2023

Rapid assessment among people who inject drugs, men who have sex with men, and female sex workers and sexually exploited girls in Pemba Island, Zanzibar, Tanzania - 2023

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Acronyms and abbreviations

AIDS	Acquired immunodeficiency syndrome
AMREF	African Medical and Research Foundation
ART	Antiretroviral treatment
ARV	Antiretroviral
AYAHIZA	Association of Youth Against HIV/AIDS in Zanzibar
BSS	Behavioral surveillance survey
CDC	Centers for Disease Control and Prevention
FGD	Focus group discussion
FSW	Female sex worker
HBV	Hepatitis B virus
HCV	Hepatitis C virus
HIV	Human immunodeficiency virus
HTS	HIV testing services
IBBS	Integrated biological and behavioral surveillance
IEC	Information, education, and communication
ID	Identification
IDI	In-depth interview
JUKAMKUM	*Jumuiya ya kuelimisha athari za madawa ya kulevya, ukimwi na mimba katika umri mdogo*
KII	Key-informant interview
KP	Key population
MAT	Medication-assisted therapy
MSM	Men who have sex with men
NGO	Non-governmental organization
NHLQATC	National Health Laboratory Quality Assurance and Training
OAT	Opioid Agonist Therapy
ODK	Open Data Kit
PEPFAR	President's Emergency Plan for AIDS Relief
PEP	Post exposure prophylaxis
PrEP	Pre-exposure prophylaxis
PWID	People who inject drugs
RA	Rapid assessment
RDS	Respondent driven sampling
SEG	Sexually exploited girls
STI	Sexually transmitted infection
TB	Tuberculosis
TLS	Time location sampling
UCSF	University of California, San Francisco
U=U	Undetectable equals Untransmittable
UMATI	Chama cha Uzazi na Malezi Bora Tanzania
UNAIDS	Joint United Nations Programme on HIV/AIDS
VCT	Voluntary counseling and testing
VL	Viral load

ZAC	Zanzibar AIDS Commission
ZAHRI	Zanzibar Health Research Institute
ZAMREC	Zanzibar Medical Research Ethical Committee
ZAPHA+	Zanzibar Association of People Living with HIV/AIDS
ZAYEDESA	Zanzibar Youth Education Development Support Association
ZIHHTLP	Zanzibar Integrated HIV, Hepatitis, Tuberculosis, and Leprosy Program
ZYF	Zanzibar youth forum

Institutional involvement

Collaborating institutions

Zanzibar Integrated HIV, Hepatitis, TB, and Leprosy Programme (ZIHHTLP)

Ministry of Health, Zanzibar

Zanzibar AIDS Commission (ZAC)

US Centers for Disease Control and Prevention (CDC), Division of Global HIV and TB

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1. Introduction

Zanzibar is a semi-autonomous region of Tanzania, comprised of islands off the coast of mainland Tanzania. Pemba Island is the second largest with a population of 543,441[1]. Pemba is a rural island that is home to a small, majority Muslim population where commercial sex work, injection drug use, and same sex sexual relations are illegal. According to the Tanzania HIV Impact Survey 2022-2023, HIV prevalence among the general population of Pemba Island was 0.3% (95% confidence interval [CI]: 0, 0.9).

A rapid assessment (RA) was conducted in Pemba in 2011 by the Zanzibar Integrated HIV, Hepatitis, Tuberculosis, and Leprosy Programme (ZIHHTLP) amongst three key populations (KP): people who inject drugs (PWID), men who have sex with men (MSM), and female sex workers and sexually exploited girls (FSW/SEG) (young women aged 15-17 years who sold sex were classified as SEG). The objectives of the RA were to estimate HIV seropositivity among these three groups, identify and characterize their risk behaviors, and contextualize their risk of infection. The RA was repeated in 2018[2] and again in 2023 to monitor and characterize KP networks and HIV risk in Pemba. The 2023 RA had a larger sample size for each of the three populations of interest and added the district of Micheweni, which was not included in the previous RAs.

This report details the findings of the third RA conducted among PWID, MSM, and FSW/SEG in Pemba. The objectives were to:

1) Estimate the positivity of HIV, hepatitis B, and syphilis among PWID, MSM, and FSW/SEG;
2) Identify and characterize basic risk behaviors among PWID, MSM, and FSW/SEG;
3) Understand the context in which HIV risk behaviors take place for PWID, MSM, and FSW/SEG;
4) Gather data to inform future surveillance activities; and,
5) Estimate population sizes for PWID, MSM, and FSW/SEG.

[1] Ministry of Finance and Planning, Tanzania National Bureau of Statistics and President's Office - Finance and Planning, Office of the Chief Government Statistician, Zanzibar. The 2022 Population and Housing Census: Age and Sex Distribution Report. Tanzania Zanzibar, December 2022

[2] Report from 2018 RA available at ZIHHTLP-Zanzibar Integrated HIV, Hepatitis, TB and Leprosy Programme (zhhtlsmz.go.tz)

2. Rapid assessment methods

2.1. Composition and training of rapid assessment team

The RA study team included data collectors and investigators affiliated with ZIHHTLP, the Zanzibar Ministry of Health, the Zanzibar AIDS Commission, and the University of California, San Francisco (UCSF), as well as nurse counsellors from local facilities, and other staff working with community-based organizations in Pemba, including peer educators. All team members had knowledge of and experience working with KPs in Zanzibar, with a mix of members coming from Unguja and Pemba. Several members of the RA team had direct experience providing HIV prevention, care, and treatment services to KPs. Peer educators were drawn from all three populations and were local to Pemba. The team also included laboratory personnel responsible for on-site testing.

All members of the study team participated in a five-day training. The training gave the study 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 could occur during implementation. All data collection tools were reviewed during the training to ensure that all interviewers had the same understanding of each question. Peer educators participated in the review of data collection tools to ensure that non-offensive language was used. The RA team also received comprehensive human subjects training, including informed consent and confidentiality, to ensure the protection of RA participants. Staff were also trained to identify and appropriately refer children disclosing child sexual abuse or sexual exploitation. Laboratory staff were trained in all tests used during the RA.

2.2. Overview of the rapid assessment

2.2.1. Overview of rapid assessment methods

The decision to conduct a third RA rather than using a more empirical surveillance method, such as respondent-driven sampling or time-location sampling, was made based on findings from previous RAs as well as an interest in completing data collection as quickly and discreetly as possible. The 2011 and 2018 RAs found that key populations in Pemba had limited networks outside of their districts of residence and that there were few venues where KPs typically congregated, and in some districts none. The amount of time required to complete data collection was also considered. The guidance from investigators was that, due to stigma and discrimination against KPs within the local community, spending too much time in a single location for data collection could result in a negative response from the surrounding community and endanger RA activities.

The study team used both qualitative and quantitative data collection methods. Qualitative methods included key informant interviews (KIIs), focus group discussions (FGDs), and individual in-depth interviews (IDIs). Quantitative data were collected through a demographic and risk factor survey, administered individually by an interviewer. We also conducted on-site rapid testing for HIV, hepatitis B surface antigen, and syphilis antibodies using venous blood specimens.

There were two types of RA participants: key informants (KIs) and those who participated in an FGD or an IDI (FGD/IDI participants). The RA procedures for each type of participant are depicted in

Figure 1. Individuals who participated in KIIs could not participate in the FGD/IDI components of the RA. Likewise, individuals who participated in the FGD/IDI components of the RA could not participate as KIs.

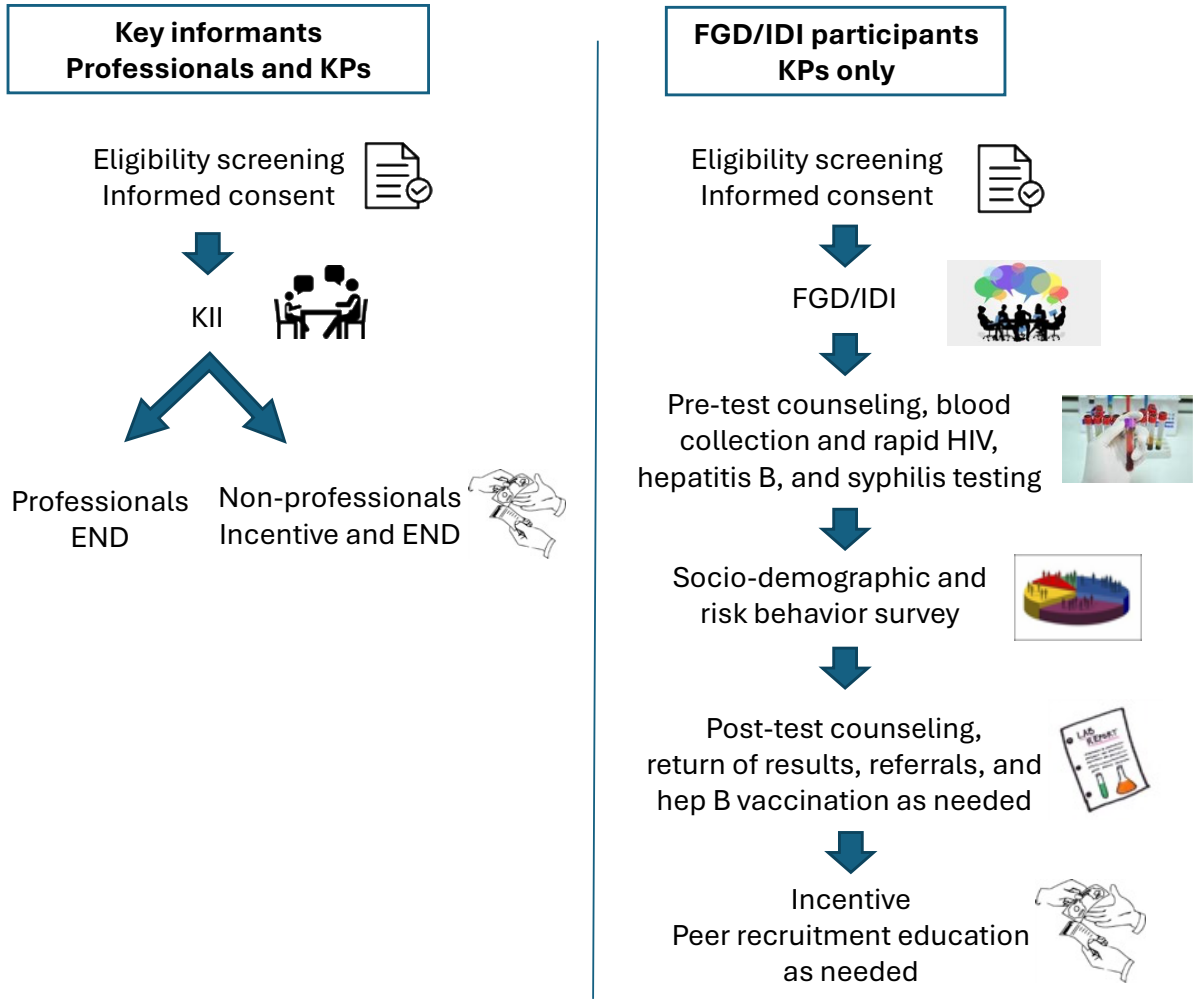

Figure 1: Rapid assessment procedures for key informants and focus group discussion/in-depth interview participants, Pemba, 2023

We conducted KIIs with two types of KIs: individuals providing HIV services to the populations of interest who were interviewed in a professional capacity, and KPs who were well-networked and knowledgeable about the populations of interest throughout Pemba (non-professionals). KIIs aimed to understand the characteristics of the populations, including HIV risk behaviors, to understand the availability and uptake of KP-friendly HIV services, and to plan survey logistics.

FGD and IDI participants were all KPs. These individuals participated in three components of data collection: a quantitative demographic and risk factor survey, either an FGD/IDI, and biomarker testing. All FGD/IDI participants were invited to join an FGD. Individuals who did not feel comfortable joining a group interview were given the option to participate in an individual IDI instead.

We conducted data collection in each of the four main districts in Pemba: Chake Chake, Wete, Mkoani, and Micheweni. We used ZIHHTLP offices or the offices of non-governmental organizations (NGOs) working with KPs in Pemba as study sites. There were six study sites across the four districts: three in Chake Chake (ZIHHTLP, ZAC, and an NGO providing services to KPs and youth), one in Mkoani (an NGO providing services to KPs), one in Wete (an NGO providing services to KPs and youth), and one in Micheweni (a newly established youth center). These sites were selected because they were acceptable to KPs and provided secure and confidential spaces.

Data collection took place from 6th to 23rd February 2023.

2.3. Sample size

We planned for a maximum of 48 KIIs: three individuals participating in a professional capacity in each district, and three individuals from each population participating in a non-professional capacity in each district (Table 1).

Table 1: Planned number of key informant interviews, Pemba rapid assessment, 2023

Key informant interview participants	Maximum number of key informant interviews per district	Number of districts	Total key informants
Non-professionals (people who inject drugs)	3	4	12
Non-professionals (men who have sex with men)	3	4	12
Non-professionals (female sex workers and sexually exploited girls)	3	4	12
Professionals serving KPs	3	4	12
Total number of key informant interviews			**48**

We planned for a maximum of 36 FGDs: three FGDs per population per district (Table 2). Each FGD was expected to have six to eight participants, with a maximum of ten.

Table 2: Planned focus group discussions, Pemba rapid assessment, 2023

Key population	Maximum number of focus group discussions per district	Number of districts	Total number of focus group discussions
People who inject drugs	3	4	12
Men who have sex with men	3	4	12
Female sex workers and sexually exploited girls	3	4	12
Total number of focus group discussions			**36**

2.4. Inclusion and exclusion criteria

2.4.1. Key informants

KIs who were members of a KP were required to meet the inclusion criteria described in 2.4.2.

KIs who were not members of KPs had 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 behavior among FSW/SEG, MSM, or PWID, OR own a local business that caters to FSW/SEG, MSM, or PWID, OR involved in outreach work among FSW/SEG, MSM, or PWID, OR involved in research with local FSW/SEG, MSM, or PWIDs.

KIs, who did not meet the above criteria were excluded.

2.4.2. Focus group / in-depth interview participants

FGD and IDI participants were required to meet the below inclusion criteria to participate in the Pemba RA. Mature minors were those whose circumstances allowed them to consent for themselves, as per Zanzibar national HIV testing and counseling guidelines[3].

- **Inclusion criteria for PWID:** a) injected drugs in the past 3 months; b) male or female 18+ years of age or mature minor aged 15-17 years (non-mature minors were excluded); c) lived in Pemba for the past 3 months; and d) willing and able to provide informed consent.
- **Inclusion criteria for MSM:** a) engaged in anal sex with other males in the past 3 months; b) biological male 18+ years of age or mature minor aged 15-17 years (non-mature minors were excluded); c) lived in Pemba for the past 3 months; and d) willing and able to provide informed consent.
- **Inclusion criteria for FSW/SEG:** a) exchanged sexual intercourse for money in the past month; b) female 18+ years of age or mature minor 15-17 years (non-mature minors were excluded); c) lived in Pemba for the past 3 months; and d) willing and able to provide informed consent.

2.5. Data collection

The flow of data collection for KIs and FGD/IDI participants can be seen in Figure 1.

2.5.1. Participant recruitment

Key informants

The study team purposively selected KIs who were interviewed in a professional capacity (i.e., service providers). These individuals were drawn from ZIHHTLP and other organizations providing or supporting the delivery of HIV/AIDS services for KPs in Pemba.

[3] Zanzibar Integrated HIV, Hepatitis TB and Leprosy Programme of the Ministry of Health, Social Welfare, Elderly, Gender, and Children. (2020). *Zanzibar National Guidelines for the Prevention and Treatment of HIV and AIDS.*

The study team used several methods to identify and recruit KP KIs: recruited directly by ZIHHTLP staff, identified and recruited by other KPs who had been identified as potential participants, and identified by KPs who had participated in the RA. This allowed the study team to interview KIs who were not within existing ZIHHTLP networks.

Focus group / in-depth interview participants

Peer educators used their organizational and personal contacts to recruit FGD/IDI participants within their networks. In some cases, their contacts recruited others from within their social network. In addition, the study team used information gathered during data collection to recruit KPs who were not previously known to peers and NGOs. This ensured participation by more hidden individuals.

Specific recruitment strategies used for each RA population are described below.

People who inject drugs recruitment strategies

An active PWID peer educator and community outreach worker from the Zanzibar Youth Education Development Support Association (ZAYEDESA) recruited potential participants. The peer educator was experienced in providing services to PWID and was known to and accepted by PWID in all districts of Pemba. In addition, the peer had access to PWID leaders and the capacity to penetrate and reach hidden PWID.

The peer educator identified several PWID hotspots and, within each one, identified a hotspot leader. The hotspot leader was someone who was known to all PWID within the hotspot and had the capacity to influence others. The peer educator discussed the RA with the hotspot leader, including the importance and potential advantages and disadvantages of participating in the study, and addressed any questions or concerns. Hotspot leaders were then asked to recruit 10 PWID to participate in the RA. Hotspot leaders informed their group members about the RA and referred them to the study site. The study team screened referred individuals to be sure they met the eligibility criteria to participate in the RA and invited those who were eligible to participate.

Men who have sex with men recruitment strategies

KP KIs who had either been identified by ZIHHTLP staff or who were part of the study team recruited their peers to participate in the RA. These KIs also used their contacts to assist with recruitment efforts. This expanded the study team's reach into MSM networks that were not directly accessible to the study team.

Female sex worker/sexually exploited girl recruitment strategies

In all districts except for Micheweni, the study team used existing knowledge of hotspots and FSW/SEG networks to recruit. A well-known peer identified an initial group of FSW/SEG in each district. Those participants then referred other FSW/SEG to the study site. In Chake Chake, FSW/SEG also directed the study team to a specific area where young FSW/SEG worked. The study team visited this location and identified a young FSW/SEG who was willing and able to recruit her peers to participate in the RA.

The study team used a different recruitment strategy in Micheweni. This was because no NGOs provided services to FSW/SEG in that district, and the study team did not know any FSW/SEG residing in Micheweni. An MSM who had participated in the RA in Wete District provided information to the RA team on where they could find FSW/SEG in Micheweni. The study team visited

the area and gathered information from a local resident regarding establishments where most FSW/SEG worked. This person knew some FSW/SEG and facilitated recruitment.

2.5.2. Screening and informed consent

Study team members screened all potential participants for eligibility upon arrival at the study site using a screening tool (Appendix 5.1). Eligible individuals were invited to participate and referred to an interviewer. Interviewers read the relevant informed consent form (Appendix 5.2) to eligible participants and answered any questions they had. KII participants provided written consent to participate in the RA as they were participating in a professional capacity. FGD/IDI participants were asked to provided verbal consent to each component of data collection. A signed consent form would link participants to the survey and due to the sensitive nature of interview topics, identification of survey participants could have posed a risk to them.

2.5.3. Unique study identifiers

FGD/IDI participants were identified using barcode stickers that contained a pre-printed unique identification number. Barcode stickers with the same unique ID were used to label all RA-related materials for a given individual.

2.5.4. Qualitative interviews

All qualitative interview guides used in this RA were based on the corresponding interview guides used during previous RAs and updated to consider relevant changes to the KP context and experience in Pemba. Interview guides were developed in English, translated into Kiswahili, and then back translated into English to ensure the guides were correctly translated. Interview guides were reviewed during the training, including with members of the study team who were also members of target populations, to ensure appropriate language.

Key informant interviews

Interviewers from the study team conducted KIIs using KII interview guides (Appendix 5.3). These interviews collected data on the characteristics of KPs and the experience of providing sexually transmitted infection (STI)/HIV and other related services to KPs in Pemba.

KIIs covered the following topics:

- Characteristics of KP groups, including socio-demographic characteristics and typical risk behaviors
- KP networks
- Changes in KP populations since the previous RA
- Locations of hotspots where KPs congregate or high-risk activities are taking place
- Types and availability of KP-friendly services
- Challenges or barriers to KPs accessing KP-friendly services
- Networks of KPs who do and do not access KP-friendly services
- Suggestions on how best to access KP networks not already reached by KP-friendly services

Interviews were not audio recorded. Notes and themes were recorded, either on paper tools or directly into Microsoft Word. Notes did not include any identifying information; instead, each participant was issued a unique identification ID. KIIs lasted between 45 and 60 minutes.

KIs participating as non-professionals received an incentive of 20,000 Tanzanian shillings ($8.58 US dollar [USD] as of 13 June 2022 and $7.79 USD as of 2 April 2024) for their transport and time spent to complete the interview. KIs participating in a professional capacity were not compensated.

Focus group / in-depth interviews

Consenting participants were invited to participate in an FGD. Individuals who were not comfortable being interviewed in a group setting were interviewed individually in an in-depth interview. FGDs and IDIs followed the same interview guides (Appendix 5.4) to collect data on characteristics of the KPs, risk behaviors common among KPs, participants' social networks, knowledge of HIV prevention, access to and utilization of health services including HIV-related services, and venues where KPs congregate. HIV knowledge was assessed using standard UNAIDS comprehensive HIV knowledge questions[4].

FGDs were conducted by a minimum of two study team members, one moderator and one note-taker, although additional team members participated, when available, as co-moderators. IDIs were conducted by two members of the study team, one interviewer and one note-taker. Interviews were conducted in Swahili. Notes were taken by hand and later transcribed into Microsoft Word. All participants were provided with a snack and 20,000 Tanzanian shillings ($8.58 USD as of 13 June 2022 and $7.79 USD as of 2 April 2024) for their transport and time spent to complete the RA.

2.5.5. Sociodemographic and risk behavior survey

Interviewers from the study team administered the appropriate socio-demographic and risk behavior survey (Appendices 5.5–5.7) to each FGD/IDI participant individually. The surveys were programmed in Open Data Kit (ODK) software and administered using tablets. The survey collected information on participants' socio-demographic characteristics, sexual and drug risk behaviors, access to and utilization of HIV-related services, and HIV status, and lasted approximately 30 minutes. Data were uploaded to a password-protected server at the end of each day.

2.5.6. Biological testing

Nurse counsellors who were part of the study team provided pre-test counselling for consenting FGD/IDI participants. Study team nurse counsellors were staff from local health facilities who had experience providing testing and counseling services to KPs.

Nurse counsellors collected a whole blood specimen from each participant in a 5 milliliter Ethylenediamine tetraacetic acid vacutainer tube and labelled the tube with a barcode sticker containing the participant's unique study ID. Trained laboratory technicians used those whole blood specimens to conduct rapid tests for HIV, hepatitis B surface antigen (HBsAg), and syphilis antibodies using the below tests. All FGD/IDI participants were tested for all three infections and all testing was done on-site.

[4] United Nations General Assembly Special Session on HIV/AIDS (2005). Guidelines on Constructions of Core Indicators. jc1126-constrcoreindic-ungass_en.pdf (unaids.org)

- Rapid HIV testing followed the national algorithm[5] (i.e., SD Bioline™ HIV-1/2 3.0 [Standard Diagnostics, Kyonggi-do, South Korea] followed by Uni-Gold™ HIV [Trinity Biotech, Bray, Ireland] for participants with a reactive first test). Participants were tested for HIV regardless of their self-reported serostatus.
- Rapid hepatitis B testing was done using Bioline, HBsAg WB test (Abbott Diagnostics Korea Inc.) to detect the presence of hepatitis B surface antigen.
- Rapid syphilis testing was done using SD Bioline Syphilis 3.0 antibody test (Standard Diagnostics, Inc. Gyeonggi-do, Republic of Korea).

Counsellors returned HIV, hepatitis B, and syphilis test results to all FGD/IDI participants from all populations in conjunction with post-test counselling on the same day. Counsellors also provided referrals for treatment and prevention services as appropriate. Counsellors offered the initial dose of the hepatitis B vaccine to participants who had a non-reactive hepatitis B rapid test result. They also provided a vaccination card and information on where to access additional doses to complete the vaccination series.

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

2.6.Data management and analysis

The study team maintained possession of all confidential study-related materials, including data collection tablets, while in the field. Once data collection was completed, the study team stored data in a locked cabinet and on password-protected computers in the ZIHHTLP office. The study team did not record participants' names or other personal identifiers in their notes or on any of the laboratory specimens or results. Instead, they used barcode stickers with unique study IDs to label study materials and link participant data. Personally-identifying information of service provider KIs was securely stored in locked cabinets in the ZIHHTLP office and will not be shared or published.

The study team analyzed qualitative data through an iterative process. Interviewers took detailed notes of all interviews and FGDs. Notes were expanded every day to clarify and add contextual details. Notes were summarized in an Excel matrix by question and topic and reviewed with the study team at the end of each day to identify common and divergent themes. The team summarized findings according to key themes and topics.

Quantitative data collected electronically were uploaded to a password-protected server at the end of each day and monitored to ensure successfully upload and to check for data quality issues. Test results for participants were linked to their socio-demographic and risk behavior questionnaire data via their unique study ID number. Quantitative data were cleaned and analyzed using STATA version 17.0 (STATA Corp, College Station, TX).

[5] Zanzibar Integrated HIV, Hepatitis TB and Leprosy Programme of the Ministry of Health, Social Welfare, Elderly, Gender, and Children. (2020). *Zanzibar National Guidelines for the Prevention and Treatment of HIV and AIDS*.

2.7.Population size estimation

The study team estimated KP sizes by reviewing and synthesizing data from several sources. Data sources included the RA itself, which used wisdom of the crowds to gather estimates, routine HIV testing data from ZIHHTLP and NGOs providing services to KPs, previous rapid assessment reports, and census data.

For wisdom of the crowds, interviewers asked participants to estimate the size of the key population to which they belonged or, in the case of KIs, the population they had experience working with, in each of the four districts. Interviewers asked participants to provide estimates only for districts with which they were familiar. During analysis the study team adjusted estimates for over- and under-estimation (see Appendix 5.8 for more information and adjustments) and calculated total size estimates by adding the median estimates from all four districts.

The study team convened a meeting with key stakeholders, including members of KPs and stakeholders working directly with KPs, to synthesize all data sources and estimates generated by the RA and to interpret the results. The group reviewed all available information and discussed the relative strengths and limitations of each data source. Stakeholders were also asked to provide their own estimates for the size of each population, based on their expert knowledge and experience. These estimates were reviewed by the larger group alongside all other data sources and estimates. Based on this analysis and discussion, the group agreed on estimates of the numbers of PWID, MSM and FSW/SEG in Pemba.

2.8.Ethical considerations

Participation in the RA was completely voluntary, and participants were informed that they could end their participation at any time without any negative consequence. All KP participants gave verbal consent prior to engaging in any study procedures. 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, hepatitis B, and syphilis test results. All participants consented to both study components. Service providers who served as KIs provided written consent.

Participants who were younger than 18 years of age and self-reported sex work were offered referrals to local facilities for psycho-social support services during counseling sessions with nurse counselors who were part of the study team.

The study protocol, including questionnaires and consent forms, received approvals from the Zanzibar Health Research Institute (ZAHRI) and the ethical review board at UCSF. This project was also reviewed in accordance with U.S. Centers for Disease Control and Prevention (CDC) human research protection procedures and was determined to be non-research.

All project staff who were involved in data collection and handling received human subjects and ethics training and signed a confidentiality agreement form prior to beginning survey activities.

2.9.Limitations

This study has limitations. First, KPs in Pemba face discrimination and stigmatization from the community, making some KPs unwilling to disclose their KP status within healthcare or research settings. This can make KPs difficult to reach with study recruitment efforts. To mitigate this

limitation, the study team worked to reach more hidden PWID, MSM, and FSW/SEG, and to ensure participation from diverse sub-groups within each population. Second, we used a convenience sampling strategy including peer-to-peer recruitment. The sample likely does not represent all PWID, MSM, and FSW/SEG in Pemba. Those who were not known to or who did not have a relationship with initial recruiters or other recruited peers might have been excluded.

Finally, behavioral data were self-reported and might have been prone to social desirability bias. This could have led to under-reporting of high-risk practices and over-reporting of desired practices.

3. Results

3.1. Overview of rapid assessment participants

A total of 365 individuals participated in the Pemba RA in four districts (Chake Chake, Mkoani, Wete, and Micheweni) of Pemba Island from 6th to 23rd February 2023. We conducted 41 KIIs, with 34 individuals participating as KP KIs and 7 participating as professionals who work with KPs. We conducted a total of 34 focus groups with 306 participants. There were 19 individuals who did not want to participate in a group interview and chose to participate in an individual IDI instead. Most IDI participants were MSM. All FGD/IDI participants also completed the socio-demographic and risk behavior survey as well as biological testing for HIV, hepatitis B, and syphilis (Table 3).

Table 3: Numbers and types of participants by population, rapid assessment among people who inject drugs, men who have sex with men, and female sex workers/sexually exploited girls, Pemba, Zanzibar, 2023

Population	Key informant interviews		Focus group discussions		Number of in-depth interviews*	Number of socio-demographic and risk survey participants	Number tested for HIV, hepatitis B, and syphilis
	Number with key population members	Number with professionals	Number of focus group discussions	Number of participants			
People who inject drugs	12	2	12	110	0	110	110
Men who have sex with men	11	4	10	91	16	107	107
Female sex worker and sexually exploited girls	10	1	12	105	3	108	108
TOTAL	**33**	**7**	**34**	**306**	**19**	**325**	**325**

**In-depth interviews were conducted with members of key populations who were not comfortable participating in a focus group discussion because of the group setting. The same interview guides were used for both types of interviews.*

3.2. Presentation of findings

Detailed results for each KP group are presented in the following sections. Findings from the quantitative survey as well as testing data are presented as unweighted percentages. These do not include information collected from KIs. Qualitative findings presented throughout the report include data from KIIs, FGDs, and IDIs and are clearly labeled as qualitative. Findings are representative of the RA sample and present their perceptions of KP communities in Pemba.

Additional quotes collected through qualitative interviews can be found in Appendix 5.9.

3.3.People who inject drugs (PWID)

3.3.1. Key findings

Key findings among people who inject drugs (N=110)

1. All were males. Most were 35 years and older. Participants had lived in Pemba for a median of 20 years.
2. Well networked as each knew at least 10 other PWID and met regularly while searching for drugs and injecting.
3. There were approximately 400 PWID in Pemba (range: 350–600) consistent with the 2018 RA.
4. Nearly all (98%) were injecting heroin.
5. One in five participants shared needles in the past 3 months.
6. Limited sexual partnerships (31% had a female partner and 2% a male partner in the past 3 months) and inconsistent condom use.
7. Less than half (43%) had comprehensive HIV knowledge, and 52% agreed that "Cleaning needles and syringes between injections reduces the risk of HIV."
8. Experiencing physical violence from police and having one's personal belongings and money unlawfully taken was common.
9. Did not see value in reporting mistreatment by police as their reports were usually disregarded.
10. Seventy-nine percent tested for HIV in the past year.
11. Many received services from NGOs, but these services were limited in Micheweni District.
12. Many complained of discrimination when seeking health services from health facilities, including long wait times resulting from being served last.
13. Opioid agonist therapy was not available; only one sober house was operational.
14. HIV positivity was 2.7% (n=3), hepatitis B surface antigen positivity was 1.8% (n=2), and syphilis antibody positivity was 0.9% (n=1). No co-infection with HIV was identified.

3.3.2. Recruitment outcomes among people who inject drugs

We recruited a total of 124 individuals for the RA among PWID: 14 KIs (two professionals providing services to PWID and 12 recovered PWID) and 110 PWID who participated in 12 FGDs (Table 4). The majority of PWID participants were not known to the peer educator who guided recruitment efforts and were not engaged in services provided by local NGOs.

Table 4: Numbers and types of participants by district, rapid assessment among people who inject drugs, Pemba, Zanzibar, 2023

District	Key informant interviews			Focus group discussions		Number of in-depth interviews	Number of socio-demographic and risk survey participants	Number tested for HIV, hepatitis B, and syphilis
	Key population members	Professionals		Number of focus group discussions	Number of participants			
Chake Chake	4	1		3	31	0	31	31
Mkoani	4	1		3	29	0	29	29
Wete	3	0		3	30	0	30	30
Micheweni	3	0		3	20	0	20	20
Total	**12**	**2**		**12**	**110**	**0**	**110**	**110**

3.3.3. Description of the population of people who inject drugs

Characteristics of rapid assessment participants (quantitative survey)

All PWID who participated were male. The majority (74%) were aged 35 years and above, with a median age of 40 years (interquartile range [IQR]: 33, 45 years). Participants reported living in Pemba for a median of 20 years (IQR: 9, 35 years). Half (51%) of participants had either partially or fully completed secondary education. Half (55%) of participants were self-employed, and 7% were unemployed. Just under one-quarter (24%) of participants reported being married or living with a partner. Of those who were not married or living with a partner, 25% reported being in a steady sexual relationship (Table 5).

Table 5: Sociodemographic characteristics of participants, rapid assessment among people who inject drugs, Pemba, Zanzibar, 2023 (N=110)

Characteristics	Frequency (n)	Percentage (%)[¥]
Age group (years)		
20–24	2	2
25–34	27	25
≥35	81	74
Median age in years (interquartile range)	40 (33, 45)	
Education		
No formal education	13	12
Not completed primary	18	16
Completed primary	23	21
Not completed secondary	36	33
Completed secondary	20	18
Time lived in Pemba		
Whole life	26	24
<5 years	12	11
≥5 years	72	65
Median time lived in Pemba in years (interquartile range)	20 (9, 25)	
Residence		
Wete	30	27
Chake Chake	31	28
Mkoani	29	26
Micheweni	20	18
Occupation		
Self-employed	61	55
Employed	6	5
Casual laborer	35	32
Unemployed	8	7
Marital status		
Married/living with a partner	26	24
Separated/widowed	55	50

Never married	29	26
In a steady relationship (n=84)*		
Yes	21	25
No	63	75

** Among those who were not married/living with a partner*
ˠ Due to rounding, proportions may not equal 100%

Subgroups among people who inject drugs and meeting venues

During qualitative interviews, PWID participants described several subgroups within the population:

i. High versus low class, based on perceived socioeconomic status
ii. Hidden (only injects in private) versus openly injecting (i.e., injects with other PWID)
iii. New injectors versus those who have been injecting for longer

Hidden PWID were known as "PWID special" and were described as usually looking "smart." Participants reported that while "PWID special" did not interact with other PWID, people in other subgroups interacted frequently. PWID who were new to injection tended to form their own social groups, but they eventually mingled and became friends with other PWID.

> "Age doesn't matter at all, there are no subgroups during drug search and injection. I am 54, and I inject with some who are 60 years and above." **(PWID participant, Chake Chake)**

Participants qualitatively reported that most PWID did not frequent bars or night clubs to socialize. Instead, they visited those places to collect empty bottles or to steal from drunk men to get money for drugs. To inject, PWID participants reported that they met in venues such as abandoned houses, cemeteries, and other places (e.g., swamps, mangroves, and under the bridge) which were not visited by the public. In addition, PWID KIs reported that PWID met in coffee venues to play games such as checkers, draft, and bao.

Networks and movement

PWID seemed well networked. During qualitative interviews, PWID participants reported that they knew at least 10 other PWID. They also reported interacting with other PWID often, especially when looking for drugs or seeking help to inject (i.e., finding a vein). PWID participants reported that they traveled within Pemba to look for drugs and, if drugs were unavailable, they either travelled or sent a trusted representative to buy drugs in other places such as Dar es Salaam and Tanga, Tanzania mainland; Unguja, Zanzibar; or Mombasa, Kenya. PWID participants reported communicating either in person or by phone and using coded language to purchase drugs or to agree on places to meet drug dealers.

> "I'm known as a doctor among my fellow PWID as I identify veins and inject others. I know 32 PWID in Wete and 12 in Micheweni. We meet frequently and when they get money for drugs they come to be injected." **(PWID participant, Wete)**

Population size estimate

Analysis of wisdom of the crowd estimates yielded an estimated population size of 350 PWID in Pemba. Program data from January to December 2022 reported 764 HIV tests among PWID (not unique individuals). The estimate from the previous RA was 400 (range: 200–600). Considering these

data points, peers and experts working for KP programs in Zanzibar who participated in the size estimation workshop estimated a median population size of 400 (range: 350–600) PWID in Pemba.

3.3.4. Drug use and HIV risk behaviors among people who inject drugs

During qualitative interviews, PWID participants reported a perceived increase in the number of PWID in Pemba in recent years, especially among younger individuals. The use of drugs among young people was attributed to several factors including: financial hardship, inadequate job or employment opportunities, peer pressure, and the desire to arouse sexual partners. In addition, PWID participants reported that drug availability had expanded from urban to rural areas resulting in increased drug use.

In the quantitative survey, almost half (47%) of participants reported injecting drugs for the first time before 25 years of age. The median age at first injection was 25 years (IQR: 20, 30 years). The majority (92%) of participants had been injecting drugs for at least 5 years, with a median of 13 years (IQR: 8, 18 years) of injection drug use (Table 6).

Table 6: Age at first injection and duration of injection drug use, rapid assessment among people who inject drugs, Pemba, Zanzibar, 2023 (N=109*)

Characteristics	Frequency (n)	Percentage (%)[ɣ]
Age at first injection (years)		
<20	20	18
20–24	32	29
≥25	57	52
Median age at first injection in years (interquartile range)	25 (20, 30)	
Duration of injection drug use (years)		
<5	9	8
5–9	25	23
10–14	30	28
≥15	45	41
Median duration of injection drug use in years (interquartile range)	13 (8, 18)	

**Excludes one individual who could not remember the age at which he started injecting drugs.*

[ɣ] Due to rounding, proportions may not equal 100%.

Drugs used for injection and injection practices

Nearly all (98%) PWID participants reported injecting heroin (white and/or brown) in the quantitative survey. Only two PWID reported that they did not inject heroin; one reported injecting cocaine while the other reported using prescription drugs. PWID participants qualitatively reported the use of adulterated heroin (i.e., heroin mixed with other substances), which led them to inject even more heroin to achieve the desired effect. They also reported use of prescription drugs like tramadol

> "If my syringe/needle is not functioning well by the time I have withdrawal symptoms, I won't be able to wait for a new syringe. I will use the one which is easily available by just cleaning it with any water and inject myself." **(PWID participant, Chake Chake)**

(opioid) or Valium (generic name diazepam, benzodiazepine) to ease pain when drugs of choice were unavailable.

Qualitatively, PWID participants reported an overall decrease in sharing of needles and syringes among PWID. In the quantitative survey, 20% of participants reported sharing needles or syringes in the past 3 months.

Sexual partnerships and HIV risk behaviors among people who inject drugs

In the quantitative survey, two-thirds (67%) of PWID participants reported first sexual intercourse between the ages of 15–19 years. More than two-thirds (69%) of PWID reported no female sexual partners in the past 3 months, and 98% reported no male sexual partners in the past 3 months. Three (3%) PWID participants reported receiving money or goods in exchange for sex in the past month (Table 7). Condom use was qualitatively reported to be low.

Table 7: Sexual history and partnerships among people who inject drugs, Pemba, Zanzibar, 2023 (N=110)

Characteristics	Frequency (n)	Percentage (%)[ɣ]
Age at first sex (years)		
15–19	72	65
20–29	30	27
≥30	5	5
Did not remember	3	3
Median age at first sex in years (interquartile range)	18 (17, 20)	
Number of female sexual partners in past 3 months		
None	76	69
1	26	24
2 or more	8	7
Number of male sexual partners in past 3 months		
None	108	98
1 or more	2	2
Received money or goods for sex in past month		
Yes	3	3
No	107	97
Used a condom last time received money or goods for sex among those who received money or goods for sex in past month		
Yes	1	33
No	2	66

[ɣ] *Due to rounding, proportions may not equal 100%.*

3.3.5. HIV knowledge and experiences with violence and stigma

HIV knowledge among people who inject drugs

As part of the quantitative survey, PWID participants were asked five standard UNAIDS HIV knowledge questions. Between 84–96% of participants responded to the individual questions correctly. Less than half (43%) of participants had comprehensive HIV knowledge (answering all five

questions correctly). While most (93%) participants agreed that sharing needles increases the risk of HIV, only 52% agreed with the statement: "Cleaning needles and syringes between injections reduces the risk of HIV" (Table 8).

Knowledge of undetectable equals untransmittable (U=U) was limited. Half (54%) of participants agreed with the statement "a person living with HIV who is taking HIV medication cannot pass HIV to a sexual partner once a laboratory test can no longer detect the HIV in their blood" (Table 8).

Table 8: Assessment of HIV knowledge among people who inject drugs, rapid assessment among people who inject drugs, Pemba, Zanzibar, 2023 (N=110)

	Participants who responded correctly	
	Frequency (n)	**Percentage (%)**
UNAIDS knowledge questions		
Can the risk of HIV transmission be reduced by having sex with only one uninfected partner who has no other partners?	98	89
Can a person get HIV from mosquito bites?	89	81
Can a person reduce their risk of getting HIV by using a condom every time they have sex?	82	75
Can a healthy-looking person have HIV?	92	84
Can a person get HIV by sharing food with someone who has HIV?	106	96
Comprehensive knowledge*	**47**	**43**
Undetectable equals untransmittable questions		
When taken as prescribed by a health worker, HIV medications decrease the amount of HIV in the blood of people living with HIV. Therefore, the amount of virus in their blood becomes too low to detect in a laboratory test.	85	77
A person living with HIV who is taking HIV medication cannot pass HIV to a sexual partner once a laboratory test can no longer detect the HIV in their blood.	59	54
Risk assessment questions		
Sharing needles when injecting drugs will increase the risk of HIV infection.	102	93
Cleaning needles and syringes between injections reduces the risk of HIV.	57	52

* Able to respond correctly to all five HIV knowledge questions

Experiences of violence among people who inject drugs

Almost every PWID participant qualitatively reported to have experienced physical violence either from police or the community. PWID participants reported often being blamed for anything bad that happened in the streets or within the community and sometimes being beaten as a result, even if they did not commit the offense. They stated that they had no place to report their own experiences of violence as violence was often perpetrated by law enforcement.

> "My leg was broken after being beaten by police. Police sometimes steal from us during ambushes once they do not find evidence of drugs. Currently, there is a lot of harassment and physical violence emanating from law enforcers." **(PWID participant, Chake Chake)**

Professional KIs also reported that violence by police could make it difficult for NGOs to reach clients, as PWID sometimes feared that NGOs could lead police (especially community security officers) to them.

Experiences with stigma

PWID participants reported that stigma was common. They reported stigma from other substance users who feared being present when a PWID experienced a negative outcome of injecting, such as an overdose. PWID participants also reported stigma from their families and the wider community, who often regarded them as professional thieves and people who had no direction or path in life. They reported that injecting drugs was seen by the community as something that PWID enjoyed and actively chose as opposed to the result of addiction or substance use disorder. PWID participants also reported being stigmatized by health care providers and experiencing stigma related to HIV. They reported that it was hard to disclose one's HIV status due to both stigma and concerns about confidentiality.

> "In Pemba, unlike Dar es Salaam and Unguja, it is hard to disclose your HIV status as people will be gossiping about you. In that case people decide to keep quiet." **(PWID participant, Chake Chake)**
>
> "There is a stigma, especially from the new health providers. I went to the facility at noon and was served around 10 pm. The providers were just staring at me." **(PWID participant, Mkoani)**

3.3.6. Availability and uptake of HIV and sexually transmitted infection services

PWID participants qualitatively reported receiving HIV prevention services from various institutions including ZAYEDESA, Jumuiya ya kuelimisha athari za madawa ya kulevya, ukimwi na mimba katika umri mdogo (JUKAMKUM), ZIHHTLP, Zanzibar Youth Forum (ZYF), UMATI, Association of Young people Against HIV/AIDS in Zanzibar (AYAHIZA), and ZAPHA+. The exception was Micheweni district. It was reported that no institution was providing services to PWID directly in Micheweni, and services were only offered on a limited basis by outreach workers coming from other districts. Participants

> "ZAYEDESA have constantly been providing education regarding HIV, hepatitis, and drug abuse. Moreover, they visit us at our venues for HIV testing every month." **(PWID participant, Mkoani)**
>
> "I have been here for 3 years and have not seen any organization or institution that intends to reach PWID". **(Key informant, Micheweni)**

also reported being exposed to messages regarding HIV prevention through seminars and media, including radio and television.

In the quantitative survey, all 110 PWID reported to have tested for HIV at least once in their lifetime, with 79% testing in the past year (Table 9). Reasons given for not testing for HIV included time constraints and fear of HIV results. Three (3%) PWID participants disclosed a known HIV-positive status, and all of them reported being on ART. When asked about HIV care and treatment services during qualitative interviews, PWID participants reported that while they may face difficulties during enrollment, it was not hard to access and remain in HIV care and treatment programs. PWID participants were unaware of pre-exposure prophylaxis (PrEP) services[6].

During qualitative interviews, nearly all PWID participants expressed a desire to participate in opioid agonist therapy (OAT) and access sober house services to rehabilitate and resume their normal lives. At the time of the RA, there were no OAT services in Pemba, and there was only one sober house located in Chake Chake. Participants reported being tired of the agony and difficulties brought on by drug injection, including being abandoned by their families and the community.

Both PWID participants and professional KIs qualitatively reported that NGOs provided services through outreach at venues where PWID congregate. Professional KIs reported that engaging with PWID in venues where they spend time and engaging recovered PWID who were well known and trusted had been successful strategies to reach this population. They also reported reaching limited numbers of new PWID clients and that they typically reached the same clients when providing services. They attributed this to the fact that new injectors tended to hide when they would first start injecting.

Table 9: Uptake of key-population friendly health services and HIV testing among people who inject drugs, rapid assessment among people who inject drugs, Pemba, Zanzibar, 2023 (N=110)

Characteristic	Frequency (n)	Percentage (%)
Ever tested for HIV		
Yes	110	100
Most recent HIV test among those who ever tested for HIV (excluding those who disclosed an HIV-positive status)		
Within past year	85	79
1–2 years ago	16	15
More than 2 years ago	6	6

3.3.7. Biological results

Three (2.7%) of 110 PWID tested positive for HIV. All PWID living with HIV disclosed their status and reported being on treatment. Two (1.8%) PWID tested positive for hepatitis B surface antigen, and one (0.9%) tested positive for syphilis antibodies. None of the PWID who tested positive for HIV had any co-infections.

[6] At the time of the assessment pre-exposure prophylaxis services were only available as a pilot in Chake Chake.

3.3.8. Perceived changes in the population of people who inject drugs and comparison with the previous survey

This RA had a larger sample size (N=110) than the 2018 RA (N=57) and included participants from Micheweni district (n=20), which was not previously included.

Participants reported a perceived increase in the number of PWID over the past 5 years; however, the population size estimate remained consistent with the previous RA. It was also reported that young people had started injecting drugs to prolong erections and better satisfy their sexual partners, as well as due to shortages and limited effects of non-injection drugs (e.g., smoking heroin or a mixed cocktail of heroin and cocaine was perceived to have a weaker effect than injecting). Participants also reported a perceived decrease in the sharing of needles and syringes, which was attributed to education and a few small pharmacies that sold needles and syringes to PWID. However, as in the previous RA, while PWID qualitatively reported that sharing of needles was decreasing, some individual participants quantitatively reported recently sharing needles with other PWID. Another reported change was that due to increasing police harassment and violence over the past 5 years, most PWID no longer spent as much time in groups or at venues. Finally, as in the 2018 RA, PWID continued to request access to OAT and sober house services, which had not yet been scaled in Pemba.

3.3.9. Key considerations

The findings show gaps in the availability and uptake of primary and secondary prevention services, in particular availability of sterile injection equipment and PrEP, as well as drug use treatment options. Stigma, discrimination, and violence against PWID continued to be present and created barriers for PWID to access services. However, the RA reached and recruited PWID who had not previously been reached by KP services, suggesting that there is room to expand existing services and that providers could reach more PWID with increased efforts.

The following are key considerations resulting from this RA:

1. Increasing accessibility of sterile needles and syringes at a variety of outlets including hospitals, pharmacies, and NGOs reaching PWID could reduce needle sharing and disease transmission among PWID. Sensitizing regulatory agencies, community authorities, and pharmacy owners on the importance of primary prevention services may help to increase the acceptability of making clean needles more widely available.
2. The RA leveraged networks within the PWID community to reach and recruit individuals who had not previously been reached by services focusing on key populations. Ensuring that NGOs have enough resources and staffing to reach all PWID in Pemba and strengthening the use of PWID networks could result in improved reach, coverage, and uptake of services.
3. Establishing OAT and expanding sober house services in all districts would provide PWID with an option to enter recovery. Supporting recovering PWID with life and entrepreneurship skills as part of rehabilitation services might help to improve their reintegration into the community.
4. Increasing collaboration and networking with communities, law enforcement, particularly the Zanzibar Drug Control Authority, and health care providers, and sensitizing them on the key points below could reduce stigma and discrimination against PWID. It could also improve

options for PWID to report and receive services when they are the victims of violence or crime.

   a. Addiction as a health issue and support for PWID to access and adhere to recovery programs.
   b. Importance of equitable access to healthcare for all members of the community, including PWID and other KPs.
   c. Rights of PWID and acceptable and appropriate service delivery, including following standard procedures when PWID report experiencing violence or another mistreatment.

5. Increasing the frequency and reach of educational interventions about HIV and the benefits of clean needles might lead to increased HIV knowledge and prevention of new infections.

3.4.Men who have sex with men

3.4.1. Key findings

Key findings among men who have sex with men (N=107)

1. Most were young (median age of 23 years), originally from Pemba (73%), and more than a quarter (27%) reported being married or living with a female partner.
2. Met often, both socially and for sexual encounters, with a median network size of 15.
3. There were approximately 350 MSM in Pemba (range: 250–450).
4. Transactional sex (74% had received money or goods for sex in past 30 days) and condomless sex (64% did not use a condom at last sex) were common, with a perception that the practice of having multiple concurrent sexual partners is increasing.
5. Six in ten (61%) had comprehensive HIV knowledge.
6. Eight in ten (80%) had tested for HIV in the past year.
7. Sexual violence was somewhat common with perpetrators being other MSM, but safe channels did not exist for reporting and receiving services.
8. Condoms and other HIV prevention services were not routinely available and accessible, especially in hotspots. Micheweni District had limited NGO services.
9. Most were unaware of PrEP and post-exposure prophylaxis (PEP) services.
10. Most preferred that HIV services, including condoms, be provided by other MSM.
11. HIV positivity, hepatitis B surface antigen positivity, and syphilis antibody positivity were each 0.9% (n=1).

3.4.2. Recruitment outcomes among men who have sex with men

We recruited 122 individuals for the RA among MSM: 15 KIs (11 MSM and 4 non-MSM professionals), 91 MSM who participated in 10 FGDs, and 16 MSM who participated in IDIs. Eleven (69%) of the 16 IDIs were conducted in Mkoani District where participants did not want to be identified in front of a group as MSM (Table 10).

Table 10: Numbers and types of participants by district, rapid assessment among men who have sex with men, Pemba, Zanzibar, 2023

District	Key informant interviews		Focus group discussions		Number of in-depth interviews	Number of socio-demographic and risk survey participants	Number tested for HIV, hepatitis B, and syphilis
	Key population members	Professionals	Number of focus group discussions	Number of participants			
Chake Chake	4	1	4	35	2	37	37
Mkoani	3	1	2	19	11	30	30
Wete	2	1	3	26	3	29	29
Micheweni	2	1	1	11	0	11	11
Total	**11**	**4**	**10**	**91**	**16**	**107**	**107**

The study team experienced challenges during recruitment. Some individuals agreed to participate but did not show up and some left the study site without participating after seeing other MSM present. Some potential participants were afraid that they would experience stigma and discrimination from the community if they participated. In addition, FGD participants in Wete reported rumors circulating among MSM that photos of participants would be taken and shared through local media. Misinformation about the motives of the RA may have reduced participation.

Recruitment was especially challenging in Mkoani and Micheweni where there were strong cultural norms that resulted in MSM being hidden and less networked. Where possible, the RA team conducted separate FGDs for receptive and insertive MSM after observing during interviews in Chake Chake that receptive MSM were hesitant to share their experiences and opinions when in mixed groups. Creating a safe and free space helped with participation of both receptive and insertive MSM in the RA. Receptive and insertive MSM were differentiated based on self-report and information from peers.

3.4.3. Description of the population of men who have sex with men in Pemba

Characteristics of rapid assessment participants (quantitative survey)

The majority (92%) of MSM participants were aged 15 to 34 years, with a median age of 23 years (IQR: 20, 26 years). Almost all (98%) had some formal education and more than 40% had completed secondary school. Almost three quarters (73%) of participants were originally from Pemba, with only 2% reporting that they had lived in Pemba for less than a year. Half (50%) reported working in a private business or being self-employed. Twenty-seven percent reported being married to or living with a female partner. Of those not married to or living with a female partner, almost three-quarters (74%) reported being in a steady relationship; the gender of the partner was not assessed (Table 11).

Table 11: Sociodemographic characteristics of participants, rapid assessment among men who have sex with men, Pemba, Zanzibar, 2023 (N=107)

Characteristics	Frequency (n)	Percentage (%)¥
Age group (years)		
15–19	26	24
20–24	39	37
25–34	33	31
≥35	9	8
Median age in years (interquartile range)	23 (20, 26)	
Education		
No formal education	2	2
Not completed primary	12	11
Completed primary	24	22
Not completed secondary	24	22
Completed secondary	41	38
Higher education	4	4
Time lived in Pemba		
Whole life	78	73
<1 year	2	2
≥1 to <5 years	9	8
≥5 years	18	17
Residence		
Wete	28	26
Chake Chake	37	35
Mkoani	31	29
Micheweni	11	10
Occupation		
Self-employed	53	48
Employed by government or private sector	9	8
Public bus driver or conductor or motorcycle taxi driver	5	5
Casual laborer or porter	21	19

Petty trader	3	3
Student	5	5
Unemployed	14	13
Marital status		
Married/living with a partner	29	27
Separated/widowed	3	3
Never married	75	70
In a steady relationship (n=78)*		
Yes	58	74
No	20	26

**Among those who were not married or living with a partner*

ˠ Due to rounding, proportions may not equal 100%.

Subgroups among men who have sex with men

During qualitative interviews, some MSM disclosed their typical sexual role. The majority identified as either receptive or insertive, with a few identifying as versatile (i.e., engaging in both receptive and insertive sex). MSM participants described insertive MSM in Pemba as less open about their sexual behaviors and not identifying as gay. MSM participants characterized receptive MSM in Pemba as being young and more openly gay. Participants also reported that Chake Chake and Wete had a more openly gay population, while outward expression was reported to be more muted in Mkoani and Micheweni due to strong heterosexual norms within those communities.

MSM participants also mentioned a sub-group of young MSM commonly known as “newcomers” (*chipukizi*) who were aged 15–19 years, often in school and under parental care, with limited MSM networks. They reported that more experienced MSM do not interact with “newcomers” for fear of being accused of teaching young MSM about having sex with other men.

Meeting venues

MSM reported meeting each other frequently at different recreational and social functions, both as members of the general population and at gatherings specifically for MSM. Receptive MSM more commonly reported social interactions; insertive MSM reported meeting less frequently and primarily for sexual as opposed to social activities.

MSM participants commonly reported meeting each other at bars, local brew venues, friends’ homes, community gardens, rest places, bus stops, hang out spots (*vijiwe*), homes selling local alcohol, and beaches. They reported meeting at these places primarily at night to network, tell stories, drink alcohol, smoke marijuana, and chew khat (leaves containing a stimulant). MSM reported meeting in various locations for sexual activities, from private homes to more open places such as bars and at the beach. One participant reported renting out a private space to other men for sexual activities.

Networks and movement

MSM participants qualitatively reported that MSM networks differ depending on several characteristics including their sexual role, where they lived, their age, and their economic activities (e.g., farming, motorcycle taxi driver, barber). Receptive MSM reported larger networks than insertive MSM, and those who lived in Wete and Chake Chake were more networked both within and between districts. Mkoani residents reported small networks within Mkoani but had more

interaction with MSM from Chake Chake and Wete. There was some networking between Micheweni and Wete residents but limited networking within Micheweni, especially among insertive partners. MSM engaging in commercial and transactional sex reported larger networks and were mainly found in Chake Chake and Wete. Participants reported knowing between 2 and 230 other MSM in Pemba with a median network size of 15.

MSM participants reported communicating with other MSM primarily in person and via telephone, including through social media applications such as WhatsApp and Facebook. Only a few MSM (primarily receptive) reported traveling outside of Pemba to Unguja, Zanzibar and mainland Tanzania for socioeconomic activities. They reported commonly engaging in sexual activities during these trips. MSM participants also reported that MSM from Unguja and Dar es Salaam, Tanga, and other areas of mainland Tanzania visited Pemba. A few participants mentioned traveling abroad or engaging in sexual activities with international tourists.

Conversely, professional KIs described MSM in Pemba as a mobile population who frequently travelled to meet their friends or partners. They perceived MSM in Pemba to interact frequently with other MSM from Unguja, Dar es Salaam, Tanga, Dodoma, and other parts of Tanzania mainland, especially while participating in social functions.

Population size estimate

Analysis of wisdom of the crowd estimates yielded an estimated population size of 290 MSM in Pemba. Program data from January to December 2022 reported 457 HIV tests among MSM (not unique individuals). The estimate from the previous RA was 300 (range: 200–400). Considering these data points and that RA participants reported a perceived increase in the number of MSM in Pemba, peers and experts working for KP programs in Zanzibar estimated a median population size of 350 (range: 225–450) MSM in Pemba.

3.4.4. Sexual and HIV risk behaviors among men who have sex with men

In the quantitative survey, participants reported a median age of 17 years at first sex with both female and male partners. Four in ten (40%) participants reported their first partner was male and 36% reported their first partner was female. Some participants reported their first sex with male and female partners at the same age (17%). Nine percent of participants could not recall their age at first sex with a female partner. Fewer than 20% of participants reported their first sexual experience before the age of 15, with both male (17%) and female (11%) partners.

Table 12: Age at first sex and gender of first sexual partners, rapid assessment among men who have sex with men, Pemba, 2023 (N=107)

	Frequency (n)	Percentage (%)[Y]
Age at first sex with a male partner (years)		
<15	18	17
15–19	66	62
20–24	18	17
≥25	4	4
Did not remember	1	1
Median age at first sex with a male partner in years (interquartile range)	18 (15, 19)	

Age at first sex with a female partner (years)		
<15	12	11
15–19	67	63
20–24	14	13
≥25	4	4
Did not remember	10	9
Median age at first sex with a female partner in years (interquartile range)	17 (16, 19)	
Gender of first sexual partner*		
Male	40	41
Female	41	42
First sex with male and female partners at same age	16	17

**Excludes 10 participants who could not remember their age at first sex with a female partner; therefore, it was not possible to determine the gender of their first sexual partner.*

ˠ Due to rounding, proportions may not equal 100%.

MSM participants reported several common behaviors among MSM that put them at increased risk for HIV and STI infection. These behaviors were reported qualitatively with some supported by quantitative findings.

Multiple concurrent sexual partners

> "You are given free clothes, outings, and money by receptive MSM. One cannot resist $40." **(MSM participant, Chake Chake)**

MSM participants qualitatively reported that it was common for MSM to have multiple and concurrent sexual partners, including both male and female partners. They cited several reasons, including searching for sexual satisfaction, boredom, prestige or showing off, wanting to have a relationship that was socially acceptable (i.e., female partners), and as a source of income, especially for young insertive MSM. MSM participants also mentioned that the practice of having multiple concurrent sexual partners had been increasing over time.

Group sex

During qualitative interviews, some MSM participants reported engaging in group sex, with groups ranging from 3 to 8 participants. Others reported witnessing group sex. This was reported primarily by participants in Chake Chake and Wete. In some cases, group sex was reported to have a financial component where either participants were paid to take part or a facilitator was paid to organize the group. Groups sex was reported to be common when people were drunk at the beaches and in private rented rooms. Participants also reported that female sex workers were occasionally involved in these groups and that condoms were rarely used.

Transactional sex

MSM qualitatively reported that transactional sex was very common, both for money (ranging from TZS 5,000–1,300,000/$2–$500[7] USD per act) and in exchange for goods such as phones, clothes, motorcycles, or cars. This was supported by the quantitative survey in which nearly three-quarters (74%) of participants reported receiving money or other goods in exchange for sex in the past 30 days. The median age of first receiving money or goods for sex was 19 years. Those who reported receiving money or goods for sex reported doing this a median of three times per month. Engaging in transactional sex was qualitatively reported to reduce the power to negotiate condom use.

> "There are receptive MSM who do it to get money, some people offer $50 or motorcycles." **(MSM participant, Chake Chake)**

MSM participants qualitatively reported that it was most common for insertive MSM to be paid by receptive counterparts for their services. This was also highlighted as a factor that influenced young men to engage in risky sexual activities. MSM participants reported that insertive MSM who sold sex commonly worked as *boda boda* (motorcycle taxi) drivers or in informal jobs such as porters. These MSM shared the details of their customers among themselves so that their peers could also offer those services, especially to clients who paid more money.

In Micheweni, insertive participants reported engaging in transactional sex to obtain money and other favors. Receptive MSM reported engaging in transactional sex to receive items such as beds or soap from their insertive partners.

Condomless sex

Condomless sex was reported to be a common behavior during qualitative interviews across all districts and MSM subgroups. This was supported by the quantitative survey data in which 36% of participants reported using a condom at last sex.

> "Having a condom is proof of being unfaithful. Once my wife found a condom in the pockets of my trousers, and she wanted a divorce. Ever since, I have never used a condom." **(MSM participant, Wete)**

MSM participants qualitatively reported that the most common reasons for not using condoms were that condoms reduced sexual sensitivity and were uncomfortable. Some reported that they were told condoms had side effects such as causing itching or reducing sexual stamina. Participants also mentioned that condoms were viewed by the wider community as a sign of infidelity for those in a steady relationship.

Receptive MSM participants more commonly reported condom use than insertive MSM during qualitative interviews. Some participants mentioned that they used condoms occasionally, especially when they had sex with strangers or people they did not trust.

Alcohol and substance abuse

MSM participants qualitatively reported that drinking alcohol, including beers, spirits, wine, and local brews, was common among both insertive and receptive MSM and that MSM would often drink

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[7] *On the first day of data collection, 1 Tanzania shilling was equivalent to 0.00043 US dollars available at https://www.oanda.com/currency-converter/en/?from=TZS&to=USD&amount=1, February 7, 2023.*

before engaging in sexual activities. Some MSM participants reported that they smoked marijuana, and in only a few instances, chewed khat or used other drugs like cocaine and heroin.

3.4.5. HIV knowledge and experiences with violence and stigma

HIV knowledge

In the quantitative survey participants were asked standard UNAIDS HIV knowledge questions. The scores for individual questions ranged from 83% to 94%. Six in ten (61%) participants had comprehensive HIV knowledge (answering all five questions correctly). Knowledge of how ART works and the concept of U=U was low, with less than half (49%) of participants agreeing that someone on ART cannot pass HIV to a sexual partner once virally suppressed (Table 13).

Table 13: Assessment of HIV knowledge among men who have sex with men, rapid assessment among men who have sex with men, Pemba, Zanzibar, 2023 (N=107)

	Participants who responded correctly	
	Frequency (n)	**Percentage (%)**
UNAIDS knowledge questions		
Can the risk of HIV transmission be reduced by having sex with only one uninfected partner who has no other partners?	99	93
Can a person get HIV from mosquito bites?	89	83
Can a person reduce their risk of getting HIV by using a condom every time they have sex?	89	83
Can a healthy-looking person have HIV?	97	91
Can a person get HIV by sharing food with someone who has HIV?	101	94
Comprehensive knowledge*	**65**	**61**
Undetectable equals untransmittable questions		
When taken as prescribed by a health worker, HIV medications decrease the amount of HIV in the blood of people living with HIV. Therefore, the amount of virus in their blood becomes too low to detect in a laboratory test.	85	79
A person living with HIV who is taking HIV medication cannot pass HIV to a sexual partner once a laboratory test can no longer detect the HIV in their blood.	52	49

** Able to respond correctly to all five HIV knowledge questions*

Experiences of violence

During the qualitative interviews, MSM participants reported experiencing violence from the community, their sexual partners, and other MSM. They reported that violence from the community primarily targeted receptive MSM but that the severity of that violence had decreased and shifted from public beatings and humiliation to verbal abuse.

MSM participants in all districts reported experiences of physical violence and abuse during qualitative interviews. Abuse was reportedly perpetrated by other MSM, with receptive partners being the primary targets of this violence, often perpetrated by their sexual partners. MSM participants reported that sexual violence was used as a form of revenge for social and sexual offenses (e.g., having sex with another's insertive sexual partner). It also occasionally resulted from drinking too much alcohol. This violence results in serious physical and emotional trauma, as victims saw it as shameful. Participants said feelings of shame resulted in most acts of sexual violence going unreported.

> "You may find that an insertive partner wants to revenge, instead of going alone they go three." **(MSM participant, Micheweni)**

During qualitative interviews, a few participants reported experiencing or knowing others who experienced domestic sexual abuse by a man at a young age. One participant recalled being punished for reporting this type of abuse. He reported that he was not able to get help or support following his experience.

3.4.6. Availability and uptake of HIV and sexually transmitted infection services

Availability of services

When asked during qualitative interviews, many participants could not name specific organizations providing HIV prevention and STI services. However, MSM participants reported receiving services such as HIV testing through outreach services. Those who named specific organizations mentioned ZAC, ZAYEDESA, UMATI, ZAPHA+, JUKAMKUM, and AMREF.

HIV prevention services accessed by men who have sex with men

During qualitative interviews MSM participants reported that the most accessible HIV-related services were HIV counseling and testing, condoms, and ART; however, they reported that accessibility varied across districts. Participants reported that in Chake Chake and Mkoani, HIV testing services and condoms were accessible. Access to condoms was reportedly limited in Wete as they were only provided in health facilities. In Micheweni, participants reported that services focusing on MSM were limited and that HIV testing was offered mostly in bars during outreach services but not in coffee spots (*vijiwe vya kahawa*) where MSM spend much of their time.

Barriers to accessing health services

MSM participants qualitatively reported that most of their peers had not tested for HIV in the past year. However, when asked individually during the quantitative survey, 84% of participants reported testing for HIV at least once in their lifetime, and 80% of participants reported testing in the past year (Table 14). MSM participants qualitatively gave several reasons for MSM in Pemba not testing for HIV, including fear of test results and fear of stigma if they tested positive. They also cited lack of interest and time, although this was more commonly reported by insertive MSM than receptive.

Most MSM participants qualitatively reported that, overall, they did not experience stigma or discrimination from health care providers when seeking services. They also reported that health care providers often gave MSM priority to avoid potential conflict with other clients. However, some MSM reported experiencing judgmental attitudes when accessing condoms from providers at health facilities, pharmacies, and shops. MSM also reported that condoms are not available at night and condom outlets were far from hotspots, making them hard to get when they were most needed.

> "I once went to health facility to collect condoms, (and) the health care provider told me, 'You are very young, where are you taking condoms to?'" **(MSM participant, Wete)**

Professional KIs reported that they experienced challenges in offering KP-friendly services. They reported facing resistance from the community and religious groups, making it difficult to reach the targeted population. Service providers from NGOs also reported facing stigma from members of the community because they offered KP-friendly services.

Gaps in health services

MSM participants qualitatively reported that HIV testing and condoms were mainly offered during public events such as the National Uhuru Torch race (*mbio za mwenge*) and not on a routine basis. They requested that services be made routinely available.

Most MSM participants were unaware of PrEP services[8]. A few participants reported during qualitative interviews to have enrolled in PrEP but had not used the medicine consistently. Some reported using PrEP only for a short time while others said they gave the medicine to their friends. After receiving basic education on PrEP during the RA, most participants did not believe that PrEP could prevent HIV transmission when taken consistently. Many insisted the medicine was only for those living with HIV.

MSM participants made the following suggestions regarding health services:

1. Make HIV testing available in coffee spots (*vijiwe vya kahawa*) to reach more MSM.
2. Expand community condom outlets to include venues such as bars.
3. Have MSM-friendly services offered by peers (i.e., other MSM).
4. Provide health education, especially on PrEP.

In addition to recommendations related to gaps in health services, participants requested economic empowerment opportunities to counteract the financial incentive to sell sex.

Table 14: Uptake of key-population friendly health services and HIV testing among men who have sex with men, rapid assessment among men who have sex with men, Pemba, Zanzibar, 2023 (N=107)

Characteristics	Frequency (n)	Percentage (%)
Ever tested for HIV		
Yes	90	84
No	17	16

[8] At the time of the assessment PrEP services were only available as a pilot in Chake Chake.

Most recent HIV test among those who ever tested for HIV (excluding those who disclosed an HIV-positive status)		
Within past year	71	80
1–2 years ago	12	13
More than 2 years ago	6	7

3.4.7. Biological results

Among 107 MSM who were tested, 1 (0.9%) was positive for HIV, 1 (0.9%) for hepatitis B surface antigen, and 1 (0.9%) for syphilis antibodies. None of the MSM had a co-infection with HIV.

3.4.8. Perceived changes in the MSM population and comparison to the previous survey

This RA had a larger sample size than the 2018 RA (n=107 versus n=51 non-KII participants) and included participants from Micheweni district (n=11), which was not previously included.

All participants qualitatively mentioned that the MSM population in Pemba had changed with an increase in younger boys (ages 15–19 years), both insertive and receptive, engaging in sex with male partners. Many attributed this to the increased practice of older receptive MSM offering money in exchange for sex. Although the quantitative data must be interpreted cautiously, the data potentially support this hypothesis as a higher proportion of participants in this RA reported exchanging sex for money or goods (n=73; 74%) compared to 2019 RA (n=23; 47%).

Participants also reported that more MSM in Pemba had become open about their sexual orientation and that MSM had become more networked than 5 years ago, facilitated in part by social media platforms such as WhatsApp and Facebook.

While there continued to be some backlash against MSM in Pemba, MSM participants qualitatively reported that it had become less severe and there were now places where MSM could live more openly and freely. Finally, participants reported an increase in the practice of MSM having multiple sexual partners and a decrease in condom use.

3.4.9. Key considerations

HIV prevention services were not universally accessible nor routinely available to MSM in all districts of Pemba. MSM continue to face stigma and discrimination, particularly those who openly identified as MSM. The following are key considerations based on the findings:

1. Improving accessibility of HIV preventive services could improve uptake of these services and ultimately prevent new HIV infections among MSM. Strategies to consider include:
    - Make condoms consistently available in community settings, especially hotspots.
    - Provide education and generate demand for PrEP and PEP and expand the number of venues providing PrEP and PEP services.
    - Increase the number and types of venues offering HIV testing services to include those commonly frequented by MSM.
    - Expand health and HIV education, including U=U, to reach more MSM.

    - Increase awareness among MSM of available community and KP-friendly health services.
    - Integrate MSM-friendly health services within other KP-friendly health providers.
    - Use MSM to provide HIV services to their peers.
2. Focusing risk reduction and behavior change communication programs on MSM, including those who do not openly identify as MSM, and the specific HIV risk behaviors that are common in this community could help to reduce risk behaviors and risk of HIV transmission, both within this population as well as to non-MSM sexual partners.
3. Raising awareness of sexual violence (including violence against children) among MSM and the community and ensuring safe reporting channels could increase reporting of violence, decrease shame and stigma associated with being a victim of violence, and increase linkage of victims of violence to appropriate services.

3.5.Female sex workers and sexually exploited girls

3.5.1. Key findings

Key findings among female sex workers and sexually exploited girls (N=108)

1. The median age was 30 years and more than three quarters (77%) had previously been married (i.e., divorced, or widowed).
2. Financial hardship was the primary reason for engaging in sex work.
3. Sex work seemed to be more visible in Pemba than in the past although FSW/SEG originally from Pemba hid their sex work.
4. In some parts of Pemba sex work was seasonal.
5. FSW/SEG met often, particularly venue-based FSW/SEG from Chake Chake, Wete, and Mkoani, and had a median network size of 10.
6. There were an estimated 850 FSW/SEG in Pemba (range: 700–1,000).
7. Forty percent did not use a condom with their most recent client.
8. Reasons for not using condoms with their most recent client were use of alcohol during sex, client preference, being able to charge more for sex without a condom and testing for HIV before engaging with a client.
9. Group sex and anal sex were newly reported risk factors among FSW/SEG.
10. Comprehensive HIV knowledge was 65%. Knowledge that PLHIV on ART and virally suppressed cannot transmit HIV to sexual partners was limited (54%).
11. Physical, psychological, and sexual violence was commonly experienced and under-reported.
12. FSW/SEG known to be living with HIV faced stigmatization and lost clients. This motivated them to seek HIV treatment outside of their area of residence.
13. The majority (86%) had tested for HIV within the past year.
14. About half accessed health services through NGOs, particularly via outreach. Young FSW/SEG were less aware of NGO services. There were no HIV FSW/SEG-friendly services in Micheweni District.
15. HIV positivity was 8.3% (n=9), hepatitis B surface antigen positivity was 3.7% (n=4), and syphilis antibody positivity was 1.9% (n=2).

3.5.2. Recruitment outcomes among female sex worker and sexually exploited girls

The study team recruited a total of 119 individuals for the RA among FSW/SEG: 11 KIs (10 FSW/SEG and 1 professional), 105 FSW/SEG who participated in 12 FGDs, and 3 FSW/SEG who participated in IDIs (Table 15).

Table 15: Numbers and types of participants by district, rapid assessment among female sex workers and sexually exploited girls, Pemba, Zanzibar, 2023

District	Key informant interviews		Focus group discussions		Number of in-depth interviews	Number of socio-demographic and risk survey participants	Number tested for HIV, hepatitis B, and syphilis
	Key population members	Professionals	Number of focus group discussions	Number of participants			
Chake Chake	4	0	4	36	0	36	36
Mkoani	3	1	3	29	3	32	32
Wete	3	0	3	29	0	29	29
Micheweni	0	0	2	11	0	11	11
Total	**10**	**1**	**12**	**105**	**3**	**108**	**108**

Many FSW/SEG in Pemba continued to be hidden. While FSW/SEG could be identified and seen openly in some venues in Wete and Chake Chake, there were no hotspots where FSW/SEG were visible in Mkoani nor Micheweni. This secrecy around sex work created challenges during recruitment. Some FSW/SEG refused to participate in the RA as they believed that participation would result in their sex work being made public, resulting in humiliation.

3.5.3. Description of the population of female sex workers and sexually exploited girls in Pemba

Characteristics of rapid assessment participants (quantitative survey)

There was an almost equal distribution of participants across all districts. The median age of participants was 30 years (IQR: 25, 38 years), with 39% aged 35 years and older. Approximately one-third (34%) of participants had completed secondary education. Just over half (55%) of participants were originally from Pemba. Those who moved to Pemba reported living in Pemba for a median of 11 years (IQR: 3, 20 years). More than half (55%) of participants reported sex work as their sole source of income. More than three quarters (77%) were either separated, divorced, or widowed (Table 16).

Table 16: Socio-demographic characteristics of participants, rapid assessment among female sex workers and sexually exploited girls, Pemba, Zanzibar, 2023 (N=108)

Characteristics	Frequency (n)	Percentage (%)[¥]
Age group (years)		
15–19	7	7
20–24	19	18
25–34	40	37
≥35	42	39
Median age in years (interquartile range)	**30 (25, 38)**	
Education		
No formal education	12	11
Not completed primary	10	9
Completed primary	24	22
Not completed secondary	25	23
Completed secondary	37	34
Time lived in Pemba		
Whole life	59	55
<1 year	10	9
≥1 to <5 years	10	9
≥5 years	29	27
Residence		
Chake Chake	36	33
Mkoani	33	31
Wete	29	27
Micheweni	10	9
Has another source of income besides sex work		
Yes	49	45
No	59	55
Occupation among those with a source of income besides sex work (N=49)		
Self-employed	28	57
Employed by the government	1	2

Employed in the private sector	3	6
Petty trader	17	35
Marital status		
Married/living with a partner	6	6
Separated/widowed/divorced	83	77
Never married	19	18

[ɣ] *Due to rounding, proportions may not sum to 100%.*

Subgroups and meeting venues

FSW/SEG participants qualitatively described FSW/SEG in Pemba to include both women from Pemba and women from outside of Pemba. FSW/SEG originally from Pemba reported engaging in commercial sex work in secret. This was the result of Pemba being a small community where people knew each other and the island's conservative religious values. FSW/SEG from outside Pemba were reported to come mainly from Dar es Salaam and Tanga in mainland Tanzania, and Unguja, Zanzibar. FSW/SEG participants from Pemba described FSW/SEG from outside of Pemba to be open and outspoken and to charge less money for their services. They also reported a perception that there were more FSW/SEG from outside of Pemba than native to Pemba.

> "Newcomers outnumber us. Because they are free and open and accept any price." **(FSW/SEG participant, Wete)**

During qualitative interviews, FSW/SEG participants categorized the FSW/SEG population in Pemba based on three factors: (1) the price they charged, (2) their age, and (3) their sexual practices. Those grouped by price were categorized as VIPs (the highest class, paid up to TZS 100,000/$43[9] USD per encounter), average class (paid TZS 30,000–70,000/$13–30 USD), and low class (paid as little as TZS 5,000/$2 USD per encounter). FSW/SEG participants described age categories as younger than 18 years and 18 years and older. They reported that younger FSW/SEG had older clients while FSW/SEG aged 18 years and older catered to clients of all ages.

Categorization based on sexual practices was determined by whether an FSW/SEG engaged in anal sex. In one FGD, FSW/SEG participants explained that it is often younger FSW/SEG who were willing to practice anal sex. Other participants stated that engaging in anal sex was determined by their client's preference and/or price.

All participants, during both KIIs and FGDs/IDIs, highlighted Chake Chake as a central meeting point for FSW/SEG from Mkoani, Wete, and Micheweni. This was because there were more venues selling alcohol in Chake Chake compared to other districts, and Chake Chake was easily accessible from other districts. FSW/SEG participants qualitatively reported that they met one another at bars, beaches, and other social gatherings such as weddings or parties. In Micheweni, FSW/SEG participants qualitatively reported meeting fellow FSW/SEG in their areas of residence and in grocery stores.

[9] *On the first day of data collection, 1 Tanzania shilling was equivalent to 0.00043 US dollar, available at https://www.oanda.com/currency-converter/en/?from=TZS&to=USD&amount=1, February 7, 2023.*

Networks and movement

FSW/SEG participants qualitatively reported meeting and communicating regularly, mainly by phone. They reported discussing both social issues and issues related to their business, including sex work. FSW/SEG participants from Chake Chake, Wete, and Mkoani were well-networked and reported commonly meeting in Chake Chake. FSW/SEG participants from outside Pemba reported supporting each other, especially after first arriving in Pemba. For example, FSW/SEG from outside of Pemba would host those who had newly arrived until they could get their own residence. FSW/SEG participants reported knowing from 1 to 100 other FSW/SEG in Pemba, with a median network size of 10.

During qualitative interviews, FSW/SEG participants reported that it was common to use agents to get clients. Agents included fellow FSW/SEG, barmaids, and motorcycle drivers. Agents would be approached by clients and would match them with FSW/SEG who could meet their needs.

> "They come during clove season. During this season it is always product for product, which means, they give you cloves, and you give them sex." **(FSW/SEG participant, Wete)**

FSW/SEG participants qualitatively reported that FSW/SEG in Pemba regularly moved from place to place based on where clients were available, experiences of harassment, and other barriers. For example, during clove harvesting season, FSW/SEG from across Pemba moved to Mkoani, where many clove farms were located. There, FSW/SEG exchanged sex for cloves. During the month of Ramadhan, FSW/SEG, both those from Pemba and those from outside of Pemba, were reported to leave the island.

FSW/SEG participants qualitatively reported commonly travelling from Pemba to Dar es Salaam and Tanga in mainland Tanzania, and Unguja, Zanzibar. Some reported traveling frequently to Mombasa, Kenya.

Population size estimate

Analysis of wisdom of the crowd estimates yielded an estimated population size of 665 FSW/SEG in Pemba. Program data from January to December 2022 reported 1,198 HIV tests among FSW/SEG (not unique individuals). The estimate from the previous RA was 700 (range: 400–800). Considering these data points and that RA participants reported a perceived increase in the number of FSW/SEG in Pemba, peer educators and local experts working for KP programs in Zanzibar estimated a median population size of 850 (range: 700–1,000) FSW/SEG in Pemba.

3.5.4. Risk behaviors among female sex workers and sexually exploited girls

In the quantitative survey, approximately 68% of FSW/SEG participants reported their sexual debut before the age of 20 years, with a median age at first sex of 18 years (IQR: 15, 19 years). The median age at first selling sex was 23 years (IQR: 20, 28 years). One-fourth (25%) of FSW/SEG participants started selling sex before 20 years of age. Two-thirds (65%) of participants reported financial hardship (i.e., being abandoned by their families or needing to support their families) as the main reason they began selling sex (Table 17).

Participants in the quantitative survey reported engaging in sex work a median of four days per week with a median of three clients per day. Nearly 40% of participants reported that they did not use a

condom with their most recent client (Table 17). During qualitative interviews, FSW/SEG participants from all districts except Micheweni reported engaging in group sex during which not all participants used a condom.

Qualitatively, FSW/SEG participants reported that although FSW/SEG in Pemba often carried condoms, the decision to use a condom depended on their client's preference, price, and other factors. Factors for not using condoms included the use of alcohol during sex, decreased sexual satisfaction, perceived cause of prolonged ejaculation, smell, friction, and having sex with trusted clients. With some clients, FSW/SEG were reported to test for HIV before having sex without a condom to confirm to the client that they were HIV-negative.

Drug use among FSW/SEG was qualitatively reported to be limited, with marijuana being the most commonly used drug.

Table 17: Sexual debut and overview of sex work, rapid assessment among female sex workers and sexually exploited girls, Pemba, Zanzibar, 2023 (N=108)

Characteristics	Frequency (n)	Percentage (%)[ɣ]
Age at first sex (years)		
<15	10	9
15–19	73	68
≥20	25	23
Median age at first sex in years (interquartile range)	18 (15, 19)	
Age at first paid sex (years)		
15–19	27	25
20–24	32	30
25–29	28	26
≥30	21	19
Median age at first paid sex in years (interquartile range)	23 (29, 28)	
Primary reason for entering sex work		
Needed money to help family or pay debt	70	65
Abandoned by husband or family	11	10
Liked the work	5	5
Had friends or family engaged in sex work	8	7
Provides good / additional income	13	12
Other	1	1
Engagement with clients		
Median number of clients per day (interquartile range)	3 (2, 4)	
Median number of days worked per week (interquartile range)	4 (3, 6)	
Used a condom with last paying client		
Yes	60	60
No	43	40

[ɣ] *Due to rounding, proportions may not equal 100%.*

3.5.5. HIV knowledge and experiences with violence and stigma

HIV knowledge

Participants in the quantitative survey were asked five standard UNAIDS HIV knowledge questions. The scores for individual questions ranged from 84% to 99%, and 65% had comprehensive HIV knowledge (answering all five questions correctly). Knowledge of the concept of U=U was limited, with half of FSW/SEG (54%) agreeing with the statement "a person living with HIV who is taking HIV medication cannot pass HIV to a sexual partner once a laboratory test can no longer detect the HIV in their blood."

Table 18: Assessment of HIV knowledge among female sex workers and sexually exploited girls, rapid assessment among female sex workers and sexually exploited girls, Pemba, Zanzibar, 2023 (N=108)

	Participants who responded correctly	
	Frequency (n)	**Percentage (%)**
UNAIDS knowledge questions		
Can the risk of HIV transmission be reduced by having sex with only one uninfected partner who has no other partners?	103	95
Can a person get HIV from mosquito bites?	91	84
Can a person reduce their risk of getting HIV by using a condom every time they have sex?	92	85
Can a healthy-looking person have HIV?	98	91
Can a person get HIV by sharing food with someone who has HIV?	107	99
Comprehensive knowledge*	**70**	**65**
Undetectable equals untransmittable questions		
When taken as prescribed by a health worker, HIV medications decrease the amount of HIV in the blood of people living with HIV. Therefore, the amount of virus in their blood becomes too low to detect in a laboratory test.	82	76
A person living with HIV who is taking HIV medication cannot pass HIV to a sexual partner once a laboratory test can no longer detect the HIV in their blood.	58	54

** Able to respond correctly to all five HIV knowledge questions*

Experiences of violence among female sex workers and sexually exploited girls

FSW/SEG participants qualitatively reported experiences of physical, psychological, and sexual violence. Participants reported being beaten by their clients and harassed by police, including community security forces. They also reported facing stigma and discrimination from those in their communities who were aware that they sell sex.

During qualitative interviews, a few FSW/SEG participants reported being forced to have sex. Some instances involved multiple men when they had agreed to provide services to a single client.

> "There are assaults, you get sexually assaulted by more than one person. It happens you have agreed with one client, but when you get there, he also brings in his friends, and they all have sex with you." **(FSW/SEG participant, Mkoani)**

Most experiences of violence were reported to go unreported. FSW/SEG participants explained during qualitative interviews that many FSW/SEG were not willing to report violence to police out of fear of being exposed as FSW/SEG or being arrested. Those who had reported violence shared mixed experiences; some received assistance while others did not.

3.5.6. Availability and uptake of HIV and sexually transmitted infection services

Availability of services

Participants qualitatively reported that FSW/SEG-friendly health services were provided by NGOs including ZAPHA+ (Chake Chake), ZAYEDESA (Mkoani), and UMATI (Wete). However, FSW/SEG participants reported that NGOs were not providing services in Micheweni. FSW/SEG participants reported that they also used public health facilities to access health services. While HIV-related health services were available, participants highlighted that there were no NGOs providing services to meet their religious, psychological, or economic needs, such as starting small-scale businesses or securing loans.

HIV prevention services accessed by female sex workers and sexually exploited girls

During qualitative interviews, FSW/SEG participants reported that they accessed health services from NGOs both directly and through community outreach workers. Qualitatively, half of FSW/SEG participants said they had received services from NGOs, including counselling and testing for HIV, condoms, and health promotion information. Because Micheweni did not have services specifically focusing on this population, FSW/SEG there depended entirely on public health facilities. Although PrEP had been introduced as a pilot in Chake Chake, very few participants reported having enrolled, and all had stopped taking PrEP.

According to the quantitative survey, most (96%) participants had tested for HIV at least once in their lifetime, and 86% had tested within the past year. Four FSW/SEG (4%) disclosed an HIV-positive status during the survey, and all reported being on ART. Two FSW/SEG (2%) were not comfortable disclosing their HIV status.

Table 19: Uptake of key-population friendly health services and HIV testing among female sex workers and sexually exploited girls, rapid assessment among female sex workers and sexually exploited girls, Pemba, Zanzibar, 2023 (N=108)

Characteristics	Frequency (n)	Percentage (%)[ɣ]
Ever tested for HIV		
Yes	104	96
No	4	4
Most recent HIV test among those who ever tested for HIV (excluding those who disclosed an HIV-positive status)		
Within past year	86	86
1–2 years ago	8	8
More than 2 years ago	6	6

[ɣ] *Due to rounding, proportions may not equal 100%.*

Barriers to accessing services

Although most FSW/SEG had accessed HIV counselling and testing services, they presented concerns about testing including being afraid of their HIV test results. They also had concerns about the yellow appointment cards routinely provided for confirmation testing because these could indirectly expose one's HIV status.

> "If someone is known to have HIV, her [commercial sex] market ends up there." **(FSW/SEG participant, Wete)**

During qualitative interviews, FSW/SEG participants reported that FSW/SEG who were living with HIV faced discrimination from peers and could lose clients because of their HIV status. For that reason, it was very difficult for FSW/SEG to disclose an HIV-positive status to her peers.

> "I cannot blame the doctor. But I ask myself, we were only two inside when I was taking a test, how did information get out of the room..." **(FSW/SEG participant, Wete)**

A few FSW/SEG participants qualitatively reported a lack of confidentiality by health care providers. They cited instances of health care workers disclosing a client's HIV status without their permission. For these reasons, participants reported that FSW/SEG living with HIV commonly received HIV care and treatment services at facilities far from their homes, including outside of Pemba.

Gaps in health services

During qualitative interviews, FSW/SEG participants expressed the need for expanded PrEP services[10] and a consistent supply of male condoms. Other services of interest included female condoms and HIV self-test kits. FSW/SEG also cited the need for non-health related services, including economic empowerment.

3.5.7. Biological results

Among 108 FSW/SEG participants tested for HIV, syphilis, and hepatitis B, nine participants (8.3%) were HIV positive, four (3.7%) had a reactive hepatitis B test surface antigen, and two (1.9%) tested positive for syphilis antibodies. One (1.0%) FSW/SEG had HIV and hepatitis B co-infection. Four (44.4%) of nine FSW/SEG who tested HIV positive had disclosed a known HIV status during the assessment, while two participants had been unwilling to disclose the result of their most recent HIV test. Therefore, up to five (55.6%) of the nine participants who tested HIV positive in this RA had not been diagnosed prior to the survey. Seven (77.8%) of the nine FSW/SEG living with HIV were originally from outside of Pemba.

3.5.8. Perceived changes in the population of female sex workers and sexually exploited girls and comparison to the previous survey

This RA had a larger sample size than the 2018 RA (n=108 versus n=57 non-KII participants) and included participants from Micheweni district (n=11), which was not previously included.

[10] At the time of the assessment PrEP services were only available as a pilot in Chake Chake.

Participants qualitatively reported that the number of FSW/SEG had increased over the past 5 years, with a notable increase in FSW/SEG younger than 20 years. They attributed this increase to economic hardship and increased visibility of FSW/SEG in Pemba. FSW/SEG participants also reported changes in risk behaviors over the last several years. They reported an increase in anal sex among FSW/SEG as well as instances of group sex. Group sex was not reported in the previous RA as a risk behavior. Participants also reported that younger FSW/SEG were more likely to engage in risky behaviors because they were less informed of the health risks.

> "There are changes, in previous days, FSW used to start from age 18, but now-a-days age starts with 15 years." **(FSW/SEG participant, Mkoani)**

Despite changes in risk behaviors, FSW/SEG participants reported qualitatively that they had an increased awareness of HIV risks and protective measures such as PrEP. They reported that FSW/SEG used condoms more now compared to 5 years ago. However, while FSW/SEG were reported to commonly carry condoms with them, the use of condoms depended on a client's preference and price. Participants also mentioned that some clients requested an FSW/SEG to test for HIV prior to having condomless sex, which was not mentioned in the previous RA. This could imply an increase in HIV knowledge and access to HIV testing services, including self-test kits, among clients.

Finally, some of the services that were requested in the previous RA, including increased access to condoms and economic empowerment, were also requested in this assessment. This suggests that these needs had not yet been adequately addressed.

3.5.9. Key considerations

FSW/SEG in Pemba continued to engage in commercial sex to overcome financial hardship. The number of FSW/SEG appeared to be increasing and included pockets of young FSW/SEG who were reported to have limited knowledge of HIV risk and prevention services. The following are key considerations based on this RA:

1. Increasing access to and awareness of HIV prevention services and HIV prevention education could increase the uptake of these services and ultimately prevent new HIV infections among FSW/SEG. Strategies to consider include:
    - Ensure condoms are more accessible through outlets frequented by FSW/SEG and consider novel options for increasing access to condoms such as self-dispensing machines.
    - Ensure that HIV education includes information about U=U.
    - Increase availability of HIV self-test kits.
    - Increase access to high-quality PrEP services by integrating into routine HIV prevention services.
    - Empower FSW/SEG to negotiate safer sex.
2. Targeting delivery of HIV prevention services during seasons or times of the year when many FSW/SEG are in one location, such as clove harvesting season, and focusing on FSW/SEG who may not be fully accessing services, such as young and hidden FSW/SEG, might expand reach and coverage of prevention services.

3. Supporting economic empowerment initiatives for FSW/SEG might provide alternative means of securing income for girls and women, creating an avenue other than sex work for them to support themselves and their families.
4. Sensitizing police on how to handle reports of violence by FSW/SEG and exploring alternative mechanisms for FSW/SEG to report physical and sexual violence and harassment could lead to increased reporting of violence. Increased reporting may result in perpetrators being held responsible for their actions as well as a greater proportion of survivors being linked to the services they need.

4. Conclusion

This third rapid assessment in Pemba confirmed most of the findings from the previous RA of PWID, MSM, and FSW/SEG in Pemba. KPs continued to engage in behaviors that put them at increased risk for HIV and other STIs. Many KPs had sexual partnerships both with other KPs and community members. This creates risk of HIV transmission to the broader community. Ensuring that individuals have access to consistent HIV-related services from providers who treat them with dignity and respect could reduce this risk and prevent new HIV infections.

Participants in this RA from all three KPs expressed frustration at not having routine access to HIV prevention services such as condoms and PrEP from easily accessible outlets. Some also cited inconsistent access to HIV testing, although most participants had tested for HIV in the past year. In addition, available services were not offered in all districts of Pemba. Lack of easy access to condoms was cited as a challenge in both the previous and current RA. This challenge could be addressed by broadening condom outlets to venues, such as coffee shops, where KPs spend time. Expanding HIV prevention services could be done through peer educators, who are likely to be trusted by KPs, and could be coupled with raising awareness that these services are available and important for KPs to access.

Violence and discrimination were commonly mentioned by participants from all three KPs. They also raised the need for a trusted channel, where their voices would be heard and given the same attention as any other member of the community, to report incidents of mistreatment and abuse. Increasing engagement with the broader community and other institutions that commonly interact with KPs, such as police and drug authorities, could be a means to reduce stigma and create understanding of the importance of providing HIV prevention services to KP groups.

Experiences of stigma and discrimination from health care providers were mixed but emerged most strongly with PWID. FSW/SEG cited experiences of health care workers disclosing their HIV status without their consent, while MSM reported experiencing judgmental attitudes when accessing condoms. Sensitizing health care providers on how to provide services in way that is friendly to KPs and continuously emphasizing the importance of confidentiality as it relates to clients' HIV status could improve the experience that KPs have when accessing health services and encourage them to seek services more frequently.

Finally, continuing HIV and STI surveillance in Pemba on a routine basis could continue to generate important information about risk behaviors and the status of these infections among KPs. Using flexible and innovative approaches that can accommodate the unique context and culture of Pemba

might improve the success of these efforts. This could include methods that are quick to implement and utilize a variety of recruitment strategies with separate study sites in each of the four districts. This RA showed that using KPs to recruit their peers can be a successful strategy, which could allow for more robust surveillance methods in the future. In addition, given that one in three PWID had a reactive hepatitis C antibody test in a survey conducted in Unguja, Zanzibar, shortly after this RA, incorporating testing and treatment for hepatitis C in any future surveillance involving PWID in Pemba could reveal the extent to which hepatitis C is circulating in this population and provide treatment to those in need.

KPs face unique challenges in the highly conservative culture of Pemba. This RA highlighted potential opportunities to increase access to services while reducing discrimination and stigmatization.

5. Appendices

5.1. Screening Forms for Pemba RA

5.1.1. PWID screening form

Date of interview __ __ / __ __ / 2023	Place participant barcode here:

Screen the participant for eligibility. Read the following:
Before starting, I want to be sure that you are eligible to participate in this study, and that you know what this study is about. I'm going to start by asking a few questions so that I can verify the eligibility requirements.

		Yes	No	Comments
1	Is 18 years or older (or a mature minor 15-17) *(How old are you?)*			
2	Has lived in Pemba for the past 3 months. *(How long have you lived in Pemba?)*			
3	Has injected illicit drugs in the past 3 months *(When was the last time you injected illicit drugs?)*			

If eligible continue with the next step. If not eligible, thank the individual for their time and end here.

5.1.2. MSM screening form

Date of interview __ __ / __ __ / 2023	Place participant barcode here:

Screen the participant for eligibility. Read the following:
Before starting, I want to be sure that you are eligible to participate in this study, and that you know what this study is about. I'm going to start by asking a few questions so that I can verify the eligibility requirements.

		Yes	No	Comments
1	Is 18 years or older (or a mature minor 15-17) *(How old are you?)*			
2	Has lived in Pemba for the past 3 months. *(How long have you lived in Pemba?)*			
3	Engaged in anal sex with other men in the past 3 months *(When was the last time you had anal sex with a man?)*			

If eligible continue with the next step. If not eligible, thank the individual for their time and end here.

5.1.3. FSW/SEG screening form

Date of interview __ __ / __ __ / 2023	Place participant barcode here:

Screen the participant for eligibility. Read the following:
Before starting, I want to be sure that you are eligible to participate in this study, and that you know what this study is about. I'm going to start by asking a few questions so that I can verify the eligibility requirements.

		Yes	No	Comments
1	Is 18 years or older (or a mature minor 15-17) *(How old are you?)*			
2	Has lived in Pemba for the past 3 months. *(How long have you lived in Pemba?)*			
3	Has exchanged sex for money in the past 1 month *(When was the last time you exchanged sex for money?)*			

If eligible continue with the next step. If not eligible, thank the individual for their time and end here.

5.2.Informed consent forms for Pemba rapid assessment

5.2.1. Informed consent for Pemba RA participants: KPs

Survey title

Rapid Assessment among men who have sex with men (MSM), female sex workers or Sexually Exploited Girls(FSW/SEG), and people who inject drugs (PWID), Pemba, Zanzibar, 2022/2023

Introduction

You are being asked to take part in an interview as part of a rapid assessment. Before you decide to join, it is important for you to understand why the assessment is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether you wish to take part.

All information you provide for this survey is confidential. Names are not recorded anywhere, and nothing can be attributed to you personally.

What is the purpose of the assessment?

We wish to find out about the characteristics, behavior and attitudes of men who have sex with men, injecting drug users, and sex workers. This is part of a larger survey where we are measuring the amount of HIV in these populations. The assessment will help us develop programs to improve health among MSM, FSW/SEG, and PWID in Pemba, Zanzibar. This assessment will be carried out by the Zanzibar Integrated HIV, Hepatitis, TB, and Leprosy Programme, the Centers for Disease Control and Prevention, and the University of California, San Francisco in the United States of America.

Why am I being asked to participate in this assessment?

You are being asked to participate in this assessment because you may be at risk of HIV and other sexually transmitted infections.

Do I have to take part?

It is up to you to decide whether or not to take part. If you do not decide to take part in the survey, there will be no penalty to you. If you decide to take part you are still free to withdraw at any time and without giving a reason. There will be no penalty to you for withdrawing.

What will happen to me if I take part?

If you agree to participate in the survey, you will be asked to do the following:

1) Fill out a short demographic and risk behavior survey. This survey should take no more than 30 minutes, and we will not record you name on the survey.

2) Take part in an individual or group (6-8 people) discussion which takes between 60 and 90 minutes. You will be asked questions about sexual behavior, drug use, perceptions of this research survey, HIV stigma and who you talk about HIV with among your family and friends. You will be able to skip any questions that you do not want to answer.

We will take notes on what you say during the discussion. The notes will be used to help us keep an accurate record of what is said during the interviews and focus group discussions for when we write the report. We will not record any names.

3) Give approximately 2 tablespoons of blood, drawn from your arm, using a clean disposable instrument. This blood specimen will be used for HIV, hepatitis B, and syphilis testing. After blood is taken, the interviewer will label the specimen container with your coupon identification number (barcode). Your name will not be on the blood that you provide for the survey. Your assessment identification number (barcode) will only be seen by laboratory or survey staff. After the specimens are collected, the counselor will conduct the HIV, hepatitis B, and syphilis rapid tests. You will receive the results for all of the tests immediately, together with counseling and referrals for care and treatment as needed based on your test results. We will only conduct an HIV test if you agree to the test and you agree to receive your test results.

Including the interview and the counseling and test, the entire survey visit may take up to three hours.

What are the risks of participating in this survey?

If you take part in the interview or focus group, the questions we ask you are very personal and may be uncomfortable to answer. Once again, you are free to not answer any questions that you feel are too personal. We will not use your name and we will take great care to protect your privacy. We will ask all focus group participants to keep the discussion private. However, we cannot guarantee that the other participants will not share information outside of the group. Also, you may know someone else in the group and they may know you. It is not possible to guarantee that you will not be identified.

There is the possibility that someone outside of the survey staff could find out about your HIV and STI test results and you may experience stigma, discrimination, or abuse. Although we will not use your name or any information that could identify you personally, this could still happen. There is also a chance that someone else in the group may assume you have a STI or HIV.

During the blood draw, you may experience pain, bleeding, swelling, bruising, or in rare cases infection where the needle enters the skin. You may feel some lightheadedness or fainting, but this is very rare.

If you test positive for HIV, syphilis, and/or hepatitis B, you may feel anxious or depressed. Our survey staff may refer you to local counselors or support groups to help deal with these feelings.

What are the benefits of participating in this survey?

If you choose to be in this survey, you will receive free and confidential testing for HIV, syphilis, and hepatitis B . If needed, you will be referred to clinics that can provide medical care and treatment. You will also receive condoms and educational information on HIV/AIDS, syphilis, and hepatitis B.

Overall, your participation will help health professionals and others in your community learn more about who is at risk for HIV, syphilis, and hepatitis B. What we learn will help us try to improve education, prevention, and care programs for your community.

Will my taking part in this survey be kept confidential?

All information you provide for this survey is confidential. Names are not recorded anywhere, and nothing can be attributed to you personally. What you say in the interview will be private and your HIV, hepatitis B, and syphilis results will be confidential, that is they will not have your name on them.

What will happen to the results of the survey?

The results of the survey will be written up into a report and into a publication in an academic journal. These publications will be used to help design important programs to improve health and prevent HIV infection for injecting drug users, sex workers and males who have sex with males in Pemba. No persons will be identified in any report or publication.

Costs and compensation

There are no costs to you to participate. You will receive up to TZS 15,000 for your participation today.

Contact for further information

If you have questions about this survey, about the conduct of anyone involved with the survey, or about any injury you receive as a result of taking part in the survey, you may contact the following:

Dr. Mohamed Dahoma
Program Manager, Zanzibar Integrated HIV, Hepatitis, TB, and Leprosy Program
Mobile number: +255 777 461 870

Mr. Ahmed Suleiman Said
Head of Strategic Information, Zanzibar Integrated HIV, Hepatitis, TB, and Leprosy Program
Mobile number +255 777 199090/0689539520

If you have any questions or concerns about how you are being treated as a participant or if you wish to lodge complaints, you may contact the Zanzibar Medical Ethical Committee at +255-54-31089/90.

Your help will be of great value to us. Thank you for your time.

Verbal consent

Survey staff to read the following statements allowed and tick the corresponding box based on participant's response:

☐ I confirm that I have read and understand the information sheet for the above survey and have had the opportunity to ask questions.

☐ I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, without my medical care or legal rights being affected.

☐ I agree to take part in the above survey by completing the short demographic and risk behavior survey.

☐ I agree to take part in the above survey by participating in the interview on sexual behavior, drug use, use of health services, experiences with stigma and your knowledge about HIV.

☐ I agree to take part in the above survey by giving blood for HIV, syphilis, and hepatitis B testing.

☐ I agree to receive the results of my HIV, hepatitis B, and syphilis tests.

_____ _____

Signature of person taking consent Date

5.2.2. Informed consent for Pemba RA – KIIs with KPs

You are being asked to take part in a research survey conducted by the Ministry of Health.

Introductory Statement

We want to ask you for some information. Before we ask for this information, we want to tell you everything about what we want. We will read this form to you. You will be able to read along with us using the copy that we have given you. You may ask questions about anything in this form that is not clear or concerns you. When all of your questions have been answered, you can decide if you want to talk to us. This process is called "informed consent". We will give you a copy of this form to keep.

Purpose of the Survey

We want to talk to you about the INSERT KP GROUP community in Pemba so that we may finalize plans for a survey we will do with them. Through this survey we want to learn about the characteristics, behavior and attitudes of INSERT KP GROUP. We also want to measure the amount of HIV in these populations.

What will happen in the interview?

You have to be at least 18 to talk with us. We would like you take part in a special talk called an interview. It will take about one hour. This is a one-time interview. As part of the interview one person from the survey will talk with you while another person will take notes to remind us about what was said. You will be asked to talk about the INSERT KP GROUP community in Pemba and answer questions that will help us plan for our upcoming survey.

Voluntary Participation and Right to Withdraw

Talking to us is voluntary. You can refuse to answer any questions. You can stop the interview at any time. Your decision will not be discussed with anyone else. It is up to you whether to take part in the survey.

Risks or Discomforts

There may be minimal psychological discomfort from participating in this interview. For example, some questions might make you feel uncomfortable because they ask about sensitive issues. You may refuse or decline to answer any questions that you do not want to answer. You can leave the interview at any time.

Handling of Risk

You can refuse or decline to answer any questions that you do not want to answer. You can leave the interview at any time.

Benefits

You will help us better understand the concerns of you and your community. What you tell us about your experience will help us make appropriate recommendations for improving services to these populations.

Costs to you

It will not cost you anything to be in this survey. You will receive TZS 20,000 ($8.81 USD 11 April 2018) for your participation today.

Confidentiality
We will not ask you for any information that can identify you such as your name or address. We will assign a code number to your interview. This code will not be linked to your name.

Future Use of the Information
What you tell us will be added to what we hear in other interviews. Your answers and comments will not be presented alone. They will be part of the entire report to give a general picture of HIV and *INSERT KP GROUP* in Pemba.

Persons to Contact
If you have questions about this survey, about the conduct of anyone involved with the survey, or about any injury you receive as a result of taking part in the survey, you may contact the following:

Dr. Farhat Khalid
Program Manager, Zanzibar Integrated HIV, TB, and Leprosy Program
Mobile number: +255 773 585 860

Ms. Asha Ussi Khamis
Head of Strategic Information, Zanzibar Integrated HIV, TB, and Leprosy Program
Mobile number +255 777 948426

If you have any questions or concerns about how you are being treated as a participant or if you wish to lodge complaints, you may contact the Zanzibar Medical Ethical Committee at +255-54-31089/90.

Verbal Consent
You have read and/or had read to you the explanation of this survey, you have been given a copy of this form, a chance to ask questions, and you know that you can refuse to participate. Would you agree to take part in the interview? (Staff to circle one answer only)

YES NO

Statement of Survey Staff Obtaining Consent
I have explained the survey to the subject. I have answered the participant's questions to his/her satisfaction.

_____ _____

Signature of survey staff Date

5.3.RA Key Informant Interview Guide

Interviewer Initials: _____ Date of interview (dd/mm/yyyy): _____

For NGO staff	For KP key informants
Name: Title: Organization: Contact (address/phone/email): KP group(s) served:	KP group represented:

1. [INSERT KP GROUP] CHARACTERISTICS

   1.1. Can you describe your experience and interactions with INSERT KP GROUP in your work?
   1.2. We want to really understand more about the KP GROUP in Pemba and all of the different subgroups within the larger population. Can you tell us about the different subgroups that are present and the defining characteristics of each?

Interviewer instruction: Use one table for each subgroup. Fill in the name(s) and characteristics for all sub-groups that the KII is familiar with. After this, go through the remaining questions one sub-group at a time.

Subgroup local name(s): Defining characteristics:	
a. Where are the members of this group from (geographically)?	
b. Are they well networked? Including across districts?	
c. Do they travel a lot in and out Pemba?	
d. What are their common HIV risk behaviors? Do they have any unique risk factors or behaviors?	
e. Is this a small, medium, or large proportion of the overall KP population in Pemba?	
f. Where does this sub-pop usually spend time out? Mention specific areas / venues / etc.	
g. Have there been any major changes in this group over the past 5 years?	
h. Does your organization/Do KP-friendly organizations work with this sub-group? If yes, what are the services that are provided to this sub-group the most?	
i. How easy are they to reach with HIV-related services (including both prevention and treatment)?	
j. What are the barriers/challenges to reaching them?	

1.3. We want to ask you how many INSERT KP GROUP do you think live in and around Pemba. Can you estimate the number of INSERT KP GROUP living in each of the following districts?

a.	How many < INSERT KP GROUP > do you think are living in **CHAKE CHAKE**?	_____
b.	How many < INSERT KP GROUP > do you think are living in **WETE**?	_____
c.	How many < INSERT KP GROUP > do you think are living in **MKOANI**?	_____
d.	How many < INSERT KP GROUP > do you think are living in **MICHEWENI**?	_____

1.4. For INSERT KP GROUP who are sex workers, what commercial venues do they frequent? What hours are they usually found in these venues? [Get names of neighborhoods and/or venues]

2. SERVICE PROVISION [Only ask these questions of NGO service providers]

2.1. 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?

2.2. What services is your organization providing to INSERT KP GROUP? What are the services that are most commonly requested / used by your clients? Are there any services that your clients request that you do not currently provide?
2.3. When and where do you provide these services (e.g., in the facility, through outreach in the community, at venues, etc.) and who is providing services on behalf of your organization (e.g., medical professionals, peer educators, etc.)?
2.4. What is the general age distribution of the INSERT KP GROUP your organization serves?
2.5. 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?
2.6. How much turn-over is there among your clientele? Are they usually the same people or do they change a lot?
2.7. We want to understand more about who is supportive and who might make it difficult to provide services to KPs.
    a. Tell me about groups that are supportive of providing services for *INSERT KP GROUP*.
    b. Are there any groups or institutions that make your work difficult (e.g., police, community police, religious groups, etc.)?

3. SURVEY LOGISTICS

As I mentioned, we are conducting a survey among INSERT KP GROUP to understand behaviors and attitudes within this community. The next few questions will help us finalize our plans for this survey.

3.1. We want to conduct group interviews with INSERT KP GROUP. Are there any sub-groups that would not feel comfortable in a group interview together?
3.2. We want to include KPs who are not already being reached by KP-friendly organizations (i.e., more hidden individuals). Do you know of ways that organizations have tried to reach these types of KPs and can you share what has or has not worked?
3.3. What do you think are the best days and times of day to conduct interviews with <KP GROUP>?
3.4. What are the best locations to conduct these interviews? We want to make sure we conduct the interviews where participants will feel comfortable and safe.
3.5. We will offer HIV, syphilis, and hepatitis B rapid testing to all participants and provide them with their results during the survey. Do you think INSERT KP GROUP will have any concerns about these tests? If yes, what concerns would they have?
3.6. We want to compensate people who participate in our survey for their time and transport but we do not want to offer too much. By "too much", we mean an amount that makes it hard for people to say 'no' even if they really do not want to participate. We also do not want people to pretend they are part of the group so that they can join the survey for cash. We are planning to offer up to TZS 20,000 to participants. Is this about the right amount? If not, what amount would be more appropriate?

5.4.RA Focus Group Discussion/In-Depth Interview Guide – KPs

Date (dd/mm/yyyy): _____
Primary Interviewer Initials: _____
Secondary Interviewer Initials (if applicable): _____
Note Taker Initials (if applicable): _____

Venue: _____
Start time: _____
End time: _____

Number of participants: _____
How many participants remained full time? _____

Introduction
Before we 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 and you can feel free to tell us your honest opinion. We just want to understand the needs of your community so we can make recommendations to provide better services.

Characteristics of peers and the *INSERT KP GROUP* community

A1. How many *Insert KP Group* do you know? How often do you see other *Insert KP Group*? Where do you see them? How do you communicate?

A2. Where are your peers mostly from?
   a. Within Pemba, Unguja, Tanzania mainland, other countries?
   b. What proportion of the overall population are from each of these places?

A3. Do <KP group> move a lot in and out of Pemba? Where do they normally travel?

A4. 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?

A5. Which areas of Pemba do you and your friends usually frequent? What hours?
Probe: Which bars, restaurants or similar places do you and your friends go to? What hours?

A6. 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?

A7. How has the *INSERT KP GROUP* changed over the last five years?

a. PROBE for changes in the socio-demographic characteristics – where they are from, age – and the size of the population
b. PROBE for changes in risk behaviors
c. PROBE for changes in visibility and openness about being a *INSERT KP GROUP*

A8. We want to ask you how many INSERT KP GROUP you think live in and around Pemba.

a. Can you estimate the number of INSERT KP GROUP living in this district?
b. What about all of Pemba?

HIV and other support services

A9. Are there any support organizations that are well known among you and your peers? What are their names? What services do they provide? What services are most commonly used?

Probe for Health, legal, economic, social support and spiritual.
Probe specifically for HIV-related services, including PrEP.

A10. How many of your peers do you think have received HIV prevention information or messages from CBOs or other organizations?

A11. How many of your peers do you think have been tested for HIV in the last 12 months (a few, some, most, all)? What do you think prevents your peers from being tested for HIV?

A12. Do you think there is stigma around HIV among your peers? Do you think it would be easy or hard for one of your peers who is HIV positive to tell others about their status?

A13. Do you think it would be easy or hard for one of your peers who is HIV positive to be on HIV treatment? Why?

A14. Do you think it is common for INSERT KP GROUP to be stigmatized or discriminated against by health care providers? What kinds of experiences are common?

A15. Are there services that you think INSERT KP GROUP want but are not available in Pemba?

Information about sex work

Ask these questions only if you are interviewing a group of FSW/SEG or if participants have volunteered information that they engage in sex work.

B1. Where and how do you (your peers) typically find clients? For example, over the phone, on the street, at hotels, bars and nightclubs, brothels? What are the names of these venues and where are these venues located?

B2. What are the characteristics of clients of FSW/SEG? Are most of them from Pemba or from outside (probe for where if outside of Pemba)? Are they younger or older?

B3. Do you or your peers share your earnings from sex work with someone, such as an intermediary or an agent, sometimes called a pimp?
Probe: 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?

B4. How common do you think it is for your peers to use alcohol or drugs? Do you think your peers who use alcohol or drugs use them before sex, including during sex work? What kinds of drugs are most common?

B5. How common do you think it for your peers to use condoms? Does it depend on the type of sexual partner? What else influences condom use?

B6. Do you think it is common for FSW/SEG to experience harassment or violence? What kinds of experiences do FSW have? Who is mostly responsible for these actions? Do you think most FSW know where to get help after this kind of experience?

Information about sex among MSM
Ask these questions only if you are interviewing MSM.

C1. How common do you think it is for your peers to use alcohol or drugs? Do you think your peers who use alcohol or drugs use them before sex? What kinds of alcohol and drugs are most common?

C2. How common is it for MSM to have more than one sexual partner at a time? Is this different for different types of MSM?

C3. How common is it for MSM to exchange sex for money or other gifts?

C4. How common do you think it for your peers to use condoms? Does it depend on the type of sexual partner? What else influences condom use?

C5. Do you think it is common for MSM to experience harassment or violence? What kinds of experiences do MSM have? Who is mostly responsible for these actions? Do you think most MSM know where to get help after this kind of experience?

Information about injection practices among PWID
Ask these questions only if you are interviewing PWID.

D1. What kinds of drugs are most commonly injected in Pemba?

D2. Where do you (your peers) typically inject? How do you meet? Where do you hang out? What areas of town?

D3. How common do you think needle sharing is among PWID in Pemba?

a. What are the main reasons people share needles when injecting? Do people normally clean needles when sharing? What is most often used for cleaning?
b. Where do you and your peers normally get clean needles? Are there any barriers to accessing clean needles when PWID need them?

D4. How common is it for PWID to exchange sex for money, drugs, or other goods? How common is it for PWID to have multiple sexual partners at the same time?

D5. How common do you think it is for your peers to use condoms? Does it depend on the type of sexual partner? What else influences condom use?

D6. Do you think it is common for PWID to experience harassment or violence? What kinds of experiences do PWID have? Who is mostly responsible for these actions? Do you think most PWID know where to get help after this kind of experience?

5.5.Pemba Socio-demographic Survey (PWID)

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

1. Date of Focus Group or Interview: __ __ /__ __ /__ __
2. Location of Interview:
    a. Wete
    b. Chake Chake
    c. Mkoani
    d. Micheweni

12. 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

13. Where do you live?
    a. Wete
    b. Chake Chake
    c. Mkoani
    d. Micheweni
    e. Other (specify): _____

14. How long have you lived there?
    6a. ____ years ; OR 6b. ____ months
    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	i. Trader
b. Farmer	j. Taxi driver
c. Fisherman	k. Bar worker or owner
d. Driver/conductor of daladala	l. Teacher
e. Military	m. Employed in government
f. Student	n. Employed in private sector
g. Police	o. Other (Specify) _____
h. Housekeeper or maid	p. Unemployed

9. What is the highest level of education that you have completed until now?
    a. Never went to school
    b. Madrasa only
    c. Did not complete primary
    d. Completed primary

e. Did not complete secondary
f. Completed secondary
g. Post-secondary (College/University)

15. What is your marital status?
    a. Married/living with partner
    b. Widowed/Separated/divorced
    c. Single
16. IF not married – Are you currently in a steady sexual relationship?
    Yes
    No

13. How old were you the first time you had sex? _____ years

13b. How many sexual partners (male and female) have you had in the past 3 months?

(if none – write NA) _____male partners, _____female partners

14. Have you exchanged vaginal or anal sex for money, drugs, or other goods 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 Q21)
c. No, I have never exchanged sex for money or drugs

15. The last time you exchanged sex for money or other goods, did you use a condom?

19. How old were you when you first injected drugs? ___years of age

20. On average, how many times a day do you inject drugs? _____

21. What drug(s) do you inject? **Check all that apply.**

☐ Brown heroin
☐ White heroin
☐ Opium
☐ Amphetamines
☐ Prescription drugs
☐ Other_____

22. In the past 3 months, have you used a needle that was already used by someone else to inject drugs?
    a. Yes
    b. No

23. HIV KNOWLEDGE QUESTIONS

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
Can a person get HIV from mosquito bites?	Yes 1 No 2 Don't know 97 No response 98

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
Can a healthy-looking person have HIV?	Yes 1 No 2 Don't know 97 No response 98
Can a person get HIV by sharing food with someone who has HIV?	Yes 1 No 2 Don't know 97 No response 98
Do you agree or disagree with the following statement? "When taken as prescribed by a health worker, HIV medications decrease the amount of HIV in the blood of people living with HIV. Therefore, the amount of virus in their blood becomes too low to detect in a laboratory test."	Agree 1 Disagree 2 Don't know 97 No response 98
Do you agree or disagree with the following statement? "A person living with HIV who is taking HIV medications cannot pass HIV to a sexual partner once a laboratory test can no longer detect the HIV virus in their blood."	Agree 1 Disagree 2 Don't know 97 No response 98
Sharing needles when injecting drugs will increase the risk of HIV infection	Yes 1 No 2 Don't know 97 No response 98
Cleaning needles and syringes between injections reduces the risk of HIV.	Yes 1 No 2 Don't know 97 No response 98

24. Have you ever been tested for HIV?
    a. Yes
    b. No (End of interview)
25. When was your last HIV test?
    a. Within the last 12 months
    b. 1-2 years ago
    c. More than 2 years ago
26. If you are comfortable saying, what was the result of your last HIV test?
    a. Negative (end of interview)
    b. Not comfortable saying ***(END OF INTERVIEW)***
    c. Positive
27. Are you currently on ART?
    a. Yes
    b. No

(end of interview)

5.6.Pemba Socio-demographic Survey (FSW/SEG)

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

1. Date of Focus Group or Interview: __ __ /__ __ /__ __

2. Location of Interview:

a. Wete
b. Chake Chake
c. Mkoani
d. Micheweni _____

17. 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. Micheweni
e. Other (specify): _____

18. How long have you lived there?

6a. ____ years

OR 6b. ____ months

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.

19. What is the highest level of education that you have completed until now?
    a. Never went to school
    b. Madrasa only
    c. Did not complete primary
    d. Completed primary
    e. Did not complete secondary
    f. Completed secondary
    g. Post-secondary (College/University)
20. 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. Driver/conductor of daladala
e. Military
i. Trader
j. Taxi driver
k. Bar worker or owner
l. Teacher
m. Employed in government

f. Student
g. Police
h. Housekeeper or maid
n. Employed in private sector
o. Other (Specify) _____
p. Unemployed

21. What is your marital status?
    a. Married or living with a partner
    b. Widowed/divorced/separated
    c. Single
22. 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
    h. Other
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 do you earn from sex work in a week? _____

20. Did you use a condom with your last paying client?
    a. Yes
    b. No

21. HIV KNOWLEDGE QUESTIONS

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
Can a person get HIV from mosquito bites?	Yes 1 No 2 Don't know 97 No response
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
Can a healthy-looking person have HIV?	Yes 1 No 2 Don't know 97 No response
Can a person get HIV by sharing food with someone who has HIV?	Yes 1 No 2 Don't know 97 No response
Do you agree or disagree with the following statement?	Agree 1 Disagree 2 Don't know 97

"When taken as prescribed by a health worker, HIV medications decrease the amount of HIV in the blood of people living with HIV. Therefore, the amount of virus in their blood becomes too low to detect in a laboratory test."	No response 98
Do you agree or disagree with the following statement? "A person living with HIV who is taking HIV medications cannot pass HIV to a sexual partner once a laboratory test can no longer detect the HIV virus in their blood."	Agree 1 Disagree 2 Don't know 97 No response 98

22. Have you ever been tested for HIV?
    a. Yes
    b. No (end of interview)
23. When was your last HIV test?
    a. Within 12 months
    b. 1-2 years ago
    c. More than 2 years ago
24. If you are comfortable saying, what was the result of your last HIV test?
    a. Negative (end of interview)
    b. Not comfortable saying ***(END OF INTERVIEW)***
    c. Positive
25. Are you currently on ART?
    a. Yes
    b. No

(end of interview)

5.7.Pemba Socio-demographic Survey (MSM)

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

23. Date of Focus Group or Interview: __ __ /__ __ /__ __

2. Location of Interview:

a. Wete
b. Chake Chake
c. Mkoani
d. Micheweni _____

24. Type of participant

a. Focus Group Discussion Participant
b. Key Informant Interview Participant

Questions for participant

4. How old are you? ___ (IF <15 years old, end interview)

25. Where do you live?

a. Wete
b. Chake Chake
c. Mkoani
d. Micheweni
e. Other (specify): _____

26. How long have you lived there?

6a. ____ years
OR 6b. ____ months

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. Farmer
c. Fisherman
d. Driver/conductor of daladala
e. Military
f. Student
g. Police
h. Housekeeper or maid
i. Trader
j. Taxi driver
k. Bar worker or owner
l. Teacher
m. Employed in government
n. Employed in private sector
o. Other (Specify) _____
p. Unemployed

27. What is your level of education that you have completed until now?

a. Never went to school

b. Madrasa only
c. Did not complete primary
d. Completed primary
e. Did not complete secondary
f. Completed secondary
g. Post-secondary (College/University)

28. What is your marital status?
    a. Married or living with a partner
    b. Widowed/divorced/separated
    c. Single

29. Are you currently in a steady sexual relationship with a man?
    a. Yes
    b. No

13. How old were you the first time you had sex with a man? _____ years

14. How old were you the first time you had sex with a woman? _____ years

15. The last time you had sex with a man, did you use a condom?

    a. Yes
    b. No

16. Have you exchanged anal sex with other men for money or other gifts in the past 30 days?
    a. Yes
    b. No (GO TO Q19)

17. At what age did you begin exchanging sex for money? _____ years

18. On average, how many times a month do you exchange sex for money? _____

19. HIV KNOWLEDGE QUESTIONS

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
Can a person get HIV from mosquito bites?	Yes 1 No 2 Don't know 97 No response 98
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
Can a healthy-looking person have HIV?	Yes 1

	No 2 Don't know 97 No response 98
Can a person get HIV by sharing food with someone who has HIV?	Yes 1 No 2 Don't know 97 No response 98
Do you agree or disagree with the following statement? "When taken as prescribed by a health worker, HIV medications decrease the amount of HIV in the blood of people living with HIV. Therefore, the amount of virus in their blood becomes too low to detect in a laboratory test."	Agree 1 Disagree 2 Don't know 97 No response 98
Do you agree or disagree with the following statement? "A person living with HIV who is taking HIV medications cannot pass HIV to a sexual partner once a laboratory test can no longer detect the HIV virus in their blood."	Agree 1 Disagree 2 Don't know 97 No response 98

20. Have you ever been tested for HIV?
    a. Yes
    b. No (end of interview)

21. When was your last HIV test?
    a. Within the last 12 months
    b. 1-2 years ago
    c. More than 2 years ago

22. If you are comfortable saying, what was the result of your last HIV test?
    a. Negative (end of interview)
    b. Not comfortable saying ***(END OF INTERVIEW)***
    c. Positive

23. Are you currently on ART?
    a. Yes
    b. No

(end of interview)

5.8. Wisdom of the crowds estimate adjustments

Responses were adjusted for over- and under- estimation by two approaches. First, estimates suggesting that >3% of the adult population in the town belong to the population were truncated to 3% based on the upper range of size estimates. Second, estimates lower than the number of KPs recruited for the RA survey in the respective to district were set at that number. The data were then used to calculate the median value for each district and the median values for the four districts were aggregated to generate a total estimate.

5.9. Additional quotes from qualitative interviews

5.9.1. PWID qualitative quotes

Regarding PWID subgroups and venues where they congregate:

- "Normally we do not visit a bar, we only go there to wait for people to get drunk so that we easily steal from them and get money to buy drugs." (PWID_Micheweni)

Regarding networks and movement:

- "We (PWID) normally travel to Unguja and Dar es salaam with no other major issues rather than searching for drugs, some are sailors, so they travel to different places and come back with drugs". (PWID_Wete)
- "We have a phone code to understand the number of drugs needed, for example, 'Bi kidude' means PWID wants seven pieces of drugs, 'Boya namba mbili' means they have changed the venue for the congregation. We use voice procedure that is perfectly understood between us". "We (PWID) normally travel to Unguja and Dar es salaam with no other major issues rather than searching for drugs, some are sailors, so they travel to different places and come back with drugs". (PWID_Wete)

Regarding types of drugs used by PWID:

- "The common drug used is heroin, I don't think there is anyone who has used cocaine. Cocaine is very strong and expensive. When there is a scarcity of drugs, they normally use tramadol or valium to ease body pain". (KII_Micheweni)

Regarding injection practices:

- "Also, some PWID went to The CITIZEN (hospital) and collect the syringes that have already been used and used them for injection purposes without any treatment measure." (PWID_Wete)
- "I have almost 43 years since I started injecting drugs, most young people are injecting drugs to delay ejaculation and so to provide a better sexual climax to their sexual partners." (PWID_Chake-Chake)
- "Two pieces of drug taken by injection gives quick and more stimulus rather than the 10 pieces taken through cocktail, so people start to inject when they have no money or when there is a scarcity of drugs. When you start injecting drugs there is no turning back." (PWID_Micheweni)

Regarding use of condoms:

- "If a Female sex worker has a condom that's fine with me, when I get 10,000 Tshs, I pay for sex and I leave quickly, I don't walk with condoms or bother to use condoms, and also if a drunk man loses conscious and fell down the floor along the way, every one of us wants to have an opportunity of having sex, there is no consideration for a condom at that moment." (PWID_Micheweni)

Regarding availability and provision of services:

- "Most of my friends who had never tested for HIV are afraid of their HIV results compared to those who test for a second time and also most testing services are provided during afternoon hours where PWID engage in other economic activities." (PWID_Chake-Chake)
- "We visit PWID during outreach activities which are performed twice a month at their venues, sometimes they see us when they need something and also, they request our assistance at the police or hospital whenever they encounter problems". (KII_Chake-Chake)
- "The Drug Control and Enforcement authority makes it hard for us to reach PWID as they are fearing being attacked and harassed. I think there is a need for them to be educated on how to handle this population. Also, we face some challenges from religious people" (KII_Chake-Chake)

5.9.2. MSM qualitative quotes

Regarding treatment of MSM by the community:

- "In the past village elders and leaders used to come to homes of suspected receptive MSM, ask their parents or family members to surrender them and would spank them in public, due to this, many flew and only a few remained hiding."

Regarding different MSM subgroups:

- "Receptive MSM are known but their partners are unknown."
- "One day a person sent me bus fare, I knew that he was receptive and that he needed my service but after I finished tables turned by surprise".
- "The newcomers are there 15, 16 years but I'm not close to them, we are afraid of the community but once they are 19, we advise them do this, do that and if you have a sugar daddy pass him to me. As for my receptive friends that I know, they relate with their peers not children. Insertive partners do not choose, if you throw yourself to them, they take just any age."
- "If a 15-year-old passes by, I pull him to my ghetto, this one is cute and has some juice".

Regarding interaction with foreigners

- "We meet on Facebook, we share images of our private parts and I tell them to come to Zanzibar, we meet and finish our business, I had two recently from US and France. As for foreign females, we mostly meet in beach once they are already in Zanzibar and require the service, these range from teenagers to old ladies, I don't care as long as they pay me."

Regarding risk behaviors

- “We have many sexual partners as result of searching for different taste and greed for money.”
- ‘I told him that this woman doesn’t love you, I will help you to keep your urine, so I hide his shame and he gives me a gift of soap to go bath with after the act’
- “If you put my men in a rapid transport bus it will be full, and some will be hanging off “ Responded one participant when asked how many sexual partners do you have?
- “Normally, it involves three people, 1 receptive and 2 receptive partners. I am receptive, I have ever taken up to 5 insertive partners at once”
- “I have ever done it with 3 women and 2 receptive men, we were drunk.”
- “This is there, I have ever facilitated a group sex for 2 insertive men and 5 receptive, they paid my facilitation fees.”

Regarding selling sex:

- “Sometimes my man comes even when my wife is around and stay with us for 2weeks, when my wife leaves for a little while we finish our business.”
- “When you tell me here is $500, you can lock me in even for a week, when I feel exhausted I go to doctor and ask him to add me some pills (Viagra).”
- “That old man is my friend, sometimes he asks me to come do him, then he treats me with full body scrub, so we save each other, he tells me I give it to you for free because you are my friend, I know you have nothing to give me, but I preserve your urine for you.”
- “Even the day before yesterday, that old man showed me 5X6 bed that his man bought him, he is looking for another one to buy him a mattress for his venue in the farm.”
- “Condoms are not used nowadays, most people like it bare, condoms reduce sensitivity.”

Regarding experiences of violence:

- “It has ever happened in the street, there was one person who was versatile, he rented one house and was chased, went to another one and was chased as well, he was enticing children and destroying them.”
- “There is no agreement in crashing the car, people just watch you and when you fall, they serve themselves.”
- “When he snatches somebody’s man, we all follow him and tell him to strip so that we show him, we do in turns even when you have no power you buy viagra.”
- “Buy him alcohol, when he sees its free and down the hill kind a thing but people have their plans”
- “You are beaten and robbed of everything you have, it happened to some of my friends because they were forcing love, the insertive partners beat them because of forcing “I don’t want you anymore, you are forcing”

Regarding services:

- “ARVs are easily accessible but the main problem is in the use.”
- “There may come a man who wants or doesn’t want to use condoms, the old must use condoms, therefore, I convince him that you have a family you should use it. There are so

many diseases so I advise the old men to wear, there is gonorrhea, I may not know if I have it."

- "We encourage each other to test and know one's status so as to stop worrying, because we are constantly worried because of what we do, you may not know who has it and who doesn't "

5.9.3. FSW/SEG qualitative quotes

Regarding the FSW/SEG population:

- "[Female sex workers] who are old, look for young clients", FGD participant, Wete.
- "There are some FSW/SEG who conduct both vaginal and anal sex, especially the young FSW they do both vaginal and anal sex", participant of FGD, Chake-Chake.
- "…. They have increased, because, the current ones remains, and those who joining the group are also present." FGD participant, Wete.

Regarding risk factors:

- "Female sex workers use condom, but it depends on whether you have use alcohol of not ……" FGD participant, Chake-Chake.
- "Someone might use condom in the first place, but he might do it for about three hours without ejaculating, You ask him to remove it,,,,,……". FGD participant, Chake Chake.
- "I use drugs, if I develop withdraw symptoms, I go to male PWID and exchange sex for drugs". As narrated by a FSW/SEG participant who uses drugs in Chake Chake.

Regarding services:

- "Even if you use medications, you cannot take them from here, people do take their medication outside Chake Chake".
- "If you have the yellow card [indicating returning date] and I do not have, do you think what people might think of that. If you do not have a yellow card, your results are known". FGD participant from Mkoani cemented on that.
- "IF someone is known to have HIV, her [commercial sex] market ends up there", Participant of FGD, Wete.
- "We request 'dawa kinga' (PreP and condoms), I want a lot of condoms (male condoms) and female condoms I want them too" FGD participant, Mkoani. Wete.
- "Many of women who sell sex, tend to forget about condom, but if we will have self-testing services, it will be very nice", FGD participant, Mkoani