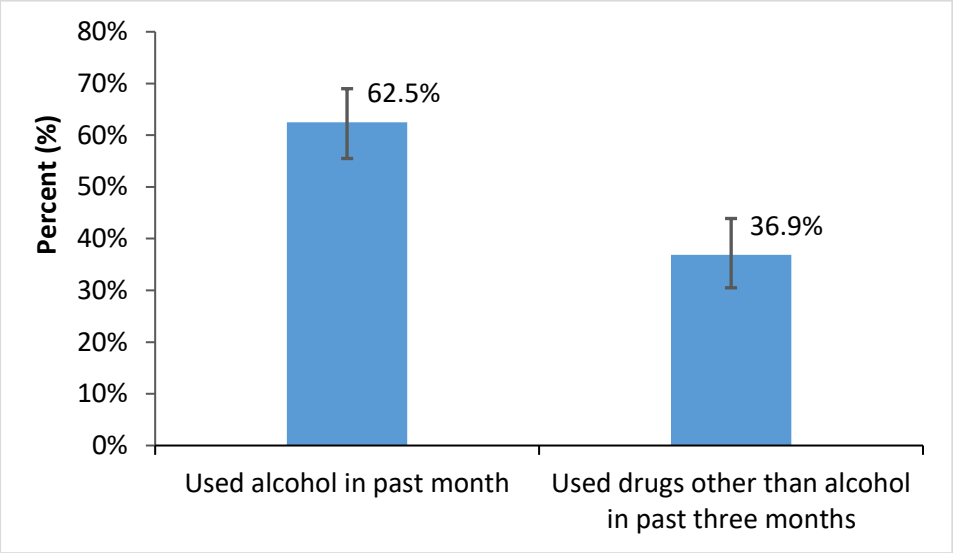


Table 40: Alcohol and drug use among MSM, Unguja, 2018

	Crude n	Weighted percent (%)	Weighted 95% CI
Consumed alcohol in past month [N=341]			
Yes	224	62.5%	[55.5-69.0]
No	117	37.5%	[31.0-44.5]
Frequency of consuming alcohol in past month [N=341]			
4 or more times a week	64	15.6%	[11.1-21.3]
2-3 times a week	50	14.9%	[10.7-20.3]
2-4 times a month	80	23.8%	[18.5-30.1]
Once a month or less	30	8.3%	[5.0-13.3]
Never	117	37.5%	[31.0-44.5]
Typical number of drinks per day [N=224]			
1 or 2	89	38.5%	[30.7-47.0]
3 or 4	53	31.0%	[23.0-40.4]
5 or 6	47	17.8%	[12.6-24.5]
7, 8 or 9	18	8.0%	[4.2-14.7]
10 or more	16	4.4%	[2.3-8.4]
Does not remember	1	0.2%	[0.0-1.5]
Used drugs other than alcohol in past three months [N=341]			
Yes	127	36.9%	[30.5-43.9]
No	214	63.1%	[56.1-69.5]

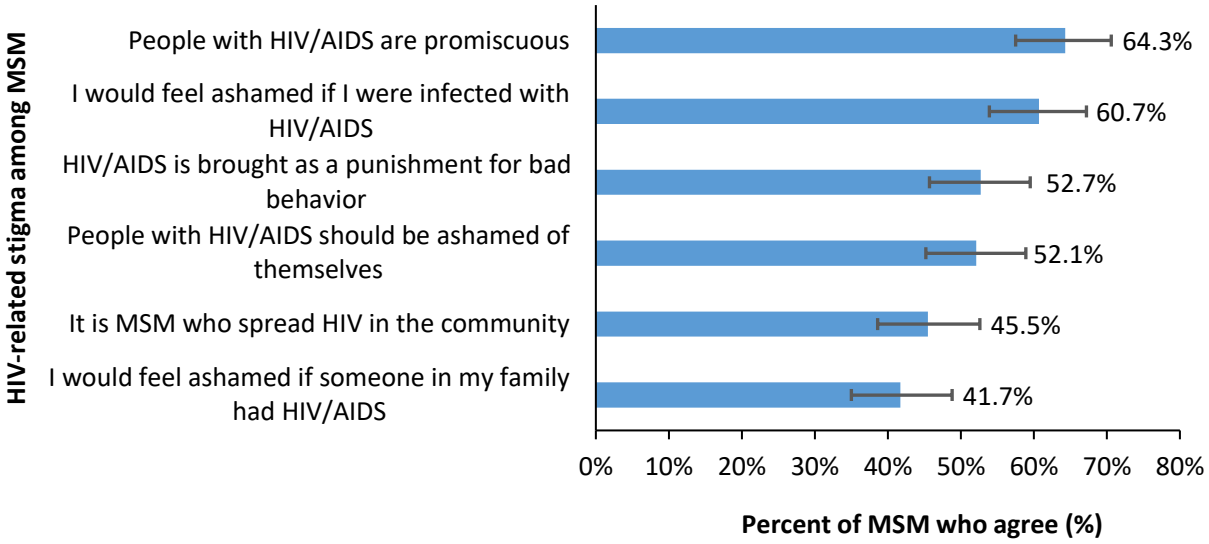
95% CI=95% confidence interval

10.7. Stigma, violence and incarceration among MSM

Half of MSM (49.8%) have experienced name calling, teasing and insults related to being an MSM. More than one-third of MSM (35.2%) reporting being abandoned by loved ones because they are MSM (Table 41).

The majority of MSM reported discriminatory attitudes for most of the HIV-related stigma questions asked in the survey (Figure 85). Almost two in three MSM believe people with HIV/AIDS are promiscuous, and more than half believe people with HIV/AIDS should be ashamed of themselves.

Figure 85: Stigma/beliefs among MSM about HIV and PLHIV, Unguja, 2018



MSM experience a high rate of arrest and violence. In the 12 months prior to the survey, one in four MSM (27.4%) were arrested, one in four (25.6%) were forced to have sex, and one in five (20.7%) experienced physical violence (Figure 86). The most common reasons for arrest were road traffic charges, drug use, being suspected of being MSM, and loitering. Strangers, the police, and friends were the most frequently reported perpetrators of violence against MSM (Table 41).

Figure 86: Experiences of arrest and sexual and physical violence among MSM in the 12 months prior to the survey, Unguja, 2018

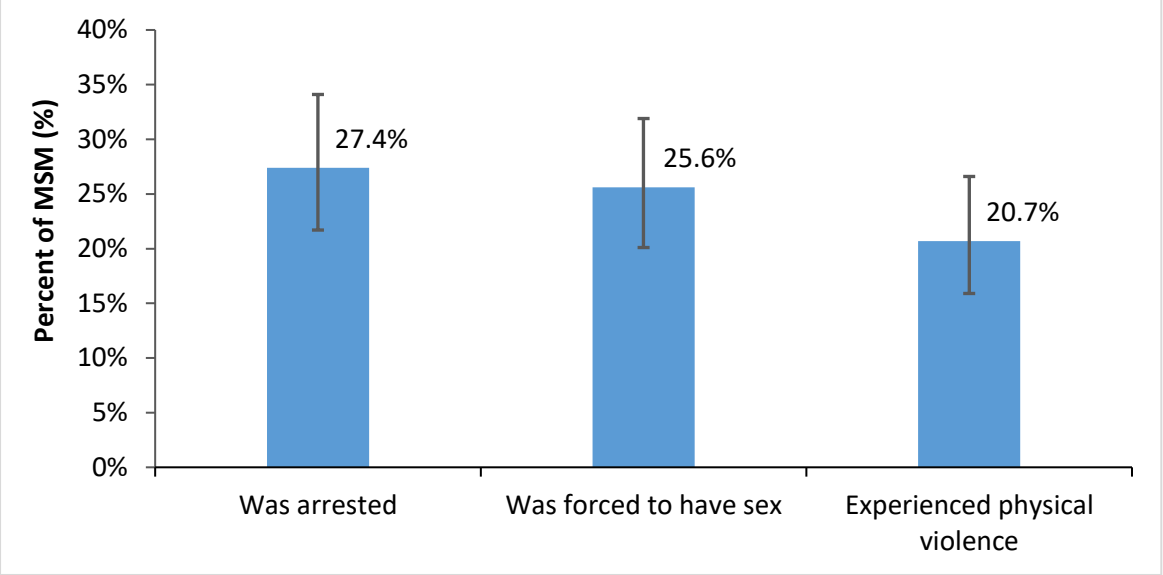


Table 41: Stigma, violence and incarceration among MSM, Unguja, 2018

	Crude n	Weighted percent (%)	Weighted 95% CI
Experiences of stigma as an MSM (% yes) [N=341]			
Experienced name calling, teasing and insults	193	49.8%	[42.9-56.8]
Excluded from a social gathering	39	9.2%	[6.0-13.8]
Others have lost respect for him	90	25.4%	[19.8-31.9]
Abandoned by loved ones	120	35.2%	[28.9-42.1]
Stigma among MSM towards those with HIV (% who agree) [N=341]			
People with HIV/AIDS should be ashamed of themselves	157	52.1%	[45.2-58.9]
I would feel ashamed if someone in my family had HIV/AIDS	132	41.7%	[35.0-48.8]
I would feel ashamed if I were infected with HIV/AIDS	188	60.7%	[53.9-67.2]
People with HIV/AIDS are promiscuous	204	64.3%	[57.5-70.6]
It is MSM who spread HIV in the community	128	45.5%	[38.6-52.6]
HIV/AIDS is brought as a punishment for bad behaviour	157	52.7%	[45.7-59.5]
Was arrested in past 12 months [N=341]			
Yes	98	27.4%	[21.7-34.1]
No	243	72.6%	[65.9-78.3]
Reason(s) for arrest in past 12 months among those who were arrested¥ [N=98]			
Road traffic charges	17	27.2%	[15.8-42.8]
Drug use	18	24.4%	[14.1-38.9]
Suspected of being an MSM	29	16.1%	[9.9-25.0]
Loitering	12	12.0%	[6.2-21.9]
Aggravated assault	9	8.1%	[3.6-17.1]
Theft	8	6.8%	[2.8-15.6]
Selling drugs	3	2.7%	[0.7-9.6]
Other reasons	4	31.9%	[19.9-46.9]

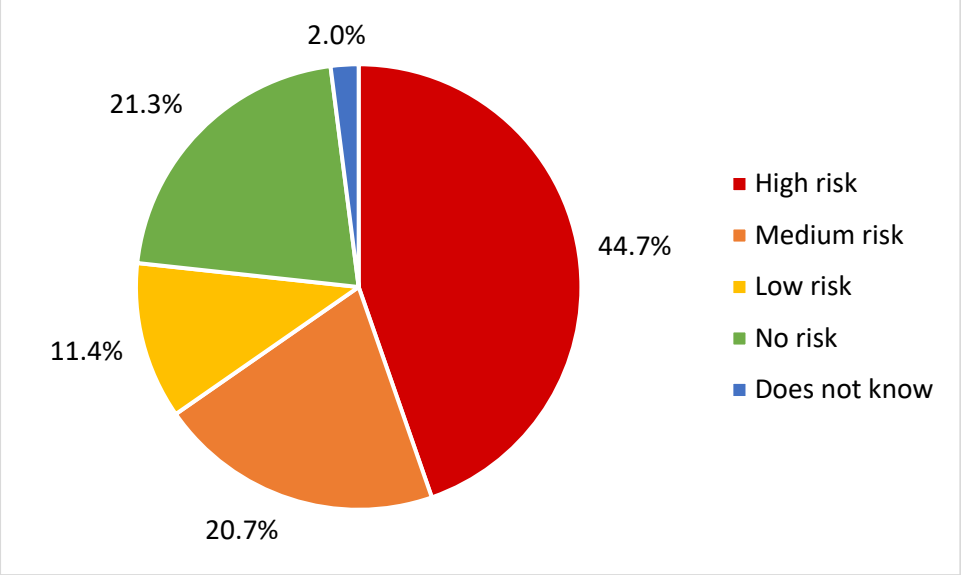
	Crude n	Weighted percent (%)	Weighted 95% CI
Experienced physical violence in past 12 months [N=341]			
Yes	83	20.7%	[15.9-26.6]
No	258	79.3%	[73.4-84.1]
Perpetrator(s) of physical violence in past 12 months, among those who experienced physical violence[¥] [N=83]			
Stranger	28	37.7%	[24.8-52.6]
Police	18	21.4%	[11.5-36.5]
Friend	14	18.6%	[9.3-33.8]
Boyfriend	15	16.4%	[8.6-29.0]
Family member	9	11.2%	[5.3-22.0]
Wife or girlfriend	2	2.3%	[0.4-12.2]
One-time sex partner	1	1.5%	[0.2-10.4]
Schoolmate	1	0.3%	[0.0-2.1]
Other person	5	5.3%	[1.9-14.4]
Forced to have sex in past 12 months [N=341]			
Yes	95	25.6%	[20.1-31.9]
No	246	74.4%	[68.1-79.9]
Perpetrator(s) of sexual violence (among those forced to have sex in past 12 months)[¥] [N=95]			
Boyfriend	43	48.6%	[35.6-61.7]
Wife or girlfriend	35	39.9%	[27.6-53.6]
Friend	8	8.0%	[3.2-18.4]
Stranger	6	5.3%	[2.2-12.2]
One-time sex partner	4	4.4%	[1.5-12.0]
Police	3	1.2%	[0.3-4.5]
Family member	2	1.1%	[0.3-4.9]
Schoolmate	1	0.8%	[0.1-5.9]
Other person	4	2.4%	[0.7-7.8]

[¥] *Denotes variable for which multiple responses were possible. 95% CI=95% confidence interval*

10.8. HIV knowledge and risk perception

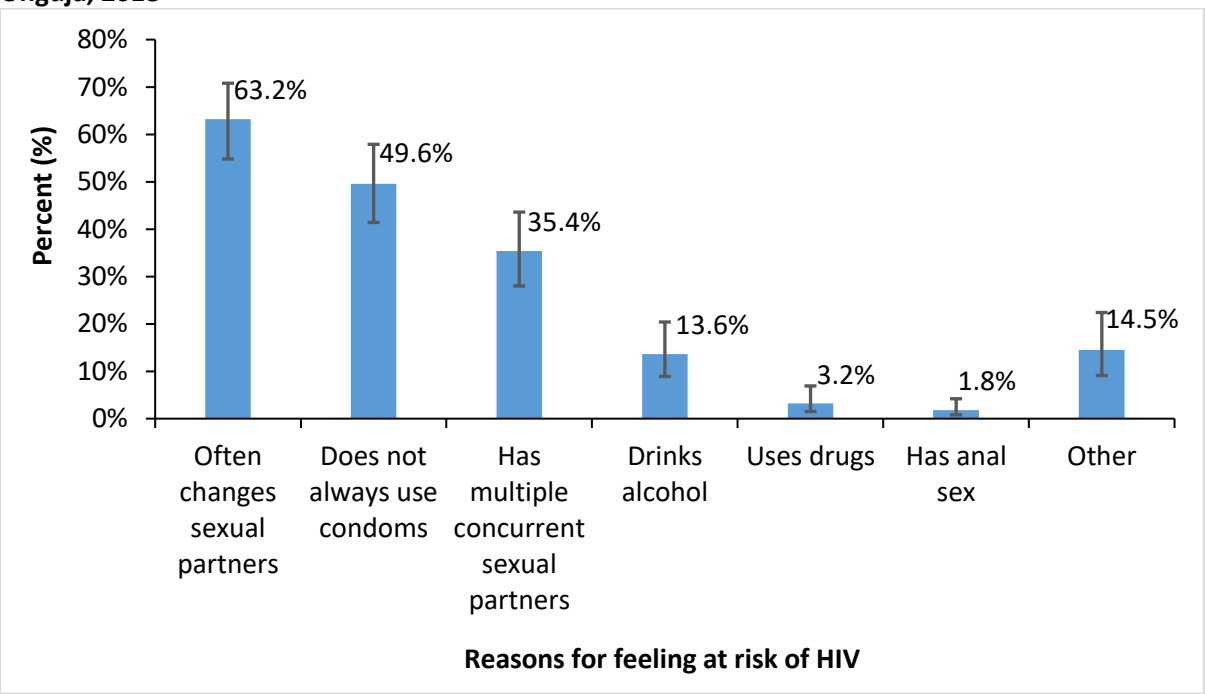
More MSM reported their perceived risk of HIV infection to be “high” (44.7%) than any other risk level. The next most common response was “no risk” (21.3%) (Figure 87).

Figure 87: Perceived risk of HIV infection among MSM (excluding known positives), Unguja, 2018



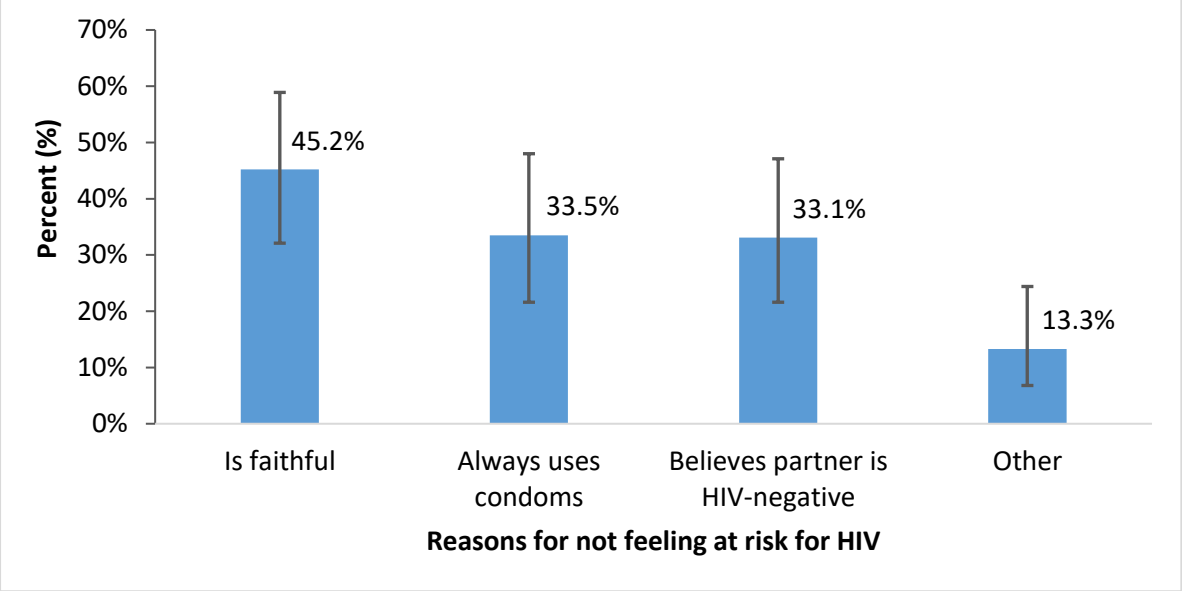
Among MSM who felt they had some level of risk, sexual risk behaviours were the most common reason for feeling at risk: 63.2% said their perception of risk was because they often change sexual partners, 49.6% because they do not always use condoms, followed by 35.4% who reported having multiple concurrent sexual partners. Other reasons included drinking alcohol, using drugs, and having anal sex (Figure 88).

Figure 88: Reason(s) for feeling at risk of HIV infection among MSM who felt they had some risk, Unguja, 2018



Conversely, being faithful (45.2%), always using condoms (33.5%) and believing their partner is HIV-negative (33.1%) were the most common reasons for MSM to feel they were not at risk (Figure 89).

Figure 89: Reasons for not feeling at risk of HIV infection among MSM who feel they have no risk, Unguja, 2018



Participants were asked five standard knowledge questions related to HIV. Those who were able to respond correctly to all five questions were considered to have comprehensive knowledge of HIV, as per the UNAIDS definition. Just under half (48.5%) of MSM had comprehensive knowledge on HIV, and 75.9% answered correctly that HIV cannot be transmitted by a mosquito bite. This was the question was the highest percentage of incorrect responses (Table 42).

Table 42: HIV knowledge and risk perception among MSM, Unguja, 2018

	Crude n	Weighted percent (%)	Weighted 95% CI
HIV knowledge [N=341]			
Agrees having one uninfected, faithful partner reduces risk of HIV transmission	311	91.6%	[87.6-94.4]
Agrees using a condom every time you have sex reduces risk of HIV transmission	282	81.1%	[74.7-86.1]
Agrees a healthy-looking person can have HIV	302	87.3%	[81.8-91.2]
Disagrees that you can get HIV from a mosquito bite	269	75.9%	[69.0-81.7]
Disagrees that you can get HIV by sharing food with someone who is HIV+	316	90.7%	[85.4-94.2]
Has comprehensive HIV knowledge* [N=341]			
Yes	178	48.5%	[41.6-55.4]
No	163	51.5%	[44.6-58.4]
Perceived HIV risk (excluding known positives) [N=328]			
High risk	130	44.7%	[37.6-51.9]
Medium risk	74	20.7%	[15.8-26.6]
Low risk	44	11.4%	[7.7-16.5]
No risk	75	21.3%	[16.4-27.1]
Do not know	5	2.0%	[0.7-5.6]

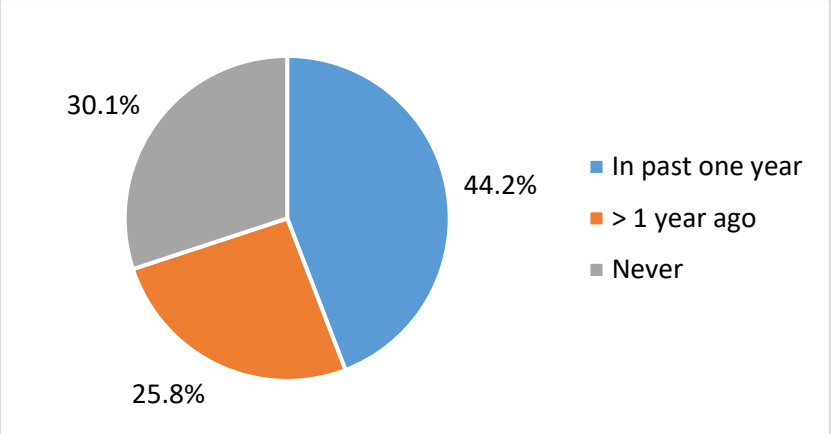
	Crude n	Weighted percent (%)	Weighted 95% CI
Reason(s) for feeling at risk of HIV infection among those who felt at risk¥ [N=248]			
Often changes sexual partners	150	63.2%	[54.8-70.8]
Does not always use condoms	135	49.6%	[41.4-57.9]
Has multiple concurrent sexual partners	90	35.4%	[28.0-43.6]
Drinks alcohol	34	13.6%	[8.9-20.4]
Uses drugs	8	3.2%	[1.5-6.9]
Has anal sex	8	1.8%	[0.8-4.2]
No response	2	0.5%	[0.1-2.7]
Other	35	14.5%	[9.1-22.4]
Reason(s) for not feeling at risk of HIV infection among those who felt they are not at risk¥ [N=75]			
Is faithful	35	45.2%	[32.1-58.9]
Always uses condoms	28	33.5%	[21.6-48.0]
Believes partner is HIV-negative	23	33.1%	[21.6-47.1]
Other	12	13.3%	[6.8-24.4]

**Those who correctly responded to all five questions in the HIV knowledge section of this table were categorized as having comprehensive knowledge.*
¥ Denotes variable for which multiple responses were possible
95% CI=95% confidence interval

10.9. STI symptoms and HIV testing history

Nearly half of MSM (44.2%) tested for HIV and received their results in the year prior to the survey (Figure 90). However, nearly one-third (30.1%) reported that they had never tested for HIV. Among those who had never tested, the most commonly reported reason for not testing was fear of knowing one's HIV status (51.5%). National guidelines stipulate that key populations at risk for HIV, including MSM, should test at least once every three months.

Figure 90: When last tested for HIV and received results, MSM, Unguja, 2018



Less than half of MSM reported having been for HIV counselling and testing with a steady or permanent partner (43.1%) but the majority (80.0%) reported that they had disclosed their HIV test results to their steady or permanent partner.

Table 43: STI symptoms and HIV testing history among MSM, Unguja, 2018

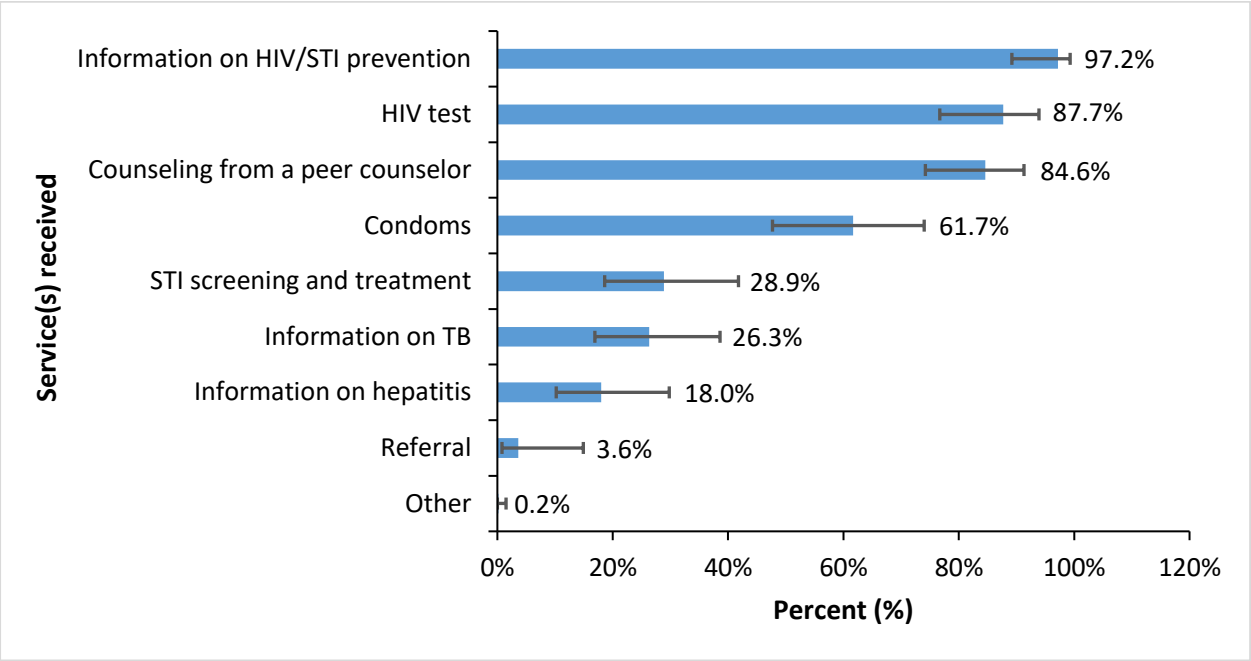
	Crude n	Weighted percent (%)	Weighted 95% CI
Experienced STI symptoms in the last 6 months [N=341]			
Yes	82	26.2%	[20.4-33.0]
No	259	73.8%	[67.0-79.6]
HIV testing history [N=341]			
Knows where to get confidential HIV test	304	85.8%	[80.0-90.2]
Ever had an HIV test	245	69.9%	[63.4-75.8]
Last tested for HIV and received results [N=341]			
In past one year	166	44.2%	[37.4-51.1]
> 1 year ago	79	25.8%	[20.0-32.6]
Never	96	30.1%	[24.2-36.6]
Why never tested for HIV [N=96]			
Fear of knowing status	50	51.5%	[39.3-63.6]
Did not know where to go	11	13.8%	[6.7-26.2]
Does not feel at risk	16	13.6%	[7.7-22.8]
It is not important	10	8.2%	[4.0-16.1]
No response	1	0.6%	[0.1-4.4]
Other reasons	15	17.4%	[9.5-29.6]
Testing with sexual partners and disclosure [N=245]			
Has been for HIV counselling with steady/permanent partner	106	43.1%	[34.9-51.6]
Has disclosed HIV test results to steady/permanent partner	194	80.0%	[72.9-85.6]

95% CI=95% confidence interval

10.10. Access to health services among MSM

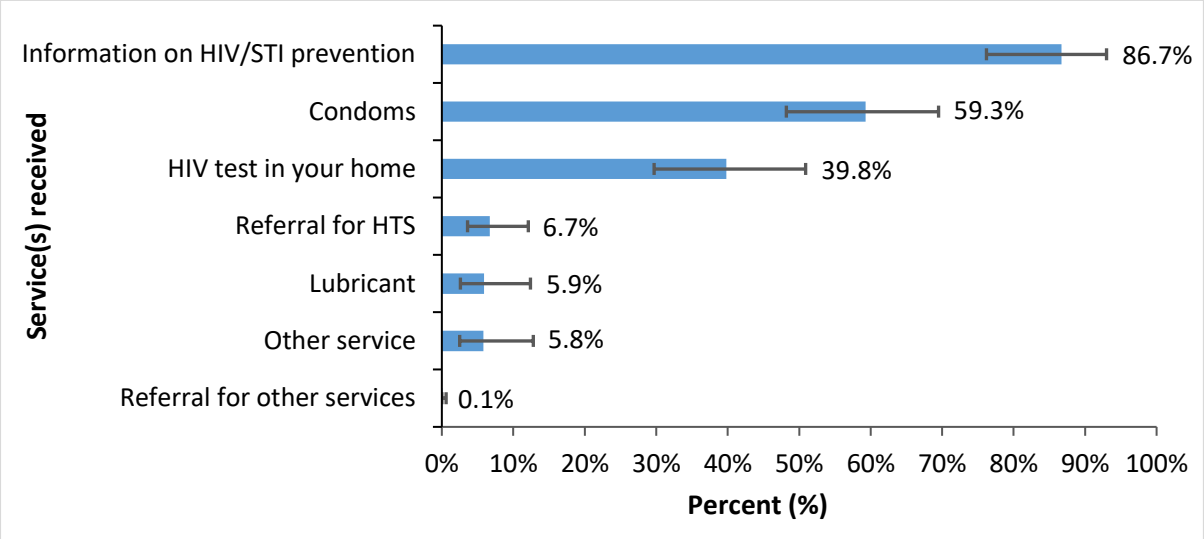
Nearly half of MSM (47.9%) received services at an MSM-focused clinic or from a peer educator in the past 12 months. One-fifth of MSM (22.2%) visited an MSM-focused clinic. Among those who received facility-based services, almost all (97.2%) received information on HIV/STI prevention, most (87.7%) were tested for HIV, and 61.7% received condoms (Figure 91).

Figure 91: Services received by MSM from MSM-focused clinics or drop-in centres among those who visited a clinic/drop-in centre, Unguja, 2018



Similarly, among the 38.9% who had reported contact with a peer educator, the most common services received were information on HIV/STI prevention (86.7%) and condoms (59.3%). HIV testing was much more commonly received at MSM-friendly clinics compared to through peers (87.7% and 39.8%, respectively) and peer educators rarely referred MSM for facility-based HIV testing (6.7%) (Figure 92).

Figure 92: Service(s) received by MSM from peer educators among those who had contact with peer educators, Unguja, 2018



Ninety-two percent of MSM said they would return to the same facility for services, based on how they were treated by staff. Ninety-one percent of MSM who received services from a peer educator said the peer educator was non-judgmental (Table 44). Both of these appear to signal high client satisfaction.

Four out of five MSM (81.3%) reported having ever used lubricant. Vaseline or other petroleum-based lubricant was the most commonly used at last sex with lubricant (67.1%). Other reported lubricants were by water-based lubricant (25.0%), saliva (12.2%), normal lotion (9.0%), and oil such as cooking oil (4.7%). Among MSM who received a service from peers in the past year, just 5.9% received lubricant.

Table 44: Access to health services, including condoms and lubricant, among MSM, Unguja, 2018

	Crude n	Weighted percent (%)	Weighted 95% CI
Received health services either at a facility or from a peer in past 12 months [N=341]			
Yes	179	47.9%	[41.0-54.8]
No	162	52.1%	[45.2-59.0]
Visited a clinic or drop-in centre providing services to MSM in past 12 months [N=341]			
Yes	98	22.2%	[17.3-28.1]
No	243	77.8%	[71.9-82.7]
Service(s) received at MSM clinic¥ [N=98]			
Information on HIV/STI prevention	95	97.2%	[89.2-99.3]
HIV test	86	87.7%	[76.7-93.9]
Counselling from a peer counsellor	79	84.6%	[74.2-91.3]
Condoms	66	61.7%	[47.7-74.0]
STI screening and treatment	33	28.9%	[18.6-41.8]
Information on TB	32	26.3%	[16.9-38.6]
Information on hepatitis	21	18.0%	[10.2-29.8]
Referral	4	3.6%	[0.8-14.9]
Other	1	0.2%	[0.0-1.5]
Would return to same facility for services based on treatment by staff [N=98]			
Yes	94	92.1%	[73.7-98.0]
No	4	7.9%	[2.0-26.3]
Had contact with a peer educator in past 12 months [N=341]			
Yes	146	38.9%	[32.4-45.8]
No	195	61.1%	[54.2-67.6]
Service(s) received from a peer educator in past year¥ [N=146]			
Information on HIV/STI prevention	131	86.7%	[76.2-93.0]
Condoms	89	59.3%	[48.2-69.5]
HIV test in your home	56	39.8%	[29.7-50.9]
Referral for HTS	13	6.7%	[3.6-12.1]
Lubricant	8	5.9%	[2.6-12.4]
Referral for other services	2	0.1%	[0.0-0.6]
Does not remember / no response	3	1.1%	[0.3-4.0]
Other	9	5.8%	[2.5-12.8]
Peer educator was non-judgmental [N=146]			
Yes	135	90.8%	[80.5-95.9]
No	7	5.3%	[1.6-16.2]
Does not know/does not remember/no response	4	3.9%	[1.3-11.1]
Can get a male condom every time needs one [N=341]			
Yes	284	81.5%	[75.3-86.4]

	Crude n	Weighted percent (%)	Weighted 95% CI
No	55	18.2%	[13.3-24.3]
No response	2	0.3%	[0.1-1.6]
Where obtained male condoms in past month¥ [N=341]			
Did not use male condom in past month	100	29.9%	[23.9-36.8]
Friends	93	27.4%	[21.7-34.0]
Shop	67	23.6%	[18.0-30.2]
Peer / NGO	57	10.1%	[6.9-14.4]
Pharmacy	23	6.2%	[3.6-10.4]
Health facility	12	4.9%	[2.4-10.0]
Bar/guesthouse/hotel	12	3.8%	[2.0-7.0]
Did not buy/get male condoms in past month	9	2.7%	[1.3-5.5]
Public office	5	0.7%	[0.3-1.7]
Another location/person	6	0.7%	[0.3-2.0]
Ever used lubricant [N=341]			
Yes	292	81.3%	[74.8-86.4]
No	49	18.7%	[13.6-25.2]
Type of lubricant used at last sex when lubricant was used¥ [N=292]			
Vaseline / other petroleum-based lubricant	190	67.1%	[59.9-73.6]
Water-based lubricant, such as KY jelly	98	25.0%	[19.6-31.2]
Saliva	37	12.2%	[8.4-17.3]
Normal lotion	19	9.0%	[5.1-15.4]
Oil, such as cooking oil	16	4.7%	[2.6-8.5]
Used condom at last sex with lubricant [N=292]			
Yes	99	33.7%	[26.8-41.3]
No	162	56.9%	[49.2-64.2]
Does not remember	1	0.1%	[0.0-0.7]
Does not use condoms	30	9.4%	[5.8-14.8]
Had a condom break during anal sex in last month [N=261]			
Yes	49	22.0%	[15.8-29.9]
No	212	78.0%	[70.1-84.2]

¥ *Denotes variable for which multiple responses were possible*
95% CI=95% confidence interval

10.11. Hepatitis testing and hepatitis B vaccine uptake

Just 9.6% of MSM reported ever being tested for hepatitis, although only half of those (51.8%) did not know which type of hepatitis they had been tested for. The majority of MSM who reported receiving a negative hepatitis B results prior to the survey were vaccinated, but nearly half did not receive all three vaccine doses (Table 45).

Table 45: Hepatitis testing and hepatitis B vaccine uptake among MSM, Unguja, 2018

	Crude n	Weighted percent (%)	Weighted 95% CI
Hepatitis testing prior to survey			
Has ever been tested for hepatitis [N=341]	45	9.6%	[6.3-14.3]

Type of hepatitis testing done [N=45]			
Hepatitis B	8	24.6%	[8.9-52.3]
Hepatitis C	3	7.9%	[1.5-32.0]
Hepatitis B and hepatitis C	11	15.7%	[6.9-32.1]
Does not know if hepatitis B or C	23	51.8%	[30.7-72.2]
Among those previously tested for hepatitis B			
Result of previous hepatitis B test [N=19]			
Negative	18	97.9%	[82.6-99.8]
Does not remember	1	2.1%	[0.2-17.4]
Hepatitis B vaccine [N=18]			
Received hepatitis B vaccine	16	58.2%	[18.2-89.7]
Does not remember whether vaccinated	2	41.8%	[10.3-81.8]
Received all 3 doses of hepatitis B vaccine [N=16]			
Yes	10	56.7%	[24.0-84.4]
No	6	43.3%	[15.6-76.0]
Among those previously tested for hepatitis C [N=14]			
Result of previous hepatitis C test [N=14]			
Negative	14	NC	NC

95% CI=95% confidence interval

10.12. Access to care and treatment and KP services among HIV-infected MSM

Just over two percent of MSM (2.2%) disclosed an HIV-positive status during their interview, compared to 5.0% who were found to be infected through rapid HIV testing offered during the survey (Table 46). Among those who disclosed a positive status, 6 out of 7 MSM were currently on ART and reporting having a viral load test.

Of the seven MSM who disclosed an HIV-positive status during the survey, three reported accessing health services from an MSM-focused clinic- in the 12 months prior to the survey, all of whom reported receiving counselling from a peer educator, an HIV test, information on HIV/STI prevention, STI screening and treatment, and condoms. Five self-reported HIV positive MSM reported receiving services from a peer educator in the 12 months prior to the survey. The most commonly reported services were condoms and information on HIV/STI prevention.

Table 46: Access to and uptake of care and treatment services among HIV-infected MSM, Unguja, 2018

	Crude n	Weighted percent (%)	Weighted 95% CI
Self-reported HIV status [N=244]			
Positive	7	2.2%	[0.8-5.6]
Negative	236	97.2%	[93.6-98.8]
Not comfortable	1	0.6%	[0.1-4.1]
Currently on anti-retroviral therapy (ART) [N=7]			
Yes	6	86.1%	[23.5-99.2]
No	1	13.9%	[0.8-76.5]
Time on ART [N=6]			

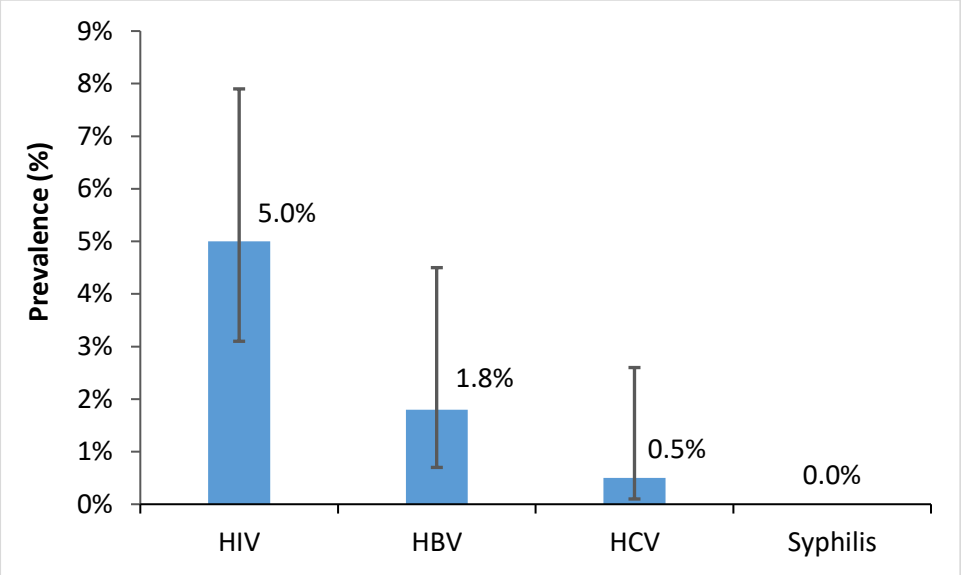
	Crude n	Weighted percent (%)	Weighted 95% CI
Less than 6 months	2	56.1%	[6.5-95.9]
More than 6 months	4	43.9%	[4.1-93.5]
Has had a viral load test [N=7]			
Yes	6	55.7%	[6.1-96.0]
No	1	44.3%	[4.0-93.9]

95% CI=95% confidence interval

10.13. HIV, HBV, HCV, and active syphilis prevalence, UNAIDS 90-90-90 cascade and HIV risk factors

The prevalence of HIV, HBV (HBsAg) and HCV among MSM were 5.0% (95% CI: 3.1-7.9), 1.8% (95% CI: 0.7-4.5) and 0.5% (95% CI: 0.1-2.6), respectively. No participants tested positive for syphilis antigen (Figure 93).

Figure 93: HIV, HBV, HCV and active syphilis prevalence among MSM, Unguja, 2018



The UNAIDS 90-90-90 targets were assessed among MSM. Among MSM who had a positive HIV test during the survey (n=27; 5.0%), only 59.7% (95% CI: 35.9-79.6; n=14) were aware of their HIV-positive status (i.e., had previously been diagnosed). Six MSM did not disclose an HIV-positive status during the survey but were found to be virally suppressed. In the absence of a test for the presence of ARV metabolites in the blood, they were assumed to be already diagnosed and already on ART. Among those diagnosed, 92.9% (95% CI: 54.3-99.3; n=13) were estimated to already be on ART, and of those on ART, 97.9% (95% CI: 80.1-99.8; n=11) were virally suppressed. Resultantly, the UNAIDS 90-90-90 cascade for MSM in Unguja is estimated to be 60-93-98 (Figure 94).

Figure 94: Progress towards UNAIDS 90-90-90 targets among MSM, Unguja, 2018

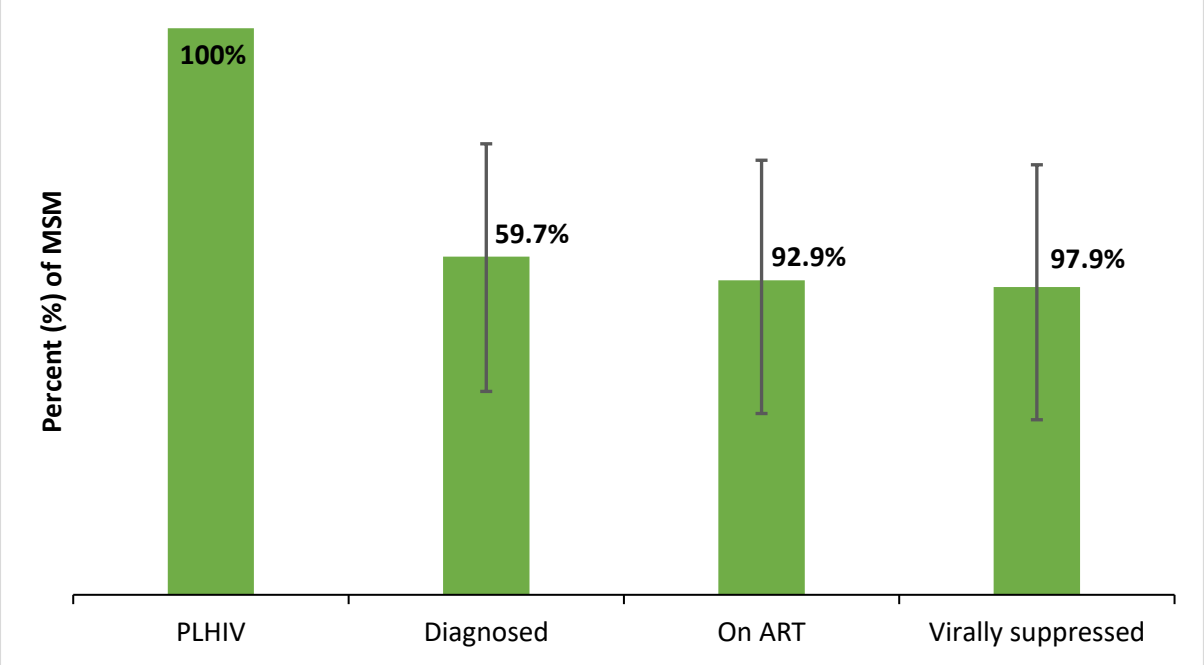


Table 47: HIV, HBV, HCV and active syphilis prevalence and 90-90-90 cascade among MSM, Unguja, 2018

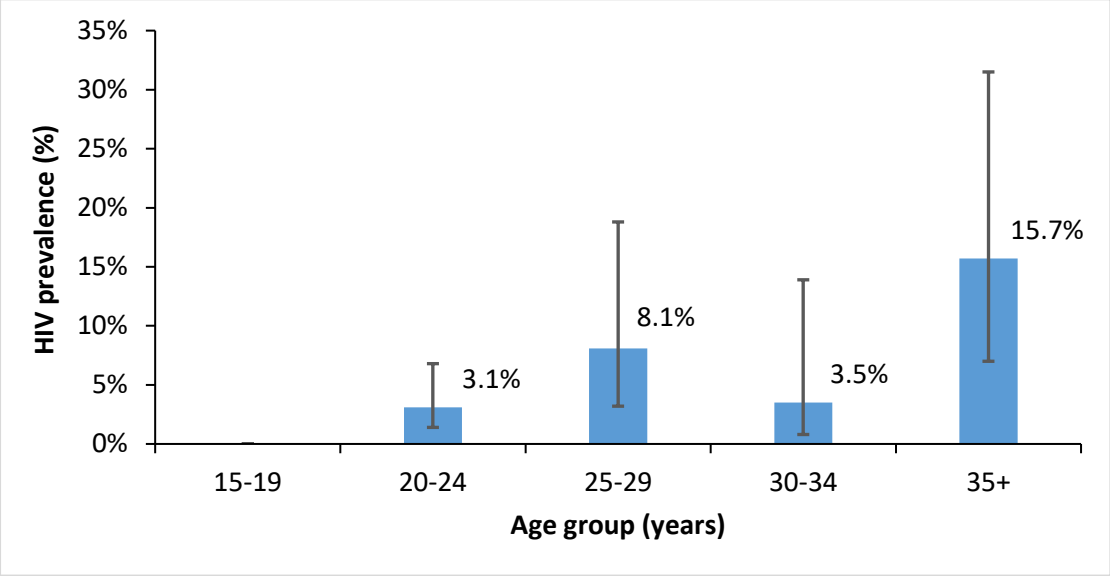
	Crude n	Weighted percent (%)	Weighted 95% CI
HIV test results [N=341]			
Positive	27	5.0%	[3.1-7.9]
Negative	314	95.0%	[92.1-96.9]
Viral suppression [N=27]			
Virally suppressed	11	54.3%	[30.9-75.9]
Not suppressed	16	45.7%	[24.1-69.1]
HBV test results [N=341]			
Positive	6	1.8%	[0.7-4.5]
Negative	335	98.2%	[95.5-99.3]
HCV test results [N=341]			
Positive	2	0.5%	[0.1-2.6]
Negative	339	99.5%	[97.4-99.9]
HIV / HCV co-infection [N=341]			
Infected with HIV and HCV	0	0.0%	NC
Syphilis test results [N=341]			
Positive	0	0.0%	NC
Negative	341	100%	NC
90-90-90 cascade			
MSM living with HIV who have been diagnosed [N=27]	13	59.7%	[35.9-79.6]
Current on ART (of those already diagnosed) [N=13]	12	92.9%	[54.3-99.3]
Virally suppressed (of those on ART) [N=12]	11	97.9%	[80.1-99.8]

95% CI=95% confidence interval

10.13.1. HIV prevalence by socio-demographic characteristics

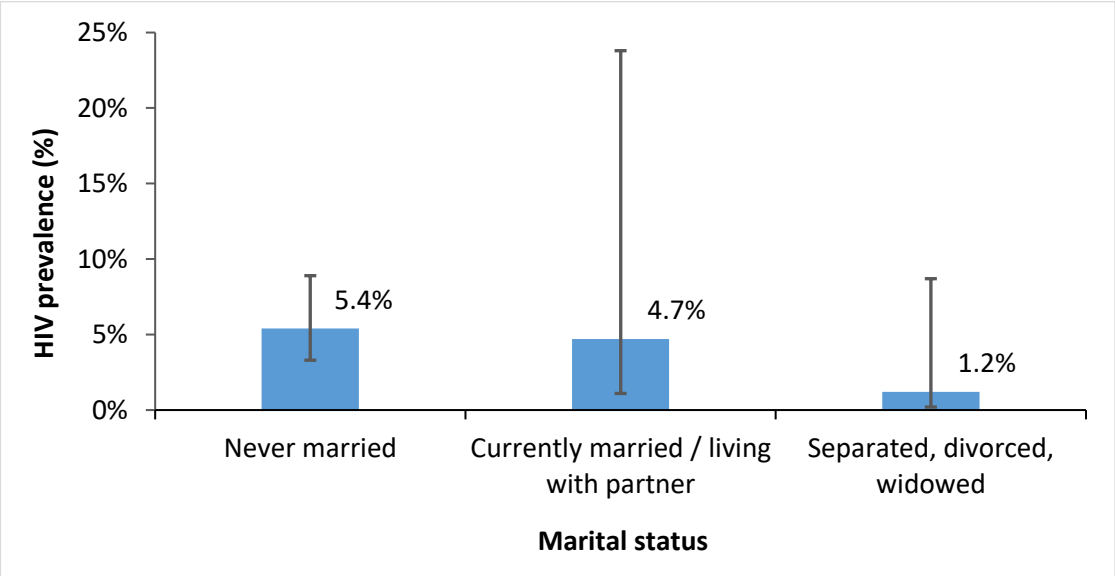
There was no clear trend between HIV prevalence and age. HIV prevalence was highest among MSM aged 35 years or older followed by MSM aged 25-29 years old. The prevalence was almost the same among MSM aged 20-24 and 30-34 years (Figure 95).

Figure 95: HIV prevalence among MSM by age group, Unguja, 2018



MSM who had never married had a slightly higher HIV prevalence (5.4%; 95% CI: 3.3-8.9) than those who were currently married or living with a partner (4.7%; 95% CI: 1.1-17.8). MSM who reported being divorced, widowed or separated had the lowest HIV prevalence (1.2%; 95% CI: 0.2-8.7) (Figure 96). However, the values for those currently married or living with a partner and those who were separated, divorced or widowed should be interpreted cautiously as they are based on small samples.

Figure 96: HIV prevalence among MSM by marital status, Unguja, 2018



MSM who reported living in Unguja for less than 5 years had a higher HIV prevalence (17.2%; 95% CI: 6.2-39.3) than those who had lived in Unguja for more than 5 years (5.0%; 95% CI: 1.7-13.6) or their whole life (3.7%; 95% CI: 2.1-6.4) (Figure 97).

Figure 97: HIV prevalence among MSM by number of years lived in, Unguja, 2018

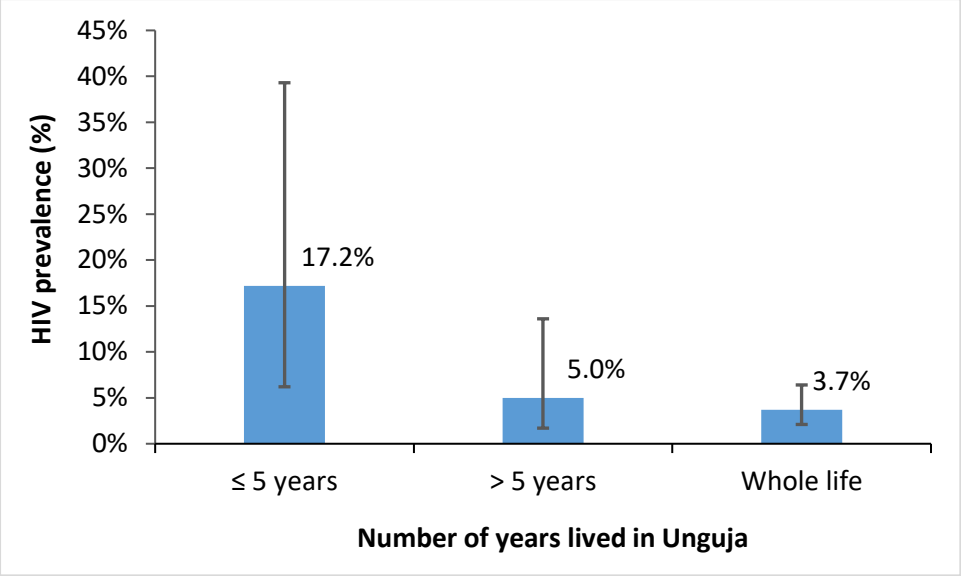


Table 48 shows HIV prevalence by additional socio-demographic characteristics. HIV prevalence was high among MSM who had no school and those who reported earning money through formal employment. However, there were no statistically significant differences within these groups.

Table 48: HIV prevalence by socio-demographic characteristics among MSM in Unguja, 2018

	Crude HIV-positive (n)	HIV prevalence (%)	95% CI
Age group			
15-19	0	0.0%	NC
20-24	8	3.1%	[1.4-6.8]
25-29	8	8.1%	[3.2-18.8]
30-34	2	3.5%	[0.8-13.9]
35+	9	15.7%	[7.0-31.5]
Level of education			
No school	1	34.3%	[3.1-89.4]
Some or completed primary	3	2.5%	[0.7-8.0]
Some or completed secondary	18	4.0%	[2.3-6.8]
More than secondary	5	22.2%	[6.6-53.4]
Marital status			
Never married	23	5.4%	[3.3-8.9]
Currently married / living with partner	3	4.7%	[1.1-17.8]
Separated, divorced, widowed	1	1.2%	[0.2-8.7]
Number of years lived in Unguja			
≤ 5 years	5	17.2%	[6.2-39.3]
> 5 years	4	5.0%	[1.7-13.6]
Whole life	18	3.7%	[2.1-6.4]

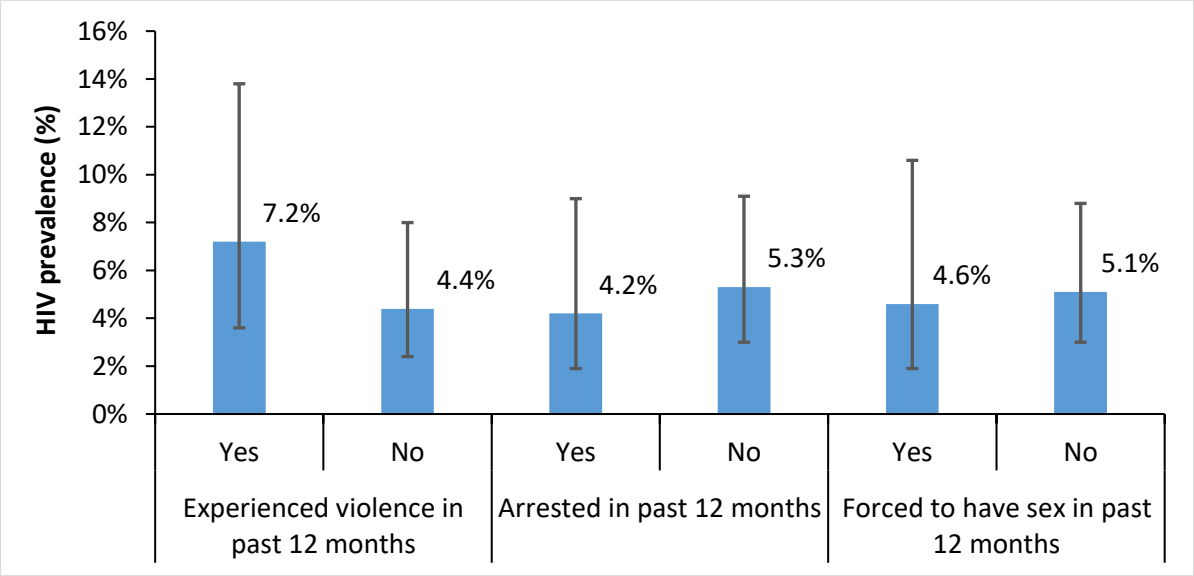
	Crude HIV-positive (n)	HIV prevalence (%)	95% CI
Migrated to Unguja			
Migrated to Unguja	9	10.0%	[4.5-20.7]
Lived whole life in Unguja	18	3.7%	[2.1-6.4]
Gender of live-in sexual partner			
Female	1	3.1%	[0.4-19.4]
Male	3	5.1%	[1.4-16.6]
No live-in sexual partner	23	5.3%	[3.2-8.7]
Ways of earning money			
Informal	16	5.1%	[2.7-9.4]
Formal	7	11.3%	[4.8-24.2]
Unemployed/student	3	3.1%	[0.8-11.1]
Illegal activities	1	0.4%	[0.1-3.2]
Income earned in past month (TZS)			
< 50,000	7	5.4%	[2.2-12.7]
50,000-120,000	4	2.8%	[0.9-8.0]
120,001-200,000	3	5.3%	[1.6-16.2]
> 200,000	13	6.6%	[3.3-12.5]

95% CI=95% confidence interval

10.13.2. HIV prevalence by vulnerability factors

MSM who had experienced violence in the 12 months prior to the survey had a higher HIV prevalence (7.2%; 95% CI: 3.6-13.8) than those who had not (4.4%; 95% CI: 2.4-8.0). However, HIV prevalence was slightly lower among MSM who reported being arrested in the 12 months prior to the survey (4.2%; 95% CI: 1.9-9.0) compared to those who had not (5.3%; 95% CI: 3.0-9.1), and also among MSM who were forced to have sex in the 12 months prior to the survey (4.6%; 95% CI: 1.9-10.6) compared to those who had not (5.1%; 95% CI: 3.0-8.8) (Figure 98).

Figure 98: HIV prevalence among MSM in Unguja by experiences of violence and arrest in past 12 months, 2018



MSM who had experienced name calling, teasing, or insults as a result of being an MSM had a higher HIV prevalence (6.4%; 95% CI: 3.8-10.7) than those who had not (3.6%; 95% CI: 1.5-8.6), although temporality (whether HIV infection or these stigmatizing experiences came first) cannot be established (Table 49). MSM who reported medium or low risk of HIV infection based on their current behaviours, or did not know how to respond, had higher HIV prevalence than those who reported a high perceived risk.

Table 49: HIV prevalence by vulnerability factors among MSM in Unguja, 2018

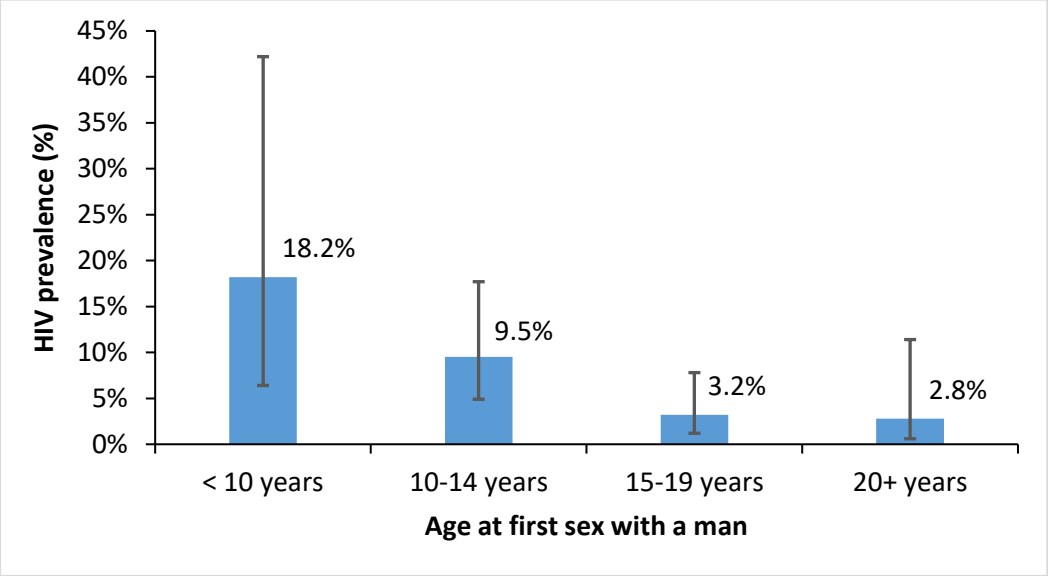
	Crude HIV-positive (n)	HIV prevalence (%)	95% CI
Experienced physical violence in past 12 months			
Yes	11	7.2%	[3.6-13.8]
No	16	4.4%	[2.4-8.0]
Arrested in past 12 months			
Yes	8	4.2%	[1.9-9.0]
No	19	5.3%	[3.0-9.1]
Forced to have sex in past 12 months			
Yes	8	4.6%	[1.9-10.6]
No	19	5.1%	[3.0-8.8]
Has experienced name calling, teasing or insults			
Yes	20	6.4%	[3.8-10.7]
No	7	3.6%	[1.5-8.6]
Has been excluded from a social gathering			
Yes	3	2.8%	[0.8-9.5]
No	24	5.2%	[3.2-8.4]
Others have lost respect for him			
Yes	6	2.9%	[1.2-6.8]
No	21	5.7%	[3.4-9.6]
Has been abandoned by loved ones			
Yes	10	3.7%	[1.7-7.8]
No	17	5.7%	[3.2-9.9]
Has comprehensive HIV knowledge			
Yes	16	6.8%	[3.7-12.2]
No	11	3.3%	[1.6-6.5]
Perceived risk of HIV infection (excluding known positives)			
High risk	4	1.2%	[0.4-3.7]
Medium or low risk	8	4.0%	[1.7-9.3]
No risk	1	0.9%	[0.1-6.2]
Does not know	1	4.0%	[0.4-28.4]
Experienced STI symptoms in past 6 months			
Yes	7	4.9%	[1.8-12.3]
No	20	5.0%	[3.0-8.5]

95% CI=95% confidence interval

10.13.3. HIV prevalence by risk behaviours

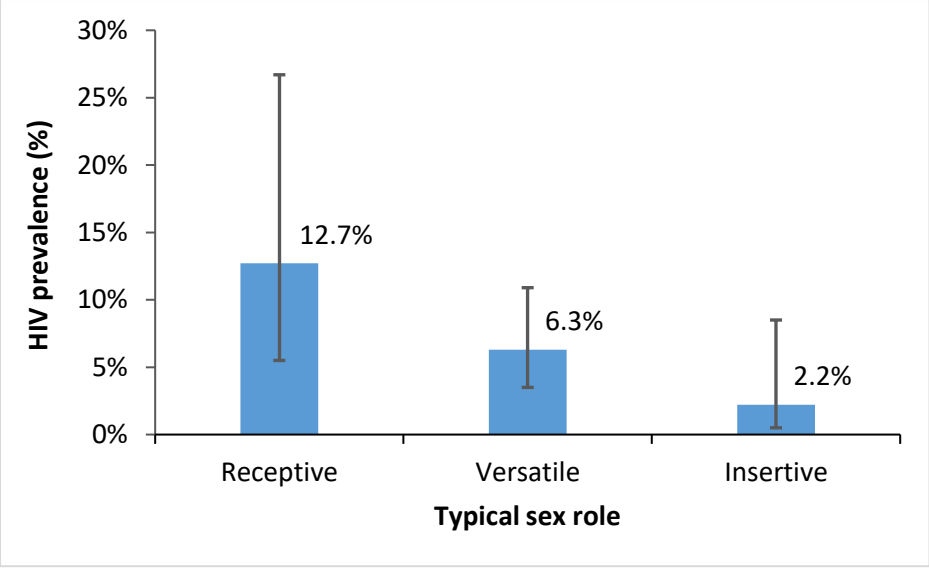
MSM who had their first sexual encounter with another man at 10 years of age or less had higher HIV prevalence than those whose sexual debut with men occurred later in life. Sexual debut is often considered a proxy for the onset of exposure to HIV, and it follows that those with more years of exposure are more likely to be infected (Figure 99).

Figure 99: HIV prevalence by age at first sex with another man among MSM, Unguja, 2018



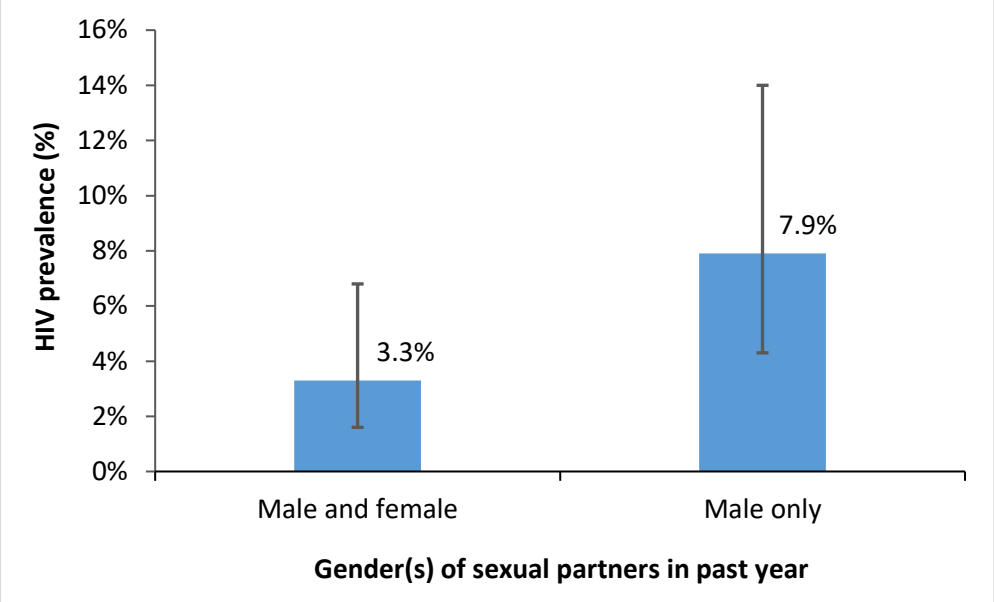
MSM whose typical sexual role to be receptive had higher HIV prevalence (12.7%; 95% CI: 5.5-26.7) than those who classified themselves as versatile (6.3%; 95% CI: 3.5-10.9) or insertive (2.2%; 95% CI: 0.5-8.5) (Figure 100).

Figure 100: HIV prevalence by typical sex role among MSM in Unguja, 2018



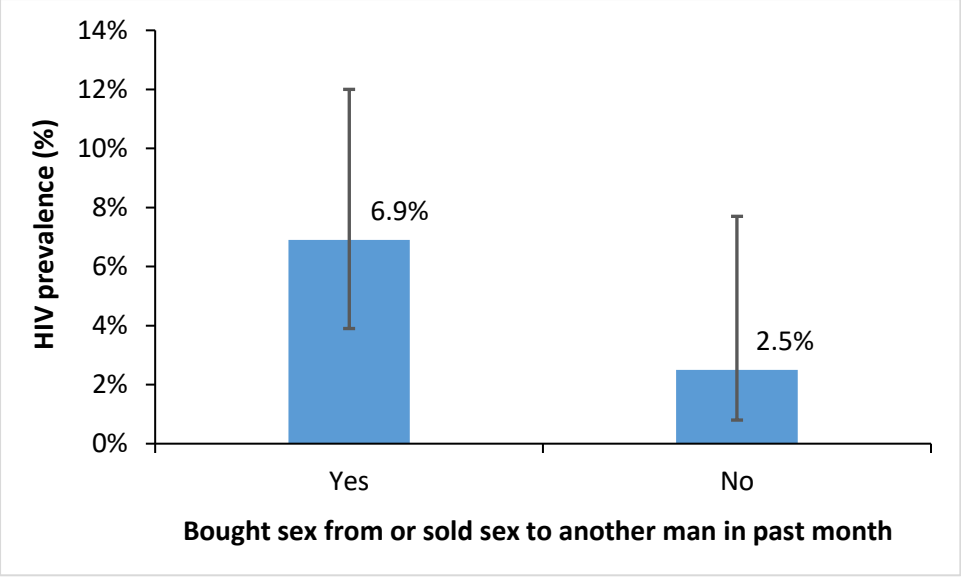
MSM who reported having sex with only male partners in the year prior to the survey had higher HIV prevalence (7.9%; 95% CI: 4.3-14.0) compared to those who reported having both male and female partners (3.3%; 95% CI: 1.6-6.8) (Figure 101).

Figure 101: HIV prevalence by gender(s) of sexual partners in past year among MSM, Unguja, 2018



MSM who engaged in transactional sex with another man (either buying or selling) in the month prior to the survey had higher HIV prevalence (6.9%; 95% CI: 3.9-12.0) than those who did not (2.5%; 95% CI: 0.8-7.7) (Figure 102).

Figure 102: HIV prevalence by whether bought or sold sex in past month among MSM, Unguja, 2018



HIV prevalence did not differ greatly between MSM who reported having paid for sex in the month prior to the survey compared to those who had not paid for sex. HIV prevalence was higher among MSM who reported selling sex to another man in the month prior to the survey (7.0%; 95% CI: 3.8-12.3) compared to those who had not (2.5%; 95% CI: 0.8-7.7). HIV prevalence was higher among MSM who had not engaged in group sex (15.1%; 95% CI: 5.8-34.1) in the month prior to the survey compared to those who had (3.4%; 95% CI: 0.6-16.4) (Table 50).

Across nearly all partner types, HIV prevalence was higher among those who reported using a condom at last sex compared to those who had not. The exception was condom use at last receptive sex with a paid male partner, in which case the opposite was found (Table 50).

Table 50: HIV prevalence by risk behaviours among MSM in Unguja, 2018

	Crude HIV-positive (n)	HIV prevalence (%)	95% CI
Age at first sex with a man			
< 10 years	5	18.2%	[6.4-42.2]
10-14 years	13	9.5%	[4.9-17.7]
15-19 years	7	3.2%	[1.2-7.8]
20+ years	2	2.8%	[0.6-11.4]
Age at first sex with a woman			
< 10	0	0.0%	NC
10-14	2	4.5%	[0.8-22.2]
15-19	10	2.5%	[1.1-5.6]
20+	8	8.7%	[3.6-19.5]
Typical sex role			
Receptive	8	12.7%	[5.5-26.7]
Versatile	17	6.3%	[3.5-10.9]
Insertive	2	2.2%	[0.5-8.5]
Gender(s) of sexual partners in past year			
Male and female	10	3.3%	[1.6-6.8]
Male only	17	7.9%	[4.3-14.0]
Number of non-paying insertive partners in past month out of all who had ANY non-paying male partner in past month			
None	1	1.6%	[0.2-10.3]
1	8	11.0%	[4.7-23.6]
2 or more	10	8.8%	[4.4-17.0]
Number of non-paying receptive partners in past month out of all who had ANY non-paying male partner in past month			
None	17	18.4%	[10.6-30.1]
1	2	4.2%	[0.8-19.5]
2 or more	0	0.0%	NC
Paid a man for sex in past month among those who ever paid a man for sex			
Yes	6	7.1%	[2.6-17.8]
No	9	8.5%	[3.7-18.1]
Paid a woman for sex in past month among those who ever paid a woman for sex			
Yes	1	1.9%	[0.3-12.9]
No	8	3.7%	[1.6-8.5]
Sold sex to a man in past month among those who ever sold sex to another man			
Yes	17	7.0%	[3.8-12.3]
No	5	2.5%	[0.8-7.7]

	Crude HIV-positive (n)	HIV prevalence (%)	95% CI
Bought sex from or sold sex to another man in past month among those who ever bought or sold sex			
Yes	18	6.9%	[3.9-12.0]
No	5	2.5%	[0.8-7.7]
Had group sex in past month among those who ever had group sex			
Yes	2	3.4%	[0.6-16.4]
No	7	15.1%	[5.8-34.1]
Condom use at last insertive sex with non-paying male partner			
Yes	2	3.1%	[0.6-14.9]
No	0	0.0%	NC
Condom use at last receptive sex with non-paying male partner			
Yes	11	14.9%	[7.2-28.2]
No	7	6.1%	[2.7-13.5]
Condom use with last non-paying female partner			
Yes	8	6.6%	[2.7-15.2]
No	6	3.4%	[1.1-10.1]
Condom use at last sex with paid female partner			
Yes	8	6.2%	[2.6-14.1]
No	1	0.2%	[0.0-1.2]
Condom use at last insertive sex with paid male partner			
Yes	2	12.5%	[2.0-50.2]
No	0	0.0%	NC
Condom use at last receptive sex with paid male partner			
Yes	3	11.8%	[2.6-40.4]
No	2	55.3%	[11.6-92.1]
Condom use at last sex with paying female partner			
Yes	6	5.8%	[2.1-15]
No	1	0.8%	[0.1-5.7]
Condom use at last insertive sex with paying male partner			
Yes	4	7.9%	[2.1-25.0]
No	0	0.0%	NC
Condom use at last receptive sex with paying male partner			
Yes	11	16.2%	[8.1-29.6]
No	1	4.3%	[0.5-26.9]
Used drugs other than alcohol in the last three months			
Yes	9	4.2%	[1.9-8.9]
No	18	5.5%	[3.1-9.6]

95% CI=95% confidence interval

10.13.4. HIV prevalence by access to/uptake of services and disease co-infection

MSM who ever had an HIV test had high HIV prevalence (7.1%; 95% CI: 4.5-11.3), although prevalence did not differ according to when they had been tested. Among MSM who had tested for

HIV, those who did not disclose their HIV status to a steady or permanent partner had a significantly higher HIV prevalence (17.8%; 95% CI: 8.6-33.5) compared to those who had disclosed their status (4.5%; 95% CI: 2.5-7.9). Those who visited a clinic providing services to MSM in the 12 months prior to the survey had a higher rate of HIV infection (6.9%; 95% CI: 3.6-12.6) than those who did not (4.5%; 95% CI: 2.4-8.1). There was no difference in HIV prevalence between those who had received services from a peer educator in the 12 months prior to the survey and those who had not (Table 51).

MSM with positive hepatitis B test results had a higher HIV prevalence (11.3%; 95% CI: 2.0-44.1) than those who had a negative result (4.9%; 95% CI: 3.0-7.8), which is to be expected since both are transmitted through condomless sex. A positive hepatitis C test result was not associated with higher HIV prevalence (Table 51).

Table 51: HIV prevalence among MSM by uptake of services, Unguja, 2019

	Crude HIV-positive (n)	HIV prevalence (%)	95% CI
Ever had an HIV test			
Yes	27	7.1%	[4.5-11.3]
No	0	0.0%	NC
When last tested for HIV and received results			
In past one year	18	7.1%	[3.9-12.6]
>1 year ago	9	7.2%	[3.3-15.0]
Don't remember	0	0.0%	NC
Experienced STI symptoms in past 6 months			
Yes	7	4.9%	[1.8-12.3]
No	20	5.0%	[3.0-8.5]
Has disclosed HIV test results to steady/permanent partner			
Yes	17	4.5%	[2.5-7.9]
No	10	17.8%	[8.6-33.5]
Received service(s) either from facility or peer in past year			
Yes	16	4.4%	[2.5-7.7]
No	11	5.5%	[2.7-10.8]
Visited clinic providing services to MSM in past 12 months			
Yes	13	6.9%	[3.6-12.6]
No	14	4.5%	[2.4-8.1]
Would return to same facility for services based on treatment by staff			
Yes	12	6.8%	[3.5-12.9]
No	1	7.7%	[0.7-50.2]
Had contact with a peer educator in last 12 months			
Yes	13	4.9%	[2.6-8.8]
No	14	5.1%	[2.6-9.6]
HBV test results			
Positive	2	11.3%	[2.0-44.1]
Negative	25	4.9%	[3.0-7.8]
HCV test results			
Positive	0	0.0%	NC

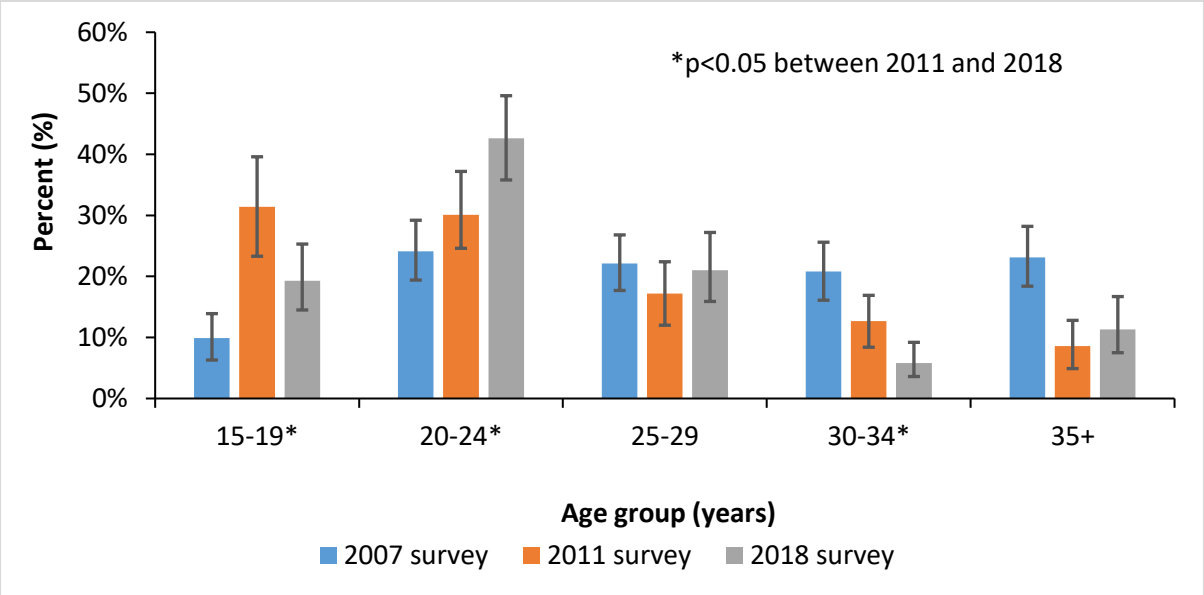
	Crude HIV-positive (n)	HIV prevalence (%)	95% CI
Negative	27	5.0%	[3.1-7.9]

95% CI=95% confidence interval

10.14. Comparison of key findings from 2007, 2011 and 2018 surveys

In 2018, MSM aged 20-24 years had much higher inclusion in the survey than in the 2011 survey (42.6% versus 30.1%; p<0.001). Conversely, fewer MSM aged 15-19 years and 30-34 years participated in the 2018 survey than in 2011 (19.3% versus 31.4%, p=0.02 and 5.8% versus 12.7%, p<0.001, respectively) (Figure 103).

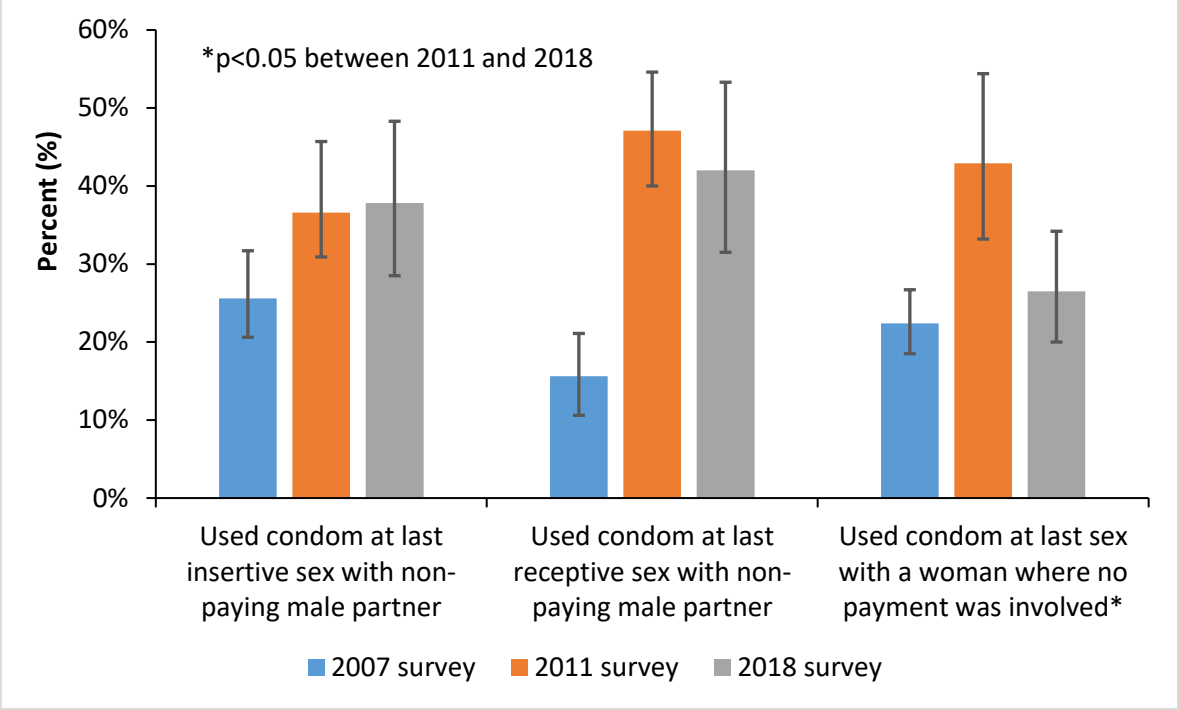
Figure 103: Age distribution of MSM in Unguja, comparison of 2007, 2011 and 2018 surveys



The proportion of MSM who reported to be currently married or living with a partner doubled from 5.8% in 2011 to 13.0% in 2018 (p=0.020). In addition, there was nearly a two-fold increase in MSM who reported to be living with a female sexual partner (7.2% versus 13.2%; p=0.040) and simultaneously a six-fold decrease in MSM who reported having a male live-in partner (33.5% versus 5.8%; p<0.001). There was a large shift in the reported income earned between the 2011 and 2018 surveys, with an increase from 2.6% to 15.5% in MSM who reported earning less than TZS 50,000 in the past month (p<0.001) and an increase from 17.9% to 28.8% in MSM who reported earning between TZS 50,000 and TZS 120,000 (p=0.040) ($1 was equivalent to approximately TZS 2,300 at the time of this report) (Table 52).

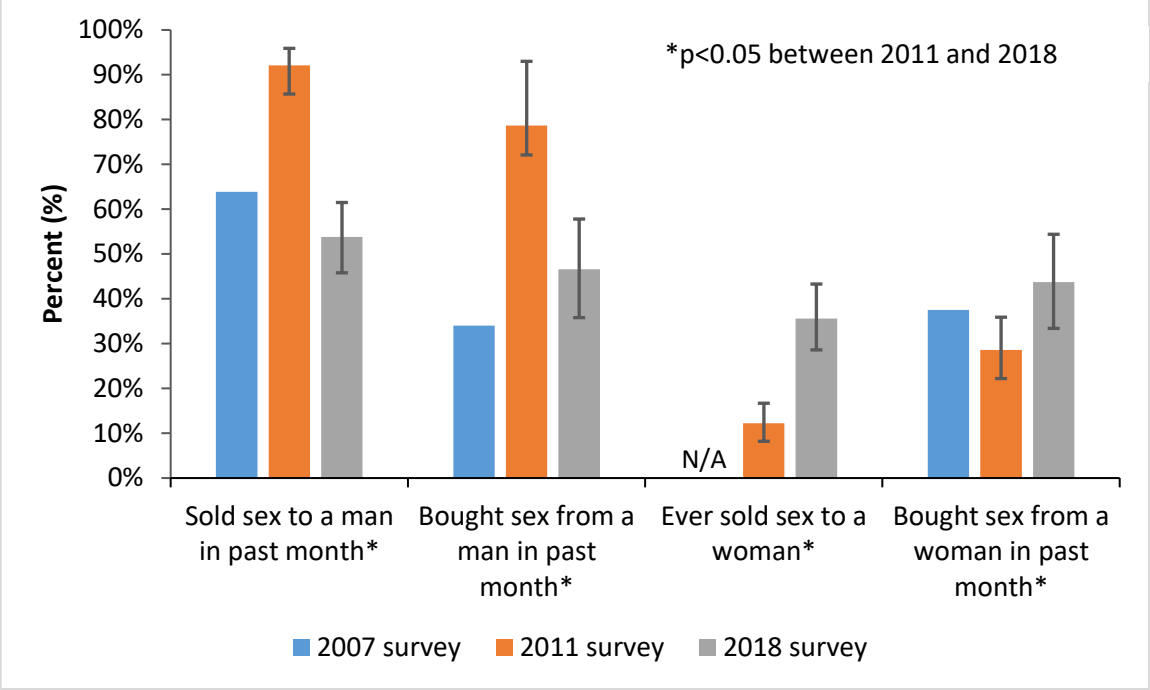
While there were no changes in the proportion of MSM who reported using a condom at last insertive or receptive sex with non-paying male partners, there was a decrease in the proportion of MSM who reported using a condom at last sex with a woman where no payment was involved, from 42.9% in 2011 to 26.5% in 2018 (p=0.020) (Figure 104).

Figure 104: Condom use practices among MSM in Unguja by partner type, comparison of 2007, 2011 and 2018 surveys



The exchange of sex for money among MSM decreased from 2011 to 2018 with male partners but increased with female partners. Among MSM who had ever sold sex, the proportion of those who reported selling sex to a man in the month prior to the survey decreased from 92.1% to 53.8% from 2011 to 2018 ($p<0.001$). Similarly, MSM who reported buying sex from a man in the month prior to the survey decreased from 78.7% in 2011 to 46.6% in 2018 ($p<0.001$). Conversely, the proportion of MSM who reported ever selling sex to a woman tripled between 2011 and 2018 (12.2% versus 35.6%; $p<0.001$) while those who reported buying sex from a woman in the month prior to the survey increased from 28.6% to 43.7% ($p=0.020$) (Figure 105). The number of MSM who reported engaging in group sex in the past month decreased from 61.2% in 2011 to 45.3% in 2018 ($p=0.120$).

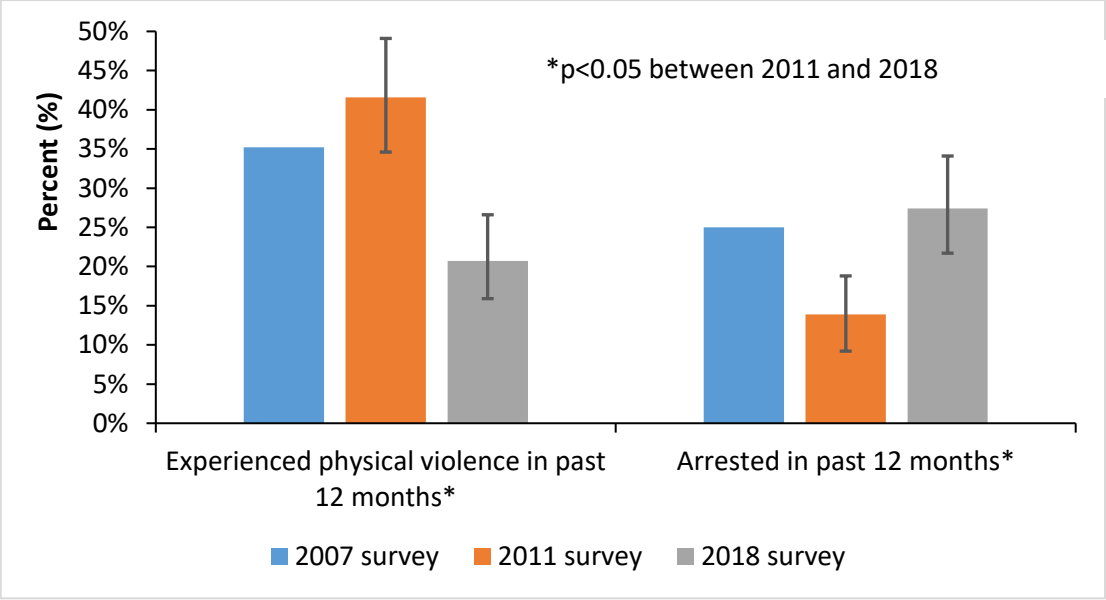
Figure 105: Risk behaviours related to buying and selling sex among MSM who ever reported transactional sex with each partner type in Unguja, comparison of 2007, 2011 and 2018 surveys



Data were not available to calculate error bars for 2007 survey point estimates

The proportion of MSM who experienced violence in the 12 months prior to the survey decreased from 41.6% in 2011 to 20.7% in 2018 (p<0.001). However, the proportion of MSM arrested in the 12 months prior to the survey increased from 13.9% to 27.4% (p<0.001) (Figure 106).

Figure 106: Experiences of violence and arrest among MSM in Unguja, comparison of 2007, 2011 and 2018 surveys



Data were not available to calculate error bars for 2007 survey point estimates

While ever having tested for HIV did not change among MSM between 2011 and 2018, testing in the past 12 months decreased significantly from 53.7% to 44.2% (p=0.040). The percentage of MSM who reported visiting a clinic or drop-in centre for MSM services increased from 13.3% in 2011 to 22.2%

in 2018 (p=0.020); however, those who reported having contact with a peer educator in the year prior to the survey decreased from 53.6% in 2011 to 38.9% in 2018 (p<0.001) (Table 52).

Changes in HIV, HBV, and HCV prevalence among MSM in Unguja from 2011 to 2018 are displayed in Figure 107 (p=0.120, p=0.500 and p=0.380, respectively).

Figure 107: HIV, HBV, and HCV prevalence among MSM in Unguja, comparison of 2007, 2011 and 2018 surveys

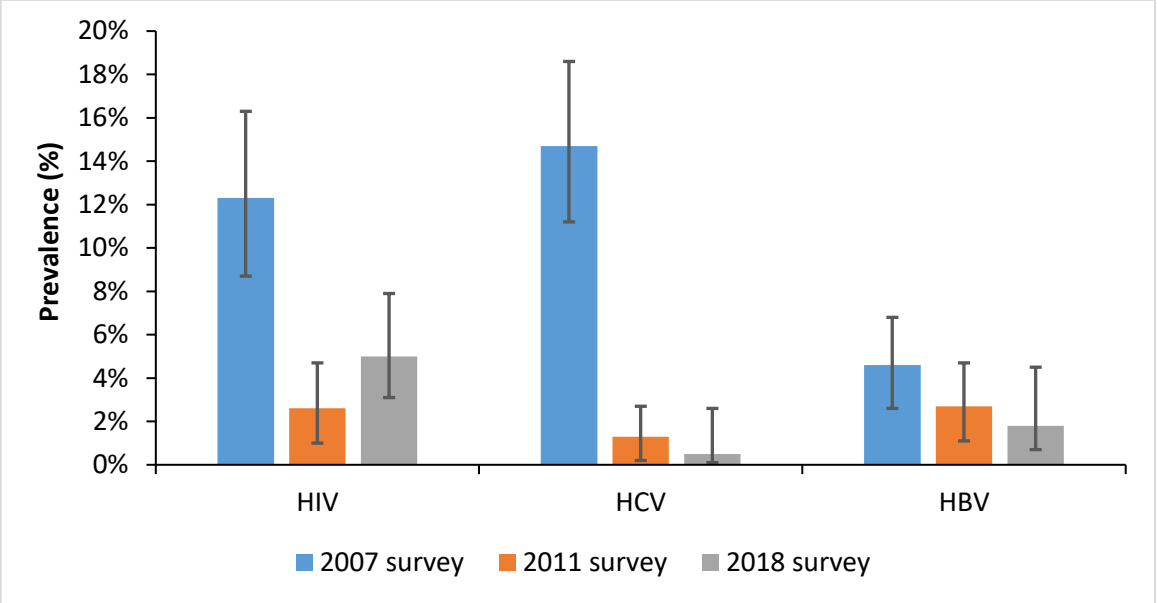


Table 52: Key findings among MSM in Unguja, 2007, 2011 and 2018

	2007	2011	2018	p-value 2011 vs 2018
SOCIO-DEMOGRAPHIC CHARACTERISTICS				
Age				
15-19	9.9%	31.4%	19.3%	**0.020**
20-24	24.1%	30.1%	42.6%	**< 0.001**
25-29	22.1%	17.2%	21.0%	0.340
30-34	20.8%	12.7%	5.8%	**< 0.001**
35+	23.1%	8.6%	11.3%	0.380
Median age	28 years	23 years	23 years	
Marital status				
Never married	58.3%	83.3%	79.2%	0.280
Currently married/living with a partner	28.8%	5.8%	13.0%	**0.020**
Separated/divorced/widowed	12.8%	10.9%	7.8%	0.200
Gender of live-in partner				
No live-in partner	48.7%	59.3%	81.0%	**< 0.001**
Male	38.0%	33.5%	5.8%	**< 0.001**
Female	13.3%	7.2%	13.2%	**0.040**

		2007	2011	2018	p-value 2011 vs 2018
Income earned in past month (TZS)					
< 50,000 TZS		31.1%	2.6%	15.5%	**< 0.001**
50,000 – 120,000 TZS		53.8%	17.9%	28.8%	**0.040**
120,001 – 200,000 TZS		11.1%	26.8%	22.2%	0.300
≥ 200,000 TZS		4.0%	52.6%	33.5%	**< 0.001**
RISK BEHAVIORS					
Used drugs other than alcohol in the past 3 months		60.3%	39.8%	36.9%	0.560
Condom use at last insertive sex with non-paying male partner		25.6%	36.6%	37.9%	0.840
Condom use at last receptive sex with non-paying male partner		15.6%	47.1%	42.0%	0.440
Condom use at last sex with a woman where no payment was involved		22.4%	42.9%	26.5%	**0.020**
Sold sex to a man in past month (among those who ever sold sex)		63.9%	92.1%	53.8%	**< 0.001**
Ever sold sex to a woman			12.2%	35.6%	**< 0.001**
Bought sex from a man in past month		34.0%	78.7%	46.6%	**< 0.001**
Bought sex from a woman in past month		37.5%	28.6%	43.7%	**0.020**
Engaged in group sex in past month			61.2%	45.3%	0.120
VULNERABILITY FACTORS					
Experienced physical violence in past 12 months		35.2%	41.6%	20.7%	**< 0.001**
Arrested in past 12 months		25.0%	13.9%	27.4%	**< 0.001**
Perceives self to be at high risk for HIV		62.7%	65.0%	44.7%	**< 0.001**
ACCESS TO AND UPTAKE OF SERVICES					
Ever used lubricant during sex		82.4%	85.9%	81.3%	0.240
Used a condom at last sex with lubricant		13.5%	36.5%	33.7%	0.560
Ever tested for HIV		18.8%	68.2%	69.9%	0.720
Tested for HIV and received results in past 12 months			53.7%	44.2%	**0.040**
Visited drop-in centre/clinic for MSM services		N/A	13.3%	22.2%	**0.020**
Contact with a peer educator in past year		N/A	53.6%	38.9%	**< 0.001**
DISEASE PREVALENCE					
Experienced STI symptoms in past 6 months		20.8%	23.1%	26.2%	0.460
HIV		12.3%	2.6%	5.0%	0.120
HCV		14.7%	1.3%	0.5%	0.380
HBV		4.6%	2.7%	1.8%	0.500
Syphilis	Lifetime infection	0.2%	0.8%		
	Active infection			0.0%	

10.15. Discussion and actions for consideration: MSM

10.15.1. Socio-demographic characteristics

The median age of the 2011 and 2018 samples were equal at 23 years. Even though there was a two-fold increase in the proportion of MSM who reported being currently married or living with a partner from 2011 to 2018, the vast majority of MSM in 2018 had never been married and had no live-in sexual partner. This may reflect the relatively young age of participants.

10.15.2. Risk behaviours of MSM

MSM reported multiple high risk sexual practices including exchanging sex for money, having high numbers of sexual partners, group sex and low condom use. Sex in exchange for money was commonly reported among MSM; approximately half reported buying or selling sex to a man in the month prior to the survey. However, the proportion of MSM exchanging sex for money with male partners decreased significantly from 2011 to 2018. Transactional sex was also reported with female partners. Although it was reported to a lesser extent than transactional sex with male partners, transactional sex with female partners increased significantly from 2011 to 2018.

Having both male and female sexual partners is common among MSM. MSM reported engaging with a high number of sexual partners, with a median of four partners and a range from zero to 69 partners (including both male and female) in the month prior to the survey. In spite of multiple sexual partnerships being common, reported condom use among MSM was low in 2018, with less than half of MSM reporting condom use at last sex across all partner types. Compared to 2011, reported condom use at last sex with a woman where no payment was involved decreased significantly in 2018.

Although overall condom use was low, HIV prevalence was higher among those who reported condom use at last sex for all but one partner type. This may be an indication that MSM who have been diagnosed are using condoms to prevent onward HIV transmission to their sexual partners.

Although there was no significant change in the proportion of MSM who reported ever engaging in group sex from 2011 to 2018, it remains a risky behaviour, with those who engaged in group sex in the month prior to the survey reporting high numbers of partners and low levels of condom use at last group sex.

The co-existence of multiple high-risk sexual behaviours among MSM is cause for concern for the potential transmission of HIV among MSM as well as to sex workers and women from the general population.

Actions for consideration:

- To sustain gains in controlling the epidemic among MSM, peer outreach and other interventions targeting HIV prevention among MSM can be strengthened. This could include:
    - Strengthening behaviour change interventions and prevention messages targeting MSM to increase this population's understanding of the risks associated with having multiple partners, engaging in transactional sex, and inconsistent condom use.
    - Continuing efforts to promote correct and consistent condom use with all partner types.
    - Ensuring wide availability and accessibility of condoms for MSM.

10.15.3. Access to and uptake of HIV prevention and other HIV-related services

In spite of national guidelines for KPs recommending HIV testing every three months, uptake of HIV testing decreased over the last two survey rounds with fewer MSM in 2018 reporting an HIV test in the 12 months prior to the survey compared to 2011. Although access to services at MSM clinics increased, the decrease in coverage by peer educators may be a contributing factor.

Actions for consideration:

- Gather additional information to better understand the changes in the uptake of clinic-based and peer-based MSM services to inform how best to reach MSM with critical HIV prevention services
- Improve coverage of community HIV testing among MSM in order to diagnose those who are living with HIV, including strategies to overcome peoples' fear of learning their HIV status

10.15.4. Prevalence of HIV, HBV, HCV, and active syphilis

HIV and HCV prevalence have stabilised in the MSM population since the 2011 survey. The highest HIV prevalence continues to be among MSM ages 35 years and above, which is expected given the likelihood that these MSM have more accumulated risk and exposure. The fact that almost 60% of HIV-infected MSM know their status, of whom 93% are on treatment, of whom 98% are virally supressed, is likely a contributing factor to the stabilizing prevalence. As noted in the previous section, condom use among those who are HIV-infected appears to be high (temporality cannot be certain), possibly signalling that those who have been diagnosed are taking precautions to prevent the infection of their partners.

Injection drug use was found to be extremely uncommon among MSM in both 2011 and 2018, which likely explains the stable status of HCV infection.

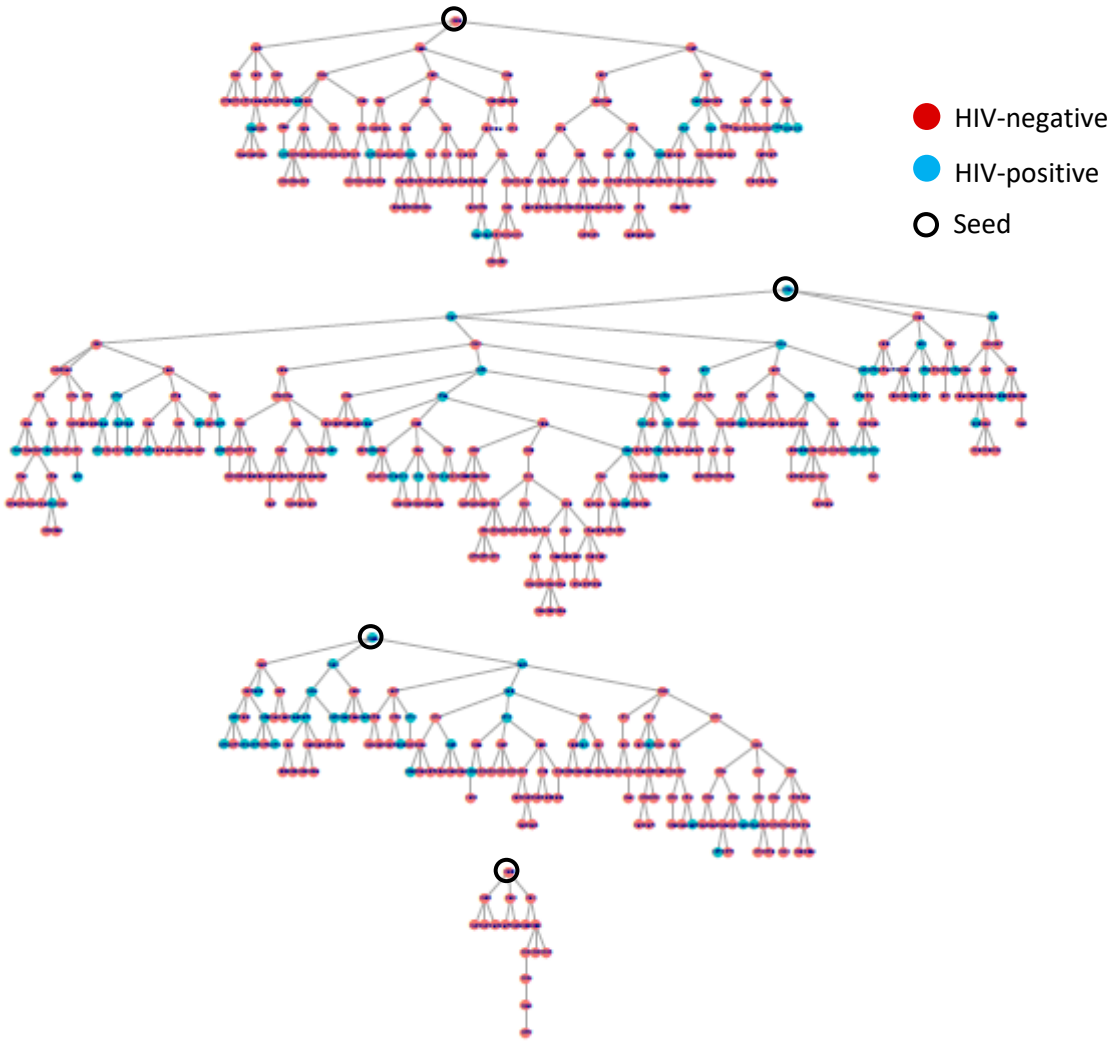
Actions for consideration:

- Comprehensive harm reduction services targeting MSM who are injecting drugs may be continued and be expanded to reach the wider PWID community in Zanzibar
- Scale up hepatitis B and C testing, coverage of hepatitis B vaccination
- Scale up comprehensive STI screening
- Another round of RDS can be conducted in 3-5 years to continue monitoring the epidemic

11.0 FEMALE SEX WORKERS/SEXUAL EXPLOITED CHILDREN (FSW)/SEC

From December 2018 to February 2019, 580 FSW/SEC enrolled in the survey. A total of 693 individuals presented survey coupons at the survey site, of whom 16.3% were ineligible to participate. The most common reason for ineligibility was that recruits insisted they were not selling sex. Figure 108 shows the recruitment tree for the FSW/SEC RDS in 2019 by HIV status.

Figure 108: RDS recruitment tree by HIV status, FSW/SEC, Unguja, 2018/19



11.1. Population size estimate

The table below describes the different methods used to estimate the size of the FSW/SEC population in Unguja in 2018/19, which included unique object multiplier, service multiplier, literature review and estimates from other available time points before the 2018/19 IBBS. Using a modified Delphi approach, a panel of experts agreed to adopt the mean of the first round of estimates (4,854) as the most plausible estimate for the number of FSW/SEC in Unguja. The estimate translates to 1.4% of the female population 15 years and older.

Table 53: Results of population size estimation for FSW/SEC in Unguja, 2018/19

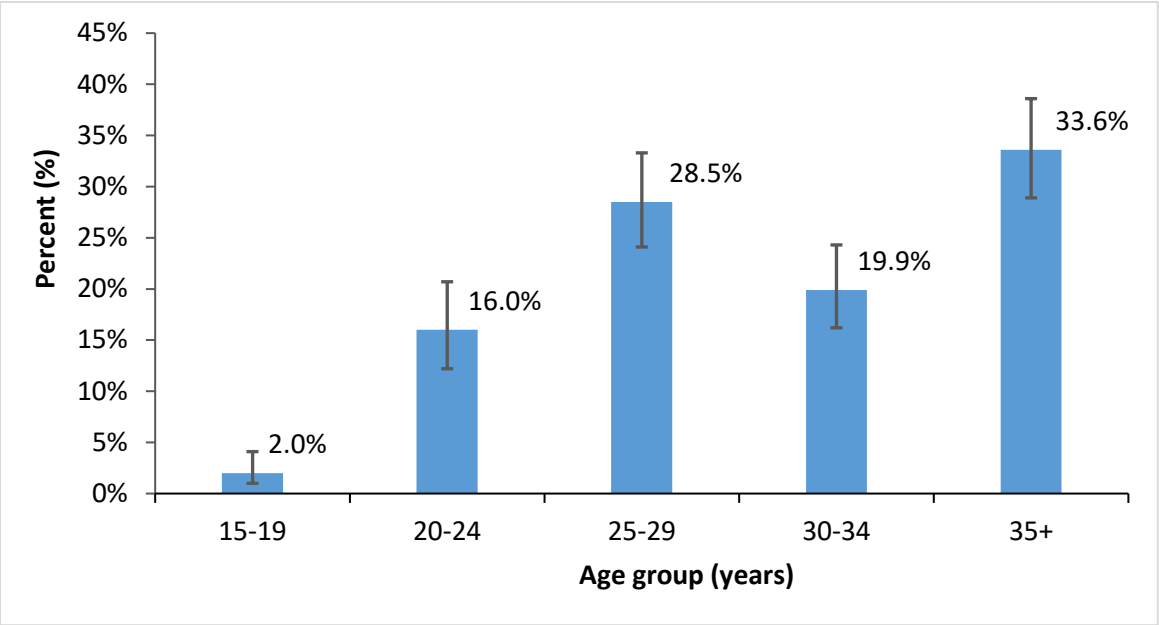
Methods	Estimate	Notes
Recapture of 2007 RDS survey participants	10,991	• 1.4% (RDSA-adjusted) reported during the 2018/19 survey that they had participated in the 2007 survey
2018/19 Unique object multiplier	6,082	• 95% CI: 4,711 – 8,579 • 815 purple key chains distributed • 13.4% (RDSA-adjusted) reported receiving a key chain during the timeframe of distribution
2018/19 Modified Delphi	4,854	• Min = 1,000 • Max = 8,000
2017 Delphi method following Formative Assessment	4,600	• Min = 2,000 • Max = 10,000
2011/12 Delphi method following RDS	3,958	• Min and max not possible to calculate
Recapture of 2011/12 RDS survey participants	2,247	• 10.9% (RDSA-adjusted) reported during the 2018/19 survey that they had participated in the 2011/12 survey
2018/19 Service multiplier	1,411	• 95% CI 1,240 – 1,642 • 481 FSW/SEC received services at ZAYEDESA facility in the year prior to the survey • 34.1% (RDSA-adjusted) reported receiving services from ZAYEDESA in the same time period
2018/19 Literature review	N/A	• Available estimates determined to be incomparable to the setting in Unguja

95% CI=95% confidence interval

11.2. Socio-demographic characteristics

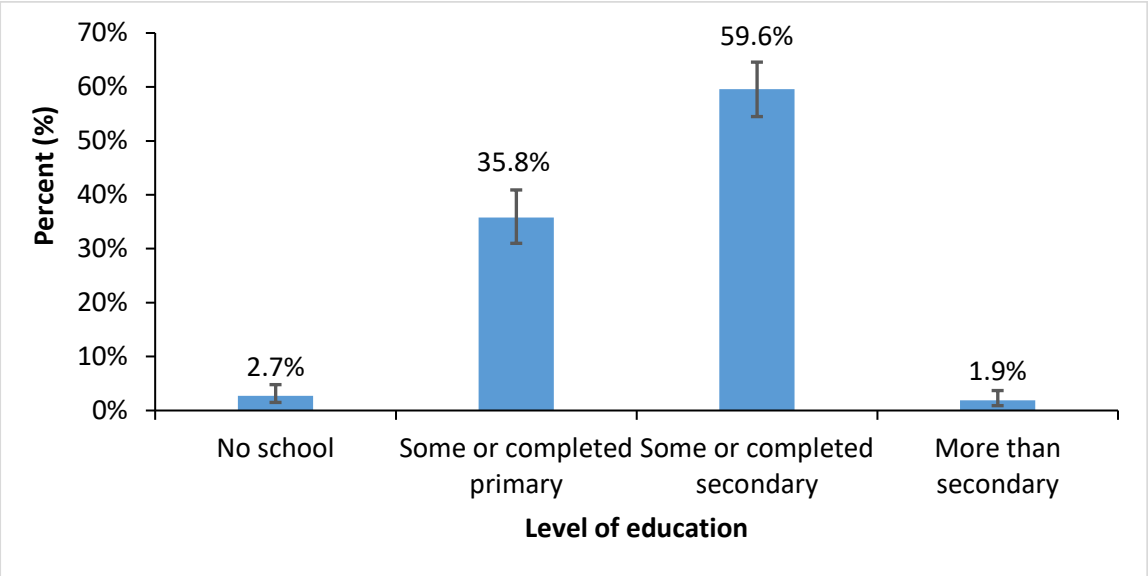
The age of FSW/SEC participants ranged from 17 to 58 years old with a median of 31 years. Slightly more than half (53.5%) were 30 years of age or older. The age distribution of FSW/SEC is shown in Figure 109.

Figure 109: Age distribution of FSW/SEC in Unguja, 2018/19



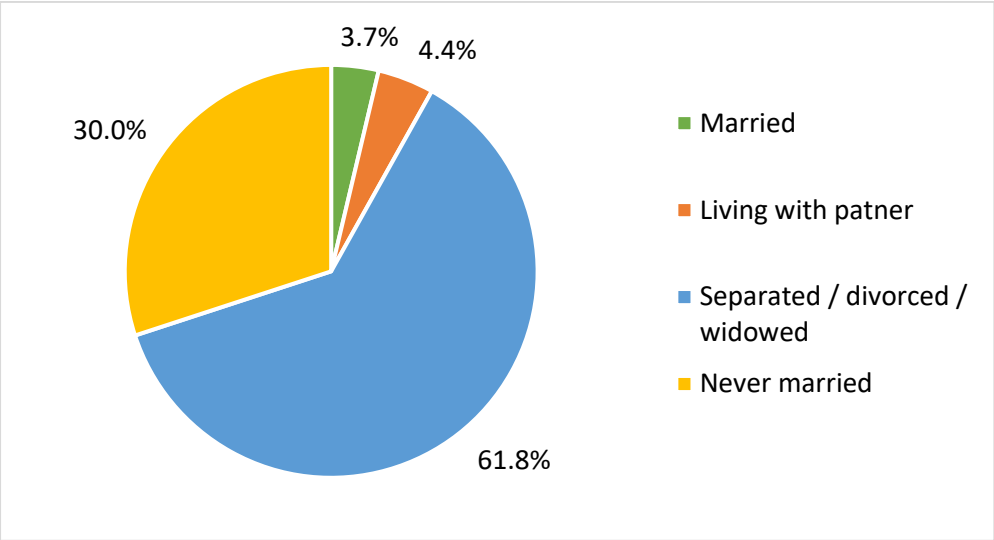
More than half of FSW/SEC (61.5%) reported having at least some secondary education. Very few FSW/SEC reported having received no formal education (Figure 110).

Figure 110: Education levels among FSW/SEC, Unguja, 2018/19



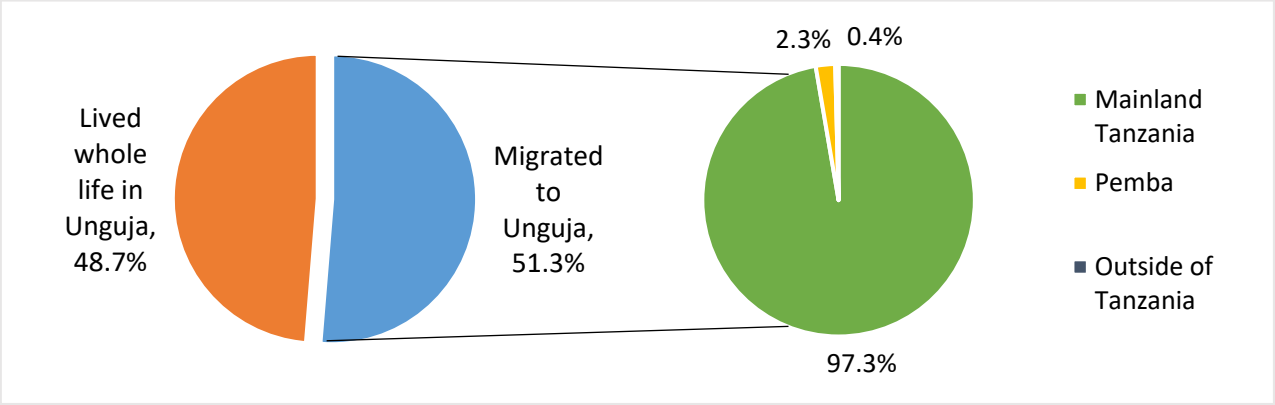
More than half (61.8%) of FSW/SEC reported being separated, divorced or widowed. Nearly one-third (30.0%) had never been married while 3.7% reported being currently married (Figure 111).

Figure 111: Marital status of FSW/SEC in Unguja, 2018/19



Nearly equal proportions of FSW/SEC reported that they currently live with their families (41.7%) as alone (40.1%). A small percentage reported living with their boyfriend (6.1%). Nearly half of FSW/SEC (48.7%) reported living in Unguja their entire lives. Of those who migrated to Unguja, the majority (97.3%) were from mainland Tanzania (Figure 112).

Figure 112: Migration of FSW/SEC to Unguja, 2018/19



The median reported income earned in the past month was TZS 220,000, with a minimum of TZS 4,500 and a maximum of TZS 3,000,000 ($1 was equivalent to approximately TZS 2,300 at the time of this report). One in ten FSW/SEC (11.2%) reported earning more than TZS 500,000 in the past month (Figure 113). Nearly half of FSW/SEC (47.7%) reported having another source of income apart from sex work, among whom the most commonly cited sources were petty trading and employment in a private business or in the private sector (Table 54).

Figure 113: Income earned in past month (TZS) among FSW/SEC, Unguja, 2018/19

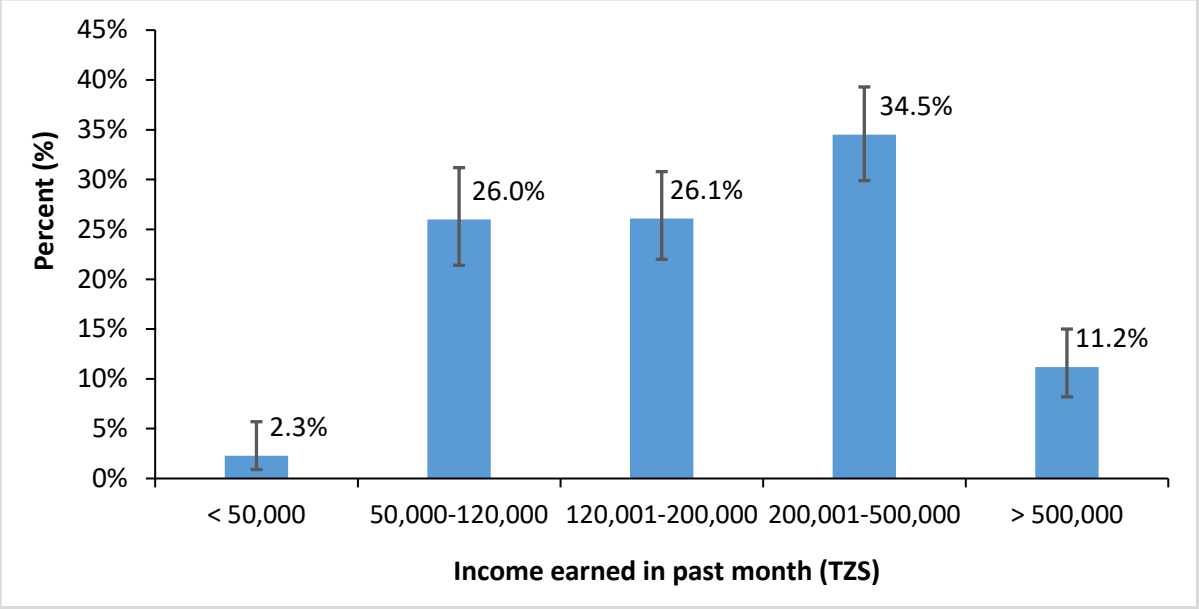


Table 54: Socio-demographic characteristics of FSW/SEC in Unguja, 2018/19

	Crude n	Weighted percent (%)	Weighted 95% CI
Age group (years) [N=580]			
15-19	8	2.0%	[1.0-4.1]
20-24	74	16.0%	[12.2-20.7]
25-29	158	28.5%	[24.1-33.3]
30-34	121	19.9%	[16.2-24.3]
35+	219	33.6%	[28.9-38.6]
Median age in years (IQR)		31 years (IQR: 26-38) Min. 17 - Max. 58 years	
Level of education [N=580]			
No school	14	2.7%	[1.5-4.8]
Some or completed primary	204	35.8%	[31.0-40.9]
Some or completed secondary	351	59.6%	[54.5-64.6]
More than secondary	11	1.9%	[0.9-3.7]
Marital status [N=580]			
Married	9	3.7%	[1.6-8.2]
Living with partner	21	4.4%	[2.4-8.0]
Separated/divorced/widowed	383	61.8%	[56.4-67.0]
Never married	167	30.0%	[25.5-35.1]
Currently living with [N=580]			
Family	211	41.7%	[36.6-47.0]
Alone	254	40.1%	[35.1-45.2]
Friends	63	10.6%	[8.1-13.7]
Boyfriend	38	6.1%	[3.8-9.5]
Other sex workers	10	0.8%	[0.4-1.6]
Husband	4	0.8%	[0.3-2.4]

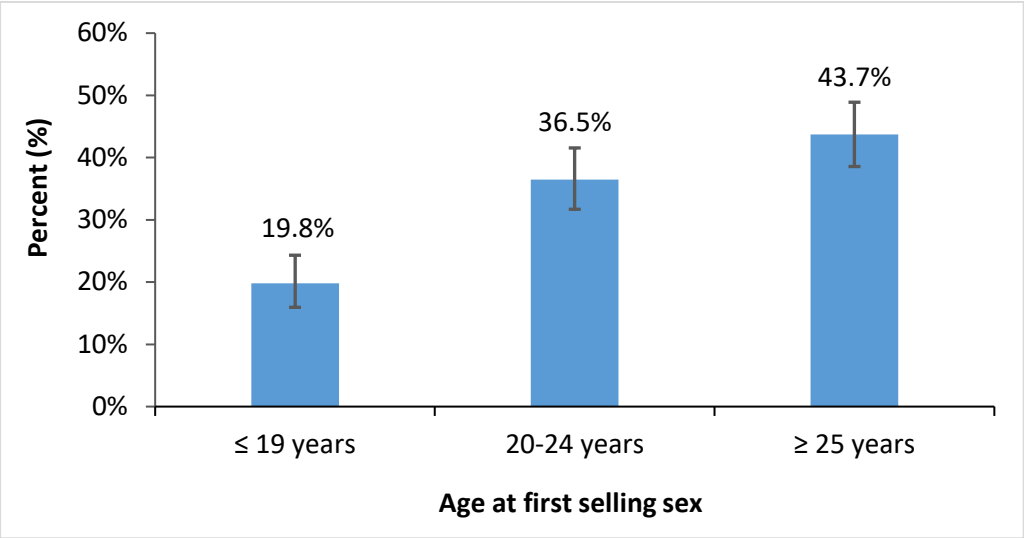
	Crude n	Weighted percent (%)	Weighted 95% CI
Number of years lived in Unguja [N=580]			
Less than 1 year	37	7.8%	[5.0-11.9]
1 to 5 years	139	23.1%	[19.2-27.5]
More than 5 years	140	20.4%	[16.8-24.4]
Whole life	264	48.7%	[43.6-53.9]
Where lived prior to Unguja [N=316]			
Mainland Tanzania	307	97.3%	[94.2-98.8]
Pemba	7	2.3%	[1.0-5.5]
Outside of Tanzania	2	0.4%	[0.1-1.7]
Migration [N=580]			
Migrated to Unguja	264	51.3%	[46.1-56.4]
Lived whole life in Unguja	316	48.7%	[43.6-53.9]
Income earned in past month (TZS) [N=580]			
< 50,000	11	2.3%	[0.9-5.7]
50,000-120,000	125	26.0%	[21.4-31.2]
120,001-200,000	152	26.1%	[22.0-30.8]
200,001-500,000	220	34.5%	[29.9-39.3]
> 500,000	72	11.2%	[8.2-15.0]
Median amount earned in past month (TZS)		TZS 220,000 Min. 4,500 - Max. 3,000,000	
Has other source of income apart from sex work [N=580]			
Yes	264	47.7%	[42.5-52.9]
No	316	52.3%	[47.1-57.5]
Other source(s) of income among those who have an income source apart from sex work¥ [N=264]			
Petty trading	142	55.8%	[47.9-63.5]
Private business / private sector	91	31.8%	[25.0-39.5]
Self-employed	19	8.9%	[4.9-15.7]
Illegal activities	5	3.2%	[0.8-11.4]
Employed by government/parastatal	3	2.0%	[0.6-6.7]
Musician	5	1.9%	[0.7-4.9]
Barmaid	4	1.3%	[0.5-4.0]
Housekeeping / cleaning	4	0.7%	[0.2-1.9]
Tourism	2	0.5%	[0.1-2.4]

95% CI=95% confidence interval

11.3. Sexual history and profile of sex work

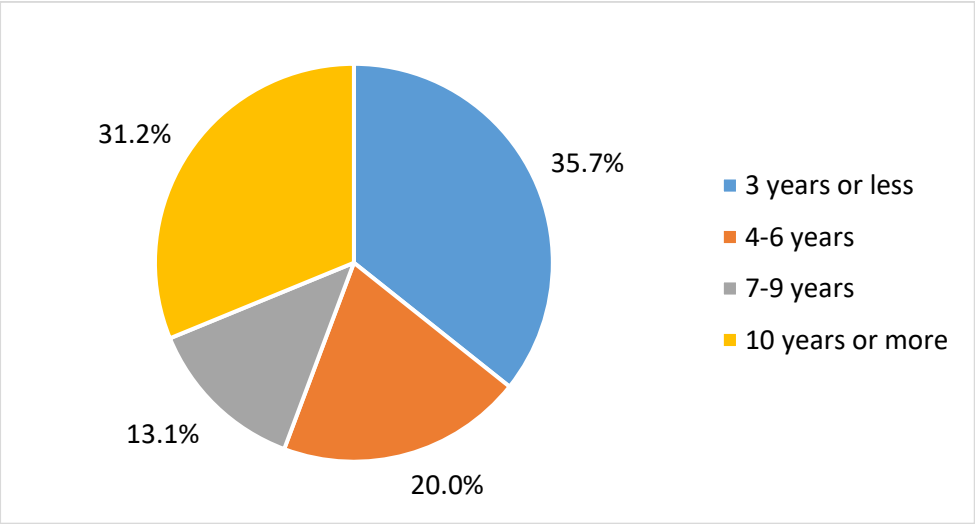
Most FSW/SEC (80.6%) reported a sexual debut before the age of 20 years; however, only 19.8% of FSW/SEC reported that they started selling sex before this age (Figure 114). The median age at which FSW/SEC began selling sex was 23.5 years.

Figure 114: Age at first selling sex among FSW/SEC, Unguja, 2018/19



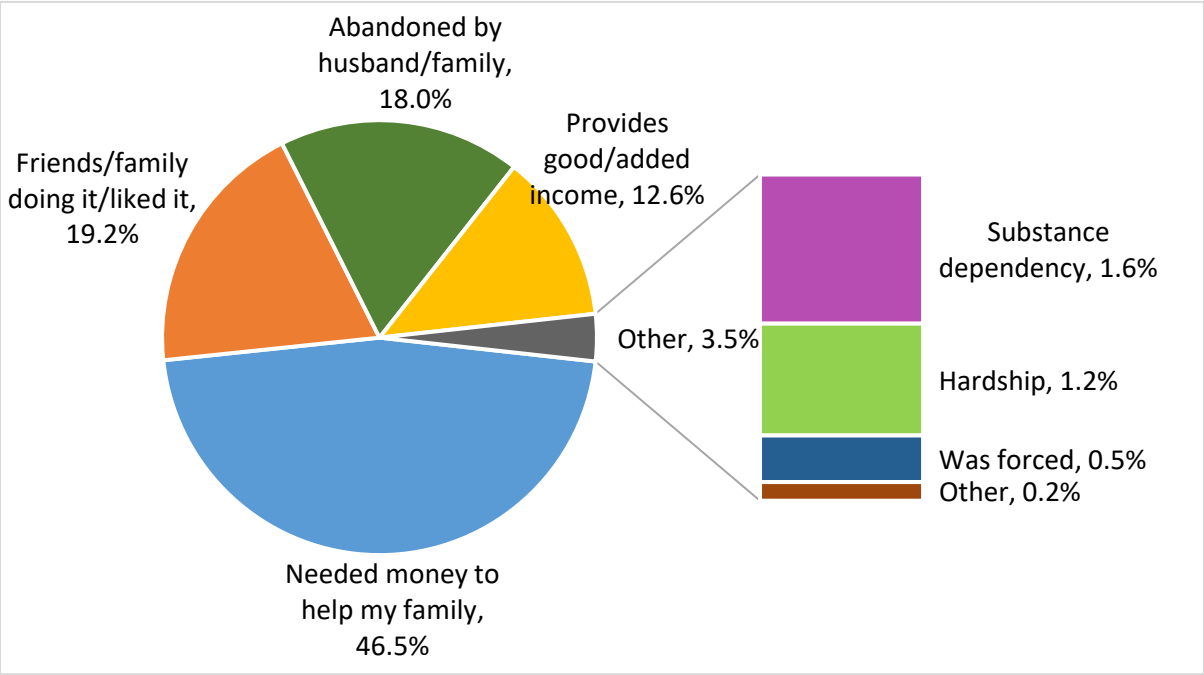
At the time of the survey, close to half of FSW/SEC (44.3%) had been selling sex for seven years or longer, with nearly a third (31.2%) reporting that they had been selling sex for ten years or more (Figure 115).

Figure 115: Duration of selling sex among FSW/SEC, Unguja, 2018/19



Nearly half of FSW/SEC (46.5%) reported that their most important reason for entering into sex work was because they needed money to help their family. Approximately one in five (19.2%) reported that they started selling sex because they either had friends or family doing it or because they liked it and a similar proportion entered into sex work after being abandoned by their husband or family (18.0%) (Figure 116). Less than one per cent of FSW/SEC reported being forced into sex work. Just over one in four FSW/SEC (26.6%) reported that someone in their family knows that they sell sex (Table 55).

Figure 116: Most important reason for entering sex work among FSW/SEC, Unguja, 2018/19

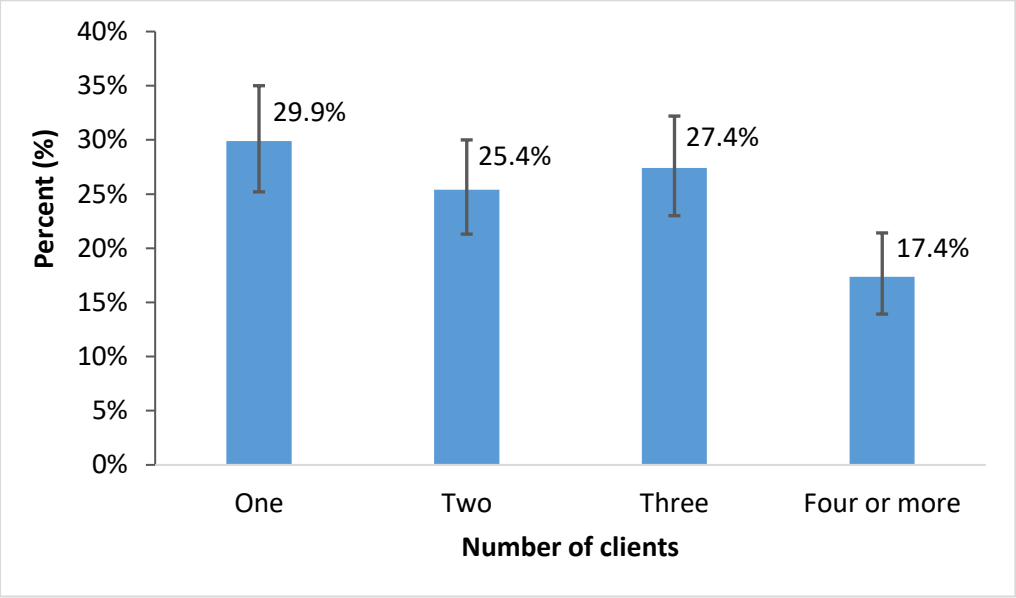


Approximately half of FSW/SEC (48.3%) reported that the primary places where they meet clients are pubs, bars or venues selling local alcohol. Night clubs and full moon parties were also common locations to meet clients (27.3%). In addition, 15.3% of FSW reported meeting clients primarily through the phone or internet (Table 55).

One-third of FSW/SEC (34.0%) reported that they have an agent or someone who helps them to meet clients.

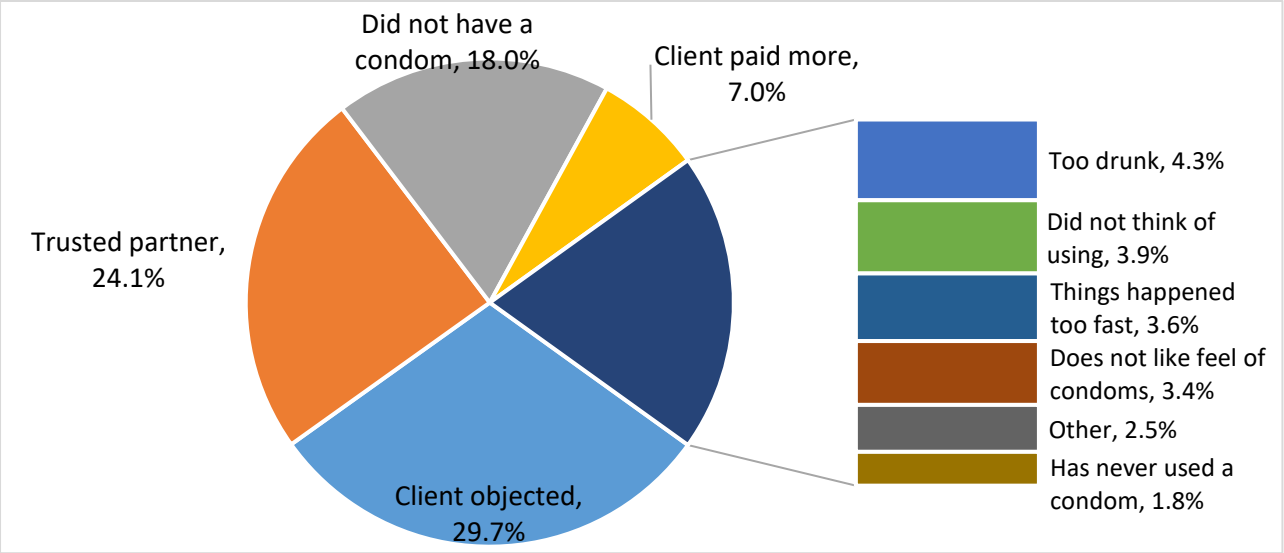
Similar proportions of FSW/SEC reported having one, two and three clients on the last day they worked (29.9%, 25.4% and 27.4%, respectively), with a median of two clients (Figure 117). The reported number of clients on the last day worked ranged from one to forty.

Figure 117: Number of clients on last day worked among FSW/SEC, Unguja, 2018/19



Nearly three-quarters of FSW/SEC (72.7%) reported using a condom with their last client on their last day worked. The main reasons for not using a condom are shown in Figure 118, with their client objecting and trusting their partner being the most commonly cited.

Figure 118: Reason did not use a condom with last client on last day worked among FSW/SEC, Unguja, 2018/19



FSW/SEC reported receiving a minimum of TZS 500 and a maximum of TZS 2,000,000 as payment for sex. The median value for payment for last sex was TZS 30,000 ($1 was equivalent to approximately TZS 2,300 at the time of this report) (Table 55).

Table 55: Sexual history and profile of sex work among FSW/SEC, Unguja, 2018/19

	Crude n	Weighted percent (%)	Weighted 95% CI
Age at first sex [N=580]			
<15 years	85	15.0%	[11.4-19.4]
15-19 years	381	65.6%	[60.5-70.3]
20-24 years	102	18.1%	[14.6-22.2]
25+ years	12	1.4%	[0.7-2.9]
Median age in years (IQR)		17 years (IQR: 15-19) Min. 8 - Max. 30 years	
Age first time sold sex [N=580]			
≤ 19 years	106	19.8%	[16.0-24.3]
20-24 years	213	36.5%	[31.7-41.6]
≥ 25 years	261	43.7%	[38.6-48.9]
Median age in years (IQR)		23.5 years (IQR: 20-28) Min. 12 - Max. 48 years	
Duration of selling sex (years) [N=580]			
3 years or less	175	35.7%	[30.6 -41.0]
4-6 years	110	20.0%	[16.1-24.5]
7-9 years	87	13.1%	[10.3-16.5]
10 years or more	208	31.2%	[26.8-36.1]

	Crude n	Weighted percent (%)	Weighted 95% CI
Median number of years selling sex (IQR)		7 years (IQR: 3-11) Min. 0 - Max. 36 years	
Most important reason for entering into sex work [N=580]			
Needed money to help my family	263	46.5%	[41.3-51.7]
Friends/family doing it/liked it	114	19.2%	[15.6-23.4]
Abandoned by husband/family	106	18.0%	[14.4-22.3]
Provides good/added income	73	12.6%	[9.1-17.1]
Substance dependency	12	1.6%	[0.9-3.1]
Hardship	5	1.2%	[0.5-3.1]
Was forced	3	0.5%	[0.1-2.1]
Other	1	0.2%	[0.0-0.4]
No response	3	0.3%	[0.1-1.0]
Primary place to meet clients [N=580]			
Pubs / bars / venues selling local alcohol	296	48.3%	[43.1-53.5]
Night clubs / full moon parties	160	27.3%	[23.0-32.1]
Through phone or internet	76	15.3%	[11.8-19.6]
On the street	21	4.1%	[2.5-6.7]
Private rooms	16	2.6%	[1.5-4.7]
Guest houses / hotels	4	1.5%	[0.4-5.8]
Through an agent	4	0.6%	[0.2-1.7]
Brothels	3	0.3%	[0.1-0.8]
Has agent/someone to help her meet clients [N=580]			
Yes	201	34.0%	[29.3-39.1]
No	379	66.0%	[60.9-70.7]
Someone in family knows she sells sex [N=580]			
Yes	175	26.6%	[22.6-31.0]
No	396	72.1%	[67.6-76.1]
Does not know	9	1.4%	[0.7-2.7]
Number of clients on last day worked [N=578][8]			
One	168	29.9%	[25.2-35.0]
Two	147	25.4%	[21.3-30.0]
Three	151	27.4%	[23.0-32.2]
Four or more	112	17.4%	[13.9-21.4]
Median number of clients on last day of sex work (IQR)		2 clients (IQR: 1-3) Min. 1 - Max. 40 clients	
Used condom with last client on last day worked [N=580]			
Yes	438	72.7%	[67.6-77.3]
No	142	27.3%	[22.7-32.4]
Reason did not use a condom with last client on last day worked [N=142]			
Client objected	47	29.7%	[20.9-40.3]
Trusted partner	28	24.1%	[15.2-36.1]
Did not have a condom	24	18.0%	[11.6-26.8]

[8] Two responses dropped that were determined to be data entry errors

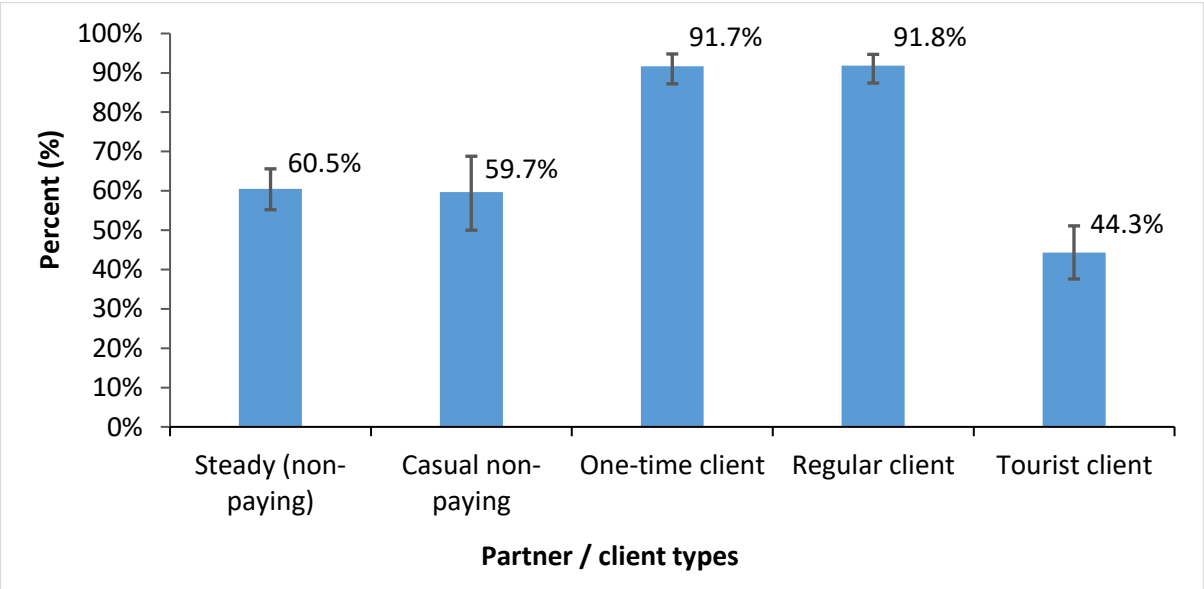
	Crude n	Weighted percent (%)	Weighted 95% CI
Client paid more	11	7.0%	[3.3-14.3]
Too drunk	6	4.3%	[1.8-10.0]
Did not think of using	5	3.9%	[1.5-10.0]
Things happened too fast	7	3.6%	[1.5-8.0]
Do not like feel of condoms	5	3.4%	[1.0-10.7]
Other	5	2.5%	[0.9-6.7]
Has never used a condom	2	1.8%	[0.4-7.8]
No response	2	1.6%	[0.4-6.5]
Payment for sex work (TZS) [N=580]			
Median payment for last sex	TZS 30,000 (IQR: 15,000-40,000) Min. 2,000 - Max. 600,000		
Median minimum payment for sex	TZS 10,000 (IQR: 5,000-15,000) Min. 500 - Max. 400,000		
Median maximum payment for sex	TZS 80,000 (IQR: 50,000-200,000) Min. 1,000 - Max. 2,000,000		

95% CI=95% confidence interval

11.4. Sexual risk behaviours

One-time clients, regular clients and steady partners were the most commonly reported partner types among FSW/SEC, with 96.2%, 94.9% and 91.3%, respectively, reporting that they had ever had those partner types. Only half of FSW/SEC (53.9%) reported ever having a tourist client, and less than one-third of FSW/SEC (31.7%) reported ever having casual, non-paying partner. Among those who had each respective partner type, nine in ten FSW/SEC had a one-time client or regular client (91.7% and 91.8% respectively), six in ten had a steady partner and casual partner (both non-paying) (60.5% and 59.7% respectively), while more than four in ten (44.3%) had a tourist client in month prior to the survey (Figure 119).

Figure 119: Partner/client types in the past month among FSW/SEC who ever had that partner/client type, Unguja, 2018/19



FSW/SEC were most likely to “always” use a condom with tourist clients (73.3%), regular clients (57.2%), and one-time clients (59.9%), juxtaposed with 24.3% and 23.8% reporting always using condoms with steady and casual non-paying partners, respectively. Conversely, they were most likely to “never” use a condom with steady and casual non-paying partners (57.5% and 36.9% respectively). Less than 10% reported “never” using a condom with one-time and regular clients (9.3% and 7.9%, respectively) (Figure 120).

Figure 120: Frequency of condom use by partner/client type among FSW/SEC, Unguja, 2018/19

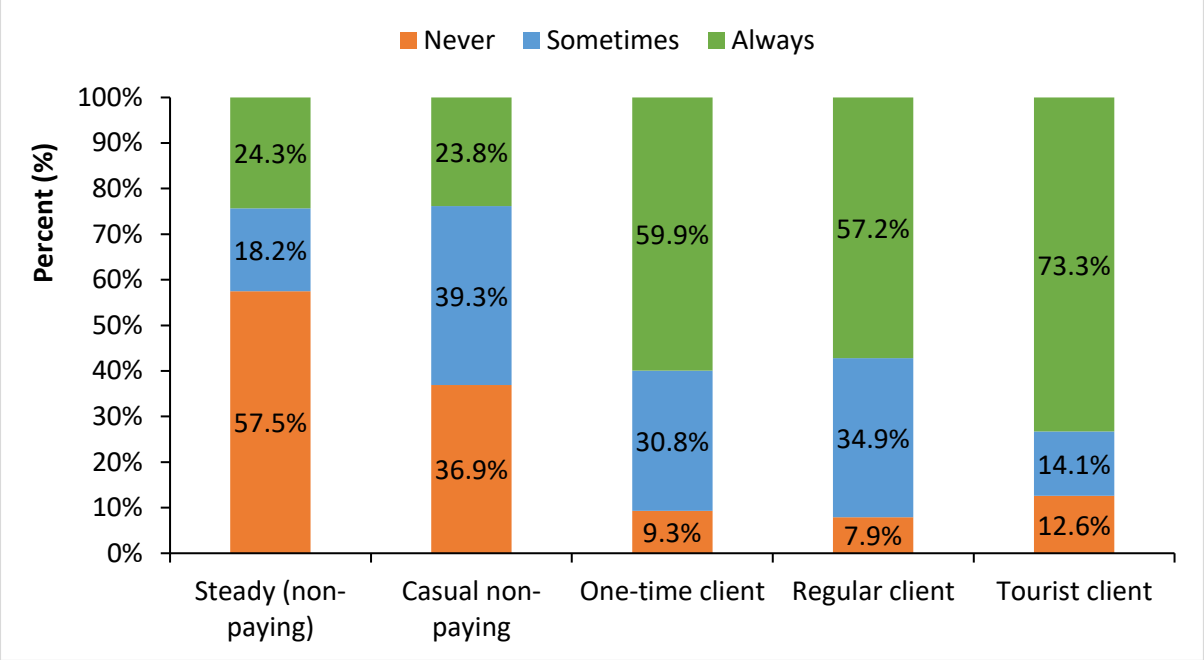
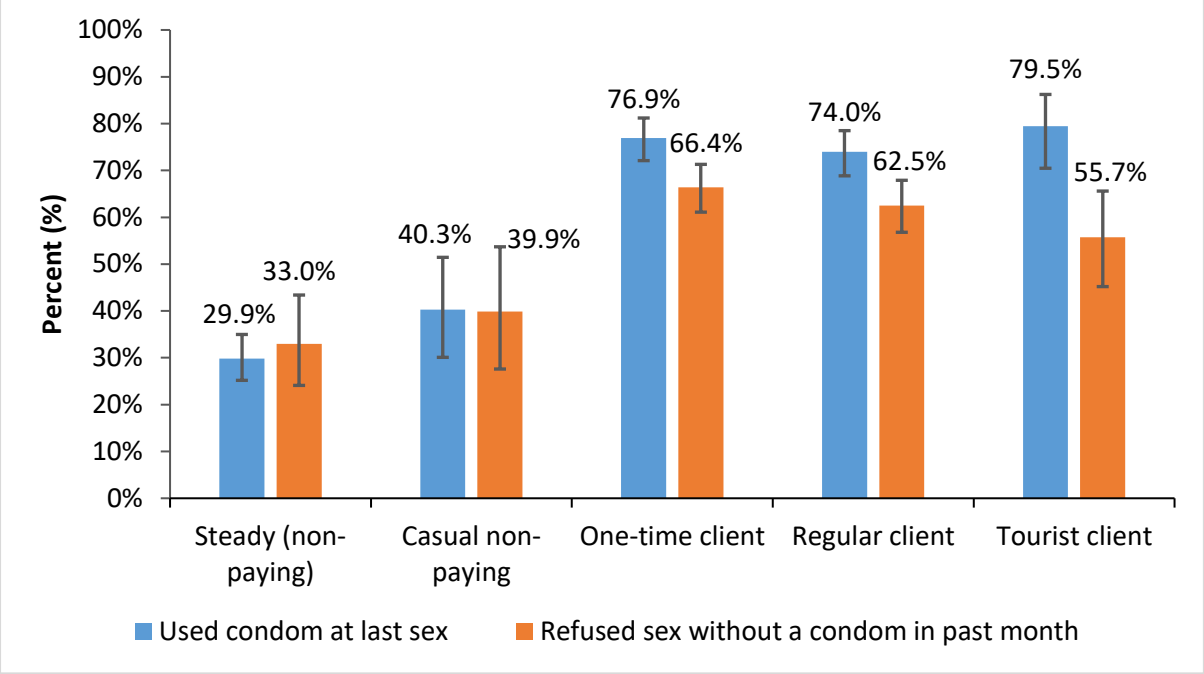


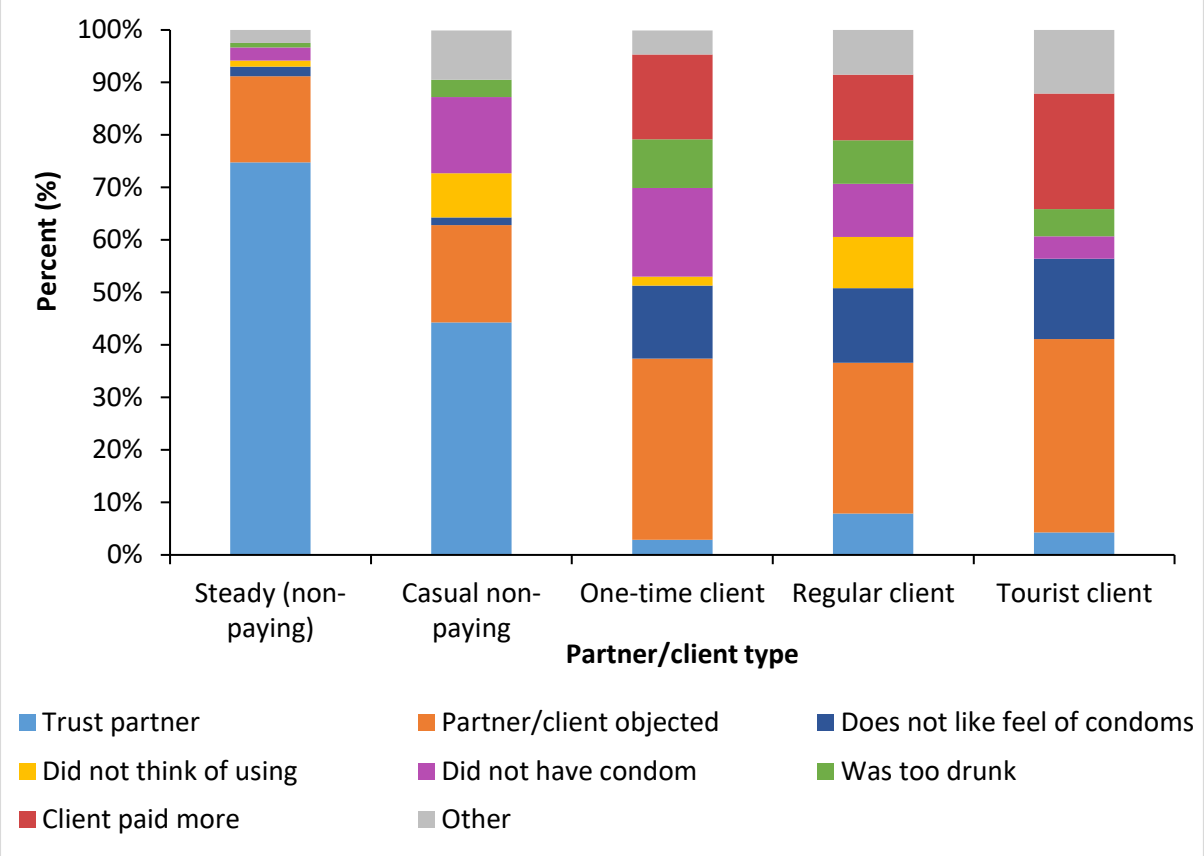
Figure 121 shows condom use at last sex alongside the proportion of FSW/SEC who refused sex without a condom in the past month (among those who reported using condoms at least occasionally with that partner type); the two proportions were similar across different partner types. Condom use was lowest with steady, non-paying partners (29.9%) and refusal of sex without a condom was also lowest with this partner type (33.0%). With one-time clients, condom use at last sex was second-highest (76.9%) and refusal of condomless sex was highest (66.4%).

Figure 121: Condom use at last sex and refusal to have sex without a condom in the past month among FSW/SEC, by partner/client type, Unguja, 2018/19



Reasons for lack of condom use at last sex varied across partner types: trusting their partner was the most common reason for FSW/SEC to not use a condom with steady and casual non-paying partners (74.8% and 44.3%, respectively), and partner objection followed at 16.4% and 18.5%, respectively. Client objection was the most common reason for FSW/SEC not to use condoms with paying partners at last sex: with 34.5% of one-time clients, 28.7% of regular clients, and 36.8% of tourist clients. This was followed by the client paying more for condomless sex.

Figure 122: Reason for not using a condom at last sex among FSW/SEC, by partner/client type, Unguja, 2018/19



Most FSW/SEC reported being the ones to suggest using a condom at last sex with all partners types: 67.6% with steady non-paying partners, 84.2% with non-paying casual partners, 87.2% with one-time clients, 85.0% with regular clients, and 59.8% with tourist clients (Figure 123; Table 56).

Figure 123: Who suggested condom use at last sex among FSW/SEC, by partner/client type, Unguja, 2018/19

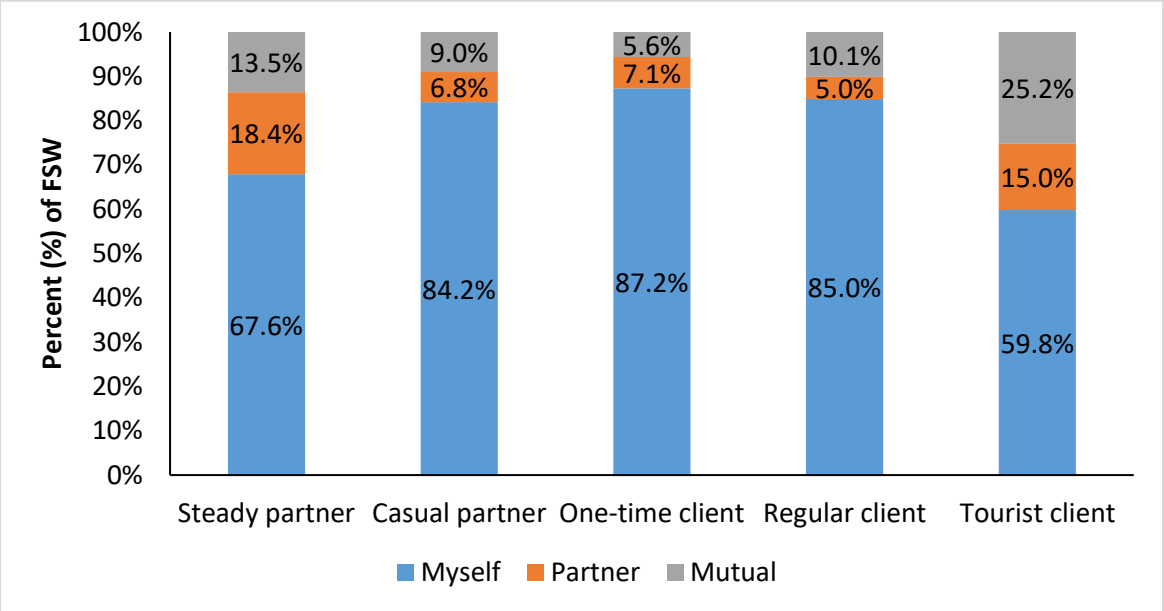


Table 56: Sexual risk behaviours among FSW/SEC, Unguja, 2018/19

	Crude n	Weighted percent (%)	Weighted 95% CI
Ever had sex with: [N=580]			
Steady partner	529	91.3%	[87.7-93.9]
Casual, non-paying partner	185	31.7%	[27.0-36.7]
One-time client	567	96.2%	[92.5-98.1]
Regular client	559	94.9%	[91.4-97]
Tourist client	348	53.9%	[48.6-59.0]
Sexual risk behaviours with steady partners			
Had sex with a steady partner in past month [N=529]			
Yes	308	60.5%	[55.2-65.6]
No	219	39.1%	[34.0-44.4]
No response	2	0.4%	[0.1-1.8]
Frequency of condom use with a steady partner in the past month [N=308]			
Always	69	24.3%	[18.7-30.8]
Most of the time	23	8.6%	[5.3-13.4]
Occasionally	33	9.6%	[6.4-14.1]
Never	182	57.5%	[50.3-64.3]
Does not remember	1	0.1%	[0.0-0.6]
Used a condom at last sex with a steady partner among those who ever had a steady partner [N=527][9]			
Yes	152	29.9%	[25.2-35.0]
No	347	65.2%	[60.0-70.1]
Does not remember	6	1.5%	[0.6-3.8]
No response	22	3.5%	[2.1-5.5]
Reason did not use a condom at last sex with a steady partner [N=346][10]			
Trust partner	265	74.8%	[68.0-80.6]
Partner objected	51	16.4%	[11.4-23.0]
Does not like feel of condoms	7	1.8%	[0.8-4.0]
Did not think of using	4	1.2%	[0.4-3.8]
Did not have condom	6	2.5%	[1.0-5.9]
Was too drunk	2	0.8%	[0.2-3.2]
Do not remember	2	0.4%	[0.1-1.9]
Condoms are too expensive	1	0.1%	[0.0-0.7]
Wanted to get pregnant	2	0.3%	[0.1-1.2]
Both are HIV+	2	0.7%	[0.2-2.6]
Other	4	1.0%	[0.3-3.5]
Who suggested condom use at last sex with steady partner [N=152]			
Myself	110	67.6%	[57.8-76.0]
Partner	24	18.4%	[11.9-27.2]
Mutual decision	17	13.5%	[8.0-21.9]

[9] Two values excluded due to conflicting responses
[10] One value excluded due to conflicting responses
95% CI=95% confidence interval

	Crude n	Weighted percent (%)	Weighted 95% CI
No response	1	0.6%	[0.1-4.0]
Refused sex with a steady partner in the past month if condom was not used [N=126]			
Yes	47	33.0%	[24.1-43.4]
No	75	64.7%	[54.3-73.8]
No response	4	2.3%	[0.7-7.2]
Sexual risk behaviours with casual, non-paying partners			
Had sex with a casual non-paying partner in past month [N=185]			
Yes	113	59.7%	[50.0-68.8]
No	72	40.3%	[31.2-50.0]
Frequency of condom use with casual non-paying partners in the past month [N=113]			
Always	34	23.8%	[15.9-34.0]
Most of the time	19	17.8%	[11.0-27.6]
Occasionally	23	21.5%	[13.8-31.9]
Never	37	36.9%	[26.7-48.3]
Used a condom at last sex with a casual non-paying partner [N=113]			
Yes	49	40.3%	[30.1-51.5]
No	64	59.7%	[48.6-69.9]
Reason did not use a condom at last sex with a casual partner [N=64]			
Trust partner	33	44.3%	[30.7-58.8]
Partner objected	10	18.5%	[9.2-33.8]
Did not have condom	7	14.5%	[6.1-30.6]
Did not think of using	5	8.4%	[3.3-19.8]
Was too drunk	2	3.3%	[0.7-14.1]
Things happened too fast	1	2.3%	[0.3-15.4]
Condoms are too expensive	1	1.6%	[0.2-11.0]
Does not like feel of condoms	2	1.5%	[0.3-6.6]
No response	3	5.5%	[1.7-16.5]
Who suggested condom use at last sex with casual non-paying partner [N=49]			
Myself	41	84.2%	[68.7-92.8]
Partner	3	6.8%	[1.9-21.7]
Mutual decision	5	9.0%	[3.3-22.5]
Refused sex with a casual partner in the past month if condom was not used [N=76]			
Yes	30	39.9%	[27.6-53.7]
No	45	59.7%	[45.9-72.1]
No response	1	0.4%	[0.1-2.8]
Sexual risk behaviours with one-time clients			
Had sex with a one-time client in the past month [N=567]			
Yes	538	91.7%	[87.2-94.7]
No	29	8.3%	[5.3-12.8]
Frequency of condom use with one-time clients in the past month [N=538]			
Always	330	59.9%	[54.6-64.9]
Most of the time	106	17.5%	[14.2-21.4]
Occasionally	67	13.3%	[10.0-17.6]

	Crude n	Weighted percent (%)	Weighted 95% CI
Never	35	9.3%	[6.2-13.7]
Used a condom at last sex with a one-time client [N=537][11]			
Yes	422	76.9%	[72.1-81.2]
No	115	23.1%	[18.8-27.9]
Reason did not use a condom at last sex with a one-time client [N=115]			
Client objected	37	34.5%	[24.0-46.7]
Did not have condom	17	16.9%	[9.8-27.4]
Client paid more	27	16.1%	[10.3-24.4]
Does not like feel of condoms	13	13.9%	[7.2-25.1]
Was too drunk	9	9.3%	[4.6-17.9]
Trust partner	4	2.9%	[1.0-8.6]
Other	4	2.7%	[0.9-8.4]
Things happened too fast	3	1.9%	[0.5-6.6]
Did not think of using	1	1.7%	[0.2-11.5]
Who suggested condom use at last sex with a one-time client [N=422]			
Myself	372	87.2%	[82.8-90.7]
Partner	26	7.1%	[4.5-11.1]
Mutual decision	24	5.6%	[3.6-8.7]
Refused sex with a one-time client in the past month if condom was not used [N=503]			
Yes	342	66.4%	[61.1-71.3]
No	160	33.5%	[28.5-38.8]
No response	1	0.1%	[0.0-1.0]
Sexual risk behaviours with regular clients			
Had sex with a regular client in the past month [N=559]			
Yes	524	91.8%	[87.4-94.7]
No	34	8.1%	[5.2-12.4]
Does not remember	1	0.2%	[0.0-1.2]
Frequency of condom use with regular clients in the past month [N=524]			
Always	301	57.2%	[51.8-62.4]
Most of the time	112	19.5%	[15.9-23.8]
Occasionally	74	15.4%	[11.8-19.9]
Never	37	7.9%	[5.4-11.4]
Used a condom at last sex with a regular client [N=524]			
Yes	398	74.0%	[68.9-78.5]
No	126	26.0%	[21.5-31.1]
Reason did not use a condom at last sex with a regular client [N=126]			
Client objected	39	28.7%	[20.1-39.3]
Do not like feel of condoms	15	14.2%	[7.8-24.5]
Client paid more	17	12.5%	[5.9-24.6]
Did not have condom	14	10.1%	[5.5-17.8]
Did not think of using	8	9.8%	[4.8-19.0]
Was too drunk	8	8.3%	[4.0-16.3]

[11] One value dropped due to inconsistent responses. 95% CI=95% confidence interval

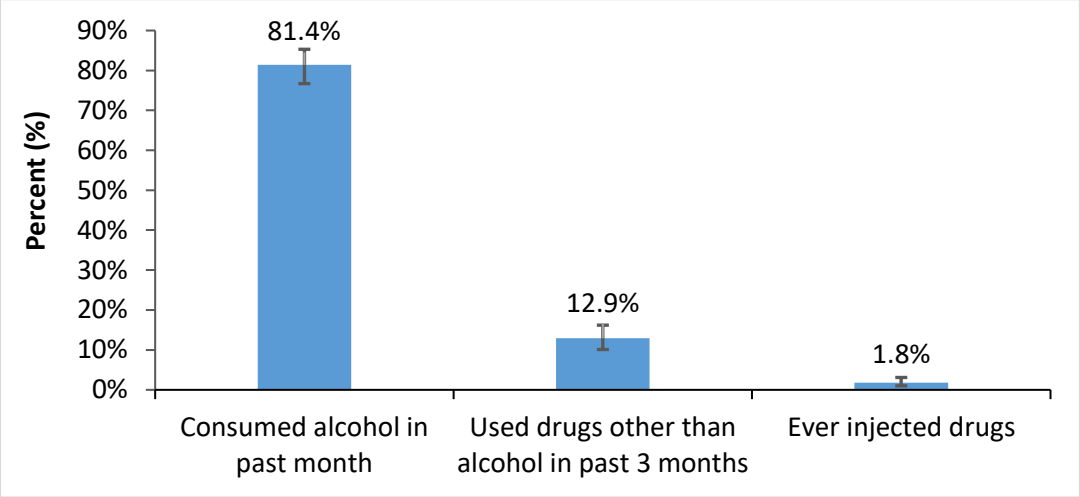
	Crude n	Weighted percent (%)	Weighted 95% CI
Trust partner	14	7.9%	[4.2-14.4]
Things happened too fast	4	4.5%	[1.4-13.2]
Other	4	1.8%	[0.6-5.0]
No response	2	1.7%	[0.4-6.8]
Condoms do not work	1	0.5%	[0.1-3.5]
Who suggested condom use at last sex with regular client [N=398]			
Myself	342	85.0%	[79.6-89.1]
Partner	19	5.0%	[2.9-8.4]
Mutual decision	37	10.1%	[6.6-15.1]
Refused sex with a regular client in the past month if condom was not used [N=487]			
Yes	311	62.5%	[56.8-67.9]
No	172	36.6%	[31.2-42.3]
No response	4	0.9%	[0.3-2.6]
Sexual risk behaviours with tourist clients			
Had sex with a tourist client in the past month [N=348]			
Yes	177	44.3%	[37.6-51.1]
No	171	55.7%	[48.9-67.6]
Frequency of condom use with tourist clients in the past month [N=177]			
Always	129	73.3%	[64.1-80.8]
Most of the time	15	8.0%	[4.4-14.3]
Occasionally	11	6.1%	[2.8-12.5]
Never	22	12.6%	[7.5-20.5]
Used a condom at last sex with a tourist client [N=177]			
Yes	142	79.5%	[70.5-86.2]
No	35	20.6%	[13.8-29.5]
Reason did not use a condom at last sex with a tourist client [N=35]			
Client objected	13	36.8%	[18.8-59.3]
Client paid more	11	22.0%	[10.4-40.7]
Do not like feel of condoms	4	15.3%	[3.7-45.4]
Other	3	12.1%	[3.2-36.5]
Was too drunk	2	5.2%	[0.9-25.0]
Trust partner	1	4.3%	[0.5-27.1]
Did not have condom	1	4.3%	[0.5-27.1]
Who suggested condom use at last sex with tourist client [N=142]			
Myself	82	59.8%	[49.1-69.7]
Partner	25	15.0%	[9.5-22.8]
Mutual decision	35	25.2%	[17.4-35.0]
Refused sex with a tourist client in the past month if condom was not used [N=155]			
Yes	81	55.7%	[45.2-65.6]
No	72	43.1%	[33.3-53.5]
No response	2	1.2%	[0.3-4.8]

95% CI=95% confidence interval

11.5. Alcohol and drug use among FSW/SEC and their clients

Most FSW/SEC (81.4%) reported consuming alcohol in the past month, among whom 70.9% reported using alcohol during sex work. More than half of FSW/SEC (56.9%) reported consuming alcohol at least 2-3 times per week. Nearly one in five FSW/SEC (18.9%) who consumed alcohol in the past month reported that they drink at least seven drinks on a typical day during which they drink. Only 12.9% of FSW/SEC reported using non-injection drugs in the past three months, with hashish/marijuana use reported by 9.8% of FSW/SEC. Less than 2% of FSW/SEC (1.8%) reported ever injecting drugs (Figure 124; Table 57) and of these, none reported injecting in the past three months.

Figure 124: Alcohol and drug use among FSW/SEC, Unguja, 2018/19



Suspected non-injection drug use among the clients of FSW/SEC ranged across partner and client types from 16.8% among both steady partners and tourist clients to 24.5% among one-time clients. There was a great variation of suspected injection drug use among FSW/SEC partners and clients, ranging from 14.6% of FSW/SEC suspecting their steady partner has injected drugs to 29.5% suspecting that a regular client has injected drugs (Figure 125).

Figure 125: Suspicion of injection drug use by partner/client type among FSW, Unguja, 2018/19

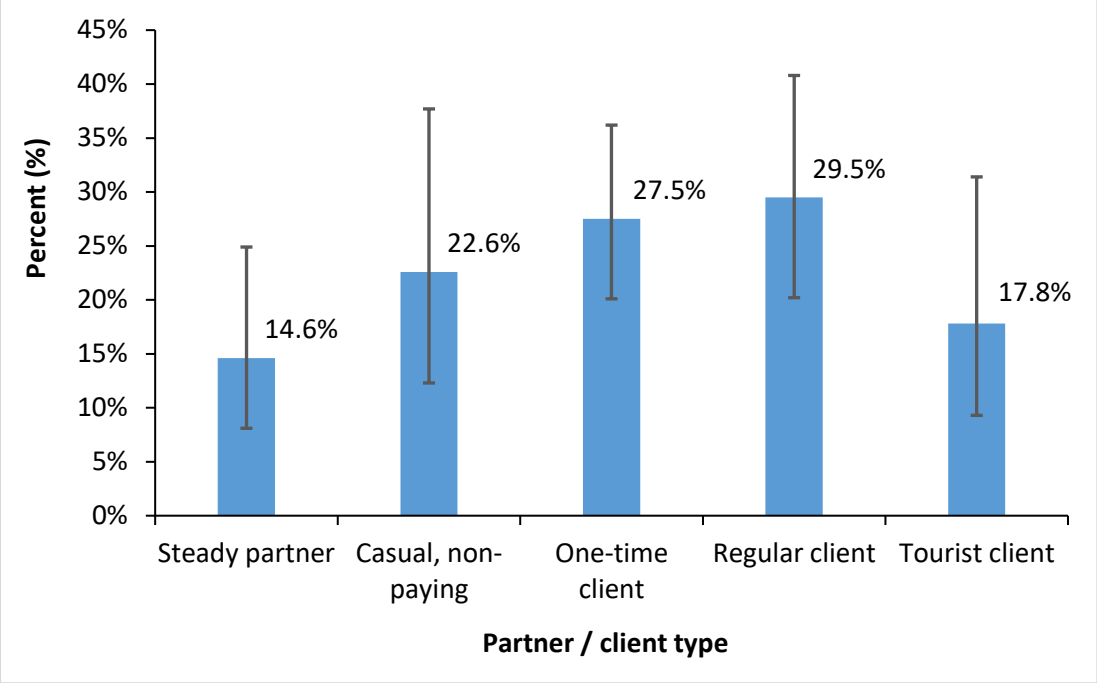


Table 57: Alcohol and drug use among FSW/SEC and their clients, Unguja, 2018/19

	Crude n	Weighted percent (%)	Weighted 95% CI
Consumed alcohol in past month			
Consumed alcohol in past month [N=579][12]	484	81.4%	[76.7-85.3]
Consumed alcohol while engaged in sex work during past week [N=484]	362	70.9%	[65.4-76.0]
Frequency of consuming alcohol in past month [N=580]			
4 or more times a week	185	27.3%	[23.0-32.1]
2-3 times a week	166	29.6%	[25.1-34.5]
2-4 times a month	85	16.3%	[12.8-20.5]
Once a month or less	48	8.1%	[5.9-11.1]
Never	95	18.6%	[14.6-23.3]
Does not remember	1	0.1%	[0.0-0.8]
Typical number of drinks per day [N=484]			
1 or 2	96	21.3%	[17.1-26.2]
3 or 4	143	30.8%	[25.8-36.4]
5 or 6	132	28.8%	[24.0-34.2]
7, 8 or 9	58	10.7%	[7.6-14.8]
10 or more	54	8.2%	[5.9-11.3]
Do not remember	1	0.2%	[0.0-1.4]
Used drugs other than alcohol in the past three months [N=580]			
Yes	92	12.9%	[10.1-16.2]
No	488	87.1%	[83.8-89.9]
Injection drug use among FSW/SEC			

[12] Participant dropped whose response was "Do not remember" when asked about frequency of alcohol consumption in past month

	Crude n	Weighted percent (%)	Weighted 95% CI
Has ever injected drugs [N=580]	16	1.8%	[1.0-3.0]
Injected drugs in the past 3 months [N=16]	0	NC	NC
Injection drug use among partners / clients of FSW/SEC *(among those who ever had that partner type)*			
Thinks steady partner has ever used drugs [N=529]			
Yes	92	16.8%	[13.2-21.2]
No	396	76.2%	[71.5-80.4]
Does not know	16	3.2%	[1.8-5.6]
No response	25	3.8%	[2.4-5.9]
Suspects steady partner has injected drugs [N=92]	18	14.6%	[8.1-24.9]
Is unsure whether steady partner has injected drugs [N=92]	7	6.0%	[2.6-13.3]
Thinks casual non-paying partner has ever used drugs [N=185]			
Yes	48	21.2%	[15.2-28.7]
No	126	72.6%	[64.3-79.5]
Does not know	11	6.3%	[3.0-12.5]
Suspects casual partner has injected drugs [N=48]	15	22.6%	[12.3-37.7]
Is unsure whether casual partner has injected drugs [N=48]	3	7.1%	[2.1-21.4]
Thinks one-time clients have ever used drugs [N=567]			
Yes	168	24.5%	[20.5-29.0]
No	280	55.5%	[50.4-60.6]
Does not know	118	19.7%	[16.1-23.8]
No response	1	0.3%	[0.0-1.9]
Suspects one-time clients have injected drugs [N=168]	56	27.5%	[20.1-36.2]
Is unsure whether one-time clients have injected drugs [N=168]	29	20.7%	[13.8-29.8]
Thinks regular clients have ever used drugs [N=559]			
Yes	145	23.8%	[19.6-28.7]
No	317	59.9%	[54.7-64.9]
Does not know	96	16.1%	[12.8-20.1]
No response	1	0.1%	[0.0-0.9]
Suspects regular clients have injected drugs [N=145]	45	29.5%	[20.2-40.8]
Is unsure whether regular clients have injected drugs [N=145]	20	13.4%	[7.8-22.1]
Thinks tourist clients have ever used drugs [N=348]			
Yes	73	16.8%	[12.7-21.9]
No	167	52.0%	[45.1-58.8]
Does not know	108	31.2%	[25.2-37.9]
Suspects tourist clients have injected drugs [N=73]	15	17.8%	[9.3-31.5]
Is unsure whether tourist clients have injected drugs [N=73]	16	25.0%	[14.7-39.1]

95% CI=95% confidence interval

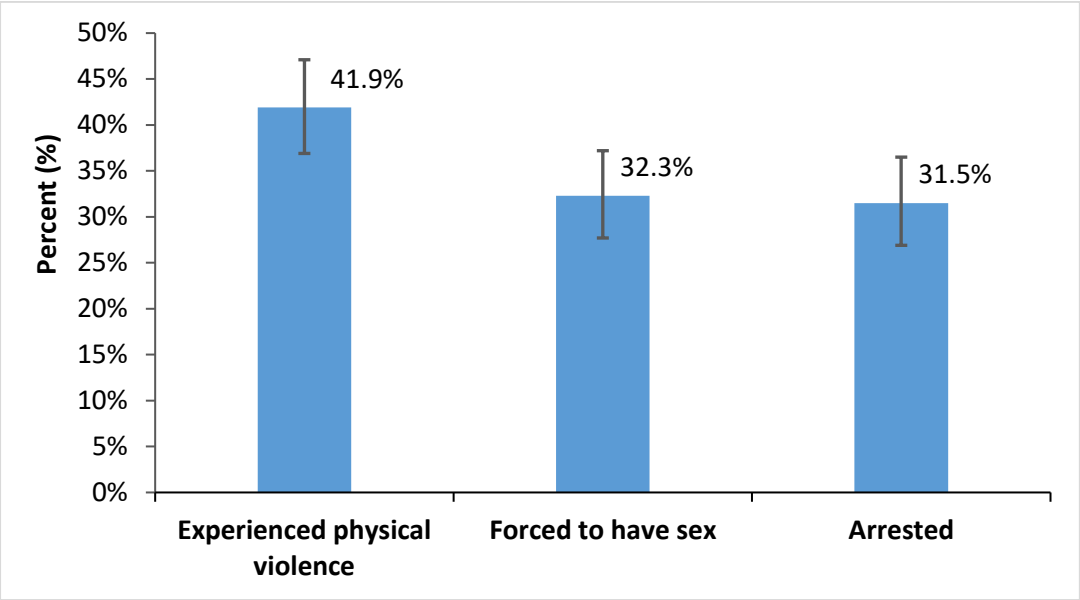
11.6. Stigma, violence and incarceration among FSW/SEC

Just over half of FSW/SEC (54.2%) reported being abandoned by loved ones as a result of engaging in sex work, while 72.3% reported being subjected to name calling, teasing and insults. FSW/SEC also reported stigmatizing attitudes towards people living with HIV and AIDS. Approximately half agreed that people with HIV/AIDS are promiscuous, HIV/AIDS is a punishment for bad behaviour and that it

is FSW/SEC who spread HIV in the community (50.1%, 47.1% and 45.2%, respectively). However, fewer FSW/SEC associated shame with HIV infection (Table 58).

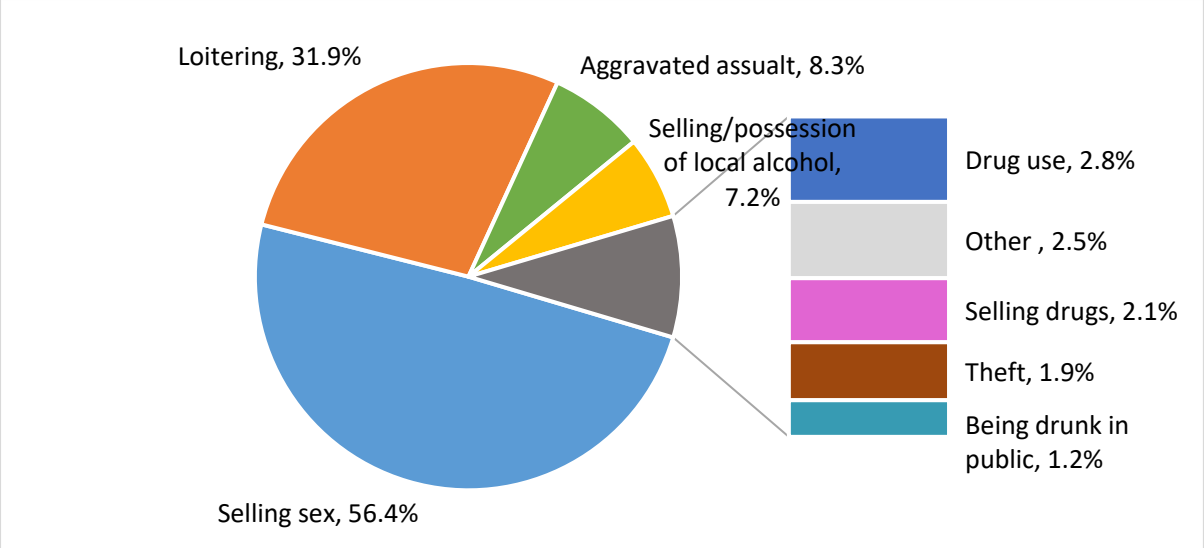
Arrest and experiences of physical and sexual violence were fairly common among FSW/SEC in the 12 months prior to the survey, with one-third of FSW/SEC or more experiencing each (Figure 126).

Figure 126: Experiences of violence and incarceration in past 12 months among FSW/SEC, Unguja, 2018/19



Among those who were arrested in the 12 months prior to the survey, selling sex (56.4%) and loitering (31.9%) were the most commonly cited reasons (Figure 127).

Figure 127: Reason(s) for arrest among FSW/SEC in Unguja, 2018/19



One-time clients were the most commonly reported perpetrators of both physical violence and forced sex, with forced sex also commonly perpetrated by strangers and regular clients (Figure 128; Table 58).

Figure 128: Perpetrator(s) of physical and sexual violence among FSW/SEC, Unguja, 2018/19

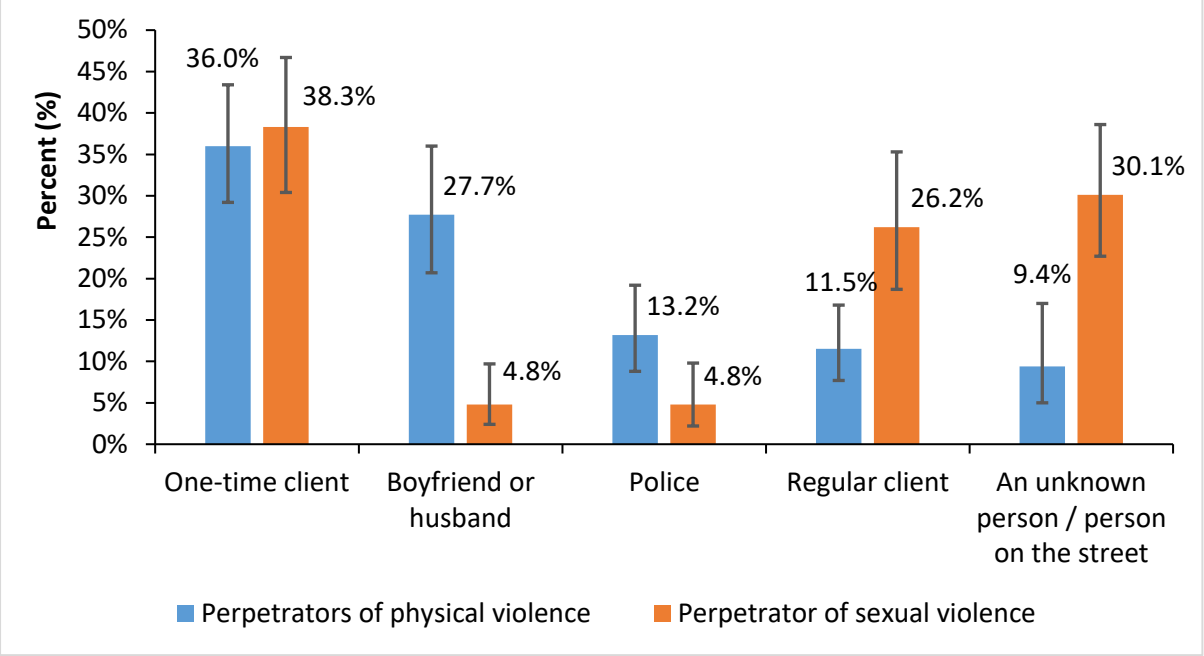


Table 58: Stigma, violence and incarceration among FSW/SEC, Unguja, 2018/19

	Crude n	Weighted percent (%)	Weighted 95% CI
Experiences of stigma as an FSW/SEC (% yes) [N=580]			
Experienced name calling, teasing and insults	446	72.3%	[67.1-77.0]
Excluded from a social gathering	128	17.5%	[14.3-21.3]
Others have lost respect	286	45.8%	[40.9-51.0]
Abandoned by loved ones	328	54.2%	[48.9-59.4]
Stigma among FSW/SEC towards those with HIV (% who agree) [N=580]			
People with HIV/AIDS are promiscuous	279	50.1%	[44.9-55.3]
HIV/AIDS is brought as a punishment for bad behaviour	250	47.1%	[41.9-52.3]
It is FSW/SEC who spread HIV in the community	241	45.2%	[40.1-50.5]
I would feel ashamed if I were infected with HIV/AIDS	209	38.2%	[33.3-43.4]
People with HIV/AIDS should be ashamed of themselves	177	31.1%	[26.5-36.2]
I would feel ashamed if someone in my family had HIV/AIDS	153	28.1%	[23.6-33.1]
Was arrested in past 12 months [N=580]			
Yes	198	31.5%	[26.9-36.5]
No	382	68.5%	[63.5-73.1]
Reason(s) for arrest in past 12 months among those who were arrested[¥] [N=198]			
Selling sex	122	56.4%	[46.8-65.5]
Loitering	71	31.9%	[24.4-40.4]
Aggravated assault	9	8.3%	[3.5-18.6]
Selling or being in possession of local alcohol	8	7.2%	[2.7-17.5]

	Crude n	Weighted percent (%)	Weighted 95% CI
Drug use	7	2.8%	[1.2-6.3]
Other	4	2.5%	[0.8-7.2]
Selling drugs	3	2.1%	[0.6-7.1]
Theft	3	1.9%	[0.6-6.1]
Being drunk in public	3	1.2%	[0.3-3.9]
Experienced physical violence in past 12 months [N=580]			
Yes	265	41.9%	[36.9-47.1]
No	315	58.1%	[52.9-63.1]
Perpetrator(s) of physical violence in past 12 months, among those who experienced physical violence[¥] [N=265]			
One-time client	107	36.0%	[29.2-43.4]
Boyfriend or husband	67	27.7%	[20.7-36.0]
Police	35	13.2%	[8.8-19.2]
Regular client	34	11.5%	[7.7-16.8]
An unknown person / person on the street	20	9.4%	[5.0-17.0]
Friend	11	3.9%	[2.0-7.7]
Family member	5	2.6%	[1.0-6.4]
Other	6	2.6%	[1.0-6.8]
Another FSW/SEC	7	2.4%	[1.0-5.9]
Wife / girlfriend of a client	6	1.9%	[0.8-4.6]
Forced to have sex in past 12 months [N=580]			
Yes	195	32.3%	[27.7-37.2]
No	385	67.7%	[62.8-72.3]
Perpetrator(s) of sexual violence (among those forced to have sex in past 12 months)[¥] [N=195]			
One-time client	79	38.3%	[30.4-46.7]
An unknown person / person on the street	53	30.1%	[22.7-38.6]
Regular client	50	26.2%	[18.7-35.3]
Boyfriend or husband	10	4.8%	[2.4-9.7]
Police	10	4.8%	[2.2-9.8]
Other	7	3.1%	[1.2-7.5]
Friend	7	2.6%	[1.1-6.3]
Someone who was drunk	3	1.7%	[0.5-5.6]
Drug dealer	2	1.2%	[0.3-4.8]

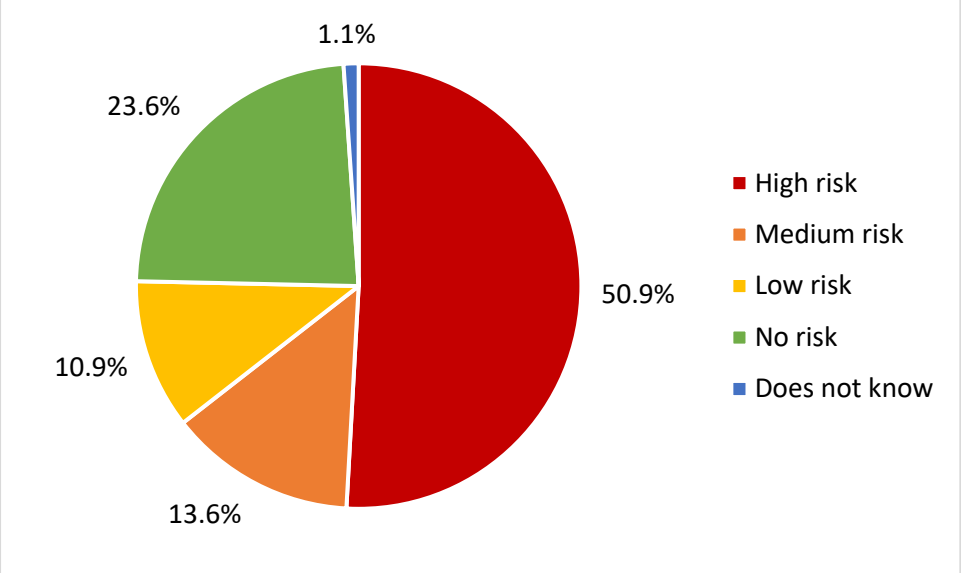
[¥] *Denotes variable for which multiple responses were possible*
95% CI=95% confidence interval

11.7. HIV knowledge and risk perception

Participants were asked five standard knowledge questions related to HIV (Table 23). Those who were able to respond correctly to all five questions were considered to have comprehensive knowledge of HIV, as per the UNAIDS definition. Half of FSW/SEC (52.5%) had comprehensive knowledge on HIV. Nearly all (96.2%) disagreed that a person can get HIV by sharing food with someone living with HIV; however, only 79.9% disagreed that a person can get HIV from a mosquito bite (Table 59).

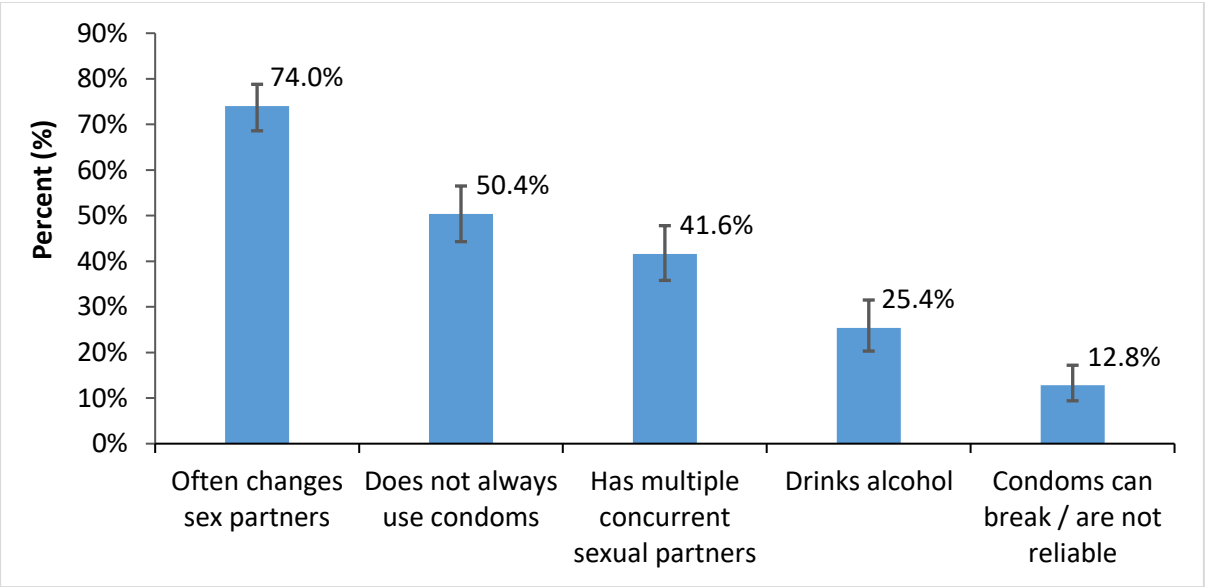
Just half of FSW/SEC (50.9%) perceived themselves to be at high risk for HIV infection. Nearly one in four (23.6%) believed themselves to have no risk for HIV infection (Figure 129).

Figure 129: Perceived risk for HIV infection among FSW/SEC in Unguja, 2018/19



Among those who perceived themselves to have at least some risk of HIV infection, three-quarters (74.0%) cited their frequent changing of sex partners as a reason, and half (50.4%) said it is because they do not always use condoms. Having multiple concurrent sexual partners was also a commonly reported reason (41.6%) (Figure 130).

Figure 130: Most common reason(s) for feeling at risk of HIV infection among FSW/SEC, Unguja, 2018/19



Among those who considered themselves not to be at risk, the majority attributed their lack of risk to always using condoms (78.6%) (Figure 131).

Figure 131: Reason(s) for not feeling at risk of HIV infection among FSW/SEC, Unguja, 2018/19

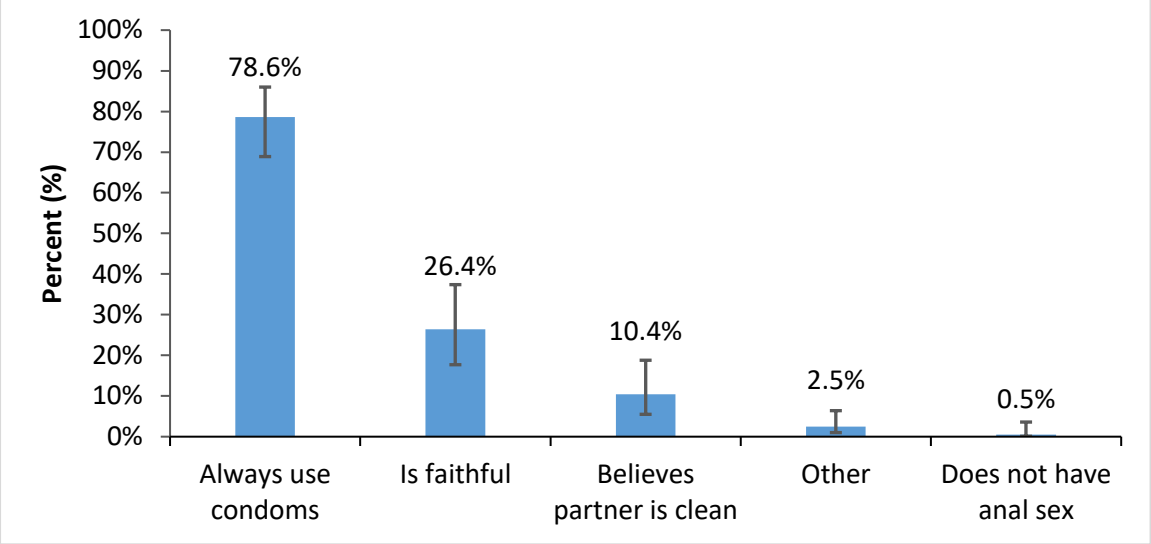


Table 59: HIV knowledge and risk perception among FSW/SEC, Unguja, 2018/19

	Crude n	Weighted percent (%)	Weighted 95% CI
HIV knowledge [N=580]			
Agrees having one uninfected, faithful partner reduces risk of HIV transmission	501	86.4%	[82.3-89.6]
Disagrees that you can get HIV from a mosquito bite	480	79.9%	[75.2-84.0]
Agrees using a condom every time you have sex reduces risk of HIV transmission	475	82.2%	[78.0-85.8]
Agrees a healthy-looking person can have HIV	523	89.2%	[85.5-91.9]
Disagrees that you can get HIV by sharing food with someone who is HIV+	561	96.2%	[93.8-97.7]
Has comprehensive HIV knowledge [N=580]			
Yes	311	52.5%	[47.3-57.6]
No	269	47.5%	[42.4-52.7]
Perceived HIV risk (excluding known positives) [N=531]			
High risk	290	50.9%	[45.5-56.3]
Medium risk	74	13.6%	[10.5-17.5]
Low risk	49	10.9%	[7.7-15.1]
No risk	113	23.6%	[19.1-28.6]
Does not know	5	1.1%	[0.4-2.8]
Reason(s) for feeling at risk of HIV infection among those who felt at risk¥ [N=413]			
Often changes sex partners	305	74.0%	[68.8-78.8]
Does not always use condoms	197	50.4%	[44.3-56.5]
Has multiple concurrent sexual partners	190	41.6%	[35.8-47.8]
Drinks alcohol	107	25.4%	[20.3-31.3]
Condoms can break / are not reliable	54	12.8%	[9.4-17.2]
Other	14	5.1%	[2.5-10.0]
Uses / used drugs	8	1.7%	[0.8-3.7]

	Crude n	Weighted percent (%)	Weighted 95% CI
FSW/SEC can be raped	10	1.5%	[0.8-3.0]
Has sexual partners who inject drugs	7	1.0%	[0.5-2.2]
No response	2	0.7%	[0.2-2.7]
Injects drugs / shares needles	1	0.1%	[0.0-0.8]
Reason(s) for not feeling at risk of HIV infection among those who felt they are not at risk¥ [N=113]			
Always use condoms	86	78.6%	[68.9-86.0]
Is faithful	32	26.4%	[17.7-37.4]
Believes partner is clean	12	10.4%	[5.5-18.8]
Other	6	2.5%	[1.0-6.4]
Does not have anal sex	1	0.5%	[0.1-3.6]
No response	5	4.3%	[1.7-10.7]

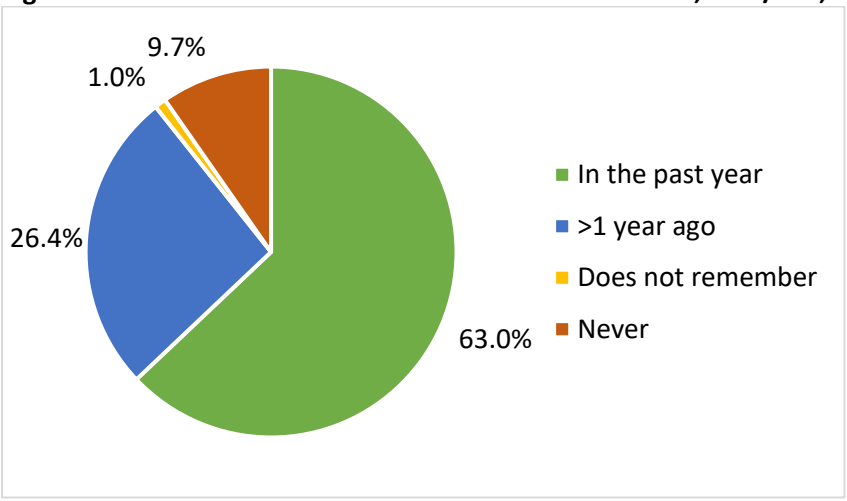
¥ *Denotes variable for which multiple responses were possible*
**Those who correctly responded to all five questions in the HIV knowledge section of this table were categorized as having comprehensive knowledge.*
95% CI=95% confidence interval

11.8. STI symptoms and HIV testing history

One in five FSW/SEC (19.5%) reported experiencing an STI symptom in the six months prior to the survey. Among these, 42.6% reported that they went to a government health facility as a result, while 24.9% went to a pharmacy. Taking preventing action during sex was less frequently reported as a result of STI symptoms, with less than 15% reporting that they used condoms (13.7%), stopped having sex (13.0%) or told their partner (10.3%) (Table 60).

The majority of FSW/SEC know where to get a confidential HIV test (91.7%) and reported ever having had an HIV test (91.0%). Well over half (63.0%) reported testing for HIV and receiving the results of their test in the year prior to the survey, and 70.8% reported disclosing their HIV status to their steady sexual partner (Figure 132; Table 60).

Figure 132: When last tested for HIV and received results, FSW/SEC, Unguja, 2018/19



Among FSW/SEC who had never tested for HIV, fear of learning their status was the most commonly reported reason (73.9%).

Table 60: STI symptoms and HIV testing history among FSW/SEC in Unguja, 2018/19

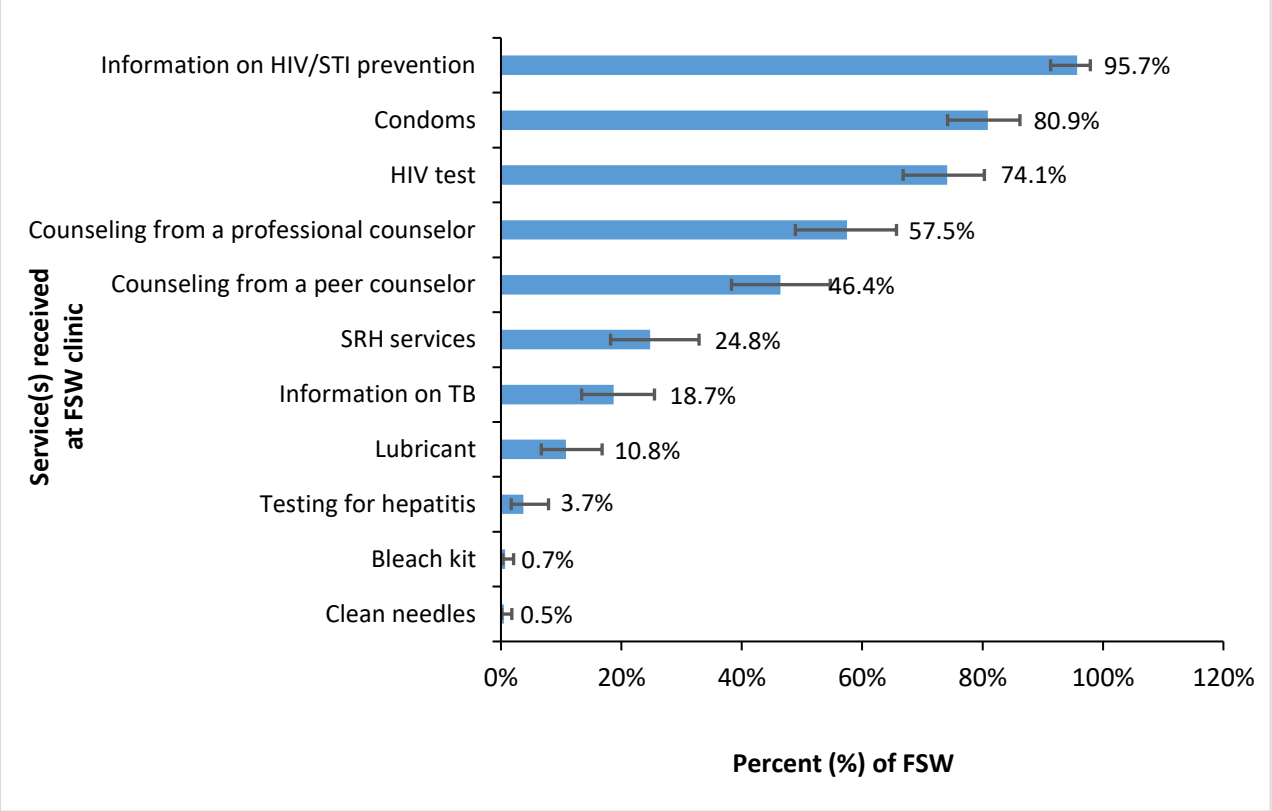
	Crude n	Weighted percent (%)	Weighted 95% CI
STI symptoms in the last 6 months [N=580]			
Yes	133	19.5%	[15.7-23.9]
No	447	80.5%	[76.1-84.3]
Action taken last time experienced STI symptoms[¥] [N=133]			
Went to a government health facility	56	42.6%	[31.4-54.5]
Went to a pharmacy	40	24.9%	[17.2-34.5]
Treated myself at home	25	18.6%	[11.9-28.0]
Went to a private health facility	24	17.6%	[11.1-26.8]
Used condoms	21	13.7%	[8.3-21.8]
Stopped having sex	19	13.0%	[7.6-21.4]
Told my partner	13	10.3%	[5.4-18.8]
Nothing	6	8.5%	[2.5-25.0]
HIV testing history [N=580]			
Knows where to get confidential HIV test	541	91.7%	[88.0-94.3]
Has ever tested for HIV	535	91.0%	[87.2-93.8]
Last tested for HIV and received results [N=580]			
In the past year	385	63.0%	[57.6-68.0]
>1 year ago	142	26.4%	[21.8-31.5]
Does not remember	5	1.0%	[0.4-2.7]
Never	48	9.7%	[6.8-13.5]
Testing with sexual partners and disclosure			
Has been for HIV counselling with steady partner [N=535]	242	44.4%	[39.1-49.8]
Has ever discussed HIV test results with steady partner [N=532]	370	70.8%	[65.7-75.5]

[¥] *Denotes variable for which multiple responses were possible*
95% CI=95% confidence interval

11.9. Access to health services among FSW/SEC

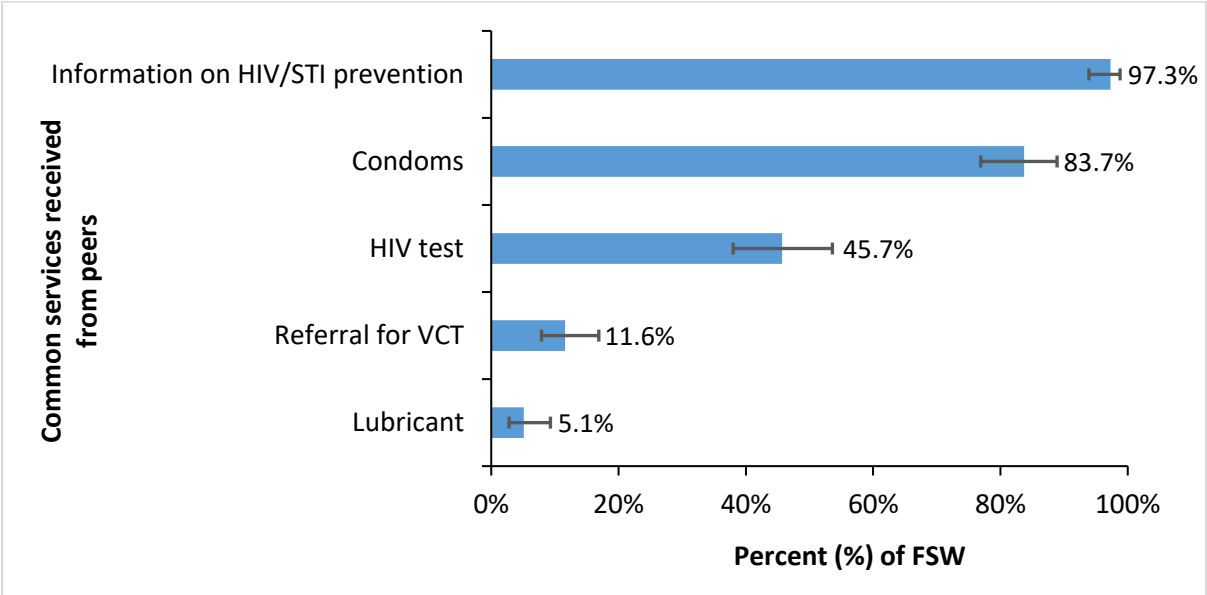
Just over half of FSW/SEC (58.4%) reported receiving health services either at an FSW-targeted facility or from a peer educator in the year prior to the survey. Only four in ten (39.4%) visited a clinic or drop-in centre providing services specifically to FSW/SEC, with ZAYEDESA being the most frequently cited facility. The services most commonly received were information on HIV prevention, condoms, and HIV testing (Figure 133). The majority of FSW/SEC (97.4%) said that, based on the way they were treated by facility staff, they would return to the same facility again (Table 61).

Figure 133: Service(s) received by FSW/SEC from FSW/SEC -focused clinics or drop-in centres, Unguja, 2018/19



Nearly one in four FSW/SEC (37.0%) had been visited by a peer educator in the year prior to the survey, with the three most commonly provided services being: information on STI/HIV prevention, condoms and HIV testing (Figure 134). More than half of FSW/SEC who had contact with a peer educator reported only one (27.4%) or two contacts (29.8%). Nearly all FSW/SEC who had contact with a peer educator reported that the peer was non-judgmental (Table 61).

Figure 134: Most common services received by FSW/SEC from peer educators in Unguja, 2018/19



The majority of FSW/SEC (88.8%) reported that they can get a male condom whenever needed and just over a third (36.0%) reported obtaining male condoms from shops in the month prior to the survey. NGOs, pharmacies and friends were also commonly cited sources of condoms (24.1%, 20.9% and 19.1%, respectively). Of note, a small percentage of FSW/SEC (3.2%) reported obtaining male condoms from clients (Table 61). Among those who said they are not able to access male condoms when needed, the two most given reasons were being too embarrassed to buy (23.2%) and not knowing where to get male condoms (20.9%).

Less than one in two FSW/SEC (17.0%) reported ever using a female condom. Among those who had ever used a female condom, only one in four (40.1%) did so in the month prior to the survey. Among those who reported using a female condom in the month prior to the survey, 38.6% reported using female condoms for protection against STIs and HIV and 24.9% reported using female condoms because it gives them more control than using male condoms. Among those who had never used female condoms, 42.2% reported not using them because they do not know how to insert them, while 33.1% reported not wanting to insert them. A small percentage of FSW/SEC (2.7%) reported being afraid of using them (Table 61).

Table 61: Access to health services including male and female condoms among FSW/SEC, Unguja, 2018/19

	Crude n	Weighted percent (%)	Weighted 95% CI
Received health services either at a facility or from a peer in the last 12 months [N=580]			
Yes	364	58.4%	[53.1-63.5]
No	216	41.6%	[36.5-46.9]
Visited clinic providing services to FSW/SEC in past 12 months [N=580]			
Yes	231	39.4%	[34.4-44.5]
No	349	60.6%	[55.5-65.6]
Service(s) received at FSW/SEC clinic¥ [N=231]			
Information on HIV/STI prevention	220	95.7%	[91.3-97.9]
Condoms	185	80.9%	[74.2-86.2]
HIV test	167	74.1%	[66.8-80.3]
Counselling from a professional counsellor	142	57.5%	[48.9-65.7]
Counselling from a peer counsellor	113	46.4%	[38.3-54.7]
SRH services	62	24.8%	[18.2-32.9]
Information on TB	52	18.7%	[13.4-25.5]
Lubricant	25	10.8%	[6.7-16.8]
Testing for hepatitis	9	3.7%	[1.7-7.9]
Bleach kit	4	0.7%	[0.3-2.1]
Clean needles	3	0.5%	[0.1-1.8]
Would return to the same facility based on how was treated by staff [N=231]			
Yes	224	97.4%	[93.6-99.0]
No	7	2.6%	[1.0-6.5]
Had contact with a peer educator in past 12 months [N=580]			
Yes	251	37.0%	[32.3-42.0]
No	329	63.0%	[58.0-67.7]
Service(s) received from a peer educator in past year¥ [N=251]			

	Crude n	Weighted percent (%)	Weighted 95% CI
Information on HIV/STI prevention	244	97.3%	[93.9-98.8]
Condoms	218	83.7%	[76.9-88.9]
HIV test	125	45.7%	[38.0-53.6]
Referral for VCT	33	11.6%	[7.9-16.8]
Lubricant	15	5.1%	[2.8-9.3]
Other	10	3.2%	[1.5-6.6]
Referral for STI treatment	8	2.9%	[1.3-6.6]
Referral for MAT services	7	2.6%	[1.2-5.9]
Referral for PMTCT services	3	1.5%	[0.4-4.9]
Referral for care and treatment services	3	1.3%	[0.4-4.4]
TB screening	3	1.4%	[0.4-4.5]
Clean needles	1	0.9%	[0.1-6.4]
Does not remember	1	0.6%	[0.1-4.0]
Information and testing for TB	2	0.3%	[0.1-1.4]
Peer educator was non-judgemental [N=251]			
Yes	246	97.4%	[91.9-99.2]
No	5	2.6%	[0.8-8.0]
Can get a male condom every time needs one [N=580]			
Yes	534	88.8%	[84.6-92]
No	35	8.7%	[5.8-12.7]
No response	11	2.5%	[1.3-4.9]
Paid for condoms last time got condoms [N=580]			
Yes	268	42.5%	[37.6-47.6]
No	286	51.9%	[46.7-57.0]
Never bought	25	5.5%	[3.5-8.6]
No response	1	0.1%	[0-0.4]
Where obtained male condoms in past month¥ [N=580]			
Shop	233	36.0%	[31.3-40.9]
NGO	155	24.1%	[20.0-28.8]
Pharmacy	127	20.9%	[17.2-25.1]
Friends	102	19.1%	[15.4-23.5]
Bar/guesthouse/hotel	50	9.8%	[6.7-14.0]
Health facility	62	9.5%	[7.1-12.5]
Did not buy/get male condoms	26	5.5%	[3.5-8.5]
Clients	14	3.2%	[1.6-6.6]
Peer educator	16	2.5%	[1.4-4.6]
A public office	13	2.0%	[1.0-3.9]
Does not use condoms	7	1.5%	[0.6-3.6]
Other	4	0.9%	[0.2-3.0]
Someone who sells condoms at place of business	5	0.6%	[0.2-1.7]
Use of female condoms among FSW/SEC			
Has ever used a female condom [N=580]	114	17.0%	[13.5-21.2]
Used a female condom in last month [N=114]	44	40.1%	[28.3-53.2]

	Crude n	Weighted percent (%)	Weighted 95% CI
Reason(s) for using female condoms¥ [N=114]			
Protection from STIs/HIV	42	38.6%	[27.0-51.7]
More control than with male condoms	38	24.9%	[16.8-35.2]
Wanted to try	15	14.0%	[7.8-24.0]
Protection from pregnancy	17	13.9%	[7.9-23.3]
Partner requests	13	11.4%	[5.7-21.6]
Prefers using with some clients (man wears)	7	5.7%	[2.4-13.2]
Could not get male condoms at the time	5	4.1%	[1.3-12.0]
It was free	2	2.0%	[0.5-8.3]
Does not know	1	2.0%	[0.3-13.4]
Other	3	6.1%	[1.8-18.2]
Reason(s) for not using female condoms¥ [N=466]			
Does not know how to insert	198	42.2%	[36.6-48.0]
Does not want to insert	156	33.1%	[27.9-38.7]
Not used to using them	58	13.4%	[9.8-18.2]
They are not available	32	8.6%	[5.6-13.1]
Prefers male condoms	26	4.9%	[3.2-7.4]
Does not know	15	3.1%	[1.7-5.5]
Has never heard of / seen female condoms	13	3.3%	[1.7-6.0]
Scared to use	12	2.7%	[1.4-5.3]
They are difficult to use	7	1.4%	[0.5-3.8]
Clients do not like them	4	0.7%	[0.3-2.0]
No response	1	0.4%	[0.1-2.9]
Other	11	2.3%	[1.1-4.5]

¥ *Denotes variable for which multiple responses were possible*
95% CI=95% confidence interval

11.10. Hepatitis testing and hepatitis B vaccine uptake

Only 8.0% (n=58) of FSW/SEC reported having ever been tested for hepatitis. Of those, more than a half (69.4%) did not know which viral hepatitis they had been tested for. Only one-third of those who tested negative for hepatitis B (36.7%) were vaccinated and most of them reported that they had not received all three doses of the vaccine (79.9%) (Table 62).

Table 62: Hepatitis testing and hepatitis B vaccine uptake among FSW/SEC, Unguja, 2018/19

	Crude n	Weighted percent (%)	Weighted 95% CI
Hepatitis testing prior to survey			
Has ever been tested for hepatitis [N=580]	58	8.0%	[5.5-11.3]
Type of hepatitis has been tested for [N=58]			
Hepatitis B	8	16.9%	[7.3-34.2]
Hepatitis C	2	3.1%	[0.7-12.5]
Hepatitis B and hepatitis C	7	10.6%	[4.0-25.5]
Does not know	41	69.4%	[51.4-83.0]
Among those previously tested for hepatitis B			

	Crude n	Weighted percent (%)	Weighted 95% CI
Result of previous hepatitis B test [N=15]			
Positive	1	2.8%	[0.3-23.0]
Negative	13	85.2%	[43.8-97.7]
Does not know / remember	1	12.0%	[1.3-58.6]
Was vaccinated for hepatitis B [N=13]			
Yes	7	36.7%	[11.3-72.5]
No	5	49.2%	[17.0-82.1]
Does not remember	1	14.1%	[1.5-64.7]
Received all 3 doses of hepatitis B vaccine [N=7]			
Yes	3	20.1%	[2.6-69.8]
No	4	79.9%	[30.2-97.4]
Why did not receive all three doses of hepatitis B vaccine [N=4]			
Travelled	2	34.6%	[0.8-97.3]
Did not have time	1	17.2%	[0.2-94.7]
Does not know / remember	1	48.2%	[1.1-98.7]
Among those previously tested for hepatitis C [N=9]			
Result of previous hepatitis C test			
Positive	2	12.9%	[1.5-59.2]
Negative	7	87.1%	[40.8-98.5]

95% CI=95% confidence interval

11.11. Access to care and treatment and KP services among HIV-infected FSW/SEC

Just under 6% of FSW/SEC (5.7%) disclosed an HIV-positive status at the time of the survey. Among those, nearly all (90.4%) reported being on ART, the majority of whom (97.6%) had been on ART for more than six months. However, just 63.2% reported ever having a viral load test (Table 63).

Of the 45 FSW/SEC who disclosed an HIV-positive status during the survey, 22 reported accessing health services from an FSW/SEC -focused clinic in the 12 months prior to the survey, all of whom reported receiving information on HIV/STI prevention and condoms. Twenty-seven self-reported HIV positive FSW/SEC reported receiving services from a peer educator in the 12 months prior to the survey. Nearly all of these (n=26) reported receiving condoms and information on HIV/STI prevention. Twelve reported receiving an HIV test.

Table 63: Access to and uptake of HIV care and treatment services among FSW/SEC in Unguja, 2018/19

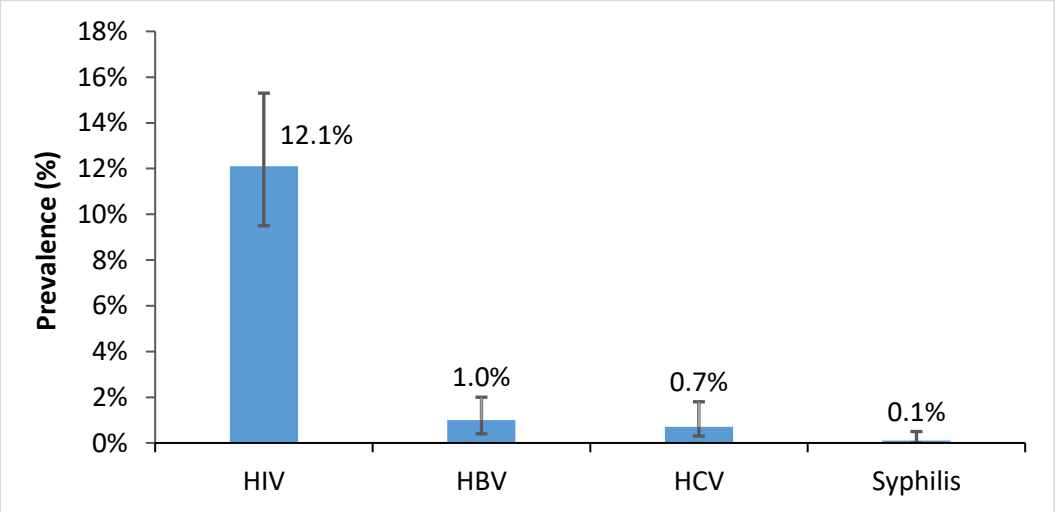
	Crude n	Weighted percent (%)	Weighted 95% CI
Self-reported HIV status [N=532]			
Positive	45	5.7%	[4.0-8.2]
Negative	484	94.0%	[91.5-95.8]
Not comfortable disclosing	2	0.1%	[0.0-0.5]
No response	1	0.1%	[0.0-1.0]

	Crude n	Weighted percent (%)	Weighted 95% CI
Currently on anti-retroviral therapy (ART) [N=45]			
Yes	41	90.4%	[73.1-97.0]
No	4	9.6%	[3.0-26.9]
Why has not started ART [N=4]			
Doctor said I was not ready to start	1	42.5%	[0.9-98.4]
I do not think I need them	2	48.4%	[1.3-98.5]
I am not ready to start	1	9.2%	[0.1-88.6]
How long has been on ART [N=41]			
Less than 6 months	2	2.4%	[0.5-10.9]
More than 6 months	39	97.6%	[89.1-99.5]
Has had VL test done [N=41]			
Yes	30	63.2%	[41.0-81.0]
No	5	12.4%	[4.3-30.7]
Does not know / remember	6	24.4%	[9.4-50.2]

11.12. HIV, HBV, HCV, and active syphilis prevalence, UNAIDS 90-90-90 cascade and HIV risk factors

HIV prevalence among FSW/SEC was 12.1% (95% CI: 9.5-15.3); HBV and HCV prevalence were 1.0% (95% CI: 0.4-2.0) and 0.7% (95% CI: 0.3-1.8), respectively; and the prevalence of active syphilis was 0.1% (95% CI: 0.0-0.5) (Figure 135). Viral suppression among FSW/SEC was 70.8% (95% CI: 58.1-80.8) (Table 64).

Figure 135: HIV, HBV, HCV and active syphilis prevalence among FSW/SEC in Unguja, 2018/19



The UNAIDS 90-90-90 targets were assessed among FSW/SEC. Almost three-quarters (72.5%; 95% CI: 60.7-81.7) of FSW/SEC who are living with HIV had been previously diagnosed. FSW/SEC who did not disclose an HIV-positive status during the survey but were found to be virally suppressed (n=21), in the absence of a test for the presence of ARV metabolites in the blood, were assumed to be already diagnosed and already on ART. Of those, 94.3% (95% CI: 83.2-98.2) were on ART. Of those on ART, 87.0% (95% CI: 69.3-95.2) were virally suppressed (Figure 136; Table 64).

Figure 136: Progress towards UNAIDS 90-90-90 targets among FSW/SEC, Unguja, 2018/19

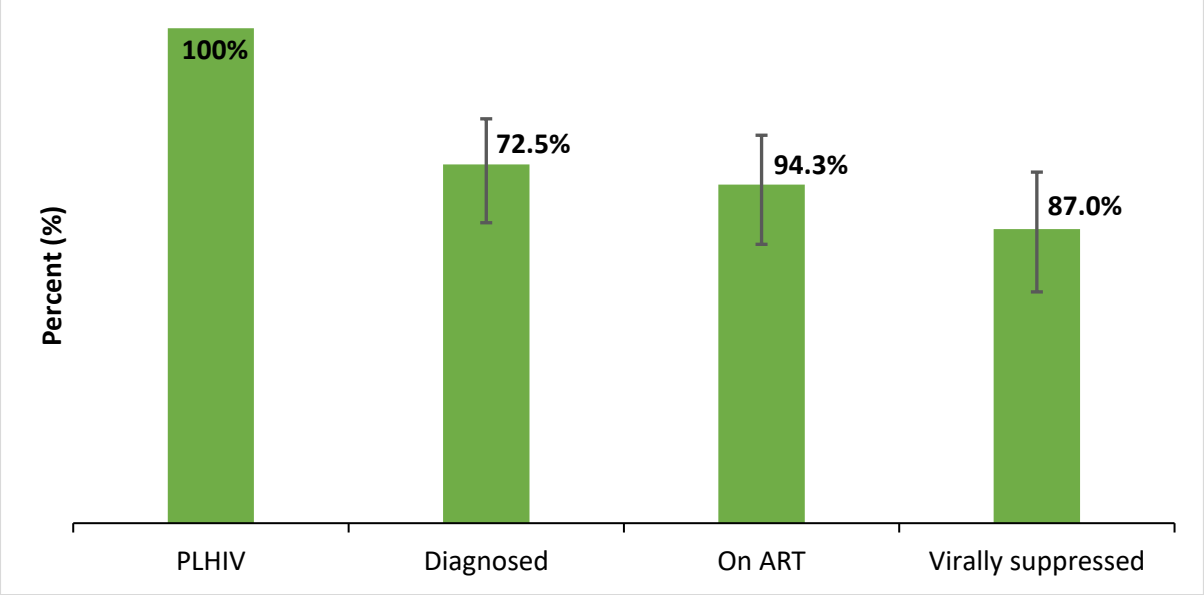


Table 64: HIV, HBV, HCV and active syphilis prevalence and 90-90-90 cascade among FSW/SEC, Unguja, 2018/19

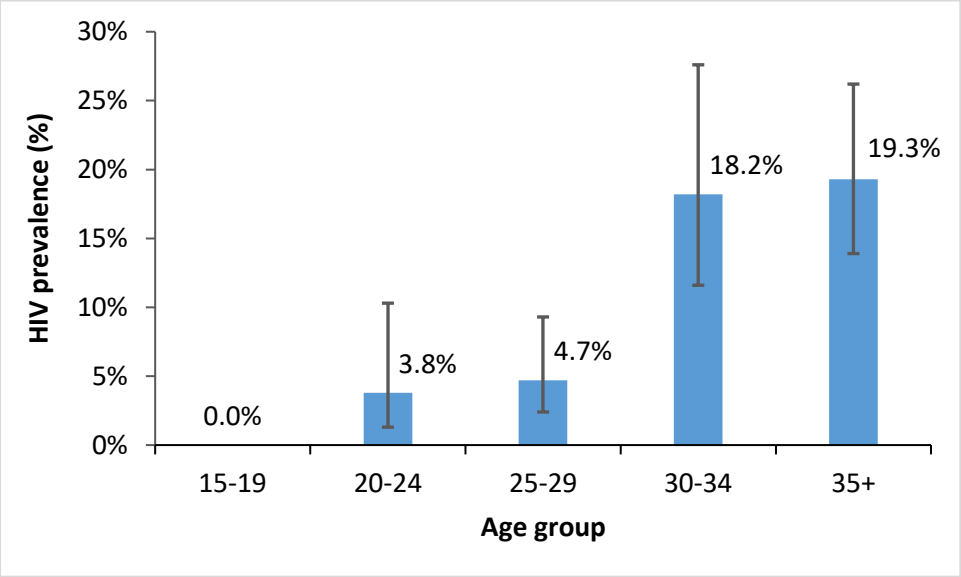
	Crude n	Weighted percent (%)	Weighted 95% CI
HIV test results [N=578]			
Positive	94	12.1%	[9.5-15.3]
Negative	484	87.9%	[84.7-90.5]
Viral suppression [N=94]			
Virally suppressed	64	70.8%	[58.1-80.8]
Not suppressed	30	29.2%	[19.2-41.9]
Hepatitis B results [N=578]			
Positive	9	1.0%	[0.4-2.0]
Negative	569	99.0%	[98.0-99.6]
Hepatitis C results [N=578]			
Positive	7	0.7%	[0.3-1.8]
Negative	571	99.3%	[98.2-99.7]
HIV / HCV co-infection [N=578]			
Infected with HIV and HCV	3	0.2%	[0.1-0.9]
Syphilis results [N=578]			
Positive	2	0.1%	[0.0-0.5]
Negative	576	99.9%	[99.5-100]
90-90-90 cascade			
FSW/SEC living with HIV who have been diagnosed [N=94]	67	72.5%	[60.7-81.7]
Current on ART (of those already diagnosed) [N=67]	63	94.3%	[83.2-98.2]
Virally suppressed (of those on ART) [N=63]	53	87.0%	[69.3-95.2]

95% CI=95% confidence interval

11.12.1. HIV prevalence by socio-demographic characteristics

None of the survey participants ages 15-19 had HIV infection. HIV prevalence increased with age, with the highest prevalence found among FSW/SEC aged 35 years and above (19.3%; 95% CI: 13.9-26.2) (Figure 137).

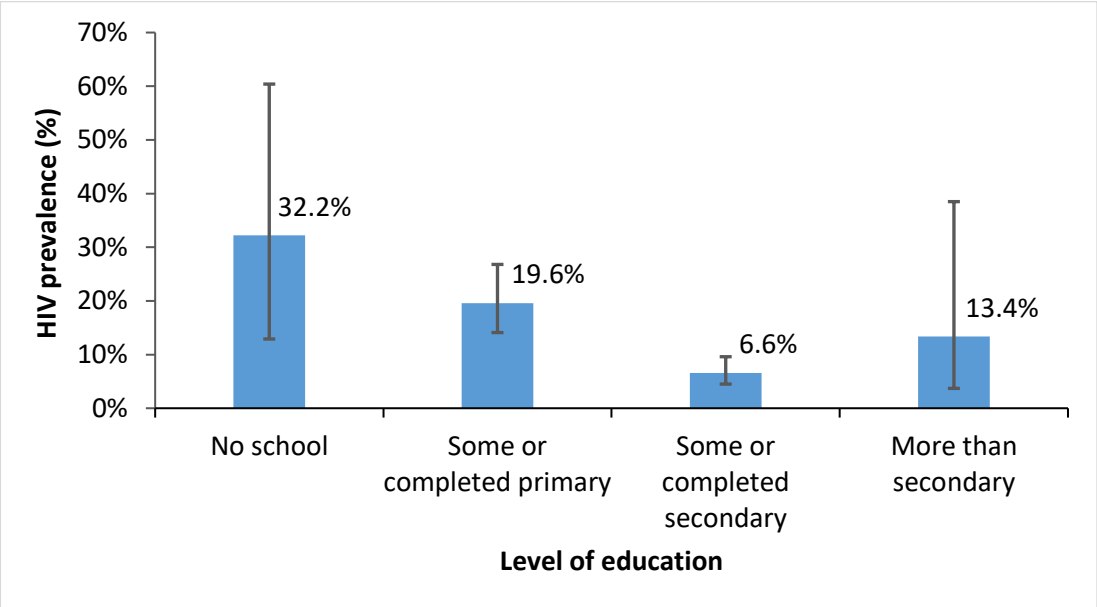
Figure 137: HIV prevalence among FSW/SEC by age group, Unguja, 2018/19



HIV prevalence was highest among FSW/SEC who reported living with a sexual partner (23.7%; 95% CI: 8.7-50.3) and lowest among those who are married (1.7%; 95% CI: 0.2-12.6) (Table 65).

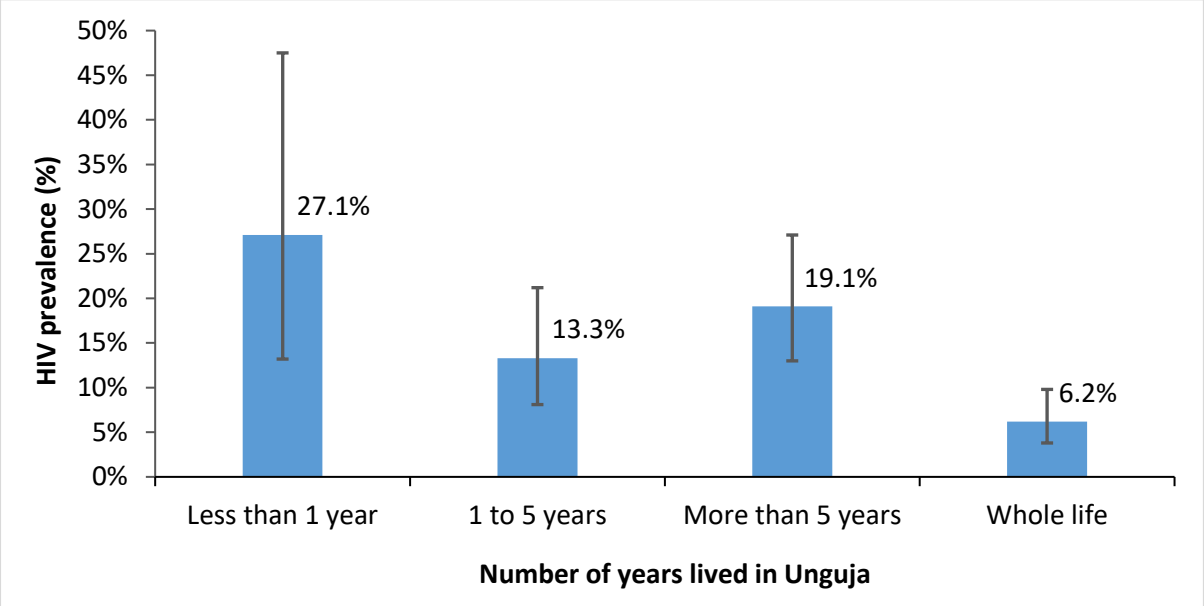
HIV prevalence generally decreased with increasing education, going from 32.2% (95% CI: 12.9-60.4) among FSW/SEC who reported having no education to 6.6% (95% CI: 4.5-9.6) among those who had partially or fully completed secondary education. However, prevalence was higher among those who reported having more than secondary education (13.4%; 95% CI: 3.7-38.5), although this should be interpreted cautiously based on the small sample size (Figure 138).

Figure 138: HIV prevalence among FSW/SEC by level of education, Unguja, 2018/19



FSW/SEC who reported living in Zanzibar their entire lives had a lower HIV prevalence (6.2%; 95% CI: 3.8-9.8) than those who had immigrated to Zanzibar (17.7%; 95% CI: 13.4-23.0). Among those who had immigrated to Unguja, those living in Unguja for less than one year had the highest prevalence (27.1%; 95% CI: 13.2-47.5) (Figure 139).

Figure 139: HIV prevalence among FSW/SEC by number of years lived in Unguja, 2018/19



There was no statistically significant difference in HIV prevalence by reported income earned in the past month, nor by whether an FSW/SEC reported having a source of income apart from sex work or not (Table 65).

Table 65: HIV prevalence by socio-demographic characteristics among FSW/SEC in Unguja, 2018/19

	Crude HIV-positive (n)	HIV prevalence (%)	95% CI
Age			
15-19	0	0.0%	NC
20-24	5	3.8%	[1.3-10.3]
25-29	11	4.7%	[2.4-9.3]
30-34	26	18.2%	[11.6-27.6]
35+	52	19.3%	[13.9-26.2]
Marital status			
Married	1	1.7%	[0.2-12.6]
Living with partner	8	23.7%	[8.7-50.3]
Separated/divorced/widowed	59	12.8%	[9.5-17.2]
Never married	26	10.1%	[6.5-15.5]
Education level			
No school	5	32.2%	[12.9-60.4]
Some or completed primary	48	19.6%	[14.1-26.8]
Some or completed secondary	38	6.6%	[4.5-9.6]
More than secondary	3	13.4%	[3.7-38.5]
Time lived in Unguja			

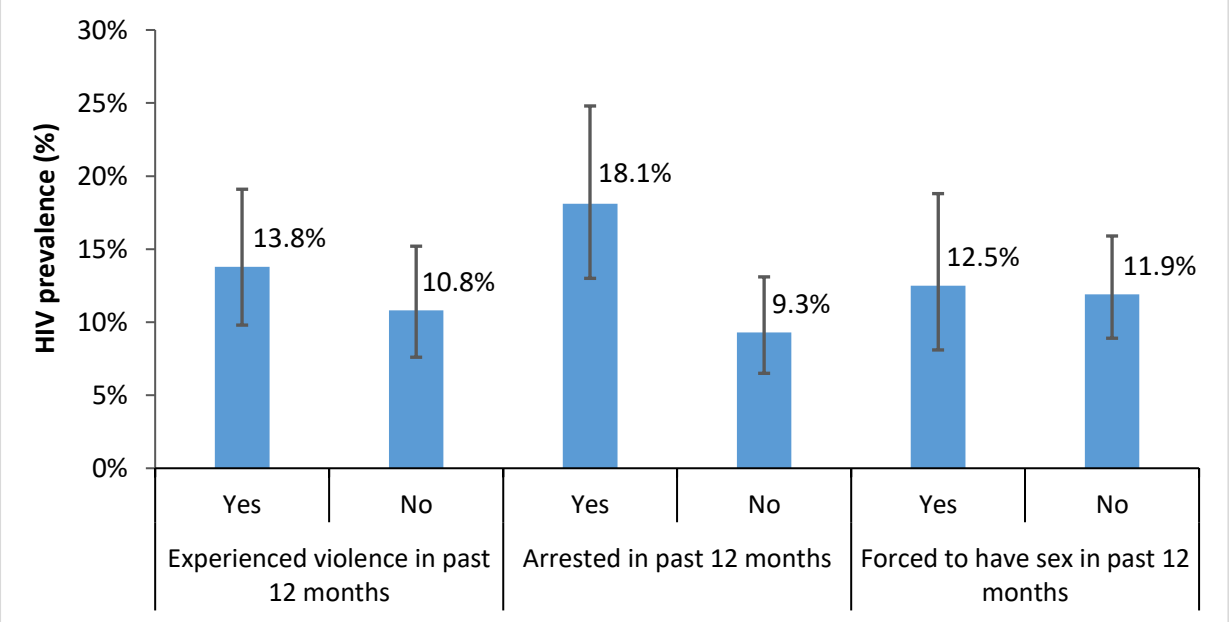
	Crude HIV-positive (n)	HIV prevalence (%)	95% CI
Less than 1 year	12	27.1%	[13.2-47.5]
1 to 5 years	25	13.3%	[8.1-21.2]
More than 5 years	33	19.1%	[13.0-27.1]
Whole life	24	6.2%	[3.8-9.8]
Migration			
Migrated to Unguja	70	17.7%	[13.4-23.0]
Lived whole life in Unguja	24	6.2%	[3.8-9.8]
Income earned in past month (TZS)			
< 200,000	44	11.4%	[8.0-16.0]
200,001-500,000	37	13.9%	[9.5-19.8]
> 500,000	13	10.0%	[4.8-19.6]
Has another source of income apart from sex work			
Yes	46	12.8%	[8.8-18.1]
No	48	11.5%	[8.3-15.6]

95% CI=95% confidence interval

11.12.2. HIV prevalence by vulnerability factors

HIV prevalence did not vary greatly based on experiences of physical or sexual violence in the 12 months prior to the survey. However, HIV prevalence was nearly double (18.1%; 95% CI: 13.0-24.8) among those who reported being arrested in the 12 months prior to the survey compared to those who had not (9.3%; 95% CI: 6.5-13.1) (Figure 140).

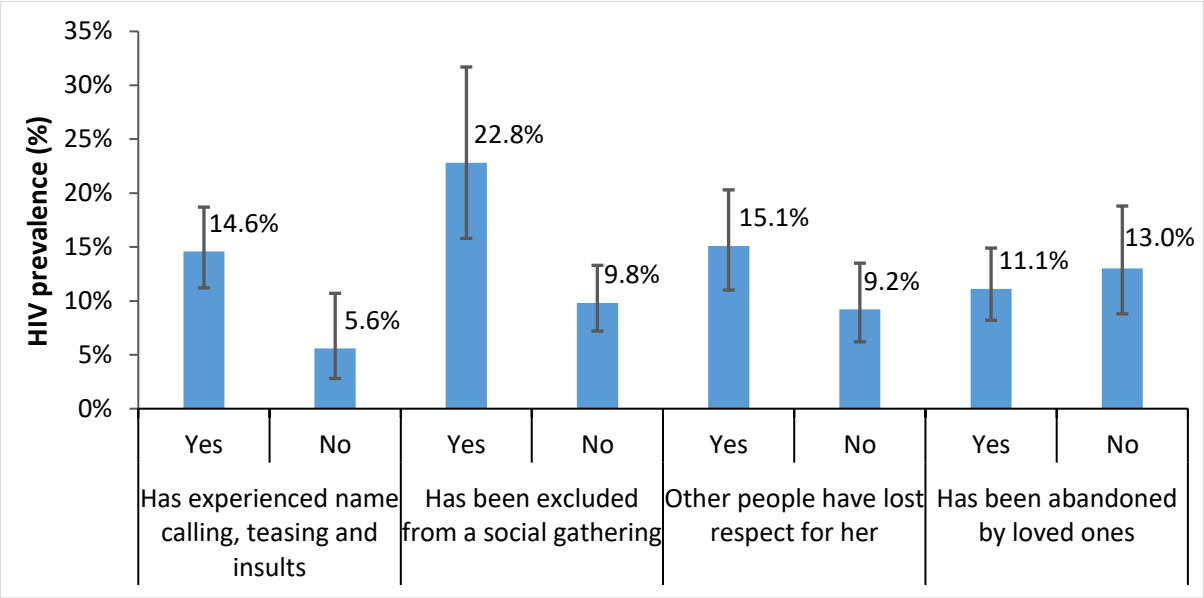
Figure 140: HIV prevalence among FSW/SEC by experiences of violence and arrest in the past 12 months, Unguja, 2018/19



HIV prevalence was higher among FSW/SEC who had comprehensive HIV knowledge (14.4%; 95% CI: 10.5-19.4) compared to those who did not (9.5%; 95% CI: 6.5-13.9) (Table 66). FSW/SEC who reported experiences of stigma by being called names, teased or insulted, being excluded from a

social gathering, or having others lose respect for her had higher HIV prevalence compared to those who had not had these experiences (Figure 141).

Figure 141: HIV prevalence by experiences of stigmatization among FSW/SEC, Unguja, 2018/19



HIV prevalence increased with increasing self-perceived risk of HIV infection. The highest prevalence was among those who did not know their risk (10.9%; 95% CI: 1.3-53.3); however, this is based on only one participant and should be interpreted with caution. Those who perceived themselves to be at high risk had the next highest prevalence (9.6%; 95% CI: 6.4-14.3), and those who perceived themselves not to be at risk had the lowest prevalence (3.1%; 95% CI: 1.1-8.2) (Figure 142).

Figure 142: HIV prevalence among FSW/SEC by perceived risk of HIV infection, Unguja, 2018/19

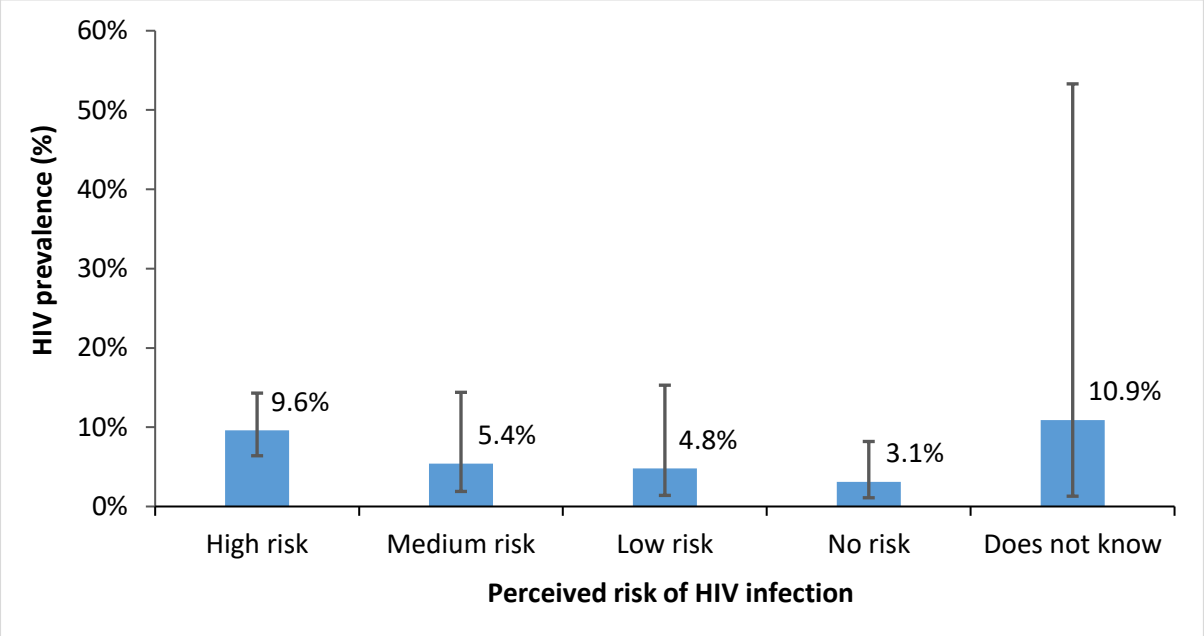


Table 66: HIV prevalence by vulnerability factors among FSW/SEC in Unguja, 2018/19

	Crude HIV-positive (n)	HIV prevalence (%)	95% CI
Experienced physical violence in past 12 months			
Yes	48	13.8%	[9.8-19.1]
No	46	10.8%	[7.6-15.2]
Arrested in past 12 months			
Yes	47	18.1%	[13.0-24.8]
No	47	9.3%	[6.5-13.1]
Forced to have sex in past 12 months			
Yes	30	12.5%	[8.1-18.8]
No	64	11.9%	[8.8-15.8]
Has agent/someone to help her meet clients			
Yes	19	6.6%	[3.8-11.2]
No	75	14.9%	[11.4-19.3]
Has comprehensive HIV knowledge			
Yes	57	14.4%	[10.5-19.4]
No	37	9.5%	[6.5-13.9]
Has experienced name calling, teasing and insults			
Yes	82	14.6%	[11.2-18.7]
No	12	5.6%	[2.8-10.7]
Has been excluded from a social gathering			
Yes	36	22.8%	[15.8-31.7]
No	58	9.8%	[7.2-13.3]
Does not know	0	0.0%	NC
Other people have lost respect for her			
Yes	57	15.1%	[11.0-20.3]
No	36	9.2%	[6.2-13.5]
Does not know	1	37.6%	[5.5-86.3]
Has been abandoned by loved ones			
Yes	54	11.1%	[8.2-14.9]
No	39	13.0%	[8.8-18.8]
Does not know	1	39.3%	[3.9-91.3]
Most important reason for entering into sex work			
Substance dependency	4	33.2%	[11.7-65.3]
No response	1	22.8%	[2.6-76.7]
Was forced	1	16.1%	[1.4-72.0]
Needed money to help my family	40	12.5%	[8.5-18.0]
Abandoned by husband/family	16	12.2%	[7.0-20.4]
Friends/family were doing it	18	11.3%	[6.5-18.9]
Liked to do it	3	9.6%	[2.6-29.7]
Provides good/added income	10	9.2%	[4.3-18.6]
Life is difficult/could not find work	1	9.1%	[1.1-47.7]
Perceived risk for HIV infection (known positives removed)			
High risk	34	9.6%	[6.4-14.3]
Medium risk	4	5.4%	[1.9-14.4]

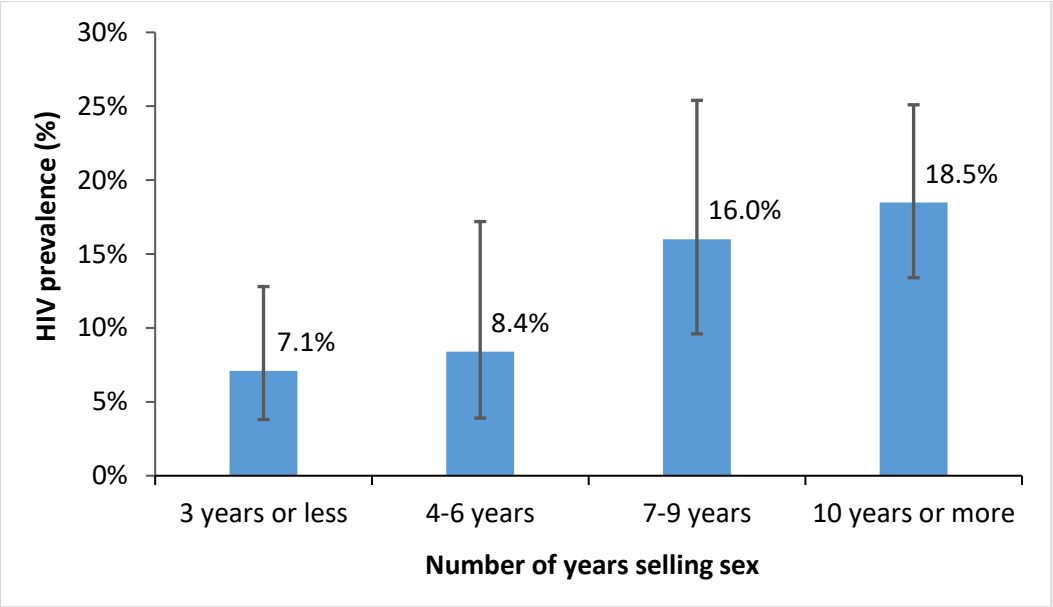
	Crude HIV-positive (n)	HIV prevalence (%)	95% CI
Low risk	3	4.8%	[1.4-15.4]
No risk	4	3.1%	[1.1-8.2]
Does not know	1	10.9%	[1.3-53.3]

95% CI=95% confidence interval

11.12.3. HIV prevalence by risk behaviours

HIV prevalence was higher among FSW/SEC who began selling sex at 25 years of age or older (16.0%; 95% CI: 11.4-21.8) compared to those who began at 20-24 (9.5%; 95% CI: 6.2-14.4) or below 20 (8.2%; 95% CI: 4.2-15.5). As expected, prevalence increased with the number of years spent selling sex, going from 7.1% (95% CI: 3.8-12.8) among FSW/SEC who reported selling sex for three years or less up to 18.5% (95% CI: 13.4-25.1) among FSW/SEC who reported selling sex for ten years or more (Figure 143).

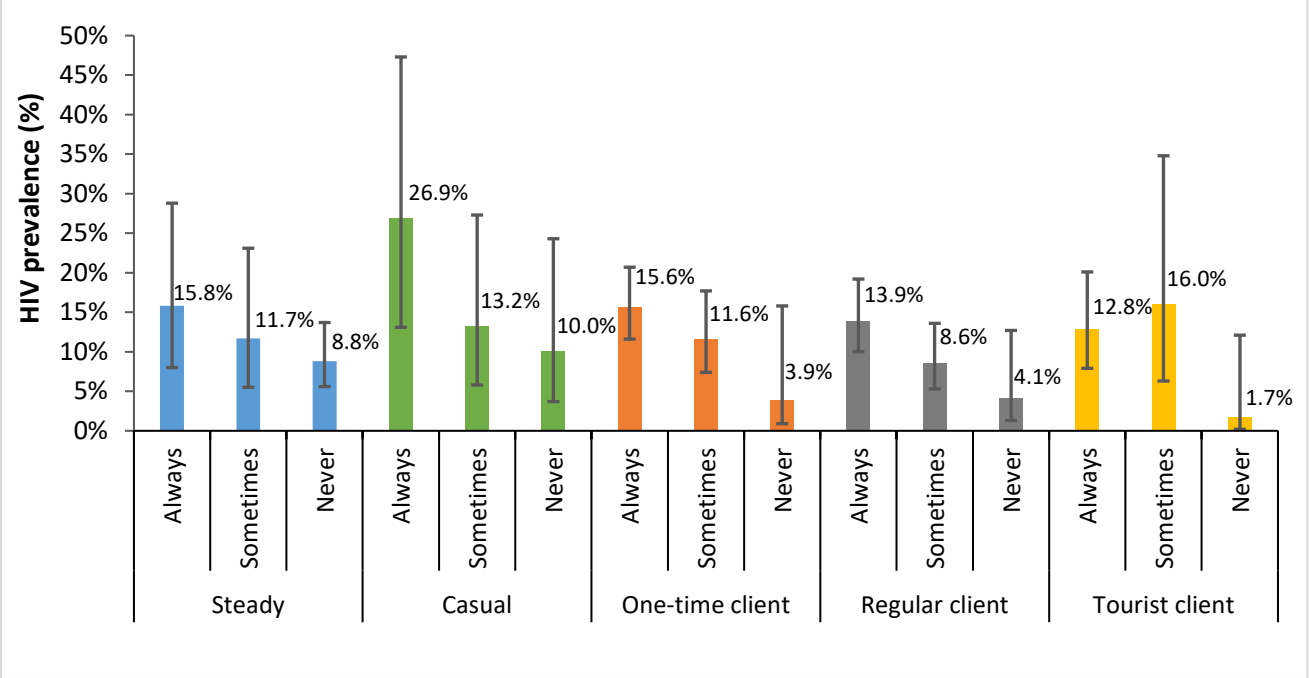
Figure 143: HIV prevalence among FSW/SEC by number of years selling sex, Unguja, 2018/19



Although HIV prevalence varied according to where FSW/SEC reported primarily meeting clients, the differences were not statistically significant (Table 67).

HIV prevalence was consistently higher among FSW/SEC who reported using a condom at last sex across all partner types compared to those who did not use a condom (although confidence intervals overlap in all cases). HIV prevalence was also higher (13.5%; 95% CI: 10.3-17.5) among FSW who reported using a condom at last sex with their last client than those who did not (8.3%; 95% CI: 4.8-14.0) (Table 67). Similarly, HIV prevalence was higher among FSW/SEC who reported always using condoms in the past months for all partner types except for tourist clients where it was higher among those who reported using condoms sometimes (Figure 144).

Figure 144: HIV prevalence among FSW/SEC by frequency of condom use in past month, by partner/client type, Unguja, 2018/19



HIV prevalence was also higher among FSW/SEC who refused sex without a condom with non-paying partner types (i.e., steady and casual partners) in the month prior to the survey (Table 67).

There were slight differences in HIV prevalence between FSW/SEC who reported consuming alcohol in the week prior to the survey (13.1%; 95% CI: 9.7-17.5) compared to those who did not (10.3%; 95% CI: 6.1-16.8), and FSW/SEC who reported using non-injection drugs in the 3 months prior to the survey (14.2%; 95% CI: 8.2-23.5) compared to those who had not (11.8%; 95% CI: 8.9-15.3). FSW/SEC who reported ever injecting drugs had a much higher HIV prevalence (58.5%; 95% CI: 30.2-82.4) than those who had not (11.3%; 95% CI: 8.7-14.5) (Figure 145).

Figure 145: HIV prevalence among FSW/SEC by alcohol and drug use, Unguja, 2018/19

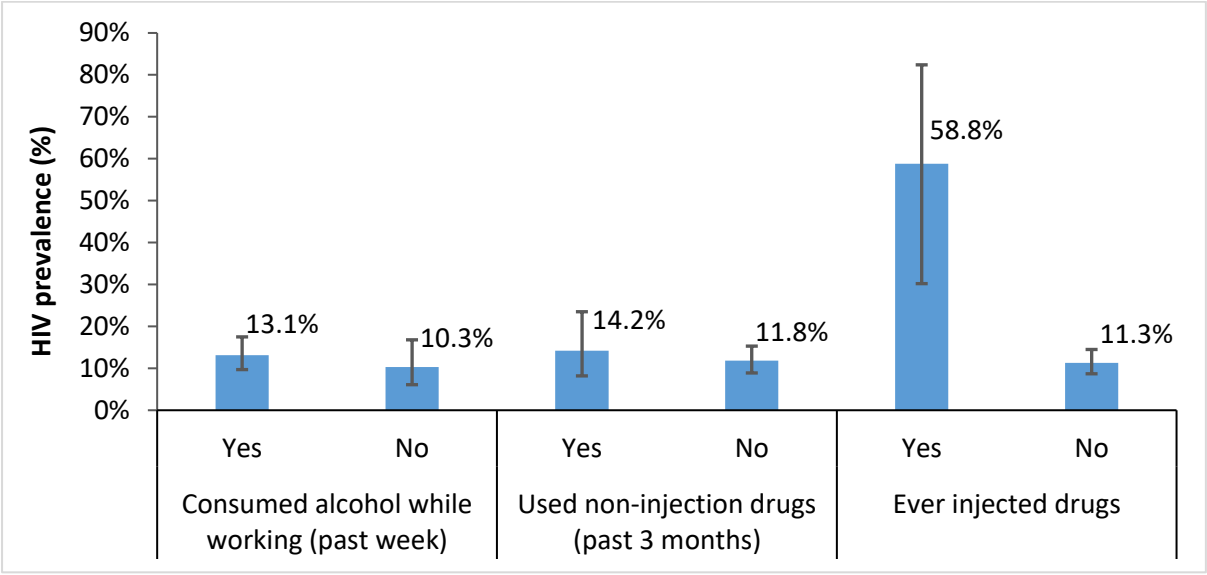


Table 67: HIV prevalence by risk behaviours among FSW/SEC in Unguja, 2018/19

	Crude HIV-positive (n)	HIV prevalence (%)	95% CI
Age first time sold sex			
≤ 19	12	8.2%	[4.2-15.5]
20-24	27	9.5%	[6.2-14.4]
25+	55	16.0%	[11.4-21.8]
Duration of selling sex (years)			
3 years or less	14	7.1%	[3.8-12.8]
4-6 years	12	8.4%	[3.9-17.2]
7-9 years	18	16.0%	[9.6-25.4]
10 years or more	50	18.5%	[13.4-25.1]
Primary place to meet clients			
Brothel	1	44.4%	[6.7-89.9]
Private room	4	14.8%	[4.3-40.5]
Pub or bar/venues selling local alcohol	51	14.1%	[10.1-19.4]
On the street	3	12.6%	[3.7-35.1]
Phone or internet	11	10.1%	[5.2-18.7]
Night club/full moon parties	24	9.9%	[6.1-15.6]
Through an agent	0	0.0%	NC
Guest house/hotel	0	0.0%	NC
Had sex with a steady partner in the past month			
Yes	48	11.0%	[7.8-15.4]
No	37	14.0%	[9.6-20.2]
No response	0	0.0%	NC
Had sex with a casual non-paying partner in the past month			
Yes	24	15.3%	[9.6-23.5]
No	15	13.5%	[7.2-24.0]
Had sex with a one-time client in the past month			
Yes	91	13.3%	[10.4-16.8]
No	2	4.0%	[0.9-15.4]
Had sex with a regular client in the past month			
Yes	80	11.3%	[8.6-14.7]
No	8	19.5%	[8.8-37.4]
Does not remember	0	0.0%	NC
Had sex with a tourist client in the past month			
Yes	30	11.8%	[7.8-17.6]
No	34	16.0%	[10.5-23.7]
Number of clients on last day worked			
One	37	17.7%	[11.9-25.6]
Two	19	9.7%	[5.8-15.7]
Three	13	4.5%	[2.3-8.3]
Four or more	25	18.7%	[11.8-28.5]
Used a condom at last sex with a steady partner			

	Crude HIV-positive (n)	HIV prevalence (%)	95% CI
Yes	29	14.1%	[8.9-21.8]
No	48	10.2%	[7.4-14.0]
Does not remember	2	43.4%	[9.4-85.1]
No response	6	18.9%	[7.9-38.6]
Used a condom at last sex with a casual non-paying partner			
Yes	14	20.8%	[10.9-36.0]
No	10	11.6%	[5.8-21.8]
Used a condom at last sex with a one-time client			
Yes	71	13.5%	[10.2-17.7]
No	20	12.5%	[7.5-20.2]
Used a condom at last sex with a regular client			
Yes	67	13.2%	[9.8-17.5]
No	13	6.0%	[3.1-11.5]
Used a condom at last sex with a tourist client			
Yes	27	13.7%	[8.8-20.8]
No	3	4.6%	[1.3-14.9]
Used condom with last client on last day worked			
Yes	77	13.5%	[10.3-17.5]
No	17	8.3%	[4.8-14.0]
Frequency of condom use with a steady partner in the past month			
Always	13	15.8%	[8.0-28.8]
Sometimes	10	11.7%	[5.5-23.1]
Never	25	8.8%	[5.6-13.7]
Does not remember	0	0.0%	NC
Frequency of condom use with a casual partner in the past month			
Always	11	26.9%	[13.1-47.3]
Sometimes	8	13.2%	[5.8-27.3]
Never	5	10.0%	[3.7-24.3]
Frequency of condom use with one-time clients in the past month			
Always	64	15.6%	[11.6-20.7]
Sometimes	25	11.6%	[7.4-17.7]
Never	2	3.9%	[0.9-15.8]
Frequency of condom use with regular clients in the past month			
Always	53	13.9%	[10.0-19.1]
Sometimes	24	8.6%	[5.4-13.7]
Never	3	4.1%	[1.3-12.7]
Frequency of condom use with tourist clients in the past month			
Always	23	12.8%	[7.9-20.1]
Sometimes	6	16.0%	[6.3-34.8]
Never	1	1.7%	[0.2-12.1]
Refused sex with a steady partner in the past month if condom was not used			
Yes	11	21.6%	[9.9-40.7]
No	10	9.5%	[4.6-18.4]
No response	2	31.8%	[4.8-81.0]

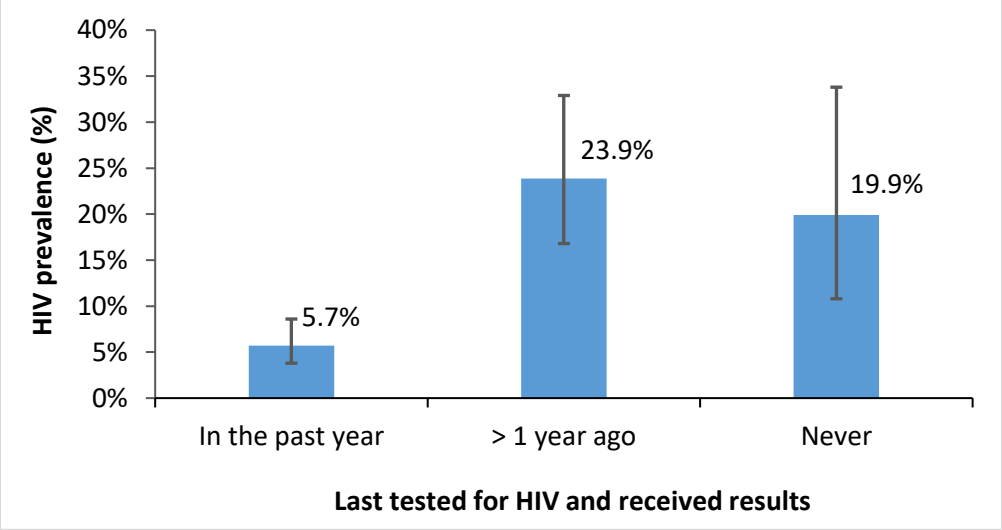
	Crude HIV-positive (n)	HIV prevalence (%)	95% CI
Refused sex with a casual partner in the past month if condom was not used			
Yes	8	26.2%	[12.1-47.8]
No	10	12.6%	[5.9-24.8]
No response	1	0.0%	NC
Refused sex with a one-time client in the past month if condom was not used			
Yes	57	13.9%	[10.1-18.8]
No	32	14.9%	[10.0-21.6]
No response	0	0.0%	NC
Refused sex with a regular client in the past month if condom was not used			
Yes	47	12.6%	[8.8-17.5]
No	28	9.9%	[6.2-15.5]
No response	2	49.5%	[11.1-88.4]
Refused sex with a tourist client in the past month if condom was not used			
Yes	13	9.3%	[4.9-16.7]
No	15	17.3%	[9.6-29.2]
No response	1	55.0%	[6.9-95.3]
Consumed alcohol while working during past week			
Yes	60	13.1%	[9.7-17.5]
No	21	10.3%	[6.1-16.8]
Used drugs other than alcohol in past three months			
Yes	18	14.2%	[8.2-23.5]
No	76	11.8%	[8.9-15.3]
Has ever injected drugs			
Yes	9	58.8%	[30.2-82.4]
No	85	11.3%	[8.7-14.5]

95% CI=95% confidence interval

11.12.4. HIV prevalence by access to/uptake of services and disease co-infection

HIV prevalence was lowest (5.7%; 95% CI: 3.8-8.6) among those who had tested for HIV in the one year prior to the survey compared to those who had never tested (19.9%; 95% CI: 10.8-33.8) or who had tested more than one year prior to the survey (23.9%; 95% CI: 16.8-32.9) (Figure 146).

Figure 146: HIV prevalence among FSW/SEC by HIV testing history, Unguja, 2018/19



Only slight differences were found in HIV prevalence between FSW/SEC who reported experiencing STI symptoms in the 6 months prior to the survey (10.8%; 95% CI: 6.6-17.3) and those who did not (12.4%; 95% CI: 9.4-16.2) (Table 68).

No HIV-infected FSW/SEC tested positive for HBsAg (HBV) or syphilis infection. HIV prevalence among those with hepatitis C infection (31.4%; 95% CI: 7.2-72.9) was higher than it was among those who tested negative for hepatitis C (11.9%; 95% CI: 9.3-15.2) (Table 68).

Table 68: HIV prevalence among FSW/SEC by HIV testing history and disease co-infection, Unguja, 2018/19

	Crude HIV-positive (n)	HIV prevalence (%)	95% CI
Has ever tested for HIV			
Yes	81	11.6%	[8.9-15.0]
No	13	17.0%	[8.7-30.6]
Last tested for HIV and received results			
In the past year	32	5.7%	[3.8-8.6]
> 1 year ago	47	23.9%	[16.8-32.9]
Never	15	19.9%	[10.8-33.8]
STI symptoms in the last 6 months			
Yes	25	10.8%	[6.6-17.3]
No	69	12.4%	[9.4-16.2]
Has ever discussed HIV test results with her steady partner			
Yes	51	10.5%	[7.6-14.4]
No	26	12.1%	[7.3-19.3]
No response	2	0.0%	NC
Hepatitis B results			
Positive	0	0.0%	NC
Negative	94	12.2%	[9.6-15.4]
Hepatitis C results			
Positive	3	31.4%	[7.2-72.9]

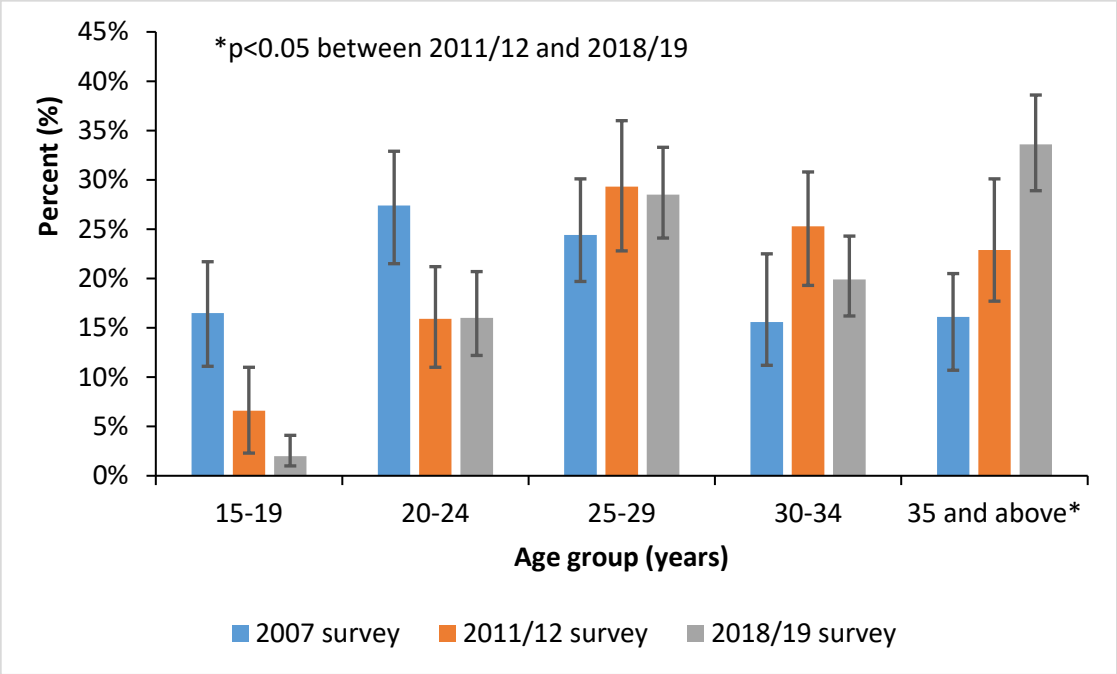
	Crude HIV-positive (n)	HIV prevalence (%)	95% CI
Negative	91	11.9%	[9.3-15.2]
Syphilis results			
Positive	0	0.0%	NC
Negative	94	12.1%	[9.5-15.3]

95% CI=95% confidence interval

11.13. Comparison of key findings from 2007, 2011/12 and 2018/19 surveys

Although the median ages of the two samples were almost the same, the 2018/19 survey had a larger proportion of FSW/SEC ages 35 and above compared to the 2011/12 survey (33.6% versus 22.9%; p<0.001) (Figure 147). FSW/SEC in the 2018/19 survey also reported higher incomes that those who participated in the 2011/12 survey, with 27.2% of FSW/SEC in 2011/12 reporting an income of TZS 200,000 or more in the month prior to the survey compared to 45.6% in 2018/19 (p<0.001) ($1 was equivalent to approximately TZS 2,300 at the time of this report) (Table 69).

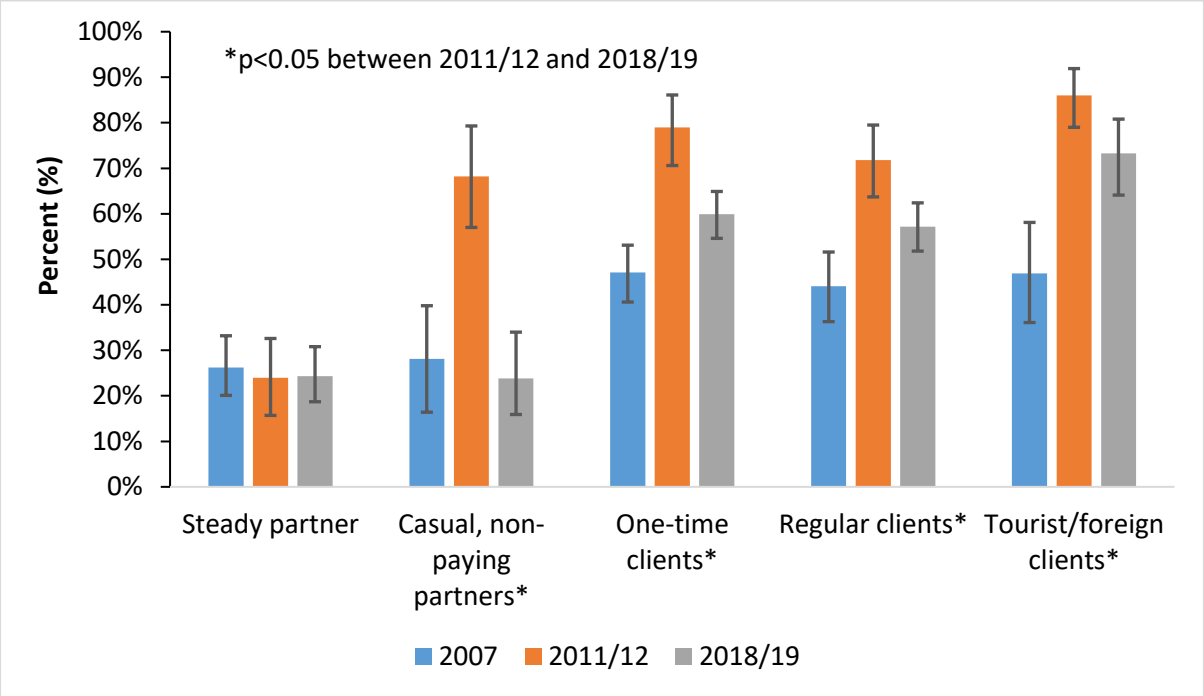
Figure 147: Age distribution of FSW/SEC in Unguja, comparison of 2007, 2011/12 and 2018/19 surveys



The median duration of selling sex increased from 5 years in 2011/12 to 7 years in 2018/19.

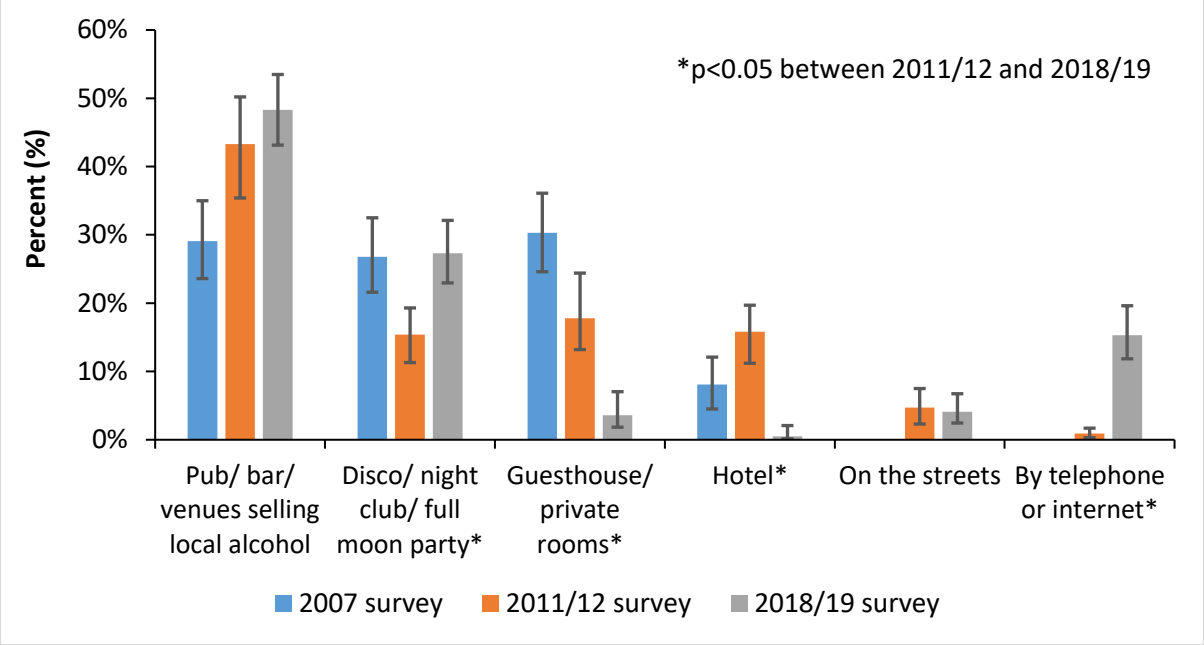
With the exception of steady partners, the proportion of FSW/SEC who reported always using a condom in the past month decreased between 2011/12 and 2018/19 for all partner and client types, going from 68.2% to 23.8% (p<0.001) with casual, non-paying partners, from 79.0% to 59.9% (p<0.001) with one-time clients, from 71.8% to 57.2% (p<0.001) with regular clients, and from 86.0% to 73.3% (p=0.020) with tourist/foreign clients (Figure 148). There were decreases in non-injection drug use (19.8% versus 12.9%; p=0.060) and injection drug use (4.1% versus 1.8%; p=0.080) among FSW/SEC from 2011/12 to 2018/19 (Table 69).

Figure 148: "Always" used condoms in past month among FSW/SEC in Unguja, comparison of 2007, 2011/12 and 2018/19 surveys



The primary places used by FSW/SEC to find clients has changed across the three surveys, with an overall decrease in the use of guesthouses or private rooms as well as hotels and an increase in the use of pubs, bars and venues selling local alcohol, as well as telephone and internet. The use of guesthouses or private rooms decreased from 17.8% in 2011/12 to 3.6% in 2018/19 ($p<0.001$) and the use of hotels fell from 15.8% in 2011/12 to 0.5% in 2018/19 ($p<0.001$). Conversely, using discos, night clubs or full moon parties as a primary venue for meeting clients increased from 15.4% in 2011/12 to 27.3% in 2018/19 ($p<0.001$), while the use of telephone and internet increased from 0.9% in 2011/12 to 15.3% in 2018/19 ($p<0.001$) (Figure 149).

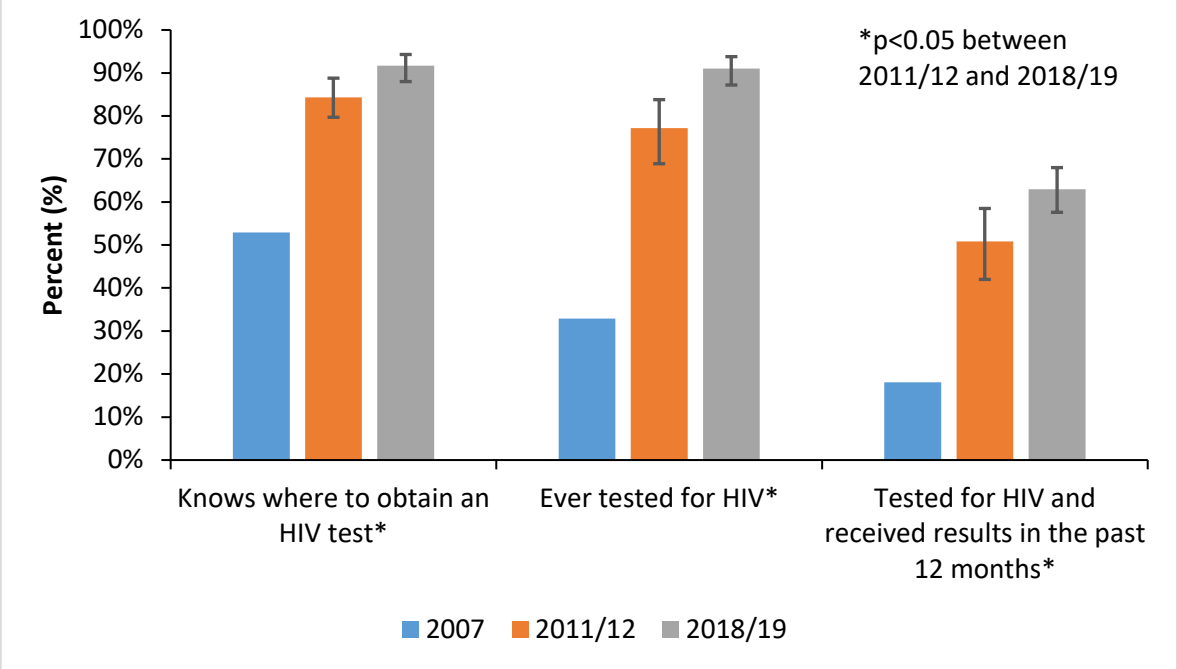
Figure 149: Primary place for FSW/SEC to meet clients, Unguja, comparison of 2007, 2011/12 and 2018/19 surveys



Levels of stigma towards those living with HIV decreased from 2011/12 to 2018/19. While 63.4% of FSW/SEC in 2011/12 agreed with the statement that people with HIV should be ashamed of themselves, that decreased to 31.1% in 2018/19 ($p<0.001$). There was a similar decrease in the percentage of FSW/SEC who said they would feel ashamed if they were infected with HIV, from 63.4% in 2011/12 to 38.2% in 2018/19 ($p<0.001$).

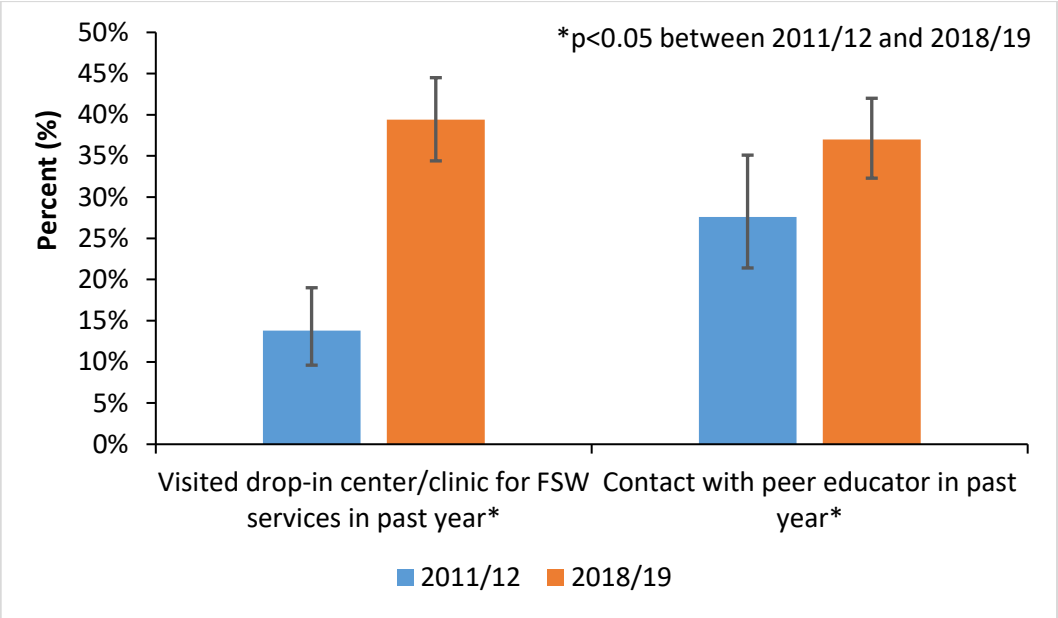
The majority of FSW/SEC (91.0%) reported ever having tested for HIV in 2018/19, an increase from 77.2% in 2011/12 ($p<0.001$). In addition, more FSW/SEC in 2018/19 reported testing for HIV in the 12 months prior to the survey (63.0%) than in 2011/12 (50.8%) ($p=0.020$) (Figure 150). These increases confirm an increasing trend over the three survey rounds (Table 69).

Figure 150: Access to and uptake of HIV testing services among FSW/SEC in Unguja, comparison of 2007, 2011/12 and 2018/19 surveys



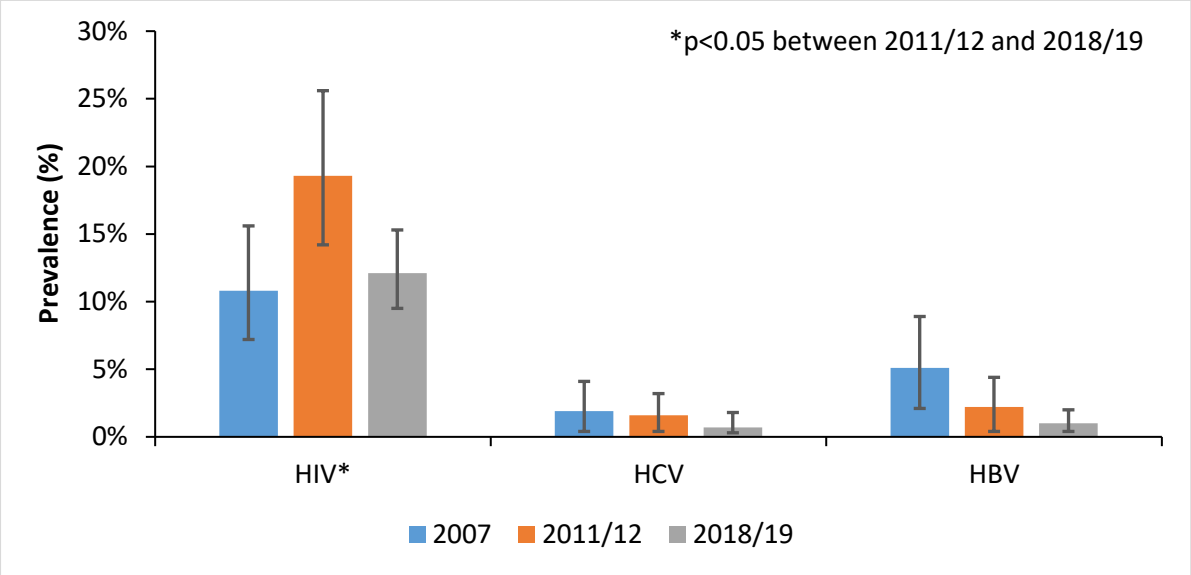
Increases were also seen from 2011/12 to 2018/19 in the proportion of FSW/SEC who reported visiting a drop-in centre or clinic for FSW/SEC services in the year prior to the survey (13.8% versus 39.4%; p<0.001), as well as the proportion of FSW/SEC who had received services from a peer educator in the year prior to the survey (27.6% versus 37.0%; p=0.020, respectively) (Figure 151).

Figure 151: Access to / uptake of FSW/SEC -targeted health services in Unguja, 2011/12 versus 2018/19



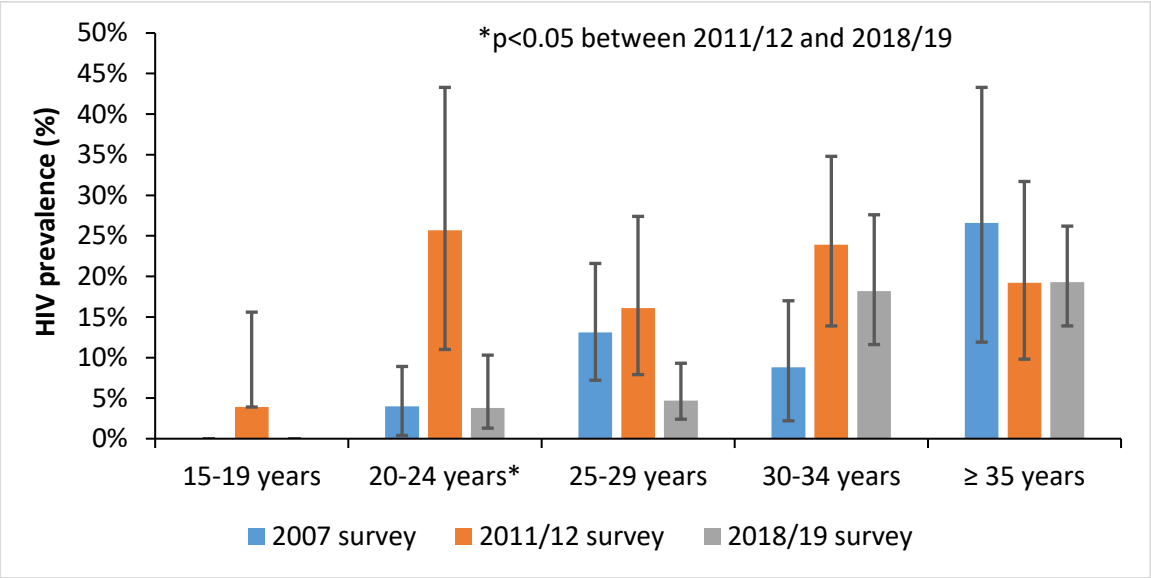
HIV, HBV, and HCV showed lower prevalence in 2018/19 than in 2011/12 (Figure 152). The decrease in HIV prevalence from 19.3% in 2011/12 to 12.1% in 2018/19 was statistically significant (p=0.020). No comparison can be made for syphilis.

Figure 152: HIV, HCV, and HBV prevalence among FSW/SEC in Unguja, comparison of 2007, 2011/12 and 2018/19 surveys



HIV prevalence also decreased from the 2011/12 survey to the 2018/19 survey among certain sub-groups. Notably, HIV prevalence decreased among 20–24-year-olds from 25.7% in 2011/12 to 3.8% in 2018/19 (p=0.020) (Figure 153).

Figure 153: HIV prevalence among FSW/SEC in Unguja by age, comparison of 2007, 2011/12 and 2018/19 surveys



HIV prevalence also decreased among those who reported selling sex for three years or less, from 18.5% in 2011/12 to 7.1% in 2018/19 (p=0.020). Finally, HIV prevalence decreased among FSW/SEC who were native to Unguja, from 20.4% in 2011/12 to 6.2% in 2018/19 (p<0.001) (Table 69).

Table 69: Key findings among FSW/SEC in Unguja, 2007, 2011/12 and 2018/19

	2007	2011/12	2018/19	p-value 2011/12 vs 2018/19
SOCIO-DEMOGRAPHIC CHARACTERISTICS				
Age				
15-19	16.5%	6.6%	2.0%	0.060
20-24	27.4%	15.9%	16.0%	0.980
25-29	24.4%	29.3%	28.5%	0.840
30-34	15.6%	25.3%	19.9%	0.140
35+	16.1%	22.9%	33.6%	**< 0.001**
Median age of sample	26 years	30.5 years	31 years	
Migration				
Migrated to Unguja		45.8%	51.3%	0.320
Lived whole life in Unguja		54.2%	48.7%	0.320
Level of income				
< 50,000 TZS	25.6%	20.6%	2.3%	**< 0.001**
50,000 – 120,000 TZS	31.5%	31.5%	26.0%	0.320
120,001 – 200,000 TZS	28.5%	20.7%	26.1%	0.300
≥ 200,000 TZS	14.4%	27.2%	45.6%	**< 0.001**
RISK BEHAVIORS				
Used non-injection drugs other than alcohol in the past 3 months	9.6%	19.8%	12.9%	0.060
Ever injected drugs	2.8%	4.1%	1.8%	0.080
Duration of selling sex				
≤ 3 years	42.1%	39.4%	35.7%	0.420
4-6 years	25.3%	22.7%	20.0%	0.500
7-9 years	15.7%	11.2%	13.1%	0.460
≥ 10 years	16.9%	26.7%	31.2%	0.260
Median duration of selling sex (years)	5 years	5 years	7 years	
Always used condom in past month with:				
Steady partner	26.2%	24.0%	24.3%	0.960
Casual, non-paying partners	28.1%	68.2%	23.8%	**< 0.001**
One-time clients	47.1%	79.0%	59.9%	**< 0.001**
Regular clients	44.1%	71.8%	57.2%	**< 0.001**
Tourist/foreign clients	46.9%	86.0%	73.3%	**0.020**
Used condom with last client on last day worked	55.7%	78.9%	72.7%	0.160
VULNERABILITY FACTORS				
Experienced physical violence in past 12 months	37.2%	43.7%	41.9%	0.700
Arrested in past 12 months	23.3%	27.3%	31.5%	0.320
Primary place to meet clients				

		2007	2011/12	2018/19	p-value 2011/12 vs 2018/19
Pub / bar / venues selling local alcohol			43.3%	48.3%	0.280
Disco / night club / full moon party			15.4%	27.3%	**< 0.001**
Guesthouse / private rooms			17.8%	3.6%	**< 0.001**
Hotel			15.8%	0.5%	**< 0.001**
On the streets			4.7%	4.1%	0.720
By telephone or internet			0.9%	15.3%	**< 0.001**
Other			2.0%	0.8%	0.400
Perceived risk for HIV					
High risk		83.8%	56.5%	50.9%	0.220
Medium risk		9.2%	8.8%	13.6%	0.060
Low risk		1.6%	7.5%	10.9%	0.240
No risk		5.4%	27.1%	23.6%	0.400
HIV knowledge and stigma					
Believes people with HIV should be ashamed of themselves		36.5%	63.4%	31.1%	**< 0.001**
I would feel ashamed if I were infected with HIV		35.0%	63.4%	38.2%	**< 0.001**
It is SW/FSW who spread HIV in the community		36.9%	47.7%	45.2%	0.580
ACCESS TO AND UPTAKE OF SERVICES					
Ever tested for HIV		32.9%	77.2%	91.0%	**< 0.001**
Tested for HIV and received results in the past 12 months		18.1%	50.8%	63.0%	**0.020**
Knows where to obtain an HIV test		52.9%	84.3%	91.7%	**< 0.001**
Visited drop-in centre/clinic for FSW/SEC services in past year			13.8%	39.4%	**< 0.001**
Contact with peer educator in past year			27.6%	37.0%	**0.020**
DISEASE PREVALENCE					
Experienced STI symptoms in past 6 months		15.3%	24.8%	19.5%	0.160
HIV		10.8%	19.3%	12.1%	**0.020**
HIV prevalence among 20–24-year-olds		4.0%	25.7%	3.8%	**0.020**
HIV prevalence among those who reported selling sex for 3 years or less		3.6%	18.5%	7.1%	**0.020**
HIV prevalence among those native to Unguja		--	20.4%	6.2%	**< 0.001**
HCV		1.9%	1.6%	0.7%	0.260
HBV		5.1%	2.2%	1.0%	0.280
Syphilis	Lifetime Infection	1.3%	3.1%		
	Active infection			0.1%	

11.14. Discussion and actions for consideration: FSW/SEC

11.14.1. Socio-demographic characteristics for FSW/SEC

The FSW/SEC population enrolled in the 2018/19 survey was older, with more than half (53.5%) being 30 years and above. This age distribution was similar to that of the 2011/12 survey, with similar median ages of 30.5 years in 2011/12 and 31 years in 2018/19.

There was no statistically significant change in the proportion of FSW/SEC from Unguja versus the proportion coming from outside of Unguja – the breakdown was approximately 50/50 in both 2011/12 and 2018/19.

In the 2018/19 survey, the majority of FSW /SEC reported being separated, divorced or widowed. The most commonly cited reason for entering into sex work activity was needing money to help their family, with nearly one in five more FSW/SEC reporting being abandoned by their husband or family. These findings suggest that women who are left without the financial support of a husband or family are at risk of entering into sex work to meet their financial needs.

11.14.2. Risk behaviours

FSW/SEC who participated in the 2018/19 survey had been selling sex longer than those who participated in the 2011/12 survey. This would be expected given the higher proportion of FSW/SEC ages 35 and above in 2018/19.

The primary places to meet clients have changed. Pubs and bars, as well as night clubs and full moon parties continue to be common venues; however, the use of venues such as hotels, guest houses and private rooms decreased from 2011/12 to 2018/19 survey while meeting clients through phone and internet increased remarkably.

Always using a condom in the month prior to the survey with one time, regular, and foreign/tourist clients was higher in the 2018/19 survey compared to condom use with non-paying partner types. However, always using condoms decreased significantly with all partner types (with the exception of steady partners) from the 2011/12 to the 2018/19 survey. Persisting factors for not using condoms were partner objections and trusting partner. Although most FSW/SEC reported being able to get a condom whenever needed, many continue to pay for condoms and the most commonly cited venue for obtaining condoms is from shops.

Although condom use decreased overall from 2011/12 to 2018/19, the 2018/19 survey found higher HIV prevalence among FSW/SEC who reported more frequent condom use. Coupled with the high percentage of HIV-infected FSW/SEC knowing their status, this could indicate that FSW/SEC who have been diagnosed with HIV are more consistently using condoms to protect themselves and their partners than their HIV-negative counterparts.

Actions for consideration

- Revive HIV prevention interventions at bars/pubs and night clubs where FSW/SEC congregate.
- Consider developing HIV prevention messages for dissemination through social media to reach those FSW/SEC who meet their clients via social media and other internet-based means.
- Strengthen comprehensive condom programming for FSW/SEC in Unguja.

11.14.3. Access to and uptake of HIV prevention and other HIV-related services

HIV testing among FSW/SEC has increased significantly since 2007, with FSW/SEC coming closer than MSM or PWID to reaching the first of the 90-90-90 targets. FSW reached by targeted services, either through clinics or peer educators, increased significantly from 2011/12 to 2018/19. In spite of these gains, coverage of FSW/SEC with HIV prevention services is relatively low when compared to the national target of reaching 90% of FSW/SEC with HIV prevention services.

While ART use among diagnosed FSW/SEC has surpassed the UNAIDS 90-90-90 global goals and viral suppression has nearly reached the target, diagnosis of HIV-infected FSW/SEC is still a challenge.

Actions for consideration

- Outreach services may be more frequently in order to reach more FSW/SEC and link them to testing.
- Enhance capacity of peer educators to provide HIV preventive interventions targeting FSW/SEC, particularly HIV testing. Information provided about HIV testing can include the recommended frequency of testing, the benefits of knowing your status and education about the efficacy of current treatment options.

11.14.4. Prevalence of HIV

HIV prevalence among FSW/SEC has decreased significantly. The increase in the uptake of HIV prevention services, including information on HIV prevention and HTS and HIV testing, among FSW/SEC as well as a focus on viral suppression in the general population, which includes their clients, may be a contributing factor.

HIV prevalence was found to increase with duration of selling sex, whereas in the 2011/12 survey prevalence was more consistent despite the reported number of years selling sex. HIV prevalence also decreased significantly among 20–24-year-olds in the 2018/19 survey. In addition, in the 2018/19 survey, there was a significant decrease in HIV prevalence among FSW/SEC who were native to Unguja compared to those who had immigrated from elsewhere.

Actions for consideration

- Sustain HIV prevention services so as to reduce new HIV infections while strengthening ART services for FSW/SEC who are HIV positive
- Another round of RDS may be conducted in 3-5 years to continue monitoring the epidemic

CONCLUSIONS

12.1 Pemba

This second rapid assessment in Pemba gave more insight into the burden of HIV and estimated population sizes of PWID, MSM and FSW/SEC in Pemba, and provided evidence that these populations continue to engage in behaviours that put them at increased risk for HIV infection including multiple concurrent sexual partnerships, exchanging sex for money, low levels of condom use, and risky drug injection practices. However, the 2018 findings suggest that some risk behaviours, such as needle sharing among PWID and condomless sex among FSW/SEC, may be decreasing. These trends can be monitored by continuous surveillance.

The number of organizations providing HIV services to KPs in Pemba has increased since the 2011 survey, an achievement which should be applauded. Despite these gains, participants cited services that are either not yet available or are not available to a wide enough extent, including MAT, needle and syringe programmes, and condoms. ZIHHTLP may consider continuing to expand its KP prevention programs including pre-exposure prophylaxis (PrEP) to ensure the widespread availability of condoms to all three populations as well as activities that focus on harm reduction, peer education on HIV risk behaviours and HIV transmission prevention, and sensitization of the authorities as well as health care providers. This will help to reach the last mile and end the epidemic in the isles.

HIV surveillance among KPs in Pemba are paramount in monitoring the epidemic; however, considering the population size estimates from this RA, a more robust method is recommended for the next round. For example, a method that combines venue and peer-based recruitment and focuses on getting into social networks, or a method that incorporates peer-based recruitment where venue-based recruitment is not feasible. In addition, a more in-depth survey could be utilized in the next round with more detailed questions on risk behaviours, experiences of stigma and violence, and uptake of HIV prevention, care and treatment services. Finally, the next round could also consider recency testing to further inform epidemic control in Pemba.

12.2 Unguja

ZIHHTLP has successfully established a functioning surveillance system among KPs in Zanzibar with the ability to monitor trends over time. This third IBBS among MSM, FSW/SEC and PWID in Unguja, Zanzibar, has provided a third set of KP surveillance data allowing for the analysis of trends of the burden of HIV and other co-infections, risky sexual behaviours, and coverage, access to and uptake of HIV services. This third round has also provided data that allow us to measure progress towards the UNAIDS 90-90-90 targets among all three populations. This information is paramount to achieve epidemic control. It is important to note that the methods employed in the three rounds of surveillance are sensitive to sub-populations and changes in the characteristics of samples across surveys, which can change over time especially with increased public scrutiny and changes in levels of acceptance towards KP groups.

The three rounds of IBBS have documented major gains in the provision and uptake of KP-targeted HIV prevention, care and treatment programmes in Zanzibar, with the second and third of the 90-90-90 targets having been achieved or nearly achieved across all three populations. However, identification of MSM, FSW/SEC and PWID who are living with HIV remains a challenge and service

coverage levels continue to fall short of Zanzibar's national targets to reach 90% of KPs with HIV prevention services. Decreases were seen in the HIV prevalence among PWID and FSW/SEC from the 2011/12 to the 2018/19 surveys. This may be, in part, the result of the dynamic nature of these populations as people move in and out of these groups over time. That can result in differences in survey sample characteristics, which is something that RDS is known to be sensitive to. In addition, the increases seen in the availability and uptake of services by these two populations may have contributed to some of the corresponding decreases observed in risky behaviours, resulting in lower prevalence. Finally, for PWID, the introduction of MAT services, which are offered at the same facility as care and treatment services, may have contributed to more HIV-infected PWID being able to stop injecting.

Continuation of KP-targeted HIV services, with a focus on improving coverage and diagnosis of KPs who are already HIV-infected is a key aspect of successful HIV programming in the isles. HIV programmes may focus on index testing among KP clients as well as the coverage of outreach services that include HIV testing as strategies to improve progress towards the first "90". A recency surveillance system can also be considered to detect new infections and inform where to focus prevention efforts.

Phylogenetic analysis:

As per protocol (page 22), an additional blood specimen from HIV infected participants was extracted to produce a dried blood spot (DBS) card which was sent to the National Health Laboratory Quality Assurance and Training Center (NHLQATC) in Dar es Salaam for:

- Viral load (VL) testing (this is additional to the VL test conducted locally in Zanzibar) as part of LAg Avidity algorithm and to determine which specimens have adequate levels of virus for phylogenetic testing;
- Recency testing to determine whether the participant was infected with HIV in the last six months; and,
- Phylogenetic analysis to assess connectivity between HIV strains.

However, due to COVID-19 pandemic the above biological tests and phylogenetic analysis was not conducted, and therefore, their analysis and findings are not included in this report. Currently, there is no plan to analyze the stored samples in the near future.

SURVEY BUDGET

The budget for this survey implementation was USD $350,000.

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APPENDICES

15.1. APPENDIX A: Organizations providing services to KPs in Pemba

Organization name	Description of organization and services provided
AYAHIZA	An organization targeting youth development and empowerment, including with KPs, that provides: • HIV and STI prevention information • HIV testing • HIV linkage • Screening for TB • Condom distribution • Referral and follow-up services
JUKAMKUM	An organization targeting drug users (including PWID) and focusing on prevention of early pregnancies. They also provide: • HIV and STI prevention information • HIV testing • HIV and TB linkage • Screening for TB • Condom distribution • Referral and follow-up services • Harm reduction services for PWID
PIRO	An organization that aims to improve the lives and welfare of Pemba people through: • Provision of health education and health projects • Child protection services • Food security and nutrition
SACCOS	A democratic, unique, member-driver self-help cooperative
Sober houses	Rehabilitation centers for people recovering from drug or alcohol addictions that provide: • Psychosocial support using “nine components of narcotic anonymous” (NA) • TB screening and referrals • HIV screening and referrals
UMATI	Is an organization targeting youth and women’s development and empowerment, including KPs, that provides: • Sexual and reproductive health information, education and services • HIV and STI prevention information • HIV testing (through escort) • HIV linkage • Screening for TB • Condom distribution • Referral and follow-up services

WAMATA	An organization targeting youth and vulnerable populations, including KPs, that offers: • Interventions targeting vulnerable young girls and boys • HIV and STI prevention information • HIV testing • HIV linkage • Condom distribution • Referral and follow-up services
Youth councils	An entity composed of young people that serves as an advisory and advocacy body to government and donor agencies. Youth councils: • Identify youth priorities • Craft policies that support youth priorities • Contribute to implementation of policies through public services • Provide youth counselling and testing interventions • Support advocacy on behalf of youth
ZAIADA	An organization targeting youth and drug users, including PWID, that offers: • HIV and STI prevention information • HIV testing services • HIV and TB linkage • Screening for TB • Condom distribution • Referral and follow-up services • Harm reduction services for PWID
ZANGOC	An umbrella organization dealing with HIV and AIDS prevention, targeting general population as well as KPs that offers: • HIV and STI information • HIV testing services • HIV and TB linkage • Condom distribution • Referral and follow-up services • Harm reduction services for PWID
ZAPHA+	An organization of PLHIV that provides: • Psychosocial support for PLHIV including adherence counselling, nutritional support, adolescent clubs, income generating activities, linkage to care, family support, anti-stigma campaigns, etc.) • VCT services • Primary prevention services including condom distribution, sensitization of HIV prevention
ZAYEA	An organization targeting youth development and empowerment, including for KPs, that provides: • HIV and STI prevention information • HIV testing (through escort) • HIV linkage • Screening for TB • Condom distribution • Referral and follow-up services

ZAYEDESA	An organization targeting youth development and empowerment, including with KPs, that provides: • HIV and STI prevention information • HIV testing • HIV linkage • HIV care and treatment services (ART, cancer screening, family planning) • STI services for KPs • Screening for TB • Psychosocial support • Condom distribution • Referral and follow-up services • Harm reduction services for PWID • Income generating activities for youth
ZYF	An organization targeting youth development and empowerment, including with KPs, that provides: • HIV and STI prevention information • HIV testing (through escort) • HIV linkage • Screening for TB • Condom distribution • Referral and follow-up services • Harm reduction services for PWID

15.2. APPENDIX B: Pemba RA KII Guide for NGO staff

Pemba KP Survey 2018
Key Informant Interview Guide for NGO Staff – <FSW/SEC, MSM & PWID>

Date (dd/mm/yyyy): _____

Interviewer Name: _____

Interviewee
Name: _____
Title: _____
Organization: _____
Contact (address/phone/email): _____

Attach Interviewee Business Card (if possible)

BACKGROUND INFORMATION

Please tell me about your organization.

A. *INSERT KP GROUP* CHARACTERISTICS

A1. Can you describe your experience and interactions with **<*INSERT KP GROUP*>** in your work?

A2. From your perspective, how would you categorize various types or subgroups of <***INSERT KP GROUP***> in Pemba? How are they different? Do they have local names?

A3. Are there any sub-groups in which the members themselves are not well connected? In other words, the members of that sub-group don't know many others in that sub-group.

A4. Thinking about the different sub-groups, how well are they connected to each other? Are there some <***INSERT KP GROUP***> subgroups not networked with other groups?

A5. Regarding <***INSERT KP GROUP***> which areas of the city do they frequent? What hours? [Get specific names of neighborhoods and/or venues] Which commercial venues do they frequent? What hours?

A6. Now I will ask you about <***INSERT KP GROUP***> who live in different areas of Pemba Island.

a. How many <*INSERT KP GROUP*> do you think live in CHAKE?
b. How many <*INSERT KP GROUP*> do you think live in WETE?
c. How many <*INSERT KP GROUP*> do you think live in MKOANI?
d. How many <*INSERT KP GROUP*> do you think live in MICHEWENI?

A7. Where are they from geographically? From Pemba, other parts of Tanzania, or abroad? About what percentage roughly of <***INSERT KP GROUP***> are from other parts of Pemba?

A8. What is the general age distribution of the <***INSERT KP GROUP***> your organization has contact with?

A9. Do they move a lot in and out of Pemba?

A10. Are there particular social meeting areas for <***INSERT KP GROUP***>? Could you tell me some of these locations?

B. SERVICE PROVISION

B1. How many organizations provide services for ***<INSERT KP GROUP*** > in Pemba? Can you give us their contact details and what kind of services they provide?

B2. What services is your organization providing to <***INSERT KP GROUP***>?

B3. When and where do you provide these services?

B4. What type of <***INSERT KP GROUP***> are serviced by this organization?
a. Prob: Adults, children, low au high class, Urban or rural residents etc.

B5. Are there any authorities that make your work difficult? How?
Prob: Like police, religious leaders etc.

B6. Which government groups are most supportive of services for ***<INSERT KP GROUP***>?

B7. Are your clients usually the same people or do they change a lot?

B8. How would you characterize <***INSERT KP GROUP***> who have refused participation or engagement in your agency's services? What are some of the main reasons for them not participating?

B9. Do you have any comment about the <**INSERT KP GROUP**> or this interview?

We have finished with the interview. Thank you very much for your time and cooperation. The information you have provided to us will help to make recommendations to improve services to <INSERT KP GROUP>.

15.3. APPENDIX C: Pemba RA FGD/IDI Guide for KPs

Pemba KP Survey 2018
FGD/In-Depth Interview Guide – INSERT KP Group

Attach barcode here

Date (dd/mm/yyyy): ___ ___ / ___ ___ / ___ ___ ___ ___

Primary Interviewer Name: _____

Secondary Interviewer Name (if applicable): _____

Note Taker Name (if applicable): _____

Venue: _____

Start Time: _____

End Time:_____

How was this participant referred to be interviewed?

_____

_____

_____

Introduction

Before I start the interview, please turn off your cell phone and other mobile devices. I will be asking you questions about yourself and your friends. When I say "friends", "colleagues", "peers" or "people like you", I mean people you know who are (INSERT KP GROUP). Like it says in the consent form, our discussion is completely confidential. Remember there are no right or wrong answers here and you can feel free to tell me your honest opinion. We just want to understand the needs of your community so we can best provide services.

A. Characteristics of Peers and the *INSERT KP GROUP* community

A1. How many ***<Insert KP Group>*** do you know? Do you communicate with them or see them regularly? Where do you see them or how do you communicate? How often do you see each other ***<Insert KP Group>***?

A2. Where are your peers mostly from? Are your peers only from within Pemba or out of Pemba? Do they move out of Pemba and return?

A3. How old are most of your peers? Do young ***<Insert KP Group>*** primarily hang out with young ***<Insert KP Group>***? Do you know ***<Insert KP Group>*** of varied ages?

A4. Which areas of Pemba do you and your friends usually frequently stay/go? What hours?
[Get proper names of the areas and venues]
Probe: Which bars, restaurants or similar places do you and your friends go to?

A5. Are there different sub-groups within the ***<Insert KP Group>*** community in Pemba? Do members of these different sub-groups know one another? Do they spend time together?

A6. Are there any support organizations that are well known among you and your peers? What are their names?
Probe: Health, legal, economic, social support and spiritual…etc.

A7. Now I will read some questions about HIV/AIDS to better understand your knowledge of HIV and AIDS.

Read each question and circle yes or no based on the participant's response.

1.	Can the risk of HIV transmission be reduced by having sex with only one uninfected partner who has no other partners?	Yes	No
2.	Can a person get HIV from mosquito bites?	Yes	No
3.	Can a person reduce their risk of getting HIV by using a condom every time they have sex?	Yes	No
4.	Can a person get HIV by sharing food with someone who has HIV?	Yes	No
5.	Can a healthy-looking person have HIV?	Yes	No

A8. Have you ever received HIV prevention education? How many ***<Insert KP Group>*** do you think have received HIV prevention education? Which institutions provide education?

A9. How many of your peers do you think have been tested for HIV and received their test results? For example, are they many or few of them?

A10. What services are required for ***<Insert KP Group>*** in Pemba? Do these services exist? Are these services used? Do you experience any form of stigma when receiving health care? Explain.

A11. Now I am going to ask you about the number of <Insert KP Group> who live in different parts of Pemba island.

a) How many <**insert group>** do you think lives here **CHAKE**? _____

b) How many <**insert group>** do you think live in **WETE**? _____

c) How many <**insert group>** do you think live in MKOANI? _____

d) How many <**insert group>** do you think live in **MICHEWENI**? _____

B. <u>Information about sex work</u>: Ask these questions only if you are interviewing an FSW/SEC or if the participant has volunteered information that s/he engages in sex work.

B1. Where do you (your peers) typically find clients? For example, over the phone, on the street, at hotels, bars and nightclubs?

B2. Do some female sex workers work in specific brothels, or hotel lodgings? Where are they?

B3. In which areas of town do FSW/SEC work?

B4. Do you or your peers share your earnings from sex work with someone, such as an intermediary or an agent, sometimes called a pimp?

<u>Probe:</u> What are the names by which you call these intermediaries (e.g., pimps, agents, etc.)? Do they force sex workers to do this work? If yes, which sex workers typically use *(appropriate word),* and which ones do not? Do they control your activities? Do they care where you go and whom you interact with?

B5. How easy can you get a condom?

B6. What proportional of FSW/SEC do you think usually use condoms when they have sex with their clients?

B7. What reasons for FSW/SEC not to use condoms with their clients?

B8. Do you have any comment or advice regarding FSW/SEC or the interview?

C. <u>Information about MSM</u>: Ask these questions only if you are interviewing MSM

C1. What proportion of MSM do you think sell sex?

C2. What proportion of MSM do you think buy sex?

C3. How easily can you get a condom?

C4. What proportion of MSM do you think usually use condoms when having sex?

C5. What are the reasons that MSM don't use condoms with their partners?

C6. What proportion of MSM do you think have more than one partner? How many partners on average?

C7. Do you have any comment or advice regarding MSM or the interview?

D. <u>Information about injection practices among PWID</u>: Ask these questions only if you are interviewing PWID.

D1. Where do you and your peers typically inject?

D2. What kinds of drugs are used in Pemba?

D3. Do you think needle sharing is common? What are the main reasons people share needles when injecting?

D4. The last time you injected, did you use a needle/syringe that had been previously used by someone else? How many PWID do you think used the same needle/syringe that has been used by someone else last time they injected drugs?

D5. Do you have any comment or advice regarding PWID or the interview?

E. <u>Sex behavior terminology (ASK ALL PARTICIPANTS)</u>

Terms	Local terms/Slang
E1. Gay identified man	
E2. Non-gay identified man	
E3. Top partner	
E4. Bottom partner	
E5. Versatile partner	
E6. Two men in a relationship/dating	
E7. Male sex worker	
E8. Club or venue for gay men	
E9. Older gay man	
E10. Younger gay man	
E11. Oral sex	
E12. Anal sex	
E13. Sex without a condom	
E14. Female sex worker	
E15. Venue where FSW/SEC meet clients	
E16. Sex worker agent/pimp	
E17. Flashblood	
E18. Shooting gallery	
E19. Lubrication	
E20. More local terminology?	

15.4. APPENDIX D: Pemba RA: People who inject drugs

Sociodemographic Survey (People who inject drugs)
In-Depth Interview and Focus Group Discussion Participants

ADMINISTER CONSENT. IF NO CONSENT GIVEN, STOP HERE AND DO NOT ASK ANY FURTHER QUESTIONS.

I would like to ask a few questions about you. We are not keeping a record of your name. All your answers are private.

SCAN PARTICIPANT BARCODE INTERVIEW CODE NUMBER _____

1. Date of Focus Group or Interview: __ __ /__ __ /__ __

2. Location of Interview:
   a. Wete
   b. Chake Chake
   c. Mkoani
   d. Others (Specify) _____

3. Type of participant
   a. Focus Group Discussion Participant
   b. Key Informant Interview Participant

4. How old are you? _____ ***(IF <15 years old, end interview)***

5. Sex of participant
   a. Male
   b. Female

6. Where do you live?
   a. Wete
   b. Chake Chake
   c. Mkoani
   d. Other (specify): _____

7. How long have you lived there?
   a. Whole life
   b. Less than one year
   c. 1-5 years
   d. More than 5 years

NOTE: IF RESPONDENT HAS LIVED THERE LESS THAN 1 YEAR, WRITE NUMBER OF MONTHS (0-11) IN 6b. IF GREATER THAN 11 MONTHS, ROUND TO NUMBER OF YEARS AND ENTER IN 6a.

8. What is your main occupation?
   a. Sex worker
   b. Farmer
   c. Fisherman
   d. Military

e. Police
f. Student
g. Housekeeper or maid
h. Trader
i. Driver/conductor of dala dala
j. Taxi driver
k. Bar/guest house worker or owner
l. Teacher
m. Employed by government
n. Employed in private sector
o. Currently unemployed

9. What is the highest level of education that you have completed until now?
   a. Never went to school
   b. Did not complete primary
   c. Completed primary
   d. Did not complete secondary
   e. Completed secondary
   f. Post-secondary (College/University)
   g. Madrasa only
   h. No response

10. Are you currently in a steady sexual relationship?
   a. Yes
   b. No ***(GO TO Q12)***

11. What is the status of your relationship?
   a. Married
   b. Living with partner
   c. Not living with partner
   d. Separated/divorced

12. How old were you the first time you had sex? _____ years

13. Have you had sex in the past 3 months with men, women or both?

14. How many male sexual partners (male and female) have you had in the past 3 months?

15. How many female sexual partners (male and female) have you had in the past 3 months?

16. Last time you had sex with a partner who is not a steady partner, did you use a condom?
   a. Yes
   b. No

17. Have you exchanged vaginal or anal sex for money or drugs in the past 30 days?
Probe: If no, is it never or not in past 30 days?
   a. Yes
   b. No, I have exchanged sex for money or drugs, but not in the past 30 days (skip to Q22)
   c. No, I have never exchanged sex for money or drugs (skip to Q22)
18. At what age did you begin exchanging sex for money?

19. When you exchanged vaginal or anal sex for money or drugs in the past 30 days, was it with men, women or both?
    a. Men only
    b. Women only
    c. Both men and women

20. On average, how many times a month do you exchange sex for money or drugs?

21. How much money, or the equivalent value if you received drugs, did you receive the last time? _____TSH

22. How old were you when you first injected drugs? _____ years of age

23. On average, how many times a day do you inject drugs? _____

24. What drug(s) do you inject? Check all that apply.
    ☐ Brown heroin
    ☐ White heroin
    ☐ Opium
    ☐ Amphetamines
    ☐ Prescription drugs
    ☐ Cocaine
    ☐ Other_____

25. In the past 3 months, have you used a syringe/needle that was already used by someone else?
    a. Yes
    b. No

26. Have you ever been tested for HIV?
    a. Yes
    b. No ***(End of interview)***

27. When did you last get an HIV test for which you received the results?
    a. Within the last 12 months
    b. 1-2 years ago
    c. More than 2 years ago

28. If you are comfortable saying, what is your HIV status?
    a. Negative ***(END OF INTERVIEW)***
    b. Positive
    c. Not comfortable saying ***(END OF INTERVIEW)***

29. Are you currently on ART?
    a. Yes
    b. No

(END OF INTERVIEW)

15.5. APPENDIX E: Pemba RA: Men who have sex with men

Sociodemographic Survey (Men who have sex with men)

In-Depth Interview and Focus Group Discussion Participants

ADMINISTER CONSENT. IF NO CONSENT GIVEN, STOP HERE AND DO NOT ASK ANY FURTHER QUESTIONS.

I would like to ask a few questions about you. We are not keeping a record of your name. All your answers are private.

SCAN PARTICIPANT BARCODE

INTERVIEW CODE NUMBER _____

1. Date of Focus Group or Interview: __ __ /__ __ /__ __

2. Location of Interview:
   a. Wete
   b. Chake Chake
   c. Mkoani
   d. Others (Specify) _____

3. Type of participant
   a. Focus Group Discussion Participant
   b. In-Depth Interview Participant

4. How old are you? _____ ***(IF <15 years old, end interview)***

5. Where do you live?
   a. Wete
   b. Chake Chake
   c. Mkoani
   d. Other (specify): _____

6. How long have you lived there?
   a. Whole life
   b. Less than one year
   c. 1-5 years
   d. More than 5 years

NOTE: IF RESPONDENT HAS LIVED THERE LESS THAN 1 YEAR, WRITE NUMBER OF MONTHS (0-11) IN 6b. IF GREATER THAN 11 MONTHS, ROUND TO NUMBER OF YEARS AND ENTER IN 6a.

7. What is your main occupation?

a. Sex worker
b. Driver/conductor of dala dala
c. Farmer
d. Taxi driver
e. Fisherman
f. Boda boda driver
g. Military
h. Bar/guest house worker or owner
i. Police
j. Saloon
k. Student
l. Teacher
m. Housekeeper or maid
n. Employed by government
o. Trader
p. Employed in private sector
q. Currently unemployed

8. What is your level of education that you have completed until now?
   a. Never went to school
   b. Did not complete primary
   c. Complete primary
   d. Did not complete secondary
   e. Complete secondary
   f. Post-secondary (College/University)
   g. Madrasa only
   h. No response

9. Are you currently in a steady sexual relationship with a woman?
   a. Yes
   b. No ***(GO TO Q11)***

10. Are you married to this partner?
   a. Yes
   b. No

11. Are you currently in a steady sexual relationship with a man?
   a. Yes
   b. No

12. Currently, with whom are you living?
   a. Alone
   b. Wife/girlfriend
   c. Boyfriend
   d. With family
   e. With friends
   f. No fixed address
   g. Other

14. How old were you the first time you had sex with a man? _____ years

15. Did you use a condom at last anal sex with a man?

a. Yes
b. No

16. Have you ever had sex with a woman?
    a. Yes
    b. No

17. How old were you the first time you had sex with a woman? _____ years

18. Have you exchanged anal sex with other men for money in the past 30 days?
    a. Yes
    b. No ***(GO TO Q21)***

19. At what age did you begin exchanging sex for money? _____ years
20. On average, how many times a month do you exchange sex for money? _____
21. How much money did you receive the last time? _____ TSh
22. Have you ever been tested for HIV?
    a. Yes
    b. No (***END OF INTERVIEW)***

23. When did you last get an HIV test for which you received the results?
    a. Within the last 12 months
    b. 1-2 years ago
    c. More than 2 years ago
    d. Never received the result

24. If you are comfortable saying, what is your HIV status?
    a. Negative ***(END OF INTERVIEW)***
    b. Positive
    c. Not comfortable saying ***(END OF INTERVIEW)***

25. Are you currently on ART?
    a. Yes
    b. No

(END OF INTERVIEW)

15.6. APPENDIX F: Pemba RA– Female sex workers

Sociodemographic Survey (Female Sex workers/Sexual Exploited Children) In-Depth Interview and Focus Group Discussion Participants

ADMINISTER CONSENT. IF NO CONSENT GIVEN, STOP HERE AND DO NOT ASK ANY FURTHER QUESTIONS.

I would like to ask a few questions about you. We are not keeping a record of your name. All your answers are private.

SCAN PARTICIPANT BARCODE

INTERVIEW CODE NUMBER _____

1. Date of Focus Group or Interview: __ __ /__ __ /__ __

2. Location of Interview:
   a. Wete
   b. Chake Chake
   c. Mkoani
   d. Others (Specify) _____

3. Type of participant
   a. Focus Group Discussion Participant
   b. Key Informant Interview Participant

4. How old are you? ___ ***(IF <15 years old, end interview)***

5. Where do you live?
   a. Wete
   b. Chake Chake
   c. Mkoani
   d. Other (specify): _____

6. How long have you lived there?
   a. Less than one year
   b. 1-5 years
   c. More than 5 years

NOTE: IF RESPONDENT HAS LIVED THERE LESS THAN 1 YEAR, WRITE NUMBER OF MONTHS (0-11) IN 6b. IF GREATER THAN 11 MONTHS, ROUND TO NUMBER OF YEARS AND ENTER IN 6a.

7. Is your sex work a steady or irregular source of income?
   a. Irregular
   b. Steady

8. Do you have any other source of income other than sex work?

a. Yes
b. No (***GO TO Q10)***

9. What is the main occupation or activity through which you earn this other income?
   a. Sex worker
   b. Farmer
   c. Fisherman
   d. Military
   e. Police
   f. Student
   g. Housekeeper or maid
   h. Trader
   i. Driver/conductor of dala dala
   j. Taxi driver
   k. Bar/guest house worker or owner
   l. Saloon
   m. Teacher
   n. Employed in government
   o. Employed in private sector
   p. Currently unemployed

10. What is the highest level of education that you have completed until now?
   a. Never went to school
   b. Did not complete primary
   c. Completed primary
   d. Did not complete secondary
   e. Completed secondary
   f. Post-secondary (College/University)
   g. Madrasa only
   h. No response

11. What is your marital status?
   a. Married
   b. Living with a partner
   c. Separated, divorced, or widowed
   d. Never married
   e. No response

12. Are you currently in a steady sexual relationship with a man?
   a. Yes
   b. No ***(GO TO Q14)***

13. Do you live in the same home with this partner?
   a. Yes
   b. No

14. How old were you the first time you had sex? _____ years

15. At what age did you begin exchanging sex for money? _____ years

16. When you started selling sex, what was the most important reason? *(circle one)*
   a. Needed money to help family
   b. Needed money to pay a debt
   c. Was forced
   d. Liked to do it/pleasure
   e. Friends/family were doing it

f. Good/added income
g. Abandoned by husband/family

17. On average, how many clients do you see in a day? _____

18. On average, how many days do you work in a week? _____

19. On average, how much money do you receive in a day? _____ TSh

20. Did you use a condom with your last client?

21. Have you ever been tested for HIV?
    a. Yes
    b. No ***(END OF INTERVIEW)***

22. When did you last get an HIV test for which you received the results? Within 12 months
    a. 1-2 years ago
    b. More than 2 years ago
    c. Never received the result

23. If you are comfortable saying, what is your HIV status?
    a. Negative ***(END OF INTERVIEW)***
    b. Positive
    c. Not comfortable saying ***(END OF INTERVIEW)***

24. Are you currently on ART?
    c. Yes
    d. No

(END OF INTERVIEW)

15.7. APPENDIX G: RDS questionnaire – PWID

Coupon Number: _____
Date: _____
Time Started: _____

Section 1: Background characteristics

First, I would like to ask you a few questions on your background, including information on your age, education, jobs and income.

No.	Questions	Coding categories	Skip to
q101	*Select participant's sex.*	Male 1 Female 2	
q102	How old are you? *In completed years*	Years _____	
q103	How many years of education have you completed up to now?	Never went to school 0 Did not complete primary 1 Completed primary 2 Did not complete secondary 3 Completed secondary 4 Higher than secondary education 5 No response 98	
q104	What is your current marital status? *Do not read out the possible answers. Mark only one response.*	Currently married 0 living with partner 1 Separated, divorced or widow 2 Never married 3 No response 98	
q105	How long have you lived here (Unguja)? *If number of years is unknown, ask for an estimate. Round up for half years (e.g., for 1 ½ years – round up to 2).*	Whole life 1 Less than one year 2 1-5 years 3 More than 5 years 4	 → **q107** → **q107** → **q107**
Q106.	What is your current district of residence?	West A 1 West B 2 South 3 Urban 4 Central 5 North A 6 North B 7 No fixed address 8 No response 9	
q107	Where did you live before moving here?	Pemba 1 Mainland Tanzania 2 Outside of Tanzania 3 No response 98	 → **q109** → **q109** → **q109**
q108	In which district in Pemba?	Micheweni 1 Wete 2 Chake Chake 3 Mkoani 4 No response 98	

q109	***Currently***, with whom are you living? *Read out the possible answers. Circle one only.*	Alone 1 With wife/husband 2 With girlfriend 3 With boyfriend 4 With family 5 With friends 6 No fixed address (unsettled) 7 No response 8	
q110	What was your total income earned in the past month? *If exact amount is not known, ask for an estimate.*	TSh_____	
q111	How do you earn money? *Do not read the possible answers out loud. Probe and mark all that are mentioned.*	Private business 1 Employed by government/parastatal 2 Employed in private sector 3 Tourism 4 Dala dala tout 5 Porter 6 Fisherman 7 Selling drugs 8 Petty trading 9 Illegal activities 10 Self-employed 11 Selling sex 13 Musician 14 Student 15 Currently unemployed 16 No response 17	
q112	(For males only) Did you recently participate in a study like this one where you received a pink coupon (Men who have sex with Men study)?	Yes 1 No 2 Don't remember 97 No response 98	
q113	Did you recently participate in a study like this one where you received a purple coupon (Female sex worker study)?	Yes 1 No 2 Don't remember 97 No response 98	
q114	Did you participate in a study like this where you received a coupon 7 years ago, in 2012?	Yes 1 No 2 Don't remember 97 No response 98	
q115	Did you participate in a study like this where you received a coupon 12 years ago, in 2007?	Yes 1 No 2 Don't remember 97 No response 98	

Section 2: PWID Network

Now I would like to ask you some questions about other PWID that you may know, including the person who recruited you into this study.

No.	Questions	Coding categories	Skip to
q201	How many PWID do you know personally (i.e., who are living in Unguja/Pemba, are aged 15 years and above, you know their name, you know who they are and they know you)? *If the exact number is unknown, as for an estimate.*	|__|__|__|	
Q202.	How many of these in question number 201 PWID are 15 years and above?	|__|__|__|	
q203	How many of these (repeat the number in Question 202) PWID have you seen during the <u>past one month</u>? *If the exact number is unknown, as for an estimate.*	|__|__|__|	
q204	What is the primary reason you decided to accept a coupon and enroll in the study? *Do not read responses. Circle one response only.*	For incentive 1 For STI/HIV test results 2 For Hepatitis B vaccine 3 Peer influence 4 Study seems interesting/useful 5 Had time to spend/I wasn't busy 6 Don't know 97 No response 98	
q205	Which of the following best describes your relationship to the person who referred you to this study, that is, the person who gave you this coupon? *Read the responses to the participant. Mark only one response.*	A stranger, someone you met for the first time 1 Someone you know, but not closely 2 A close friend, someone you know very well 3 A sexual partner 4 A family member or relation 5 A drug dealer 6 Someone you inject with 7 No response 98	
q206	About how long have you known your recruiter? *Do not read responses. Mark only one response.*	Met for the first time 1 Less than 6 months 2 6 months to 1 year 3 1 – 2 years 4 More than 2 years 5 No response 98	
q207	How often do you see your recruiter? *Do not read responses. Mark only one response.*	Every day 1 More than once per week, but not every day 2 Once per week 3 Once per month 4 Less than once per month 5 No response 98	

q208	Did you ever receive this object? *Show object to participant*	Yes 1 No 2 No response 98	 → **q301** → **q301**
q209	When did you receive this special object? *Do not read responses. Mark only one response.*	23-27 February 2019 1 Other time 2 No response 3	 → **q301** → **q301**

Section 3: General Drug Use Questions

Now I would like to ask you some questions drug use, with and without a needle. These are very personal matters, but they are very important for providing health services. Please remember that the answers to your questions are confidential and completely private.

No.	Questions	Coding categories	Skip to
q301	In the past one month, how often did you have a drink containing alcohol? *Do not read responses. Mark one response only.*	Never 1 Once a month or less 2 2-4 times a month 3 2-3 times a week 4 4 or more times a week 5 Don't remember 97 No response 98	→ **q303**
q302	How many drinks containing alcohol do you have on a typical day when you are drinking? *Do not read responses. Mark one response only.*	1 or 2 1 3 or 4 2 5 or 6 3 7, 8 or 9 4 10 or more 5 Don't remember 97 No response 98	
Q303.	Have you taken any non-injected drugs other than alcohol in the last three months?	Yes 1 No 2 Don't remember 97 No response 98	 → **q308** → **q308** → **q308**
Q304.	Which types of non-injected drugs have you used in the past three months?	Smoked hashish/marijuana 1 Smoked crack cocaine 2 Inhaled cocaine 3 Smoked heroin 4 Inhaled heroin 5 Khat 6 Mixed cocktail 7 Chase the dragon 8 Sniffed petrol, glue 9 Valium 10 Pain killers (prescription drugs) 11 Don't remember 97 No response 98	

q305	How old were you the first time you injected drugs? *If exact age is not known, ask for an estimate. Record the age in completed years.*	_____ Years	
q306	Who is the person who introduced you to injecting drugs?	Husband/Wife 1 Boyfriend/Girlfriend 2 Friend 3 Neighbor 4 Family member 5 Drug seller 6 Other drug user 7 Other specify 88 Don't remember 97 No response 98	
q307	Does anyone in your family know that you inject drugs?	Yes 1 No 2 Don't know 97 No response 98	
q308	Which types of drugs have you injected in the past <u>three months</u>? *Do not read responses. Probe and select all that apply.*	Brown heroin 1 White heroin 2 Opium 3 Amphetamines 4 Prescription drugs 5 Others (detail)_____ 88 Don't know / remember 98	
q309	<u>During the past one month,</u> on average, how often did you inject drugs? *Do not read responses. Mark one response only.*	Once a month or less 1 Several times a month 2 Once a week 3 Several times a week 4 Once a day 5 Several times a day 6 Don't remember 97	
q310	During the past <u>one month</u>, where did you most often get your needle/syringe? *Do not read responses. Mark one response only.*	Pharmacy 1 Health facility 2 Drug dealer 3 Fellow drug user 4 Outreach health workers 5 Peer educators 6 Drop-in center 7 Private home known to have clean needles available 8 NGO office (e.g., ZAYADESA, ZANGOC, ZYF) 9 Other 88 No response 98	
q311	Can you get a clean needle and syringe any time you need one? *Read options, mark one response only.*	Yes 1 No 2 Do not try 3 No response 98	→ **q313** → **q312** → **q314**

q312	What things make it difficult for you to access clean needles/syringes? *Read responses and mark all mentioned.*	Needles/syringes too expensive 1 Vendor/needle seller closed or not around 2 Preferred size not available 3 Vendor ran out/stock out 4 Vendor too far away 5 Do not know where to get 6 No need 7 Retailers refuse to sell to me 8 Other _____ 88 No response 98	
q313	Last time you were able to get a clean needle, where did you get it?	Pharmacy 1 Health facility 2 Drug dealer 3 Fellow drug user 4 Outreach health workers 5 Peer educators 6 Drop-in center 7 Private home known to have clean needles available 8 NGO office (e.g., ZAYEDESA, ZANGOC, ZYF) 9 Other 88 Did not try to get a clean needle 95 No response 98 Missing 99	
Q314	During the past one month, how often did you ask or pay a "dokta" to inject you?	Always 1 Most of the time 2 Occasionally 3 Never 4 No response 98	
q315	During the past one month, did you inject blood from someone who had taken drugs? (Flashblood)	Yes 1 No 2 Don't remember 97 No response 98	

Now I would like to ask you some questions about sharing needles. Sharing means using the same needle and/or syringe as someone else to inject drugs.

No.	Questions	Coding categories	Skip to
q316	Have you ever shared a needle with someone else when you injected?	Yes 1 No 2 Don't know/remember 97 No response 98	 → **q322** → **q322** → **q322**
q317	In the past one month, when you injected, did you use a needle previously used by someone else?	Yes 1 No 2 Don't know/Don't remember 97 No response 98	 → **q321** → **q321** → **q321**

q318	During the past one month, when you injected, how often did you use needles/syringes that had previously been used by someone else?	Always 1 Most of the time 2 Occasionally 3 No response 98	
q319	During the past one month, how often did you clean the syringe and needle that had previously been used by someone else before you used it again?	Always 1 Most of the time 2 Occasionally 3 Never 4 No response 98	 → **q321** → **q321**
q320	[If cleaned] How did you usually clean the syringe and needle? *Read list and mark all that apply.*	Cold water 1 Hot water 2 Bleach 3 Alcohol 4 Others (detail) _____ 88 No response 98	
q321	During the past one month, have you shared needle/syringes with: *Read list and select all mentioned.*	Wife/girlfriend 1 Husband/boyfriend 2 Sex worker 3 Someone who paid you for sex 4 Other sexual partner 5 Other PWID 6 Others (detail)_____ 88 No response 98	
q322	During the past one month, when you injected, how often have you prepared drugs with someone else? *Prepared means made the drugs ready for injection using the same equipment and drew the drugs from the same container.*	Always 1 Most of the time 2 Occasionally 3 Never 4 No response 98	

Section 4: Behaviors at Last Injection

Now I would like to ask you some questions about the last time you injected drugs.

No.	Questions	Coding categories	Skip to
q401	The last time you injected, what drug did you use? *Do not read responses. Mark one response only.*	Brown heroin 1 White heroin 2 Opium 3 Amphetamines 4 Prescription drugs 5 Cocaine 6 Others 88 Don't know/can't remember 97	
q402	The last time you injected, how much did you spend on the drugs? *If exact amount is unknown, ask for an estimate. If they give a range, provide the average.*	_____ TSh [Kete] Got the drugs for free 00 Don't remember 97	
q403	Last time you injected drugs, did you use a needle or syringe after someone else had used it?	Yes 1 No 2 Don't know/can't remember 97	

Q404.	Last time you injected drugs, did you pass your syringe or needle on to someone else after you used it?	Yes 1 No 2 Don't know/can't remember	
q405	The last time you injected, how many other injectors shared the same needle/syringe?	Number _____ Don't know/can't remember 97	
	Now I would like to ask you a few questions about the last time you shared a needle/syringe. This is not necessarily the last time you injected.		
q406	The last time you shared needles/syringes with other users, what was the reason? *Do not read responses. Select response that is closest to the client's wording. Mark one response only.*	Needles/syringes too expensive 1 Prefer to share with friend 2 Other injector wanted me to 3 Did not have enough money to inject alone 4 Cannot inject myself 5 Syringes/needles not available 6 Other 88 No response 98	→ **q408**
q407	The last time you shared needles/syringes with other users, was the needle/syringe cleaned between users?	Yes 1 No 2 Don't know/can't remember 97 No response 98	 → **q408** → **q408** → **q408**
q408	The last time you shared needles/syringes with other users, what did you use to clean the needle/syringe? *Do not read responses. Mark all that are mentioned.*	Cold water 1 Hot water 2 Bleach 3 Alcohol 4 Other (specify) _____ 88 Don't remember 97	

Section 5: Sexual Behavior

Now I would like to ask you some questions about your sexual history, your sex partners, and your use of condoms. These are very personal matters, but they are very important for providing health services. Please remember that your answers will remain completely confidential. Let's first talk about your non-paying sexual partners.

No.	Questions	Coding categories	Skip to
q501	Have you ever had sex with a man or woman where no payment was involved?	Yes 1 No 2 No response 98	 → **q507** → **q507**
q502	In the past one month, have you had sex with a man or woman where no payment was involved?	Yes 1 No 2 No response 98	 → **q506** → **q506**
q503	In the past one month, how many partners have you had sex with where no payment was involved? *If exact number of partners is unknown, ask for an estimate.*	Number_____	

No.	Questions	Coding categories	Skip to
q504	Of all times you had sex with a non-paying male or female partner in the last month, how frequently did you use a condom?	Always 1 Most of the time 2 Occasionally 3 Never 4 Don't remember 97 No response 98	
q505	The last time you had sex with a non-paying male or female partner, did you use a condom? *This could be before the past one month.*	Yes 1 No 2 Don't remember 97 No response 98	
Q506.	If NO. why no condom	Didn't think about it 1 I was with my wife/husband 2 Didn't like the feel of it 3 Didn't have any condoms 4 Too drunk/high to use 5 Things happened too fast 6 Partner objected 7 Trust my partner 8 Too expensive 9 Condoms don't work 10 Don't remember 11 No response 12	

Now I would like to ask you some questions about people you pay for sex. These could be male or female partners you give money or gifts to in exchange for sex.

No.	Questions	Coding categories	Skip to
q507	Have you ever paid any woman or man to have vaginal or anal sex with you?	Yes 1 No 2 No response 98	 → **q514** → **q514**
q508	In the past one month, have you paid any woman or man to have vaginal or anal sex with you?	Yes 1 No 2 No response 98	 → **q514** → **q514**
q509	*FOR MEN ONLY* In the past one month, how many different women have you paid to have sex with you? *If the exact number is unknown, ask for an estimate.*	Number_____	
q510	In the past one month, how many different men have you paid to have sex with you? *If the exact number is unknown, ask for an estimate.*	Number_____	
q511	Of all times you paid someone to have sexual intercourse with you in the last month, how frequently did you use a condom?	Always 1 Most of the time 2 Occasionally 3 Never 4 Don't remember 97 No response 98	

q512	The last time you paid someone for sex, did you use a condom?	Yes 1 No 2 Don't remember 97 No response 98	
Q513.	If NO. why no condom	Didn't think about it 1 I was with my wife/husband 2 Didn't like the feel of it 3 Didn't have any condoms 4 Too drunk/high to use 5 Things happened too fast 6 Partner objected 7 Trust my partner 8 Too expensive 9 Condoms don't work 10 Don't remember 11 No response 12	

Now I will ask you some questions about people who pay you to have sex with them. These could be friends or people you just met who give you money, drugs or gifts to have sex with them.

No.	Questions	Coding categories	Skip to
q514	Has any woman or man ever paid you to have vaginal or anal sex with them?	Yes 1 No 2 No response 98	 → **q601** → **q601**
q515	In the past one month, has any woman or man paid you to have vaginal or anal sex with them?	Yes 1 No 2 No response 98	 → **q518** → **q518**
q516	*FOR MEN ONLY* In the past one month, how many different women have paid to have vaginal or anal sex with you?	Number_____	
q517	In the past one month, how many different men have paid to have sex with you?	Number_____	
q518	Of all times someone paid you for vaginal or anal sex in the past one month, how frequently did you use a condom?	Always 1 Most of the time 2 Occasionally 3 Never 4 Don't remember 97 No response 98	
q519	The last time a man or woman paid you for vaginal or anal sex, did you use a condom? *This could be before the past one month.*	Yes 1 No 2 Don't remember 97 No response 98	
Q520.	If NO. why no condom	Didn't think about it 1 I was with my wife/husband 2 Didn't like the feel of it 3 Didn't have any condoms 4 Too drunk/high to use 5 Things happened too fast 6 Partner objected 7	

		Trust my partner 8 Too expensive 9 Condoms don't work 10 Don't remember 11 No response 12	

Section 6: Condom Use

Now I will ask you some questions on condom use. These are very personal matters but they are very important for providing health services.

No.	Questions	Coding categories	Skip to
q601	Have you ever used a male condom? *If respondent is a woman, emphasize that it is her partner wearing the condom.*	Yes 1 No 2 Don't remember 97 No response 98	 → **q606** → **q606** → **q606**
Q602.	Which places or persons have you obtained male condoms from in the last one month?	Shop 1 Pharmacy 2 Health facility 3 Bar/guesthouse/ hotel 4 Friends 5 Taxi drivers 6 Saloon 7 NGO 8 Public/ Government office 9 Peer educator 10 Don't remember 11 No response 12	
Q603.	Last time you got condoms did you pay for them?	Yes 1 No 2 No response 98	
Q604.	How much did you pay for one pack of three condoms?	TSH _____	
q605	Can you always get a male condom if you need one?	Yes 1 No 2 No response 98	→ **q605** → **q606**
q606	Why can't you get a male condom every time you need one? *Do not read responses out loud. Multiple responses possible – select all mentioned.*	Costs too much 1 Shop too far away 2 Shops closed 3 Pharmacy too far away 4 Pharmacy closed 5 Embarrassed to buy condom 6 Don't know where to obtain 7 Don't need condom 8 Things happen too fast 9 Other 88 No response 98	
q607	Have you ever used a female condom?	Yes 1 No 2 No response 98	 → **q701** → **q701**

q608	Have you used a female condom in the past 3 months?	Yes 1 No 2 No response 98	
q609	Where did you obtain your last female condom? *Do not read answer choices. Select one only.*	Shop 1 Pharmacy 2 Health facility 3 Bar/Guest House/Hotel 4 Friends 5 Taxi drivers 6 Saloon 7 NGO 8 Government office 9 Peer educator 10 Other 88 Don't remember 97 No response 98	

Section 7: Violence

Now I will ask you some questions on violence and history of incarceration. These questions are personal and may make you uncomfortable. If they do, you may choose to not answer the question.

No.	Questions	Coding Categories	Skip to
q701	In the past 12 months, were you ever beaten?	Yes 1 No 2 No response 98	 → **q703** → **q703**
q702	Who was the person (or people) who physically beat you? *Multiple answers possible. Do not read out loud. Select all that apply.*	Police 1 Drug dealer 2 Husband/Boyfriend 3 Wife/Girlfriend 4 Friends 5 Family 6 Unknown person/ person on the street 7 One-time sex partner 8 Another PWID 9 Other 88 Don't remember 97 No response 98	
q703	During the past 12 months, have you been arrested?	Yes 1 No 2 No response 98	 → **q705** → **q705**
q704	What were you arrested for? *Multiple answers possible. Do not read out loud. Select all that apply.*	Drug use 1 Aggravated assault 2 Theft 3 Selling sex 4 Loitering 5 Selling drugs 6 Other 88 Don't know/remember 97 No response 98	

q705	In the past 12 months, were you ever forced to have sex?	Yes 1 No 2 Don't remember 97 No response 98	→ **q801**
q706	Who was the person (or people) who forced you to have sex? *Multiple answers possible. Do not read out loud. Select all that apply.*	Police 1 Drug dealer 2 Husband/Boyfriend 3 Wife/Girlfriend 4 Friends 5 Family 6 Unknown person/ person on the street 7 One-time sex partner 8 Another PWID 9 Other 88 Don't remember 97 No response 98	

Section 8: STIs (Sexually Transmitted Infections)

Now I would like to ask you some questions about sexually transmitted infections.

No.	Questions	Coding of answers	Skip to
q801	<u>During the past six months,</u> have you had unusual genital discharge? *Specify urethral discharge for men*	Yes 1 No 2 Don't know/remember 97 No response 98	
q802	<u>During the past six months,</u> have you had genital/anal sores or ulcers?	Yes 1 No 2 Don't know/remember 97 No response 98	
q803	<u>The last time</u> you had a genital/anal sore, ulcer or unusual discharge which of the following did you do? *Read out the list and circle all appropriate answers.*	Never had genital/anal sore, ulcer or unusual discharge 1 Did not do anything 2 Went to govt health facility 3 Went to private health facility 4 Went to pharmacy 5 Went to traditional healer/used alternative treatment 6 Treated myself at home 7 Told my sexual partner about the symptoms 8 Stopped having sexual intercourse when having the symptoms 9 Used condoms while having sexual intercourse 10 Don't remember 97 No response 98	

Section 9: HIV knowledge and stigma

In this next section I will ask you questions about your knowledge of HIV and about HIV-related stigma. I will start by reading some statements about HIV/AIDS. Some of them are true and some are not true. These are general statements and do not refer to your own experience or behavior.

q901	Can the risk of HIV transmission be reduced by having sex with only one uninfected partner who has no other partners?	Yes 1 No 2 Don't know 97 No response 98	
q902	Can a person get HIV from mosquito bites?	Yes 1 No 2 Don't know 97 No response 98	
q903	Can a person reduce their risk of getting HIV by using a condom every time they have sex?	Yes 1 No 2 Don't know 97 No response 98	
q904	Can a healthy-looking person have HIV?	Yes 1 No 2 Don't know 97 No response 98	
q905	Can a person get HIV by sharing food with someone who has HIV?	Yes 1 No 2 Don't know 97 No response 98	
q906	Sharing needles when injecting drugs will increase the risk of HIV infection.	Yes 1 No 2 Don't know 97 No response 98	
q907	Cleaning needles and syringes between injections reduces the risk of HIV.	Yes 1 No 2 Don't know 97 No response 98	
	Now I will ask some questions about stigma related to HIV/AIDS. Please tell me whether you agree or disagree with each of the statements.		
q908	People with HIV/AIDS should be ashamed of themselves.	Agree 1 Disagree 2 Don't know 97 No response 98	
q909	I would feel ashamed if someone in my family had HIV/AIDS.	Agree 1 Disagree 2 Don't know 97 No response 98	
q910	I would feel ashamed if I were infected with HIV/AIDS.	Agree 1 Disagree 2 Don't know 97 No response 98	
q911	People with HIV/AIDS are promiscuous.	Agree 1 Disagree 2 Don't know 97 No response 98	

q912	It is PWID who spread HIV in the community.	Agree 1 Disagree 2 Don't know 97 No response 98	
q913	HIV/AIDS is brought as a punishment for bad behavior.	Agree 1 Disagree 2 Don't know 97 No response 98	
	Now I would like to ask you some questions about stigma that may affect you because you inject drugs. Please answer yes or no to the following statements that refer to your experiences as a PWID in your adult life (>15 years old).		
q914	I have experienced name calling, teasing and insults.	Yes 1 No 2 Don't know 97 No response 98	
q915	I have been excluded from a social gathering.	Yes 1 No 2 Don't know 97 No response 98	
q916	Other people have lost respect for me.	Yes 1 No 2 Don't know 97 No response 98	
q917	I have been abandoned by my loved ones.	Yes 1 No 2 Don't know 97 No response 98	

Section 10: HIV risk and testing history

This next set of questions asks about how you see your risk for HIV, your HIV testing history, and your use of HIV health services.

No.	Questions	Coding categories	Skip to
q1001	With your current behaviors, how do you think about your risk of HIV infection?	High risk 1 Medium risk 2 Low risk 3 No risk 4 Don't know 9997 No response 9998	 **→ q1003** **→ q1004** **→ q1004**
q1002	*<u>If you feel you are at risk</u>*, why do you feel that you are at risk for HIV infection? *Do not read responses; mark all mentioned.*	I often change sex partners 1 I have multiple concurrent sex partners 2 I don't always use a condom 3 I use drugs 4 I inject drugs 5 I drink alcohol 6 I share needles 7 I have sex with PWID 8 Other(s), specify _____ 88 Don't know 9997 No response 9998	 **ALL SKIP** **→ q1004**

q1003	*If you feel you are NOT at risk*, why do you feel that you are not at risk for HIV infection? *Do not read responses; probe for more and mark all mentioned.*	I am faithful 1 I always use condoms 2 I never have sex with sex workers 3 I always inject with new needles 4 I always clean needles before injecting 5 I don't share injection needles 6 I don't have anal sex 7 Don't know 8 No response 9	
q1004	Do you know of a place where people can go to have a confidential test to find out if they are infected with HIV? *Confidential means that nobody will know the test result unless you want them to know.*	Yes 1 No 2 No response 98	
q1005	Have you ever had an HIV test?	Yes 1 No 2 No response 98	 **→ q1007** **→ q1016**
q1006	When did you last request an HIV test for which you got the results?	In the past year 1 Over one year ago 2 Never tested and received results 3 Don't remember 97 No response 98	**ALL SKIP** **→ q1008**
q1007	Why have you never chosen to get an HIV test? *Probe and select all mentioned.*	Didn't know where to go 1 Don't feel at risk 2 Concerned about confidentiality 3 Negative attitude of HCWs 4 Cost 5 Distance 6 Fear of knowing status 7 Not important for me 8 Others _____88 Don't know 97 No response 98	**ALL SKIP** **→ q1016**
q1008	Have you ever been for HIV counseling with your steady partner/boyfriend/girlfriend/husband/wife?	Yes 1 No 2 No response 98	
q1009	Have you talked to your partner/boyfriend/husband about the results of your HIV tests?	Yes 1 No 2 No response 98	
q1010	What was the result of your last HIV test?	Positive 1 Negative 2 Not comfortable saying 3 Don't know/ remember 4 No response 98	 **→1016** **→1016** **→1016**
q1011	Are you currently on ART?	Yes 1 No 2 No response 98	**→ q1013** **→ q1016**

q1012	[If not on ART] Why not?	Don't know where to get them 1 Scared/embarrassed to go to a facility 2 Don't think I need them 3 Doctor said I wasn't ready to start 4 Don't want them 5 Don't like side effects 6 Using traditional/local medicine instead 7 Other 88 No response 98	**ALL SKIP q1016**
q1013	For how long have you been on ART?	Less than 6 months 1 More than 6 months 2 Don't know 97 No response 98	→ **q1016** → **q1016** → **q1016**
q1014	Have you had a viral load test?	Yes 1 No 2 Don't know/remember 97 No response 98	 → **q1016** → **q1016** → **q1016**
q1015	Have you ever been tested for hepatitis?	Yes 1 No 2 Don't know/remember 97 No response 98	 → **q1101**
q1016	Do you know which hepatitis you were tested for? *Do not read responses. Mark all mentioned.*	Hepatitis B 1 Hepatitis C 2 Don't know 97 No response 98	
Q1017	What was the result of your Hep B test?	Positive 1 Negative 2 Not comfortable saying 3 Don't know/remember 4 No response 98	
Q1018.	Were you vaccinated for Hep B?	Yes 1 No 2 Don't know/remember 97 No response 98	
Q1019.	Did you receive all three doses?	Yes 1 No 2 Don't know/remember 97 No response 98	
Q1020.	Why not?	Didn't have time 1 I travelled 2 Nuisance 3 Lost vaccination card 4 Service provider not present 5 Worried about stigma 6 Was not important 7 Don't remember/know 88 No response 98	

Q1021.	What was the result of your Hep C test?	Positive 1 Negative 2 Not comfortable saying 3 Don't know/remember 4 No response 98	

Section 11: Access to services and experiences with health care

In this last section I will ask you some questions about other health services you have accessed and your experience with those services.

No.	Questions	Coding categories	Skip to
q1101	Have you visited a clinic or drop-in center in or around Unguja that provides health information or services to men who have sex with men in the past 12 months?	Yes 1 No 2 Don't remember 9997 No response 9998	 → **q1106** → **q1106** → **q1106**
q1102	Was it any of these clinics? *Read responses and mark all that apply*.	ZAYEDESA 1 ZYF 2 ZANPUD 3 ZANGOC 4 JUKAMKUM 5 Hospital or health facility 6 Sober house 7 MAT 8 Other_____ 9 Don't remember 97 No response 98	
q1103	Did you receive any of the following services at this clinic or drop-in center? *Read responses and mark all that apply*.	Information on STI or HIV transmission or prevention 1 Received Condoms 2 Lubricant 3 General counseling from a peer counselor 4 Counseling from a professional/VCT counselor 5 Sexual and reproductive health services 6 An HIV Test 7 Bleach kit 8 Clean needles 9 Information of TB 10 Testing Hepatitis 11 Other 88 Don't remember 97 No response 98	
q1104	Based on the way you were treated by the facility staff, would you return to that facility for services?	Yes 1 No 2 Don't know 97 No response 98	→ **q1106** → **q1106** → **q1106**

q1105	Which of these did you experience that makes you not want to return to that facility? *Read responses and mark all that apply*.	HCWs spoke unkindly to you 1 HCWs gossiped about you to other HCWs/clients 2 HCWs shared information about you and your behaviors to other HCWs/clients 3 HCWs did not take time to explain medications or procedures to you 4 HCWs were physically abusive to you 5 HCWs avoided physical contact with you 6 No response 9998	
q1106	Have you ever received Opioid Substitution Therapy/methadone treatment?	Yes 1 No 2 No response 98	
q1107	[If yes] For how long were you in Opioid Substitution therapy?	Less than 6 months 1 More than 6 months 2 No response 98	
q1108	Have you been in contact with any health peer educator in the community in the <u>last 12 months</u>?	Yes 1 No 2 Don't remember 97 No response 98	→ **END** → **END** → **END**
q1109	How many times have you been in contact with a peer educator in the <u>last 12 months</u>? *If exact number is not known, ask for estimate.*	One time only 1 Two times 2 Three times 3 Four times 4 Five or more times 5 No response 98	
q1110	What services or information did you receive from the peer educator? *Read the answer choices aloud. Mark the service that applies; if they have received more than 1 service mark all that apply.*	General STI or HIV transmission or prevention information 1 Condoms 2 Lubrication 3 Referral for STI treatment 4 Referral for VCT 5 Referral for care and tx services 6 Referral for PMTCT or family planning 7 Referral for MAT 8 Referral to a sober house 9 Referral for TB screening 10 Bleach kit 11 Clean needles 12 Don't remember 13 No response 98	
q1111	Did you feel that the peer educator was non-judgmental?	Yes 1 No 2 Don't know/remember 9997 No response 9998	
END	**We have come to the end of the interview. Thank you very much for your kind cooperation and spending your valuable time with me.**		

15.8. APPENDIX H: RDS questionnaire – MSM

Appendix M: Surveillance Risk Behavior Assessment of MSM Questionnaire
RDS 2018

Coupon Number: _____ Date: _____
Time Started: _____

Section 1: Background characteristics

First, I would like to ask you a few questions on your background, including information on your age, education, jobs and income.

No.	Questions and filters	Coding categories	Skip to
q101	How old are you? *In completed years*	Years _____	
q102	How many years of education have you completed up to now?	Never went to school 0 Did not complete primary 1 Completed primary 2 Did not complete secondary 3 Completed secondary 4 Higher than secondary education 5 No response 98	
q103	How long have you lived here (Unguja)?	Whole life 1 Less than one year 2 1-5 years 3 More than 5 years 4	
Q104	What is your current district of residence?	Maghalibi A 1 Maghalibi B 2 Kusini 3 Mjini 4 Kati 5 Kaskazini A 6 Kaskazini B 7	
q105	Where did you live just before coming here?	Pemba 1 Mainland Tanzania 2 Outside of Tanzania 3 No response 98	
q106	What is your current marital status?	Currently married 1 Living with a partner 2 Separated, divorced, or widowed 3 Never married 4 No response 5	
q107	Currently, with whom are you living? *Read out the possible answers. Circle only one.*	Alone 1 Wife 2 girlfriend 3 Boyfriend 4 With family 5 With friends 6	

		No fixed address (unsettled) 7 No response 98	
Q108	In which ways do you earn your income	Sex worker 1 Farmer 2 Fisherman 3 Military 4 Police 5 Tourism 6 Fundi 7 Student 8 Housekeeper or maid 9 Trader 10 Driver/conductor of dala dala 11 Taxi driver 12 Boda boda driver 13 Bar/guest house worker or owner 14 Saloon 15 Teacher 16 Employed by government 17 Employed in private sector 18 Currently unemployed 19	
q109	What was your total income earned in the <u>past month</u>? *If exact amount is not known, ask for an estimate.*	TSh _____	
q110	Did you participate in a study like this where you received a coupon six years ago, in 2011/12?	Yes 1 No 2 Don't remember 97 No response 98	
q111	Did you participate in a study like this where you received a coupon ten years ago, in 2007?	Yes 1 No 2 Don't remember 97 No response 98	

Section 2: MSM Network

Now I would like to ask you some questions about other men who have sex with men that you may know, including the person who recruited you into this study.

No.	Questions	Coding categories	Skip to
q201	How many MSM do you know personally (i.e., who are living in Unguja, are aged 15 years and above, you know their name, you know who they are and they know you)? *If exact number is not known, ask for an estimate.*	|__|__|__|	
Q202.	How many of these (repeat the number in q201) MSM are 15 years and above	|__|__|__|	
q203	How many of these (repeat the number in q202) MSM have you seen during the <u>past one month</u>? *If exact number is not known, ask for an estimate.*	|__|__|__|	

q204	What is the primary reason you decided to accept a coupon and enroll in the study? *Do not read responses. Mark one response only.*	For incentive 1 For STI/HIV test results 2 For Hepatitis B vaccine 3 Peer influence 4 Study seems interesting/useful 4 Had time to spend/I wasn't busy 5 Other 88 Don't know 97 No response 98	
q205	Which of the following best describes your relationship to the person who referred you to this study, that is, the person who gave you this coupon? *Do not read responses. Mark one response only.*	Stranger, someone you met for the first time 1 Someone you know, but not closely 2 Close friend, someone you know very well 3 A sexual partner 4 A family member or relation 5 No response 98	
Q206.	How long have you known the person who referred you to this study?	Met for the first time 1 Less than a year 2 1-3 years 3 4-6 years 4 7-10 years 5 More than 10 years 6	
q207	How often do you see your recruiter? *Do not read responses. Mark only one response.*	Every day 1 Once per week 2 Once per month 3 Less than once per month 4 No response 98	
q208	Did you ever receive this object? *Show object to participant*	Yes 1 No 2 No response 98	 → **q301** → **q301**
q209	When did you receive this special object? *Do not read responses. Mark only one response.*	13 to 17 September 2018 1 Other time 2 No response or does not remember 4	 → **q301** → **q301**

Section 3: Sexual Partnership and Marriage

Now I would like to ask you some questions about your marital status and sexual partners you have had. These questions are personal, but they are very important for providing health services. Please remember that your answers are confidential and completely private.

No.	Questions and filters	Coding categories	Skip to
q301	At what age did you first have sexual intercourse with a man?	Currently married/living with partner 1 Separated, divorced or widow 2 Never married 3 No response 98	
q302	Have you ever had vaginal, or anal sex with a woman?	Yes 1 No 2 No response 98	

No.	Questions and filters	Coding categories	Skip to
q303	At what age did you first have sexual intercourse? (Anal and/or vaginal sex)	Age in years ____	
q304	Have you had vaginal or anal sex with a woman in the last one year?	Yes 1 No 2 No response 98	
q305	Have you bought sex in the last year? *This can be with a man or a woman.*	Yes 1 No 2 No response 98	
q306	Have you been paid for sex in the last one year? *This can be with a man or a woman.*	Yes 1 No 2 No response 98	
q307	Does anyone in your family know that you have sex with men?	Yes 1 No 2 Don't know 97 No response 98	
Q308.	Typically, are you insertive, receptive or versatile?	Versatile 1 Top 2 Bottom 3 No response 4	

Section 4: Sexual Behavior

Now I would like to ask you some questions about your sexual history, your sex partners, and your use of condoms. When I ask about sex, I am referring to anal sex for men and anal or vaginal sex for women. These are very personal matters, but they are very important for the provision of health services. Please remember that your answers will remain completely confidential. Let's first talk about your male non-paying sexual partners.

No.	Questions	Coding categories	Skip to
q401	Have you ever had anal sex with a non-paying male partner?	Yes 1 No 2 No response 98	 → **q412** → **q412**
q402	In the past one month, have you had anal sex with men where no payment was involved?	Yes 1 No 2 No response 98	 → **q406** → **q406**
Q403	Which types of anal sex have you had with a non-paying male partner in the past one month?	Versatile 1 Insertive 2 Receptive 3 No response 4	
Q404	In the past one month, how many men have you had insertive anal sex with where no payment was involved?	Number_____	
Q405	Of all times you had insertive anal sex with non-paying men in the past one month, how frequently did you use a condom?	Always 1 Most of the time 2 Occasionally 3 Never used condom 4 Don't remember 5 No response 6	

No.	Questions	Coding categories	Skip to
Q406	The last time you had insertive anal sex with a non-paying man, did you use a condom?	Yes 1 No 2 Don't remember 3 No response 4	
Q407	If NO. why no condom	Didn't think about it 1 I was with my wife 2 Didn't like the feel of it 3 Didn't have any condoms 4 Too drunk/high to use 5 Things happened too fast 6 Partner objected 7 Trust my partner 8 Too expensive 9 Condoms don't work 10 Don't remember 11 No response 12	
Q408.	In the past one month, how many men have you had receptive anal sex with, where no payment was involved?	Number_____	
Q409.	Of all times you had receptive anal sex with non-paying men in the past one month, how frequently did you use a condom?	Always 1 Most of the time 2 Occasionally 3 Never used condom 4 Don't remember 5 No response 6	
Q410.	The last time you had receptive anal sex with a non-paying man, did you use a condom?	Yes 1 No 2 Don't remember 3 No response 4	
Q411.	If NO. why no condom	Didn't think about it 1 I was with my wife 2 Didn't like the feel of it 3 Didn't have any condoms 4 Too drunk/high to use 5 Things happened too fast 6 Partner objected 7 Trust my partner 8 Too expensive 9 Condoms don't work 10 Don't remember 11 No response 12	
	These next few questions are still about non-paying sexual partners, but now I want to ask you specifically about female non-paying partners.		
q412	Have you <u>ever</u> had sex with a woman where no payment was involved?	Yes 1 No 2 No response 98	→ **q418**

No.	Questions	Coding categories	Skip to
q413	In the past one month, have you had sex with a woman where no payment was involved?	Yes 1 No 2 No response 98	→ **q415**
q414	In the past one month, how many different women have you had sex with where no payment was involved? *If exact number is not known, ask for an estimate.*	Number_____	
q415	In the past one month, of all times you had sex with a non-paying woman, how frequently did you use a condom? *Read out options 0-3 and circle one.*	Always 1 Most of the time 2 Occasionally 3 Never 4 Don't remember 97 No response 98	
q416	The last time you had sex with a non-paying female partner, did you use a condom? *This could be before the past one month.*	Yes 1 No 2 Don't remember 97 No response 98	
Q417.	If NO. why no condom	Didn't think about it 1 I was with my wife 2 Didn't like the feel of it 3 Didn't have any condoms 4 Too drunk/high to use 5 Things happened too fast 6 Partner objected 7 Trust my partner 8 Too expensive 9 Condoms don't work 10 Don't remember 11 No response 12	
	Now I would like to ask you some questions about people you pay for sex. I would like to talk about both male and female partners you give money or gifts to in exchange for sex. Again, these matters are personal. Please be truthful. Let's start with male partners.		
q418	Have you ever paid another man to have sex with you?	Yes 1 No 2 No response 98	→ **q426**
q419	In the past one month, have you paid another man to have sex with you?	Yes 1 No 2 No response 98	→ **q426**
Q420.	Which types of anal sex have you had with a man you paid for sex in the past one month?	Versatile 1 Insertive 2 Receptive 3 No response 4	
q421	In the past one month, how many different men have you paid to have sex with you? *If exact number is not known, ask for an estimate.*	Number_____	

No.	Questions	Coding categories	Skip to
q422	Of all times you had **insertive** anal sex with a partner you paid in the <u>past one month</u>, how frequently did you use a condom? *Read out options 0-3 and circle one.*	Always 1 Most of the time 2 Occasionally 3 Never 4 Don't remember 97 No response 98	
Q423.	The last time you had insertive anal sex with a man you paid, did you use a condom?	Yes 1 No 2 Don't remember 97 No response 98	
Q423a.	If NO. why no condom	Didn't think about it 1 I was with my wife 2 Didn't like the feel of it 3 Didn't have any condoms 4 Too drunk/high to use 5 Things happened too fast 6 Partner objected 7 Trust my partner 8 Too expensive 9 Condoms don't work 10 Don't remember 11 No response 12	
q424	Of all times you had **receptive** anal sex with a partner you paid in the <u>past one month</u>, how frequently did you use a condom?	Always 1 Most of the time 2 Occasionally 3 Never 4 Don't remember 97 No response 98	
q425	The <u>last time</u> you had receptive anal sex with a partner you paid did you use a condom? *This could be before the past one month.*	Yes 1 No 2 Don't remember 97 No response 98	
Q425a	If NO. why no condom	Didn't think about it 1 I was with my wife 2 Didn't like the feel of it 3 Didn't have any condoms 4 Too drunk/high to use 5 Things happened too fast 6 Partner objected 7 Trust my partner 8 Too expensive 9 Condoms don't work 10 Don't remember 11 No response 12	
	Now let's continue with questions about people you pay for sex, but we will switch to questions about female partners.		
Q426	Have you <u>ever</u> paid a woman to have sex with you?	Yes 1 No 2 No response 98	→ **q432**

No.	Questions	Coding categories	Skip to
q427	In the past one month, have you paid any woman to have sex with you?	Yes 1 No 2 No response 98	→ **q432**
q428	In the past one month, how many different women have you paid to have sex with you? *If exact number is not known, ask for an estimate.*	Number_____	
Q429.	Of all times you paid a woman for vaginal or anal sex in the past one month, how frequently did you use a condom?	Always 1 Most of the time 2 Occasionally 3 Never 4 Don't remember 97 No response 98	
Q430.	The last time you paid a woman for vaginal or anal sex, did you use a condom?	Yes 1 No 2 Don't remember 97 No response 98	
Q431.	If NO. why no condom	Didn't think about it 1 I was with my wife 2 Didn't like the feel of it 3 Didn't have any condoms 4 Too drunk/high to use 5 Things happened too fast 6 Partner objected 7 Trust my partner 8 Too expensive 9 Condoms don't work 10 Don't remember 11 No response 12	
	Now I will ask you some questions about people who pay you to have sex with them. These could be friends or people you just met who give you money or gifts to have sex with them. Again, these matters are personal but are very important for providing health services. I will start with questions about men who pay you to have sex with them, and then will ask some questions about women who pay you to have sex with them.		
Q432	Has a man ever paid you to have anal sex with him?	Yes 1 No 2 No response 98	→ **q440**
q433	In the past one month, has a man paid you to have anal sex with him?	Yes 1 No 2 No response 98	→ **q440**
Q434.	Which types of anal sex have you had with a man you paid for sex in the past one month?	Versatile 1 Insertive 2 Receptive 3 No response 4	
q435	In the past one month, how many different men have paid you to have anal sex with them? *If exact number is not known, ask for an estimate.*	Number_____	

No.	Questions	Coding categories	Skip to
Q436.	Of all times you had insertive anal sex with men who paid you in the past one month, how frequently did you use a condom?	Always 1 Most of the time 2 Occasionally 3 Never 4 Don't remember 97 No response 98	
Q437	The last time a man paid you for insertive anal sex, did you use a condom?	Yes 1 No 2 Don't remember 97 No response 98	
Q437a.	If NO. why no condom	Didn't think about it 1 I was with my wife 2 Didn't like the feel of it 3 Didn't have any condoms 4 Too drunk/high to use 5 Things happened too fast 6 Partner objected 7 Trust my partner 8 Too expensive 9 Condoms don't work 10 Don't remember 11 No response 12	
q438	Of all times you had **receptive** anal sex with men who paid you in the <u>past one month</u>, how frequently did you use a condom?	Always 1 Most of the time 2 Occasionally 3 Never 4 Never had receptive anal sex with a man who paid me 5 Don't remember 97 No response 98	
q439	The <u>last time</u> a man paid you for receptive anal sex, did you use a condom? *This could be before the past one month.*	Yes 1 No 2 Don't remember 97 No response 98	
Q439a.	If NO. why no condom	Didn't think about it 1 I was with my wife 2 Didn't like the feel of it 3 Didn't have any condoms 4 Too drunk/high to use 5 Things happened too fast 6 Partner objected 7 Trust my partner 8 Too expensive 9 Condoms don't work 10 Don't remember 11 No response 12	
	Now let us continue with questions about people who pay you for sex, but we will switch to questions about female partners.		

No.	Questions	Coding categories	Skip to
Q440.	Have you ever been paid by a woman for vaginal or anal sex?	Yes 1 No 2 No response 98	→ **q443**
Q441.	The last time you were paid by a woman for vaginal or anal sex did you use a condom?	Yes 1 No 2 Don't remember 97 No response 98	
Q442.	If NO. why no condom	Didn't think about it 1 I was with my wife 2 Didn't like the feel of it 3 Didn't have any condoms 4 Too drunk/high to use 5 Things happened too fast 6 Partner objected 7 Trust my partner 8 Too expensive 9 Condoms don't work 10 Don't remember 11 No response 12	
	Now I will ask you some questions about group sex. Group sex means sex with 3 or more people.		
q443	Have you <u>ever</u> had sex in a group?	Yes 1 No 2 No response 98	→ **q501**
q444	Have you had sex in a group in the <u>past one month</u>?	Yes 1 No 2 No response 98	
q445	<u>Last time</u> you had sex in a group, how many partners were there? *If exact number is not known, ask for an estimate.*	Number_____	
q446	<u>Last time</u> you had sex in a group, how many of the partners used condoms? *If exact number is not known, ask for an estimate.*	Number_____	

Section 5: Male Condoms and Lubricant

Now I will ask you some questions on condom and lubricant use. Again, these matters are personal, but they are very important for providing health services.

q501	Which places or persons have you obtained condoms from in the last one month? *Do not read responses out loud. Multiple responses possible – select all that apply.*	Shop 1 Pharmacy 2 Health facility 3 Bar/Guest House/Hotel 4 Friends 5 Taxi drivers 6 Saloon 7 NGO 8 Public office 9 Peer educator 10 Did not buy condom in last month 11 Did not get condom 12 Never used condom 13 Other 88 Don't remember 97 No response 98	
Q502.	Last time you got condoms did you pay for them?	Yes 1 No 2 No response 98	
q502a	How much did you pay for one pack of three condoms?	TSh_____	
q503	Can you obtain a condom every time you need one?	Yes 1 No 2 No response 98	→ **q505** → **q505**
q504	Why can't you get a condom every time you need one? *Do not read responses out loud. Multiple responses possible – select all mentioned.*	Costs too much 1 Shop too far away 2 Shops closed 3 Pharmacy too far away 4 Pharmacy closed 5 Embarrassed to buy condom 6 Don't know where to obtain 7 Don't need condom 8 Things happen too fast 9 Don't need condom 10 Other 88 No response 98	
q505	Have you ever used lubricant when having anal sex? By lubricant I mean something to make your own or your partner's penis slippery so it is easier to insert.	Yes 1 No 2 Don't remember 97 No response 98	→**601** →**601** →**601**

q506	What lubricant did you use <u>during last</u> anal sex? *Do not read responses out loud. Multiple responses possible – select all mentioned.*	Oil e.g., cooking oil 1 Water-based lubricant e.g., KY jelly 2 Normal lotion 3 Don't remember 4 No response 5	
q507	Were you using a condom that time?	Yes 1 No 2 I never use condoms 3 Don't remember 97 No response 98	→ **q601** → **q601** → **q601**
q508	For you, what are the reasons for using lubricant with condoms during anal sex? *Do not read responses out loud. Multiple responses possible – circle all mentioned.*	Decrease pain/inflammation 1 Increase feeling 2 Decrease risk of condom breakage 3 Prevent HIV/STI infection 4 Don't remember 5 No response 6	
q509	In the last month, have you used a condom that broke while you were using it during anal sex?	Yes 1 No 2 Don't remember 97 No response 98	
Q510	Have you used a female condom in the last year?	Yes 1 No 2 Don't remember 97 No response 98	

Section 6: Drug and alcohol use

Now I would like to ask you some questions about alcohol and drug use. Please remember that the answers to your questions are confidential and completely private. These are personal questions, but they are important for providing health services.

q601	In the past one month, how often did you have a drink containing alcohol? *Do not read responses - mark one response only.*	Never 1 Once a month or less 2 2-4 times a month 3 2-3 times a week 4 4 or more times a week 5 Don't remember 97 No response 98	→ **q603**

q602	How many drinks containing alcohol do you have on a typical day when you are drinking?	1 or 2 1 3 or 4 2 5 or 6 3 7, 8 or 9 4 10 or more 5 Don't remember 97 No response 98	
q603	Some people take drugs for fun or to get high. Have you taken any drugs other than alcohol in the last three months? By drugs I mean marijuana, hashish, khat, prescription drugs, petrol sniffing, kubar, or methamphetamine.	Yes 1 No 2 Don't remember 97 No response 98	→**701** →**701** →**701**
q604	Which types of <u>non-injected</u> drugs have you used in the <u>past three months</u>? *Do not read responses but probe for others and mark all mentioned.*	Smoked hashish/marijuana 1 Smoked crack cocaine 2 Smoked Heroin 3 Inhaled cocaine 4 Mixed Cocktail 5 Chase the dragon 6 Sniffed petrol, glue 7 Valium 8 Pain killers (prescription drugs) 9 Other 88 Don't remember 97 No response 98	
q605	Some people have tried injecting drugs for fun or to get high. Have you <u>ever</u> injected drugs? *By drugs I mean heroin, prescription drugs, meth, etc.*	Yes 1 No 2 No response 98	→ **q701** → **q701**
q606	Have you injected drugs in the <u>last three months</u>?	Yes 1 No 2 No response 98	
q607	<u>Last time</u> you injected, what drugs did you use? *Do not read responses but probe for others and mark all mentioned.*	Brown heroin 1 White heroin 2 Opium 3 Amphetamines 4 Prescription drugs 5 Cocaine 6 Others 88 Don't know/can't remember 97 No response 98	
q608	<u>Last time</u> you injected drugs, did you use a needle or syringe after someone else had used it?	Yes 1 No 2 Don't remember 97 No response 98	
q609	<u>Last time</u> you injected drugs, did you pass your syringe or needle on to someone else after you used it?	Yes 1 No 2 Don't remember 97 No response 98	

q610	During the past one month, on average, how often did you inject drugs? *Do not read responses - mark one response only.*	Once a month or less 1 Several times a month 2 Once a week 3 Several times a week 4 Once a day 5 Several times a day 6 Don't remember 97 No response 98	
q611	During the past one month, did you inject blood from someone who had taken drugs? (Flashblood)	Yes 1 No 2 Don't remember 97 No response 98	

Section 7: Violence

Now I will ask you some questions on violence and history of incarceration. These questions are personal and may make you uncomfortable. If they do, you may choose to not answer the question.

No.	Questions	Coding Categories	Skip to
q701	In the past 12 months, were you ever beaten?	Yes 1 No 2 No response 98	 → **q703** → **q703**
q702	Who was the person (or people) who physically beat you? *Do not read responses; mark all mentioned.*	Police 1 Family member 2 One-time sex partner 3 Boyfriend 4 Wife/girlfriend 5 Co-worker 6 School mate 7 Friend 8 Drug dealer 9 Unknown person 10 Don't remember 11 **No response 12**	
q703	During the past 12 months, have you been arrested?	Yes 1 No 2 No Response 98	 → **q705** → **q705**
q704	What were you arrested for? *Do not read responses; mark all mentioned.*	Drug use 1 Aggravated assault 2 Theft 3 Selling sex 4 Loitering 5 Selling drugs 6 They suspected I am an MSM 7 Other 88 Don't know/remember 97 No response 98	
q705	In the past 12 months, were you ever forced to have sex?	Yes 1 No 2 No response 98	 → **q801** → **q801**

q706	Who was the person (or people) who forced you to have sex?	Police 1 Family member 2 One-time sex partner 3 Boyfriend 4 Wife/girlfriend 5 Co-worker 6 School mate 7 Friend 8 Drug dealer 9 Unknown person 10 Don't remember 11 No response 12	

Section 8: STIs (Sexually Transmitted Infections)

Now I will ask you a few questions about sexually transmitted infections.

No.	Questions	Coding of answers	Skip to
q801	During the past six months, have you had unusual genital discharge? *Specify urethral discharge for men*	Yes 1 No 2 Don't know/remember 97 No response 98	
q802	During the past six months, have you had genital/anal sores or ulcers?	Yes 1 No 2 Don't know/remember 97 No response 98	
q803	The last time you had a genital/anal sore, ulcer or unusual discharge which of the following did you do? *Read out the list and circle all appropriate answers.*	Never had genital/anal sore, ulcer or unusual discharge 1 Did not do anything 2 Went to govt health facility 3 Went to private health facility 4 Went to pharmacy 5 Went to traditional healer/used alternative treatment 6 Treated myself at home 7 Told my sexual partner about the symptoms 8 Stopped having sexual intercourse when having the symptoms 9 Used condoms while having sexual intercourse 10 Don't remember 97 No response 98	

Section 9: HIV knowledge and stigma

In this next section I will ask you questions about your knowledge of HIV and about HIV-related stigma. I will start by reading some statements about HIV/AIDS. Some of them are true and some are not true. These are general statements and do not refer to your own experience or behavior.

q901	Can the risk of HIV transmission be reduced by having sex with only one uninfected partner who has no other partners?	Yes 1 No 2 Don't know 97 No response 98	
q902	Can a person get HIV from mosquito bites?	Yes 1 No 2 Don't know 97 No response 98	
q903	Can a person reduce their risk of getting HIV by using a condom every time they have sex?	Yes 1 No 2 Don't know 97 No response 98	
q904	Can a healthy-looking person have HIV?	Yes 1 No 2 Don't know 97 No response 98	
q905	Can a person get HIV by sharing food with someone who has HIV?	Yes 1 No 2 Don't know 97 No response 98	
	Now I will ask some questions about stigma related to HIV/AIDS. Please tell me whether you agree or disagree with each of the statements.		
q906	People with HIV/AIDS should be ashamed of themselves.	Agree 1 Disagree 2 Don't know 97 No response 98	
q907	I would feel ashamed if someone in my family had HIV/AIDS.	Agree 1 Disagree 2 Don't know 97 No response 98	
q908	I would feel ashamed if I were infected with HIV/AIDS.	Agree 1 Disagree 2 Don't know 97 No response 98	
q909	People with HIV/AIDS are promiscuous.	Agree 1 Disagree 2 Don't know 97 No response 98	
q910	It is MSM who spread HIV in the community.	Agree 1 Disagree 2 Don't know 97 No response 98	
q911	HIV/AIDS is brought as a punishment for bad behavior.	Agree 1 Disagree 2 Don't know 97 No response 98	
	Now I would like to ask you some questions about stigma that may affect you because you have sex with other men. Please answer yes or no to the following statements that refer to your experiences as an MSM in your adult life (>15 years old).		
q912	I have experienced name calling, teasing and insults.	Yes 1 No 2	

		Don't know 97 No response 98	
q913	I have been excluded from a social gathering.	Yes 1 No 2 Don't know 97 No response 98	
q914	Other people have lost respect for me.	Yes 1 No 2 Don't know 97 No response 98	
q915	I have been abandoned by my loved ones.	Yes 1 No 2 Don't know 97 No response 98	

Section 10: HIV risk and testing history

This next set of questions asks about how you see your risk for HIV, your HIV testing history, and your use of HIV health services.

No.	Questions	Coding categories	Skip to
q1001	With your current behaviors, how do you think about your risk of HIV infection?	High risk 1 Medium risk 2 Low risk 3 No risk 4 Don't know 97 No response 98	 → **q1003** → **q1004** → **q1004**
q1002	*<u>If you feel you are at risk</u>*, why do you feel that you are at risk for HIV infection? *Do not read responses; mark all mentioned.*	I often change sex partners 1 I have multiple concurrent sex partners 2 I don't always use a condom 3 I use drugs 4 I inject drugs 5 I drink alcohol 6 I share needles 7 I have sex with PWID 8 Other(s), specify _____ 88 Don't know 97 No response 98	 **ALL SKIP** → **q1004**
q1003	*<u>If you feel you are NOT at risk</u>*, why do you feel that you are not at risk for HIV infection? *Do not read responses; probe for more and mark all mentioned.*	I am faithful 1 I always use condoms 2 I'm convinced my sex partner is clean 3 I never have sex with sex workers 4 I always inject with new needles 5 I always clean needles before injecting 6 I don't share injection needles 7 Others, specify _____ 88 Don't know 97 No response 98	

q1004	Do you know of a place where people can go to have a confidential test to find out if they are infected with HIV? *Confidential means that nobody will know the test result unless you want them to know.*	Yes 1 No 2 No response 98	
q1005	Have you ever had an HIV test?	Yes 1 No 2 No response 98	→ **q1007** → **q1016**
q1006	When did you last request an HIV test for which you got the results?	In the past year 1 Over one year ago 2 Never 3 Don't remember 97 No response 98	**ALL SKIP** → **q1008**
q1007	Why have you never chosen to get an HIV test? *Probe and select all mentioned.*	Didn't know where to go 1 Don't feel at risk 2 Concerned about confidentiality 3 Negative attitude of HCWs 4 Cost 5 Distance 6 Fear of knowing status 7 Not important for me 8 Others _____88 Don't know 97 No response 98	**ALL SKIP** → **q1016**
q1008	Have you ever been for HIV counseling with your steady partner/boyfriend/girlfriend/husband/wife?	Yes 1 No 2 No response 98	
q1009	Have you talked to your partner/boyfriend/husband about the results of your HIV tests?	Yes 1 No 2 No response 98	
q1010	What was the result of your last HIV test?	Positive 1 Negative 2 Don't know/remember 97 No response 98	→ **q1016** → **q1016** → **q1016**
q1011	Are you currently on ART?	Yes 1 No 2 No response 98	→ **q1013** → **q1016**
q1012	[If not on ART] Why not?	Don't know where to get them 1 Scared/embarrassed to go to a facility 2 Don't think I need them 3 Doctor said I wasn't ready to start 4 Don't want them 5 Don't like side effects 6 Using traditional/local medicine instead 7 Other 88 No response 98	**ALL SKIP** **q1016**

q1013	For how long have you been on ART?	Less than 6 months 1 More than 6 months 2 Don't know 97 No response 98	→ **q1016** → **q1016** → **q1016**
q1014	Have you had a viral load test?	Yes 1 No 2 Don't know/remember 97 No response 98	 → **q1016** → **q1016** → **q1016**
q1015	Have you ever been tested for hepatitis?	Yes 1 No 2 Don't know/remember 97 No response 98	 → **q1101**
q1016	Do you know which hepatitis you were tested for? *Do not read responses. Mark all mentioned.*	Hepatitis B 1 Hepatitis C 2 Don't know 97 No response 98	
Q1017	What was the result of your Hep B test?	Positive 1 Negative 2 Not comfortable saying 3 Don't know/ don't remember 4 No response 5	
Q1018	Were you vaccinated for Hep B?	Yes 1 No 2 Don't know/remember 97 No response 98	
Q1019	Did you receive all three doses?	Yes 1 No 2 Don't know/remember 97 No response 98	
Q1020	Why not?	Didn't have time 1 I travelled 2 Nuisance 3 Lost vaccination card 4 Service provider not present 5 Worried about stigma 6 Was not important 7 Don't remember/know 8 No response 9	
Q1021	What was the result of your Hep C test?	Positive 1 Negative 2 Not comfortable saying 3 Don't know/ don't remember 4 No response 5	

Section 11: Access to services and experiences with health care

In this last section I will ask you some questions about other health services you have accessed and your experience with those services.

No.	Questions	Coding categories	Skip to

q1101	Have you visited a clinic or drop-in center in or around Unguja that provides health information or services to men who have sex with men in the past 12 months?	Yes 1 No 2 Don't remember 97 No response 98	 → **q1106** → **q1106** → **q1106**
q1102	Was it any of these clinics? *Read responses and mark all that apply*.	ZAYEDESA 1 ZAIADA 2 ZYF 3 ZANGOC 4 BIO 5 ZAYEA 6 Hospital or Health Facility 7 Don't remember 8 No response 9	
q1103	Did you receive any of the following services at this clinic or drop-in center? *Read responses and mark all that apply*.	Information on STI or HIV transmission or prevention 1 STI screening and treatment 2 Received condoms 3 General counseling from a peer counselor 4 HIV test 5 Information on TB 6 Hepatitis information 7 Referral 8 Don't remember 9 No response 10 No response 98	
q1104	Based on the way you were treated by the facility staff, would you return to that facility for services?	Yes 1 No 2 Don't know 97 No response 98	→ **q1106** → **q1106** → **q1106**
q1105	Which of these did you experience that makes you not want to return to that facility? *Read responses and mark all that apply*.	HCWs spoke unkindly to you 1 HCWs gossiped about you to other HCWs/clients 2 HCWs shared information about you and your behaviors to other HCWs/clients 3 HCWs did not take time to explain medications or procedures to you 4 HCWs were physically abusive to you 5 HCWs avoided physical contact with you 6 No response 98	
q1106	Have you been in contact with any health peer educator in the community in the <u>last 12 months</u>?	Yes 1 No 2 Don't remember 97 No response 98	 → **END** → **END** → **END**
q1107	How many times have you been in contact with a peer educator in the <u>last 12 months</u>? *If exact number is not known, ask for estimate.*	One time only 1 Two times 2 Three times 3 Four times 4 Five or more times 5 No response 98	

q1108	What services or information did you receive from the peer educator? *Read the answer choices aloud. Mark the service that applies; if they have received more than 1 service mark all that apply.*	General STI or HIV transmission or prevention information 1 Condoms 2 HIV test 3 Lubricant 4 Referral for STI treatment 5 Referral for HTS 6 Referral for family planning 7 Referral for TB screening 8 Referral for Hepatitis testing 9 No response 98	
q1109	Did you feel that the peer educator was non-judgmental?	Yes 1 No 2 Don't know/remember 97 No response 98	
END	**We have come to the end of the interview. Thank you very much for your kind cooperation and spending your valuable time with me.**		

15.9. APPENDIX I: RDS questionnaire – FSW/SEC

Coupon Number: _____
Date: _____
Time Started: _____

Section 1: Background characteristics

First, I would like to ask you a few questions on your background, including information on your age, education, jobs and income.

No.	Questions and filters	Coding categories	Skip to
N101	How old are you? *In completed years*	Years____	
N102	How many years of education have you completed up to now?	No school Did not complete primary Completed primary Did not complete secondary Completed secondary Higher than secondary No response	
N103	What is your current marital status? *Do not read out the possible answers. Mark only one response.*	Currently married Living with a partner Separated, divorced or widowed Never married No response	
N104	How long have you lived here (Unguja)?	Whole life Less than one year 1-5 years More than 5 years	 → **N106** → **N106** → **N106**
N105	What is your current district of residence?	West A West B South Urban Central North A North B No response	
N106	Where did you live just before coming here (area)?	Pemba Mainland Tanzania Outside Tanzania No response	 → **N108** → **N108** → **N108**
N107	In which district in Pemba?	Micheweni Wete Chake Chake Mkoani No response	
N108	Currently whom are you living with? *Read out the possible answers. Circle one only.*	Alone Boyfriend Husband With family	

No.	Questions and filters	Coding categories	Skip to
		With friends No fixed address (unsettled) Other sex workers No response Other	
N109	How much income did you earn in the <u>past month</u>? *If exact amount is not known, ask for an estimate.*	TSh _____	
N110	Other than sex work, what kinds of things do you do to earn money? *Do not read the possible answers out loud. Probe and mark all that are mentioned.*	No other income besides sex work Private business Employed by government/parastatal Employed in private sector Tourism Driver Teacher Student Selling drugs Petty trading Illegal activities Musician Self-employed No response Other	
N111	Have you participated in any studies like this one where you received a coupon within the past 7 years, in 2011/12?	Yes No Do not remember No response	
N112	Did you participate in a study like this where you received a coupon eleven years ago, in 2007?	Yes No Do not remember No response	

Section 2: FSW/SEC Network

Now I would like to ask you some questions about other FSW/SEC that you may know, including the person who recruited you into this study.

No.	Questions	Coding categories	Skip to
N201	How many FSW/SEC do you know personally	|__|__|__|	
N202	How many of these ${sex_worker_1} sex workers are 15 years and above?	|__|__|__|	
N203	How many of these ${sex_worker_2} sex workers have you seen during the past one month?	|__|__|__|	

N204	What are the primary reasons you decided to accept a coupon and enroll in the study? *Do not read responses. Circle one response only.*	For incentive For STI/HIV test results For Hepatitis B vaccine Peer influence Study seems interesting/useful I wasn't busy Do not know No response Other	
N205	Which of the following best describes your relationship to the person who referred you to this study, that is, the person who gave you this coupon? *Read the responses to the participant. Mark only one response.*	A stranger, someone you met for the first time Someone you know, but not closely A close friend, someone you know very well A sexual partner A family member or relation A pimp A brothel owner No response Other	
N206	About how long have you known the person who referred you to this study? *Do not read responses. Mark only one response.*	Less than 6 months 6 months to 1 year 1-2 years More than 2 years No response	
N207	How often do you see the person who referred you to this study? *Do not read responses. Mark only one response.*	Every day More than once per week, but not every day Once per week Once per month Less than once per month No response	
N208	Did you ever receive this object? *Show object to participant*	Yes No No response	 → **N301** → **N301**
N209	When did you receive this special object?	6-10 December 2018 Other time No response	 → **N301** → **N301**

Section 3: General Sex Work and Stigma Questions

Now I will ask you some general questions about sex work and stigma that may affect you because of sex work. Please remember that your responses are anonymous and completely private.

N301	Where do you meet your clients? *Do not read responses, probe and select all that are mentioned by respondent.*	Pub/Bar Disco/night club Full moon party Local traditional dancing (e.g., kibuki) Private houses (rented room) Guesthouse Hotel Brothel On the streets By phone Through agent Internet or social media, incl. WhatsApp Other	
N302	Where is your <u>primary</u> place to meet clients? *Select one.*	Pub/Bar Disco/night club Full moon party Local traditional dancing (e.g., kibuki) Private houses (rented room) Guesthouse Hotel Brothel On the streets By phone Through agent Internet or social media, incl. WhatsApp Other	
N303	The <u>last time</u> you had sexual intercourse with a client, how much were you paid? *If exact amount is not known, ask for an estimate.*	_____ TSh	
N304	What is the smallest amount you have ever been paid for sexual intercourse? *If exact amount is not known, ask for an estimate.*	_____ TSh	
N305	What is the largest amount you have ever been paid for sexual intercourse? *If exact amount is not known, ask for an estimate.*	_____ TSh	
N306	On the <u>last day</u> you worked, how many clients did you have? *If exact number of clients is not known, ask for an estimate.*	_____(*write in number*)	
N307	On the <u>last day</u> you worked, did you use a condom with the last client you had?	Yes No Do not remember No response	→ **N309** → **N309** → **N309**

N308	Why didn't you and your client use a condom that time? <u>*Do not read responses*</u>*; mark one response only.*	Didn't think of using Do not like the feel of condoms Didn't have any condoms Too drunk/high to use Things happened too fast Wanted to get pregnant Client objected Trust my partner Too expensive Client paid more Condoms do not work Do not remember No response Other	
N309	Do you have someone who helps you meet clients or acts as an 'agent'?	Yes No No response	
N310	Does anyone in your family know that you are a sex worker?	Yes No Do not know No response	

Section 4: Sexual History and Sex Work Practices

Now I will ask you some questions about your sexual history, sex partners, and use of condoms.

N401	How old were you when you had sexual intercourse (vaginal or anal sex) for the <u>first</u> time? *If exact age is not known, ask for an estimate.*	_____ years	
N402	How old were you when you sold sex for the <u>first</u> time? *If exact age is not known, ask for an estimate.*	_____ years	
N403	When you started selling sex, what was the most important reason? *Choose only one response.*	Need money to help family Need money to pay a debt Was forced Like to do it/pleasure Friends/family were doing it Good income/added income Abandoned by husband/family No response Other	

N404	In which neighborhood do you mainly sell sex?	Amani (CCM mkoa, Amani mkoa, Amani Hotel, Mbawala bar) Bububu (Ngawala, Chaza, Masinde Bar, Fuji snake) Chukwani (Coconut, Entebe, Peaceful, Mchuchuma) Kiembesamaki (Transit, Kisima mbaazi, kwa mama Lucy) Kikwajuni (Gofu, Gymkana) Kilimani (CCM, Kwa raju) Kwa alinato (Magereza, Messi ya polisi, Tunduni) Kwahani Mbweni (kwa mama Lucy, Nyama choma, Kwa imma, Kwa bi Janeth) Miembeni (Paris) Mji mkongwe (Bwawani, Tatu) Nungwi (Cholo's, Kendwa, Koko bello, Manchester, raha raha bar) Paje (Garage, Kwa komando, Jambo) No response Other	
Steady Partner - Now I will ask you questions about sex with your husband/boyfriend or steady partner. A steady partner is someone with whom you regularly have sex.			
N405	Have you ever had a steady partner?	Yes No No response	 → **N414** → **N414**
N406	In the past one month, have you had sex with a spouse or boyfriend (steady partner)?	Yes No Do not remember No response	 → **N409** → **N414** → **N414**
N407	In the past one month, how often have you used condoms with your steady partner?	Always Most of the time Occasionally Never Do not remember No response	
N408	In the past one month, did you refuse to have sex with a steady partner if a condom was not used?	Yes No No response	
N409	The last time you had sex with a steady partner, did you use a condom? *<u>Do not read responses</u>; mark one response only.*	Yes No Do not remember No response	→ **N411** → **N412** → **N412**

N410	Why didn't you and your steady partner use a condom the last time you had sex?	Didn't think about it Didn't like the feel of it Didn't have any condoms Too drunk/high to use Things happened too fast Wanted to get pregnant Was with steady partner Partner objected Trust my partner Too expensive Condoms do not work Do not remember No response Other	**ALL SKIP TO N412**
N411	Who suggested condom use?	Myself My partner Mutual decision No response	
N412	Do you think your steady partner has ever used drugs?	Yes No Do not know No response	
N413	Do you think your steady partner has ever injected drugs?	Yes No Do not know No response	

Casual, non-paying partner - Now I will ask you about sex you have with casual, non-paying partners.

N414	Have you ever had a casual, non-paying partner?	Yes No No response	 → **N422** → **N422**
N414 a	In the past one month, have you had sex with a casual, non-paying partner?	Yes No Do not remember No response	 → **N417** → **N422** → **N422**
N415	In the past one month, how often have you used condoms with your casual, non-paying partners?	Always Most of the time Occasionally Never Do not remember No response	
N416	In the past <u>one month</u>, did you refuse to have sex with a casual, non-paying partner if a condom was not used?	Yes No No response	
N417	The <u>last time</u> you had sex with a casual, non-paying partner, did you use a condom?	Yes No Do not remember No response	→ **N419** → **N420** → **N420**

N418	Why didn't you and your casual, non-paying partner use a condom the last time you had sex? <u>*Do not read responses*</u>*; mark one response only.*	Didn't think about it Didn't like the feel of it Didn't have any condoms Too drunk/high to use Things happened too fast Wanted to get pregnant Was with steady partner Partner objected Trust my partner Too expensive Condoms do not work Do not remember No response Other	**ALL SKIP TO N420**
N419	Who suggested condom use?	Myself My partner Mutual decision No response	
N420	Do you think your steady casual partner has ever used drugs?	Yes No Do not know No response	
N421	Do you think your steady casual partner has ever injected drugs?	Yes No Do not know No response	

One-time Clients - Now I will ask you about sex you have with one-time time clients in exchange for money and/or gifts.

N422	Have you ever had a one-time client?	Yes No No response	 → **N430** → **N430**
N422 a	In the past one month, have you had sex with a one-time client?	Yes No Do not remember No response	 → **N425** → **N428** → **N428**
N423	In the past one month, how often have you used condoms with your one-time clients?	Yes No No response	
N424	In the past one month, did you refuse to have sex with a one-time client if a condom was not used?	Yes No No response	
N425	The last time you had sex with a one-time client, did you use a condom?	Yes No Do not remember No response	→ **N427** → **N428** → **N428**

N426	Why didn't you and your partner use a condom that time?	Didn't think about it Didn't like the feel of it Didn't have any condoms Too drunk/high to use Things happened too fast Wanted to get pregnant Client objected Trust my partner Too expensive Client paid more Condoms do not work Do not remember No response Other	**ALL SKIP TO N428**
N427	Who suggested condom use?	Myself My partner Mutual decision No response	
N428	Do you think any of your one-time clients have ever used drugs?	Yes No Do not know No response	
N429	Do you think any of your one-time clients have ever injected drugs?	Yes No Do not know No response	

Regular Clients - Now I want to ask you about regular clients you have sex with in exchange for money and/or gifts.

N430	Have you ever had a regular client?	Yes No No response	 → **N438** → **N438**
N430 a	In the past one month, have you had sex with a regular client?	Yes No Do not remember No response	 → **N433** → **N436** → **N436**
N431	In the past one month, how often have you used condoms with your regular clients?	Always Most of the time Occasionally Never Do not remember No response	
N432	In the past one month, did you refuse to have sex with a regular client if a condom was not used?	Yes No No response	
N433	The last time you had sex with a regular client, did you use a condom?	Yes No Do not remember No response	→ **N435** → **N436** → **N436**

N434	Why didn't you and your regular client use a condom the last time you had sex? <u>*Do not read responses*</u>*; mark one response only.*	Didn't think about it Didn't like the feel of it Didn't have any condoms Too drunk/high to use Things happened too fast Wanted to get pregnant Client objected Trust my partner Too expensive Client paid more Condoms do not work Do not remember No response Other	**ALL SKIP TO N436**
N435	Who suggested condom use?	Myself My partner Mutual decision No response	
N436	Do you think any of your regular clients have ever used drugs?	Yes No Do not know No response	
N437	Do you think any of your regular clients have ever injected drugs?	Yes No Do not know No response	

Tourist/Foreigners - Now I want to ask you about tourist/foreigners you have sex with in exchange for money and/or gifts.

N438	Have you ever had a tourist/foreigner client?	Yes No No response	 → **N501** → **N501**
N438a	In the past one month, have you had sexual intercourse with any tourists/foreigners?	Yes No Do not remember No response	 → **N441** → **N501** → **N501**
N439	In the past one month, how often have you used condoms with your tourist/foreigner clients?	Always Most of the time Occasionally Never Do not remember No response	
N440	In the past one month, did you refuse to have sex with a tourist/foreigner if a condom was not used?	Yes No No response	
N441	The last time you had sex with a tourist/foreigner, did you use a condom?	Yes No Do not remember No response	→ **N443** → **N444** → **N444**

N442	Why didn't you and your partner use a condom that time? *<u>Do not read responses</u>; mark one response only.*	Didn't think about it Didn't like the feel of it Didn't have any condoms Too drunk/high to use Things happened too fast Wanted to get pregnant Client objected Trust my partner Too expensive Client paid more Condoms do not work Do not remember No response Other	**ALL SKIP TO N444**
N443	Who suggested condom use?	Myself My partner Mutual decision No response	
N444	Do you think any of your tourist/foreigner clients have ever used drugs?	Yes No Do not know No response	
N445	Do you think any of your tourist/foreigner clients have ever injected drugs?	Yes No Do not know No response	

Section 5: Male and Female Condoms

Now I would like to ask you questions about using male condoms and female condoms.

N501	Which places or persons have you obtained male condoms from in the last one month? *Do not read responses out loud. Multiple responses possible – select all that apply.*	Shop Pharmacy Health facility Bar/guesthouse/ hotel Friends Taxi drivers Saloon Public office NGO Peer educator Did not buy male condom in the last month Did not get condom Don't remember No response Other	
N502	Last time you got condoms did you pay for them?	Yes No Never bought condoms No response	

N502a	How much did you pay for one pack of three condoms?	TSh_____	
N503	Can you obtain a male condom every time you need one?	Yes No No response	→ **N505** → **N505**
N504	Why can't you get a male condom every time you need one? *Do not read responses out loud. Multiple responses possible – select all mentioned.*	Costs too much Shop too far away Shops closed Pharmacy too far away Pharmacy closed Embarrassed to buy condom Don't know where to obtain Things happen too fast Don't need condom Don't know No response Other	
N505	Have you <u>ever</u> used a female condom?	Yes No **No response**	 → **N509** → **N509**
N506	Have you used a female condom in the last one month?	Yes No No response	
N507	Where did you obtain your last female condom? *Do not read answer choices. Select one only.*	Shop Pharmacy Health facility Bar/guesthouse/hotel Friends Taxi drivers Saloon NGO Public office Peer educator Don't remember No response Other	
N508	What are your reasons for using a female condom? *Multiple answers possible. Do not read out loud but probe and select all mentioned.*	Protection from pregnancy Protection from HIV/STIs Gives me more control than a male condom for protection No response Don't know It was free Partner requests me to use it Other	**ALL SKIP TO N601**

N509	What are your reasons for not using a female condom? *Multiple answers possible. Do not read out loud but probe and select all mentioned.*	Clients don't like them Prefer male condoms Never heard of it Don't want to insert into vagina Too expensive Too big Not available Use other birth control method Not used to it Don't know how to insert Don't know No response Other	

Section 6: Drug Use

Now I would like to ask you some questions about drug use in the past three months, with and without a needle. Please remember that the answers to your questions are anonymous and completely private. These are personal questions, but they are important for providing health services.

N601	In the past one month, how often did you have a drink containing alcohol? Do not read responses - mark one response only.	Never 4 or more times a week 2-3 times a week Once a month or less 2-4 times a month Don't remember No response	→ **Q604**
N602	How many drinks containing alcohol do you have on a typical day when you are drinking?	1 or 2 3 or 4 5 or 6 7, 8 or 9 10 or more Don't remember No response	
N603	In the last one week, have you consumed any alcohol while working as a sex worker?	Yes No No response	
N604	Some people take drugs for fun or to get high. Have you taken any drugs other than alcohol in the <u>last three months</u>? By drugs I mean marijuana, hashish, khat, prescription drugs, petrol sniffing, kubar, or methamphetamine.	Yes No Do not remember No response	 → **N701** → **N701** → **N701**

N605	Which types of non-injected drugs have you used in the past three months? *Do not read responses but probe for others and mark all mentioned.*	Smoked heroin Smoked crack cocaine Sniffed cocaine Mixed cocktail Chase the dragon Khat Smoked hashish/marijuana Sniffed petrol, glue Valium Pain killers (prescription drugs) Don't remember No response Other	
N606	Some people have tried injecting drugs for fun or to get high. Have you ever injected drugs? *By drugs I mean heroin, prescription drugs, meth, etc.*	Yes No No response	 → **N701** → **N701**
N607	Have you injected drugs in the last three months?	Yes No Do not remember No response	
N608	Last time you injected drugs, what drug did you use? *Do not read responses but probe for others and mark all mentioned.*	Amphetamines Cocaine White heroin Brown heroin Opium Prescription drugs Don't know/ remember No response Other	
N609	Last time you injected drugs, did you use a needle or syringe after someone else had used it?	Yes No Do not remember No response	
N610	Last time you injected drugs, did you pass your syringe or needle on to someone else after you used it?	Yes No Do not remember No response	
N611	During the past one month, on average, how often did you inject drugs? *Do not read responses - mark one response only.*	Several times a day Once a day Several times a week Once a week Several times a month Once a month or less Did not inject in past month Don't remember No response	
N612	During the past one month, did you inject blood from someone who had taken drugs? (Flashblood)	Yes No Did not inject in past month Do not remember/know No response	

Section 7: Violence

Now I will ask you some questions on violence and history of incarceration. These questions are personal and may make you uncomfortable. If they do, you may choose to not answer the question.

No.	Questions	Coding Categories	Skip to
N701	In the past 12 months, were you ever beaten?	Yes No No response	 → **N703** → **N703**
N702	Who was the person (or people) who physically beat you? *Multiple answers possible. Do not read out loud. Select all that apply.*	Police Regular client Drug dealer Unknown person/ person on the street Friends Boyfriend/husband Family member One-time sex partner Agent/pimp Another FSW/SEC Don't remember No response Other	
N703	During the past 12 months, have you been arrested?	Yes No No response	 → **N705** → **N705**
N704	What were you arrested for? *Multiple answers possible. Do not read out loud. Select all that apply.*	Aggravated assault Selling drugs Selling sex Theft Loitering Drug use Don't know/remember No response Other	
N705	In the past 12 months, has someone ever forced you to have sex?	Yes No Do not remember No response	 → **N801** → **N801** → **N801**
N706	Who was the person (or people) who forced you to have sex?	Police Regular client Drug dealer Unknown person/ person on the street Friends Boyfriend/husband Family member One-time sex partner Agent/pimp Don't remember No response Other	

Section 8: STIs (Sexually Transmitted Infections)

Now will ask you some questions about STIs and whether you have had an STI in the past.

	Questions	Coding of answers	Skip to
N801	During the past six months, have you had unusual genital discharge?	Yes No Do not remember/know No response	
N802	During the past six months, have you had genital/anal sores or ulcers?	Yes No Do not remember/know **No response**	 → **N901** → **N901** → **N901**
N803	The last time you had a genital/anal sore, ulcer or unusual discharge which of the following did you do? *Read out the list and circle all appropriate answers.*	Did not do anything Went to private health facility Went to traditional healer/used alternative treatment Went to govt health facility Went to pharmacy Never had genital/anal sore, ulcer or unusual discharge Treated myself at home Told my sexual partner about the symptoms Stopped having sexual intercourse when having the symptoms Used condoms while having sexual intercourse Don't remember No response Other	

Section 9: HIV knowledge and stigma

In this next section I will ask you questions about your knowledge of HIV and about HIV-related stigma. I will start by reading some statements about HIV/AIDS. Some of them are true and some are not true. These are general statements and do not refer to your own experience or behavior.

No.	Questions	Coding categories	Skip to
N901	Can the risk of HIV transmission be reduced by having sex with only one uninfected partner who has no other partners?	Yes No Do not know No response	
N902	Can a person get HIV from mosquito bites?	Yes No Do not know No response	
N903	Can a person reduce their risk of getting HIV by using a condom every time they have sex?	Yes No Do not know No response	

N904	Can a healthy-looking person have HIV?	Yes No Do not know No response	
N905	Can a person get HIV by sharing food with someone who has HIV?	Yes No Do not know No response	
	Now I will ask some questions about stigma related to HIV/AIDS. Please tell me whether you agree or disagree with each of the statements.		
N906	People with HIV/AIDS should be ashamed of themselves.	Agree Disagree Don't know No response	
N907	I would feel ashamed if someone in my family had HIV/AIDS.	Agree Disagree Don't know No response	
N908	I would feel ashamed if I were infected with HIV/AIDS.	Agree Disagree Don't know No response	
N909	People with HIV/AIDS are promiscuous.	Agree Disagree Don't know No response	
N910	HIV/AIDS is a punishment for bad behavior	Agree Disagree Don't know No response	
N911	HIV/AIDS is brought as a punishment for bad behavior.	Agree Disagree Don't know No response	
	Now I would like to ask you some questions about stigma that may affect you because you engage in sex work. Please answer yes or no to the following statements that refer to your experiences as an FSW/SEC in your adult life (>15 years old).		
N912	I have experienced name calling, teasing and insults.	Yes No Do not know No response	
N913	I have been excluded from a social gathering.	Yes No Do not know No response	
N914	Other people have lost respect for me.	Yes No Do not know No response	

N915	I have been abandoned by my loved ones.	Yes No Do not know No response	

Section 10: HIV Risk and Testing History

This next set of questions asks about how you see your risk for HIV, your HIV testing history, and your use of HIV health services.

No.	Questions	Coding categories	Skip to
N1001	With your current behaviors, how do you think about your risk of HIV infection?	High Medium Low No risk Don't know No response	 → **q1003** → **q1004** → **q1004**
N1002	*If you feel you are at risk*, why do you feel that you are at risk for HIV infection? *Do not read responses; mark all mentioned.*	I often change sex partners I have multiple concurrent sex partners I don't always use a condom I use drugs I inject drugs I share needles I drink alcohol I have sex with PWID Don't know No response Other	 **ALL SKIP** → **q1004**
N1003	*If you feel you are NOT at risk*, why do you feel that you are not at risk for HIV infection? *Do not read responses; probe for more and mark all mentioned.*	I am faithful I always use condoms I am convinced my partner is HIV- I don't have anal sex Don't know No response Other	
N1004	Do you know of a place where people can go to have a confidential test to find out if they are infected with HIV? *Confidential means that nobody will know the test result unless you want them to know.*	Yes No No response	
N1005	Have you ever had an HIV test?	Yes No No response	 → **q1007** → **q1015**
N1006	When did you last request an HIV test for which you got the results?	In the past 12 months More than 12 months ago Never received results Don't remember No response	**ALL SKIP** → **q1008**

N1007	Why have you never chosen to get an HIV test? *Probe and select all mentioned.*	Didn't know where to go Don't feel at risk Concerned about confidentiality Negative attitude of health care workers Cost Distance Fear of knowing status Not important for me Don't know No response Other	**ALL SKIP → q1015**
N1008	Have you ever been for HIV counseling with your steady partner/boyfriend/girlfriend/husband/wife?	Yes No No response	
N1009	Have you talked to your partner/boyfriend/husband about the results of your HIV tests?	Yes No No response	
N1010	What was the result of your last HIV test?	Positive Negative Not comfortable saying Don't know / remember No response	 **→ q1015** **→ q1015** **→ q1015** **→ q1015**
N1011	Are you currently on ART?	Yes No No response	**→ q1013** **→ q1015**
N1012	[If not on ART] Why not?	Don't know where to get them Scared/embarrassed to go to a facility Don't think I need them Doctor said I wasn't ready to start Don't want them Don't like side effects Using traditional/local medicine instead Other	**ALL SKIP q1015**
N1013	For how long have you been on ART?	Less than six months Six months or longer Don't know No response	**→ q1015** **→ q1015** **→ q1015**
N1014	Have you had a viral load test?	Yes No Do not remember/know No response	
N1015	Have you ever been tested for hepatitis?	Yes No Do not remember/know No response	 **→ q1101** **→ q1101** **→ q1101**

N1016	Do you know which hepatitis you were tested for?	Hep B Hep C Don't know No response	 → **q1021**
N1017	What was the result of your Hep B test?	Positive Negative Not comfortable saying Don't know / remember No response	→ **q1101** → **q1101** → **q1101** → **q1101**
N1018	Were you vaccinated for Hep B?	Yes No Do not remember No response	 → **q1020** → **q1101** → **q1101**
N1019	Did you receive all three doses?	Yes No Do not remember No response	→ **q1101**
N1020	Why not?	Didn't have time I travelled It was a nuisance Lost vaccination card Service provider not present Worried about stigma Was not important Don't remember / know No response Other	 **ALL SKIP q1021**
N1021	What was the result of your Hep C test?	Positive Negative Not comfortable saying Don't know / remember No response	

Section 11: Access to services and experiences with health care

In this last section, I will ask you some questions about the services you have accessed and your experience with those services.

No.	Questions	Coding categories	Skip to
N1101	Have you visited a clinic or drop-in center in or around Unguja that provides health information or services to FSW/SEC in the past 12 months?	Yes No Do not remember No response	 → **q1106** → **q1106** → **q1106**

N1102	Was it any of these clinics? *Read responses and mark all that apply*.	ZAYEDESA AYAHIZA ZAYEA BIO ZYF YOSOA ZANGOC Hospital or health facility Don't remember No response Other	
1103	Did you receive any of the following services at this clinic or drop-in center? (*Mark the service that applies; if they have received more than 1 service, mark all that apply*)	Information on STI or HIV transmission or prevention Received Condoms Lubricant General counseling from a peer counselor Counseling from a professional/VCT counselor Sexual and reproductive health services An HIV Test Bleach kit Clean needles Information on TB Hepatitis testing Don't remember No response Other	
N1104	Based on the way you were treated by the facility staff, would you return to that facility for services?	Yes No Do not know No response	→ **q1106** → **q1106** → **q1106**
N1105	Which of these did you experience that makes you not want to return to that facility? *Read responses and mark all that apply*.	Health workers spoke unkindly to you Health workers gossiped about you to other health workers/clients Health workers shared information about you and your sex work behaviors to other health workers/clients Health workers did not take time to explain medications or procedures to you Health workers were physically abusive to you Health workers avoided physical contact with you No response Other	
N1106	Have you been in contact with any health peer educator in the community in the <u>last 12 months</u>?	Yes No Do not remember No response	 → **END** → **END** → **END**

N1107	How many times have you been in contact with a peer educator in the last 12 months? *If exact number is not known, ask for estimate.*	One time only Two times Three times Four times Five or more times Don't remember No response	
N1108	What services or information did you receive from the peer educator? *Read the answer choices aloud. Mark the service that applies; if they have received more than 1 service mark all that apply.*	General STI or HIV transmission or prevention information Condoms HIV test in your home Lubricant Referral for STI treatment Referral for VCT Referral for care and tx services Referral for PMTCT or family planning Referral for MAT Referral for TB screening Bleach kit Clean needles Don't remember No response Other	
N1109	Did you feel that the peer educator was non-judgmental?	Yes No Do not know No response	
END	**We have come to the end of the interview. Thank you very much for your kind cooperation and spending your valuable time with me.**		