KAUNTIM MI TU LAE 2017

Key findings from the Key Population Integrated Bio-Behavioural Survey, Lae, Papua New Guinea

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In loving memory of our friend and mentor Mama Rose Jameson
who, following a short illness, died soon after the completion of
Kauntim mi tu - Lae.

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A study like *Kauntim mi tu* is only possible with the support, encouragement, leadership and advice from a diverse range of people.

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PAPUA NEW GUINEA

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ACRONYMS & ABBREVIATIONS

AIDS - Acquired Immune Deficiency Syndrome
ART - Antiretroviral Therapy
CAPI – Computer-Assisted Personal Interviews
FSW – Female sex worker
HBV - Hepatitis B Virus
HIV - Human Immunodeficiency Virus
IBBS – Integrated Bio-Behavioral Survey
MDS - Men of Diverse Sexualities
MSM – Men who have sex with men
NACS - National AIDS Council Secretariat
PLoS - Public Library of Science
PNG – Papua New Guinea
RDS – Respondent-Driven Sampling
STI – Sexually transmitted infection
SW – Sex worker
TB - Tuberculosis
TG – Transgender woman
UNAIDS - Joint United Nations Programme on HIV/AIDS
WHO - World Health Organization

PREFACE

Kauntim mi tu is without doubt a major landmark in the evolution of PNG's HIV response and represents the most comprehensive attempt to date, to better understand the nature and extent of the country's epidemic.

In my leadership role in the Papua New Guinea National Department of Health I am delighted to introduce the second report from the *Kauntim mi tu* study. Like the first report from Port Moresby, the Lae *Kauntim mi tu* report is another major landmark in the evolution of Papua New Guinea's HIV response and represents the most comprehensive attempt to date to better understand the nature and extent of the country's epidemic. This is the first time any data of this nature has been available for Lae. The data will contribute to the country's understanding of the national HIV and STI epidemics for years to come by providing more and better focused information than previously available to policy makers, implementers, service providers, and financing agents, and by providing not only the first size estimation of women who sell and/or exchange sex and men who have sex with men, but also the most representative bio-behavioural data about these key populations to date.

The information that *Kauntim mi tu* provides comes at a critical time as we continue to shift our understanding of the country's HIV situation from long-held assumptions that we were addressing a generalised (or generalising) epidemic, to an understanding that we more likely have multiply concentrated and geographically situated epidemics most significantly affecting certain key populations. Without the crucial information provided by this study, it would remain difficult (if not impossible) to focus the national response on the places with the highest disease burdens and key population densities so as to ensure the access to prevention and treatment resources and services critical to stabilising (and hopefully reducing) HIV prevalence in the country. This is also of critical importance as the financing landscape for the nation's HIV and STI responses change and available financial resources decline.

UNAIDS calls on countries to "Fast Track" their national responses and this requires a base of the best strategic information; innovation in service delivery, communication, development of new delivery paradigms, and in how we fund and resource our work; integration of the HIV and STI responses in the overall health and development agendas; strategic investments which find greater financial and implementation efficiencies; and finally putting the people most affected by HIV at the centre of our responses. None of these efficiencies are possible without the kind of information that *Kauntim mi tu* provides.

Kauntim mi tu has itself also represented an excellent example of exactly the sort of innovation, and investment efficiency which Fast-Track thinking calls for. The study has, in its design, included a number of firsts for PNG and also for the world in the conduct of integrated bio-behavioural surveys. The study provided up to nine separate point of care tests.

In addition to tests for HIV, CD4 t-cell counts, syphilis and the Hepatitis B virus, the study also tested for TB, Chlamydia trachomatis and Neisseria gonorrhoeae and provided same day results for HIV viral load. In addition, the study has exemplified the UN's Fast Track thinking by being a superb example of partnership between key players in the Papua New Guinea national HIV response – communities of key populations, the scientific and academic communities, Government and national institutions, civil society, service providers, bilateral / multilateral donors, public/private partnerships, technical assistance providers, and others, including the PNG Institute of Medical Research, the Kirby Institute, UNSW Sydney, Australia, the US Centers for Disease Control and Prevention, the Oil Search Foundation, the United Nations system, the Governments of Australia and the United States, The Global Fund for AIDS, TB and Malaria, and so many others. The design and delivery of this study has ensured the very highest quality input and management oversight from some of the finest minds in partnership with Papua New Guinea's Government mechanisms, government and civil society service providers, and end users and beneficiaries of services. So not only have these technical, management, design and delivery mechanisms made this study such a success, it has also contributed to building stronger partnerships and levels of trust between service providers and users, while leveraging the study's implementation to help address some of the unfortunate realities of responding to HIV - stigma, discrimination, depression, sexual violence, complex sexuality, and the many other factors which often keep key population-associated individuals away from the services they need to be able to access freely, respectfully, and comfortably.

UNAIDS Executive Director and United Nations Under Secretary General Michel Sidibe has noted that "…as we build on science and innovation, we need fresh thinking to get us over the obstacles to achieving success in ending AIDS by 2030." He noted that "…what got us HERE, won't get us THERE because we continue to face persistent inequalities, the threat of fewer resources, a growing conspiracy of complacency…and a paucity of innovatively generated strategic information." We firmly believe that *Kauntim mi tu* addresses some of these obstacles and will significantly contribute to getting Papua New Guinea "there" – an HIV response based on strong strategic information, focused on the realities of the national epidemic which contributes to building a more equitable and just country.

PASCOE KASE

Secretary for Health

PNG National Department of Health

EXECUTIVE SUMMARY

BACKGROUND AND METHODS

Kauntim mi tu, an integrated bio-behavioral survey (IBBS) of women and girls who sell and exchange sex (FSW), and men who have sex with men and transgender women (MSM/TGW), provides much needed information to support the scale up of essential HIV prevention and treatment services for these populations. The Lae chapter of the *Kauntim mi tu* study was conducted between January and June 2017 and used respondent-driven sampling (RDS) to recruit participants. Like *Kauntim mi tu* Port Moresby, *Kauntim mi tu* Lae had two goals: 1) to conduct updated population size estimations of FSW and MSM/TG in Papua New Guinea; and 2) to collect representative bio-behavioral data about FSW and MSM/TG in order to inform HIV and STI prevention and treatment services and policy.

WOMEN AND GIRLS WHO SELL AND EXCHANGE SEX - RESULTS

A total of 709 eligible and consenting women and girls involved in the selling and exchanging of sex for goods, services or money participated in *Kauntim mi tu* Lae. The median age of FSW in Lae was 29 years, with 21.7% aged 35 years or older. Almost two in three FSW (63.6%) in Lae originate ethnically from the Highlands Region and 39.7% of FSW residing in Lae had done so for 15 or more years. Two in five (40.8%) could not read or write and almost none (1.3%) completed high school. While most FSW were separated or divorced (63.9%), 19.5% were never married and 10.5% were currently married. More than one in two (58.2%) earned less than 500 Kina per month. Sex work was the primary income source for 50.3% of FSW. It is estimated that there are approximately 6,100 FSW in Lae.

The median ages for first vaginal and anal sex were 16 and 22 years, respectively. Less than one in four (17.1%) of FSW received money or goods the first time they had sex and 26.3% were forced into their first vaginal experience, while the majority (72.7%) were forced into their first anal sex. The median age when FSW first sold or exchanged sex was 22 years. While most FSW (56.3%) had been selling or exchanging sex for less than five years, 15.5% have been doing so for 10 or more years. The most common reason for selling and exchanging sex was to provide money for the family or themselves (48.1%). Most FSW (57.0%) have had five or more clients who gave money in the past six months. Only 19.8% of FSW used condoms with all clients who gave money in the last six months.

About one in four (23.0%) FSW felt the need to hide that they sell or exchange sex when accessing health services. An estimated 25.2% of FSW had given something to the Police to avoid trouble in the last year and 5.2% had been arrested because they sell or exchange sex.

The majority of FSW (72.9%) have experienced physical violence and two in five (40.5%) have been forced to have sex. Of those experiencing physical violence in the last year, 40.8% of survivors believed it was related to them selling and/or exchanging sex. Most FSW (69.3%) who experienced sexual violence never sought help after their last unwanted sexual encounter. Approximately one in five FSW (18.4%) experienced any violence from their clients in the last six months.

An estimated 46.3% of FSW were using modern family planning methods to prevent pregnancy. Among FSW who have been pregnant, 18.6% tried to induce an abortion at least once. Of the 26.7% of FSW who had a pregnancy that resulted in a live birth in the last three years, 87.0% attended an antenatal clinic at least once. Of those who attended ANC, 72.4% were offered an HIV test and 100% of them were tested. None were HIV-positive.

Nearly one in three FSW (31.0%) have never been reached by a peer outreach worker in their lifetime. Approximately half of FSW (24.9%) have been reached in the last year and 11.9% have been reached in the last 3 months. Only slightly more than one in two (56.1%) FSW had ever tested for HIV.

Over 70% of FSW in Lae knew that they had HIV. Overall, PNG has not reached UNAIDS 90-90-90 targets among FSW in Lae. Only two in five (42.4%) HIV positive FSW were aware that they had HIV. Of those who knew they were HIV positive, 91.9% were on ART, and 70.4% of them had achieved viral load suppression. Most FSW living with HIV had been asked at their last HIV clinic appointment if they had any symptoms of TB (63.1%). Prevalence of sexually transmitted infections (STI) was high. Three in five (60.8%) FSW tested positive for at least one of the following: syphilis, gonorrhea, chlamydia, or Hepatitis B virus.

Prevalence of the most common infection, urogenital and anorectal chlamydia, was roughly the same (35.3% and 32.1%, respectively). The next most common STI was anorectal gonorrhoea (22.6%) and genital gonorrhea (21.5%). Syphilis was also common with 19.7% of FSW having ever had syphilis and 6.9% having active syphilis infection. Almost one in ten FSW (10.7%) had Hepatitis B Virus. Of the 251 FSW screened for tuberculosis in the study, 6 (2.4%) had tuberculosis. Of the FSW with HIV (11.9%), 4.0% were coinfected with TB. No FSW in the survey had drug resistant TB.

MEN WHO HAVE SEX WITH MEN AND TRANSGENDER WOMEN - RESULTS

A total of 352 eligible and consenting MSM and TG participated in *Kauntim mi tu* Lae. The median age of MSM/TG in Lae was 25 years, with 31.9% aged 20 to 24 years. Nearly one in three of MSM/TG in Lae originate ethnically from the Highlands Region (32.3%) with around one in four (22.1%) of all MSM/TG residing in Lae for less than 5 years. More than three in four MSM/TG (80.5%) could read and write, but less than half (40.8%) completed primary school (up to grade 8). About one in two (48.0%) earned less than 500 Kina per month. Work in the informal sector was the primary income source for almost half (45.6%). It is estimated that there are 4,700 MSM/TG in Lae.

The median age of first anal sex with a man or TG was 20 years. One in five MSM/TG (21.2%) were forced into their first anal sex experience. Approximately one in two (54.2%) of those who had experienced forced sex that first time had been pressured to have sex. Two in three MSM/TG did not use a condom at last sex with a main male partner

(64.5%). Similarly, two in three (62.4%) identified their sexuality as a 'man who has sex with other men' or a 'man of diverse sexualities', and most identified their gender as being a man (93.8%), with 6.1% identifying as transgender. One in two (52.3%) reported being attracted to mostly women but sometimes men, with only 6.5% reporting being attracted exclusively to men. Almost one in three (29.8%) TG had lived publically as a woman in the previous six months. Most MSM/TG (88.4%) had not disclosed their gender, sexual identity, or sexual practices to their families.

Two in five (44.9%) MSM/TG felt the need to hide their sexual practices or gender identity when accessing health services. Nearly one in three (29.8%) felt ashamed of themselves based on their sexual practices or gender identity. More than one in two (54.4%) experienced depression based on the Patient Health Questionnaire-2 screening tool.

Three quarters (75.8%) have experienced physical violence and 23.7% have been forced to have sex. Of those experiencing physical violence in the last year, only 5.8% of survivors believed it was related to their sexual behaviours or gender identity. Of those who had experienced sexual violence, 91.1% did not seek services after the experience. Approximately one in ten (11.8%) MSM/TG experienced violence from their sexual partner(s) in the last six months.

Penile modification was common among MSM/TG, with more than four in five (83.4%) reporting that they had cut the foreskin of their penis. Almost half said they had the foreskin cut to improve cleanliness and genital hygiene (47.5%), with one in three reporting that they did it for customary practices and/or traditional reasons (36.6%). Fewer MSM/TG had ever inserted (12.4%) or injected (19.2%) something into their penis.

Approximately one in three MSM/TG (30.8%) had been reached by a peer outreach worker 4-12 months ago and 24.2% were reached in the last three months. However, one in four MSM/TG (25.9%) had never been reached by a peer outreach worker in their lifetime. Only one in three MSM/TG (32.1%) had ever tested for HIV.

HIV prevalence among MSM/TG in Lae was 6.9%. Overall, PNG has not reached UNAIDS 90-90-90 targets among MSM/TG in Lae. Given that only 22 MSM and TG in our study were HIV positive, it is not possible to report weighted estimates. Of the 22 HIV-positive MSM and TG in our study, only six individuals were aware of their infection. Of these individuals who were aware, five were on treatment. Finally, of these five individuals who were on treatment, four were virally suppressed.

Prevalence of sexually transmitted infections (STI) was high and around two in five (42.0%) MSM/TG had at least one STI (syphilis, gonorrhea, chlamydia, hepatitis B virus). The most prevalent infection was Hepatitis B Virus (23.8%). The next most common STI was syphilis, with 21.1% of MSM/TG having ever had syphilis and 8.3% having active syphilis infection. Genital chlamydia was also common (14.5%), with anorectal chlamydia less so (6.5%). Of the 123 MSM and TG screened for tuberculosis in the study five (4.1%) had tuberculosis. No MSM/TG in the survey had drug resistant TB.

RECOMMENDATIONS

Kauntim mi tu highlights the needs for enhanced HIV, health, and social services for FSW, MSM, and TG. Based on study findings, FSW, MSM, and TG in Lae recommend that the National Department of Health and other service providers:

1. **The discriminatory laws currently in existence that affect key populations need to be revised. Decriminalisation is an important step to change the mind sets and attitudes of the general public towards the key populations.**
2. **Undertake effective awareness to the community and community leaders, church groups and families of key populations regarding the negative effects of stigma and discrimination and on issues about gender, sexuality, HIV, STIs and TB. Decriminalisation is an important step to change the mind sets and attitudes of the general public towards the key populations.**
3. **Health facilities need to be enhanced to meet the demands of the community who want to know their health status using point of care tests and the use of STI specific treatment including having up to date information on HIV, STIs, TB, sexual reproductive health issues for key populations to access.**
4. **Outreach coverage needs to be improved and expanded outside of Lae town to areas where members of the key populations reside including periurban and settlement areas.**
5. **Ensure safe houses are established to address and meets the needs of members of key populations who experience gender-based violence, including transgender women.**
6. **Provision of a special help desk in each law enforcement establishments to allow safe reporting of sexual violence by members of key populations.**
7. **A consistent supply of free condoms is needed across the province and in areas readily accessible by the community.**
8. **Better coordination between government departments, non-government organisations, partners and stakeholders is needed order to work more effectively and efficiently.**
9. **The PNG school curriculum needs to educate children in age appropriate ways on matters of sexual and reproductive health, including sexuality and gender diversity.**

INTRODUCTION

Despite more than three decades of global efforts in the prevention and treatment, there is still no cure for the disease. In 2015, more than 2.1 million adults and 150,000 children were infected with HIV (UNAIDS 2016).

In many countries, HIV is concentrated amongst those who already experience substantial societal stigma and exclusion, such as female sex workers (FSW) and men who have sex with men (MSM) (UNAIDS 2016). Even in generalised epidemics, these populations are over represented in new HIV cases (UNAIDS 2016). The sexual behaviours that place these populations at risk for HIV also place them at risk for other sexually transmitted infections (STIs).

Previously described as a generalised epidemic, the understanding of Papua New Guinea's (PNG) HIV epidemic has undergone substantial revision in recent years due to increased data availability, particularly the increase in reporting from antenatal clinics conducting provider initiated HIV counselling and testing.

In 2005 there were only 17 ANC HIV testing sites, while in 2011 this increased to 280 (NACS 2013). Data from ANC testing sites form the foundation of PNG's national and regional HIV estimates. The most recent estimates suggest that the national HIV prevalence is 0.9% among adults aged 15-49 years (Global AIDS Report. 2017).

Higher rates of estimated adult prevalence are notable in particular regions and provinces (such as the National Capital District and the Highlands Region), as well as within key populations. With increasing evidence of heterogeneity of the epidemic, HIV has been increasingly referred to as a mixed HIV epidemic (see for example, Kelly, Rawstorne et al. 2014), neither concentrated nor generalised.

There is substantial evidence in Papua New Guinea to suggest that key populations such as sex workers (SWs), men who have sex with men (MSM), and transgender women (TG) are particularly at risk for HIV (Vallely, Page et al. 2010, Kelly, Kupul et al. 2011, Maibani, Ryan et al. 2011, NACS 2013). Multiple studies indicate that SW, MSM, and TG are at increased risk of HIV due to their engagement in high-risk sexual behaviours, including unprotected vaginal and anal intercourse, and experience increased vulnerability due to stigma, discrimination, and violence, particularly sexual violence (Maibani-Michie, Kavanamur et al. 2007, Kelly, Kupul et al. 2011, Maibani, Ryan et al. 2011). In addition, studies have indicated high HIV prevalence amongst FSW with the most recent studies reporting 19% in Port Moresby (Kelly, Kupul et al. 2011) and 2.7% in Eastern Highlands Province (Kelly, Kupul et al. 2011, Maibani, Ryan et al. 2011).

FSW carry a higher burden of HIV than the general population and even within this group of women, prevalence of HIV varies across the country (Kelly, Rawstorne et al. 2014).

To date no representative bio-behavioural data are available for men who have sex with other men (irrespective of sexual identity) and TG in PNG. HIV prevalence amongst male sex workers in Port Moresby, most selling sex to other men, was 8.8%, while among TG who sell sex it was 23.7% (Kelly, Kupul et al. 2011).

In light of this situation, greater attention in terms of policy, services and surveillance is being afforded to women who sell or exchange sex, men who have sex with men, and transgender women in PNG (NACS 2013). Moreover, in order to ensure services are adequately reaching these populations, reliable size estimates of these populations is needed, which to date have not been available.

The Mid-Term Review of PNG's National HIV and AIDS Strategy undertaken in 2013 (Godwin and & the Mid Term Review Team. 2013) emphasised the importance of prioritising HIV services and interventions for key populations such FSW and MSM.

Specifically, the review recommended that there needed to be substantial improvement in the uptake and retention of FSW and MSM in HIV clinical prevention, treatment and care services across their lifetime.

The review also made a number of recommendations in relation to the importance of strengthening the link between the diagnosis and treatment of HIV, STIs and tuberculosis (TB).

Specifically, the recommendations included for example: greater attention to the detection and treatment of asymptomatic STIs, scaling up HIV and STI combination prevention amongst MSM and FSW, and improving availability of and access to point-of-care (POC) HIV rapid testing, with an emphasis on provider-initiated counselling and testing (PICT), STI and TB services. *Kauntim mi tu* provides much needed information to improve the scaling up of combination prevention and improving access to POC services.

STUDY AIMS AND OBJECTIVES

Study Aims

(1) To conduct Papua New Guinea's first size estimation of females who sell and /or exchange sex (FSW) and men who have sex with men (MSM)/ transgender women (TG) and;

(2) to collect representative bio-behavioural data about these key populations in order to inform HIV/STI prevention, treatment and care programing and policy development.

Objectives

1. Estimate the size of each target population in each location.
2. Estimate the weighted prevalence of different risk behaviours among each target population in each location.
3. Estimate access to and uptake of HIV-related services among each target population in each location.
4. Develop an understanding of sexual networks including the roll of mobility among each target population in each location.
5. Estimate HIV, STI, TB and HBV weighted prevalence and associated risk factors for each target population in each location.
6. Develop a map of where FSW find clients in each location
7. Develop a map of where MSM/TG socialize with other MSM/ TG
8. Translate research outcomes into recommendations for policy and program development.
9. Strengthen capacity of Papua New Guineans to conduct bio-behavioural HIV research, specifically using respondent driven sampling.

COMMUNITY ENGAGEMENT

Prior to the design of this study and throughout the preparation for implementation, community consultation was undertaken with FSW and MSM/TG in Lae. Following the completion of field work in Lae, results from *Kauntim mi tu* were presented to members of the key populations and their civil society organisations. A separate meeting was held for other

stakeholders and donors. Lae-specific recommendations were developed during the community consultation by members of Friends Frangipani, Kapul Champions and the wider stakeholder groups. Each population's list of recommendations is represented at the end of report under 'Recommendations'. A statement was also written and presented by Friends Frangipani and Kapul Champions to the stakeholders and donors and included at the end of the report providing the final reflection on the Lae study. In addition to this engagement with key population groups, members of these populations are employed in the *Kauntim mi tu* study team.

METHODOLOGY

This integrated bio-behavioural survey (IBBS) used respondent driven sampling (RDS) to recruit participants. A smaller number of participants from the IBBS were recruited into a qualitative interview. The service multiplier and unique object multiplier methods were used to estimate the size of each population..

Integrated Bio-Behavioural Survey (IBBS)

Data collection in Lae, Momase Province of Papua New Guinea, occurred between January and July 2017. The target populations were:

1. Women and girls who sell and exchange sex (from here on in written as FSW) and
2. Men who have sex with men, and transgender women (from here on in written as MSM and TG, respectively).

Inclusion criteria

To take part in this study, FSW participants must:

- Be born a biological woman;
- Be 12 years of age or older
- Have sold or exchanged sex in the past 6 months
- Speak English or Tok Pisin
- Be in possession of a valid study coupon

To take part in this study, MSM/TG participants must:

- Be born a biological man
- Be 12 years of age or older
- Have engaged in oral or anal sex with another man in the past
- 6 months
- Speak English or Tok Pisin
- Be in possession of a valid study coupon

Sample size

We proposed a sample size of 700 FSW and 700 MSM/TG in Lae. This took into account the RDS-related design effect of two (as proposed by Salganik 2006).

Study recruitment

There were two types of participants: (a) IBBS participants recruited by study team (known as seeds) and (b) IBBS participants recruited by previous *Kauntim mi tu* participants. After completing study procedures, each of the seeds were given 3 coupons and asked to recruit up to 3 peers by giving each one a coupon. In the final weeks of data collection, MSM/TG received 4 coupons to speed recruitment. Peers who received a coupon were themselves given coupons to recruit others after participating in the study. This process of referral and coupons was repeated until sample size was reached.

Study reimbursements

Participants in *Kauntim mi tu* were reimbursed according to a schedule devised with the key population members and approved by the ethics committees (Table 1).

REIMBURSEMENT ITEM		KINA
Primary	Transport to and from study site	5
	Interview and testing time at study site	40
	Subtotal	45
Secondary	Transport to and from study site, interview (on peer recruitment)	5
	Max. Recruitment (recruiting ≤3 peers, at K10 each	30
	Subtotal	35
	Total (Max)	80
Qualitative	Transport to and from study site (if interview does not occur during follow-up visits.)	5
	Qualitative interview	20
	Total (Max)	25

Table 1: Reimbursement schedule

Eligible and consenting participants undertook a researcher administered survey. A trained researcher/ interviewer used a tablet to administer a questionnaire to participants that covered a number of key areas including: basic socio-demographic data, sexual history, current sexual practices with a variety of partners (clients and main and casual partners), HIV knowledge, access to support services and peer outreach, stigma and discrimination, sexual and physical violence, condom use, HIV testing, and HIV care and treatment. The questionnaire was administered in a language of the participants' choice - English or Tok Pisin. The questionnaire took approximately 1.5 hours to complete.

No personal identifiers were collected during the survey. Participants were able to refuse to answer any question during the survey or stop the survey at any time.

Condoms, lubricants and HIV-related information were provided free of charge to all *Kauntim mi tu* study participants.

Based on their clinical and social needs, all participants were provided with a written referral/s to one or more services in Lae, which the community identified as being safe for FSW, MSM, and TG. Peer mentors were available to escort participants, as requested, to these services, and a study vehicle available to facilitate transportation.

1.1 Biological testing

Kauntim mi tu study participants were offered POC tests (Table 2) and if necessary same day treatment for syphilis, chlamydia and gonorrhoea. Subsequent treatment for syphilis was provided by local STI services. No treatment for HIV, TB or Hepatitis B virus was provided as part of the study; referrals were provided for care and treatment of these diseases as needed. Participants were only required to provide written informed consent for HIV testing. Verbal informed consent was provided for the survey, all other tests, to store remaining specimens and test them in the future, including overseas if necessary. Table 2 shows the type of tests and specimen types and tests performed.No personal identifiers were collected during the survey. Participants were able to refuse to answer any question during the survey or stop the survey at any time.

Condoms, lubricants and HIV-related information were provided free of charge to all *Kauntim mi tu* study participants.

1.2 Internal and external quality control

The study was enrolled in an external quality assurance (EQA) program with the Royal College of Pathologists of Australasia for HIV, Hepatitis B virus and syphilis immunochrpmatographic testing.

Quality control (QC) for HIV was conducted by screening all HIV positive and inconclusive samples with a third HIV test - Geenius HIV-1/2 (Bio-Rad Mitry Mory, Switzerland). This testing was conducted at the PNGIMR Sexual and Reproductive Health Laboratory. Inhouse chlamydia, gonorrhoea, tuberculosis and and HIV viral load QC were developed for this study and run monthly on GeneXpert (Xpert) NAAT devices (Cepheid, Sunnyvale, CA).

1.3 Qualitative interviews

Qualitative interviews were undertaken with a sub-sample of participants to better understand and describe issues surrounding HIV and HIV risk, including practices, perceptions, stigma, and violence. Qualitative interviews took approximately 40-60 minutes. Eighteen FSW and 22 MSM/TG participated in the qualitative interview. Participants for the qualitative interview were chosen based on a selection matrix that included for example, age, place of origin, diverse experiences of acceptance, family life, stigma or violence, HIV negative and positive, as well as not having participated in a qualitative IMR study before.

No personal identifiers were collected during the qualitative interview. Participants were able to refuse to answer any question during the interview or stop the interview at any time. Interviews were conducted in English or Tok Pisin and digitally recorded. All interviews were transcribed verbatim and translated into English as appropriate. A separate, additional written informed consent was obtained from those who participated in the qualitative interview.

All names used in the report are pseudonyms.

1.4 Data management

All quantitative interview data were collected via computer assisted personal interviews (CAPI) whereby data were "entered" during the time of interview by a study researcher directly into a tablet. Each tablet was password protected. At the conclusion of each data collection day, data from each tablet was stored on a cloud server. All rapid test results were recorded in a paper based laboratory test book. Individual test results were then transferred to a dedicated case record form and returned to the clinician for review and referral to a treatment service if required. Xpert results were automatically captured by the Xpert software and stored in an SQL database on the Xpert laptop computer. Each laptop has a secure password for entry and test results were backed up daily on to an external hard drive which was stored in a locked cupboard when not in use. Only authorised study personnel had access to the survey and test results.

The audio recording of qualitative interviews were downloaded daily into a study computer that was password protected and backed up daily at the study site to an external hard drive which was stored in a locked filing cabinet.

1.5 Size estimation

This study utilised the unique object multiplier method to estimate the number of FSW and MSM/TGW in Lae. Approximately two weeks prior to the start of the *Kauntim mi tu* study, peer volunteers distributed a fixed number of unique objects to FSW and MSM/TG in Lae. They noted on Size Estimation Log Forms the number of objects they distributed, and the date and location of the distribution. Each person

TARGET	TEST	SAMPLE
Syphilis	**Chembio DPP Syphilis Screen & Confirm Assay**	Venous blood
Hepatitis B virus	**Alere Determine HBsAg test**	Venous blood
Gonorrhoea (genital and anorectal)	**Xpert CT/NG Test**	Self-collected vaginal swab (female participants only) Urine specimen (male participants only) Self-collected anorectal swab (male and female)
Chlamydia (genital and anorectal)	**Xpert CT/NG Test**	Self-collected vaginal swab (female participants only) Urine specimen (male participants only) Self-collected anorectal swab (male and female)
Tuberculosis	**Xpert MTB/RIF Test**	Self-collected sputum
HIV	**Alere Determine HIV-1/2 Ag/Ab Combo followed by confirmatory Chembio HIV 1/2 Stat-Pak if Determine test is positive**	Venous blood
If HIV positive: CD4 T cell count	**Alere PIMA CD4 test**	Venous blood
If HIV positive: HIV Viral load	**Xpert HIV Viral Load Test**	Venous blood

Table 2: Biological testing

encountered by the peer volunteers received only one unique object and was instructed to keep the unique object because they may be asked about it the near future by other project staff. They also verified that the person had not already received an object. The goal was to distribute as many unique objects as possible, ideally up to twice as much as the sample size. Volunteers were paid a small sum of money to thank them for their time distributing objects to their peers.

Peer volunteers distributed 790 unique objects to FSW and 777 to MSM/TG in Lae. To strengthen accuracy and recall of receiving an object, peer volunteers wore a *Kauntim mi tu* hat while distributing objects. During the screening for eligibility of enrolment, study participants were asked whether they received the object. The study used the formula below to estimate the size of each population:

$$N = \frac{MC}{R}$$

Where:

M = Number counted during first phase (first capture)

C = Number counted during second phase (second capture)

R = Number of people captured during the first phase that were recaptured during the second phase (included in both captures)

N = Estimate of total population size

1.6 Ethics

This study was approved by the PNG National Department of Health's Medical Research Advisor Committee (MRAC), the Research Advisory Committee of the National AIDS Council Secretariat (RAC), the PNG Institute of Medical Research's Institutional Review Board (IRB), the Human Research Ethics Committee at UNSW Sydney and the Ethics Committee at the US Centers for Disease Control and Prevention in Atlanta. Friends Frangipani and Kapul Champions provided letter of endorsement.

LAYOUT OF REPORT

The study results for FSW and MSM/TG are presented in two parts, one per population, with population-specific recommendations at the end of each of the parts. Overall, non-population specific, study recommendations, are presented at the end of the report.

- Part 1: Women and girls who sell and exchange sex
- Part 2: Men who have sex with men and transgender women.

A NOTE ON TERMINOLOGY

For women and girls who exchange sex for money, goods or services, we use the term female sex worker (FSW) to reflect international reporting practices. This term however, was not used in the implementation of the study. We also note that women and girls in PNG move in and out of transactional relationships, often without referring to such practices as sex work.

The term men who have sex with men is derived by the public health community to describe a sexual behaviour engaged in by some people born male. Introduced into PNG by development partners, the term MSM has in some contexts become an identity. Kapul Champions, the Papua New Guinean peer-led civil society organisation representing males who engage in same-sex practices and individuals who identify as transgender originally referred to itself as representing MSM and TG. As the organization matured, a collective decision was made to use a more inclusive and reflective term that addressed the diversity and complexity of sexuality, rather than focusing solely on behaviour. They employ the term 'men of diverse sexualities' (MDS). While the term MDS may not be perfect, it is an important step forward for affected communities in PNG where they are making sense of local realities in their own terms. We, however, as authors of this report face the challenge that the international community report on IBBS data about MSM and TG. We therefore use the term MSM/TG to refer to the behaviour being described but in no way do we use this to reflect the identities of the men and transgender of Lae specifically, or PNG more generally. Indeed, the data presented in this report reflect the many identities embraced by MSM and TG in the country.

Part 1

WOMEN AND GIRLS WHO SELL AND EXCHANGE SEX

In Lae, 709 women and girls involved in the selling and exchanging of sex for goods, services or money were eligible, provided informed consent and participated in the study. Results presented here are weighted population proportions representing the entire population of female sex workers (FSW) in Lae, as per the RDS method. Unless otherwise stated through reference to study participants and the specific number of people, all data here should be interpreted as weighted population proportions.

1. SOCIO-DEMOGRAPHIC INFORMATION

Nearly two-thirds (61.4%) of women and girls were aged 25 years or older, with adolescents and young people accounting for 38.6% of FSW in Lae. **See Figure 1.1**.

Almost two of every three (63.6%) women and girls self-identified as coming from the Highlands Region, one in five (20.2%) from the Momase Region and 14.7% were of mixed heritage from two or more regions. Very few identified as originating from the Southern Region (1.3%) or the New Guinea Islands (0.2%). **See Figure 1.2**. Of those who identified that they were from the Highlands Region, most were from Simbu and Eastern Highlands provinces (33.2% and 32.6% respectively) (data not shown).

Slightly more than one in four women had lived in Lae for 20 or more years (26.7%). Slightly more (31.6%) had lived there for less than five years. **See Figure 1.3**.

There was diversity in religious affiliation among the women and girls engaged in transactional sex. The most common religious affiliations of FSW were the Seventh Day Adventist Church (28.7%) and the Lutheran (27.4%) Church. A little more than one in ten women (13.6%) were Catholic. An affiliation with newer Pentecostal churches such as the Revival Church and Four-Square Church reflect the national growth in these religious

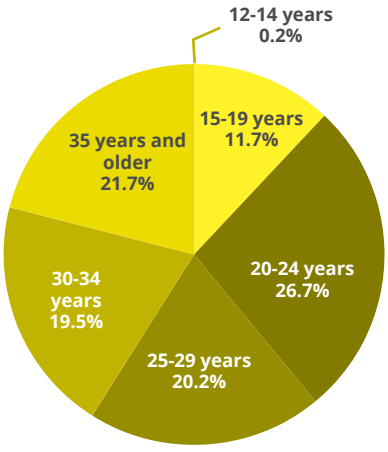

Figure 1.1: Distribution of age

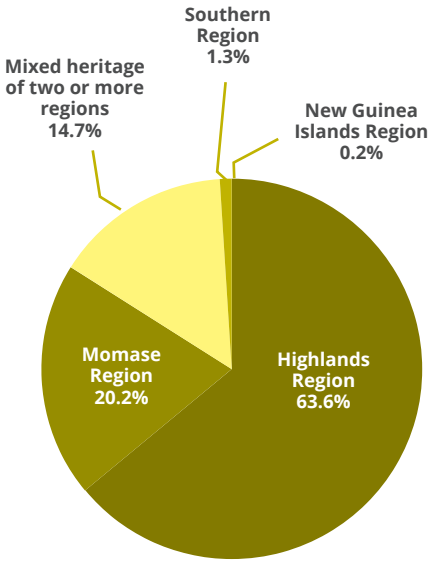

Figure 1.2: Region of origin

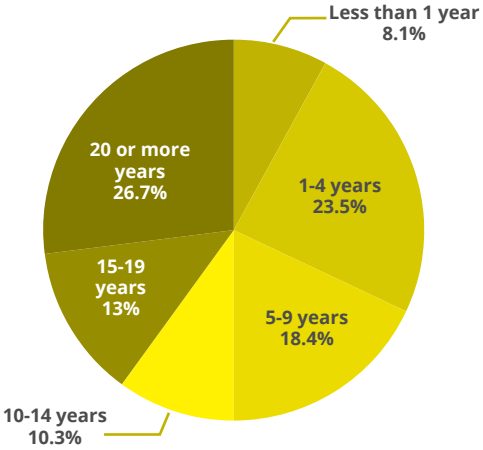

Figure 1.3: Years living in Lae

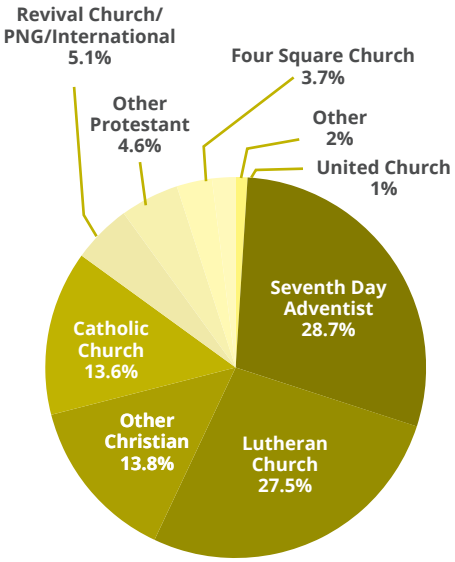

Figure 1.4: Religious affiliation

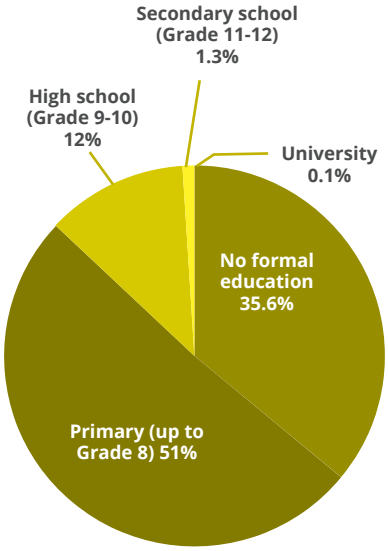

Figure 1.5: Educational level

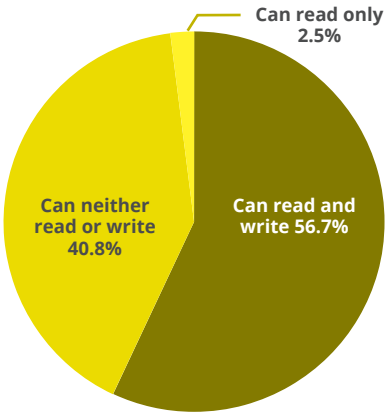

Figure 1.6: Literacy level

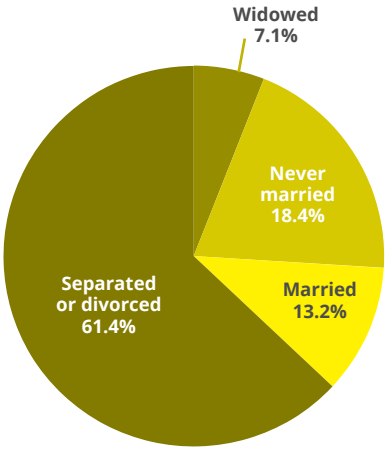

Figure 1.7: Marital Status of FSW in Lae

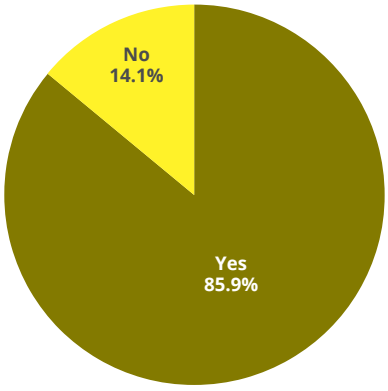

Figure 1.8: Time away from Lae in the last six months

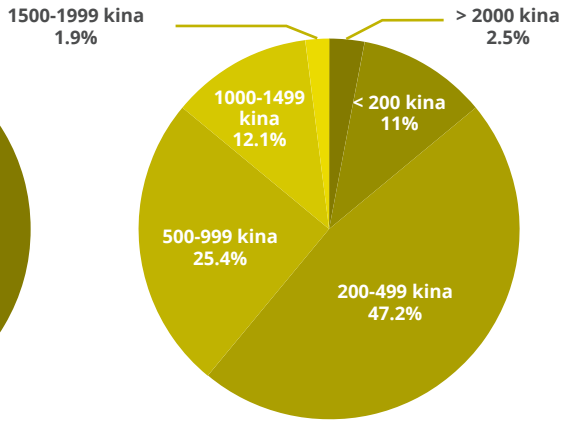

Figure 1.9: Average monthly income

denominations. **See Figure 1.4.**

The level of educational attainment for women and girls who sold or exchanged sex was low, with 35.6% having no formal education and only about half (50.9%) having achieved some level of primary education. A small proportion of FSW have gone onto high school

(12.0%) and almost none have completed secondary school (1.3%). **See Figure 1.5.**

Only 1.7% were currently in school (data not shown).

Just over half of FSW in Lae could both read and write (56.7%), with two in five women and girls (40.8%) can neither read nor write. **See Figure 1.6**.

1.1 Living arrangements and marital status

Almost two in three FSW (61.4%) were separated or divorced. Some FSW (13.2%) were married, 7.1% were widowed, and almost 18.4% were never married. **See Figure 1.7**.

The majority of FSW (85.9%) were mobile, spending more than a month away from Lae in the last six months. **See Figure 1.8**.

1.2 Income and employment

Combining all income sources, more than half of all FSW (58.2%) earned less than 500 Kina per month. One in four (25.4%) earned between 500 and 999 Kina per month and 16.5% earned 1,000 Kina per month or more. Half (50.3%) of FSW report sex work as their main source of income/employment, while 25.8% worked in the informal sector, 18.5% were unemployed, and only 5.4% were formally employed. **See Figure 1.10**.

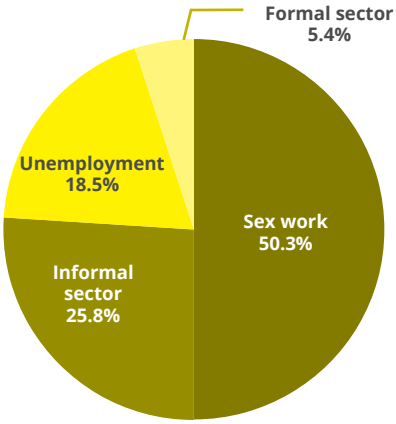

Figure 1.10: Main form of employment/ income

2. SEXUAL DEBUT, INITIATION OF SEX WORK AND MOST RECENT SEX

2.1 Sexual debut

TThe median age for first vaginal sex was 16 years. The majority of FSW (65.8%) had vaginal sex for the first time between the ages of 15 and 19 years, with more than one in four (27.0%) first having vaginal sex between the ages of 10 and 14 years. Few had their sexual debut after the age of 20 (7.2%). **See Figure 2.1**.

Among the 62.3% of FSW who have had anal sex, the median age for first anal sex was 22 years. Of FSW who have had anal sex, 6.2% did so between the age of 10 and 24 years. Roughly one in three had anal sex for the first time between the ages of 15-19 years (33.6%) and 20-24 years (29.3%). Almost 40% (39.8%) had anal sex for the first time as an adolescent (10-19 years). **See Figure 2.2**.

Most FSW (73.7%) had vaginal sex for the first time by choice but 26.3% were forced into their first vaginal sex. In contrast, the majority of FSW (72.7%) were forced into their first anal sex while 27.3% had done so by choice. **See Figure 2.3**.

The most common method of being forced to have vaginal sex for the first time was physical force (36.6%), while the most common means of being forced to have anal sex for the first time was being paid (43.7%). Being pressured was the second most common reason for being forced to have both vaginal (27.9%) and anal sex (27.8%). **See Figure 2.4**.

2.2 Vaginal and anal sex

The sexual behaviours of FSW varied. Almost two of three FSW (62.3%) engaged in both vaginal and anal sex, with 37.7% only ever having vaginal sex. **See Figure 2.5**.

2.3 Sexual attraction and history of same sex practices

Almost all FSW were attracted exclusively to men (96.6%), with 3.3% having some form of attraction to other women. Most FSW had never had sex with another woman (93.1%), but 6.9% had (data not shown).

2.4 Initiation of sex work

The median age when FSW first sold or exchanged sex was 22

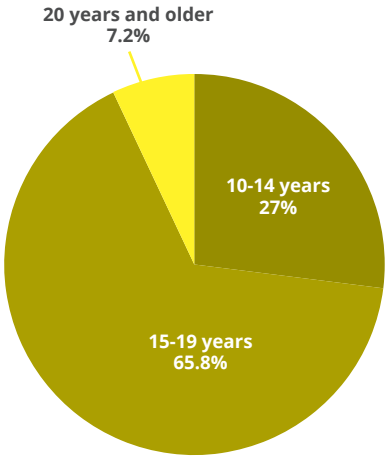

Figure 2.1: Age of first vaginal sex

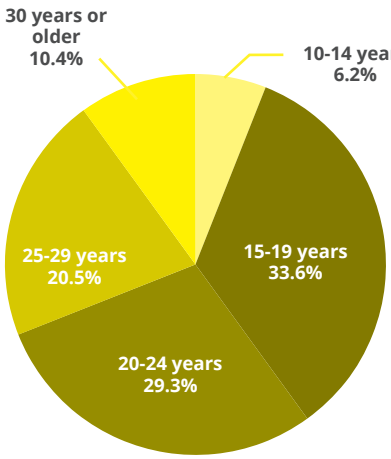

Figure 2.2: Age first had anal sex

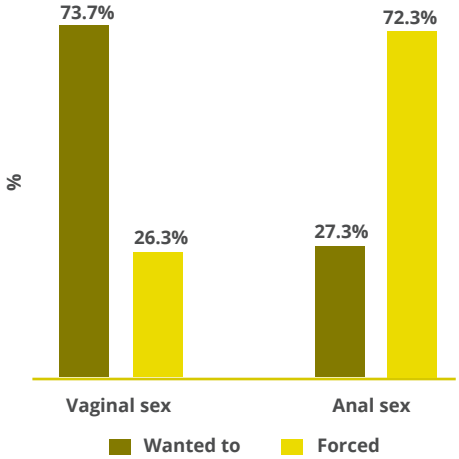

Figure 2.3: Proportion forced/coerced into first sex

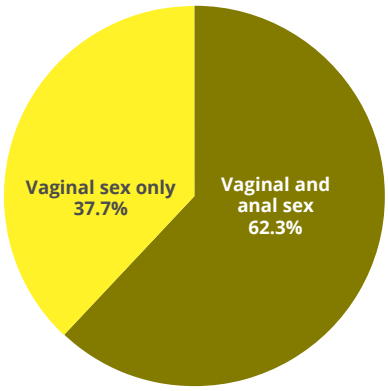

Figure 2.5: Sexual behaviour

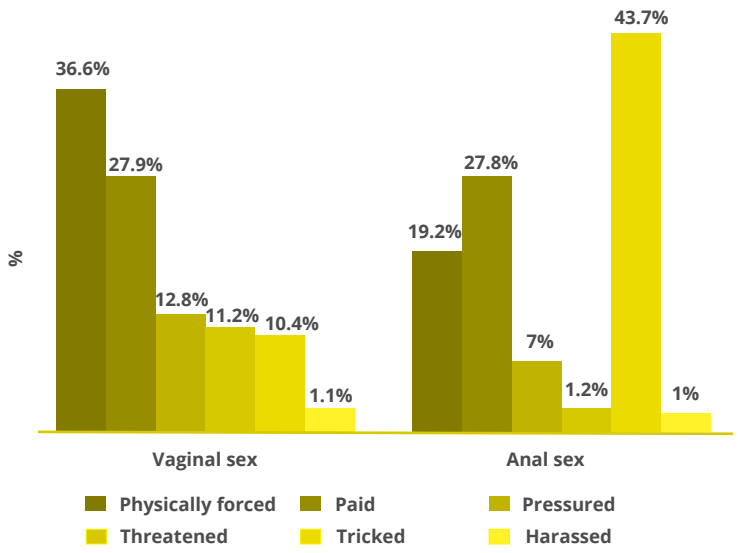

Figure 2.4: Means of being forced/coerced to have anal and vaginal sex for the first time

years. The majority (60.0%) first sold or exchanged sex aged 20 years or more. Two of five FSW (40.0%), however, first sold or exchanged sex between the ages of ten and 19 years. **See Figure 2.6**.

I was staying with my aunty in town where a lot of street girls were. These girls lured me and took me to night clubs and I started following them. I started to go out with men and these men would give me money. I left my normal life and did that for a long time. I was 19. — Sonia, 24 years.

Most FSW (82.9%) did not receive money or goods the first time that they had sex, while 17.1% did. **See Figure 2.7**.

While most FSW (56.3%) had been selling or exchanging sex for less than five years, 15.5% had been doing so for ten or more years. **See Figure 2.8**.

The most common reason for beginning to sell and exchange sex was to provide money for the family or themselves (48.1%). Family and friends doing it (19.4%), was the second most common reason. Very few sold or exchanged sex for pleasure or self-esteem (4.3%). **See Figure 2.9**.

I was about 16 years old and in Grade 4 when I came here. I was with my parents but they forced me into marrying a man. I left home and got this disease. I argue with my parents when I think about it. I use to think that I would grow up and marry someone but you people forced me and I am now infected — Pokaya, 24 years.

I stayed at home and I was worried how I would support my child. I was embarrassed the first time because I usually don't do this. I felt ashamed but then I realised that if I am feeling shame, who is going to give so I can take care of my child? So I went out and they gave me money. I usually go out like this and they would give me money and I would come and take care of my child. — Betty, 17 years.

I stayed at home but I never had money. My parents provided for basic things in the house but I wanted money for extra things like flex card, to go on Facebook; like my own money to spend on betel nut, cigarettes or whatever clothing that I wanted. When they [clients] called, I have to go because I have all these needs. — Stacey, 31 years.

I live on the streets and I feel that it [sex work] is alright for me. I had an argument with my family and came and when I saw money on the street, I realise that it is good for me so I've lived on the streets. — Ambo, 21 years.

I grew up in Wau Bulolo and went to school there, but then my parents were having problems. My father left my mother and took another wife to his village and we [children] were left with our mother. There was no money to pay for my school fees so I left home and came out to this life and have been going around like this since. — Ato, 30 years.

I have two sons, five and seven years old. When my second son was three months old, I started having problems. My husband got another wife and came to Lae while I was still up in Simbu.

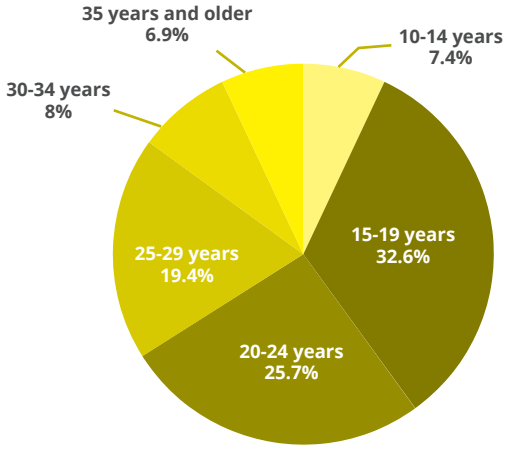

Figure 2.6: Age first sold or exchanged sex

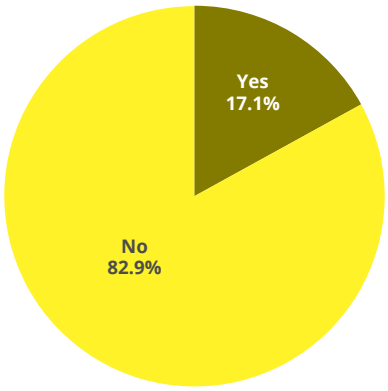

Figure 2.7: Sexual debut with men who gave money or goods

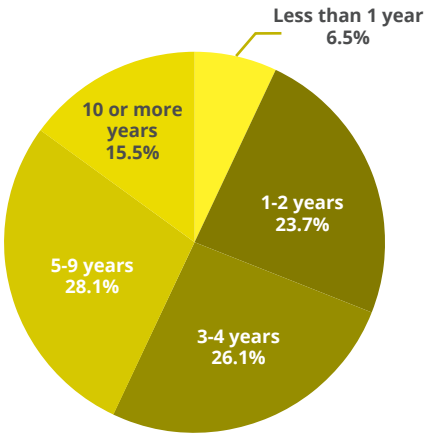

Figure 2.8: Time selling or exchanging sex

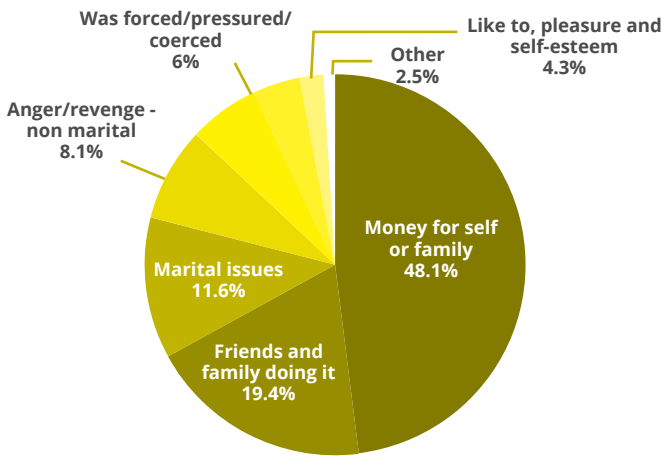

Figure 2.9: Reasons for starting to sell or exchange sex

I stayed on with my children but then I became agitated and angry. I gave away my first son to my relatives and came to Lae with my second child. We stayed with him and when my son was about four years old, I divorced my husband. I gave the child back to him and then I went onto live on the streets. I drank alcohol at night clubs, go from hotel to hotel. I've gone to all the lodges and guest houses in Lae city. — Karu, 22 years.

Selling and exchanging sex was the primary income source for 62.8% of FSW. **See Figure 2.10**.

2.5 Condom use and most recent sex

TThe four most common reasons (**see Figure 2.11**) for not using a condom during vaginal or anal sex were:

- "When my partner refuses" (67.2% and 66.3%, respectively)
- "When having sex with a regular partner" (54.8% and 50.4% respectively)
- "When I cannot find one" (56.6% and 48.7% respectively)
- "When I'm drunk or stoned" (44.3% and 45.2% respectively)

Met this person who stays at home and he insisted that I stayed with him. He gave me K45 and we had sex skin to skin inside his car. So when I go and have sex in the guest houses or anywhere, I sometimes would not recall if men used condom or not if I am dead drunk. — Mofa, 20 years.

I used to use condom when I was young but the I stopped. I started having sex without condom. I thought that I could use condom if I wanted to but I never seemed to have condoms with me when I go around. So I usually go and have sex without it. — Yvonne 30 years.

One thing I know for sure is that there are infections. When I go for testing, I've always wondered whether if that man that had sex with me comes only to me or if he's is cautious or not. I've always wondered about that but I still go around and have sex without condom. Sometimes I also feel like I'm not actually having sex when I am using condom. — Stacey, 31 years.

There are times especially when we are out there when some men will ask us to use condom. Sometimes when we ask them to use it, they would refuse and if we insist, they usually become violent. That is why I usually use condom sometimes only. — Betty, 17 years.

3. CURRENT SEX WORK PRACTICES

3.1 Meeting clients and sex work areas

FSW usually meet their clients in a number of different ways, including at public areas such as streets and parks (81.1%),

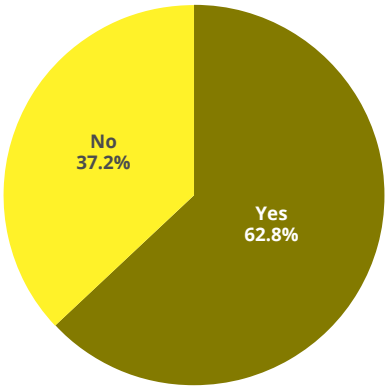

Figure 2.10: Sex work main source of income

Figure 2.11: Reasons why condom not used during type of sex

through mobile phones (54.4%) or at bars and clubs (51.9%). **See Figure 3.1**. Responding to a question specifically on the use of mobile phone applications and the internet, these were used by one in ten (10.8%) of FSW to find a client (data not shown). Approximately three-quarters of FSW (76.2%) sold or exchanged sex for goods, money or services only in and around Lae in the last 12 months. Nearly one in ten (9.3%) also sold it outside of Lae but in Morobe province and nearly one in five (17.3%) also sold sex in other provinces of PNG. **See Figure 3.2.**

3.2 Methods of payment and income earned

Almost all FSW (99.8%) received money in return for sex, with 50.7% also reporting that they were provided goods in exchange for sex. Almost ten percent (9.5%) received services in return for sex. **See Figure 3.3**.

FSW received more money for anal sex than they did for vaginal sex. Only 11.2% of FSW received 200 Kina or more for vaginal sex while 20.1% received 200 Kina or more for anal sex. Roughly equal proportions of FSW earned between 100 and 199 Kina for vaginal (36.1%) and anal sex (35.7%). **See Figure 3.4**. The median amount earned for vaginal sex was 70 Kina and for anal sex it was 100 Kina.

I usually go out with this guy from Buka. When I go see him, he normally gives me K100, K150 or K200. I then buy food for my children and that is how I live and take care of my children. — Yvonne, 30 years.

They would give me K80. It's always K100 and below, anything between fifty and hundred. I don't get K200 on the spot, it's usually less than that. — Stacey, 31 years.

3.3 Number and type of clients

Most FSW (57.0%) have had five or more clients who gave money in the past six months, with the remaining 43.0% having four or fewer clients in the last six months. **See Figure 3.5**.

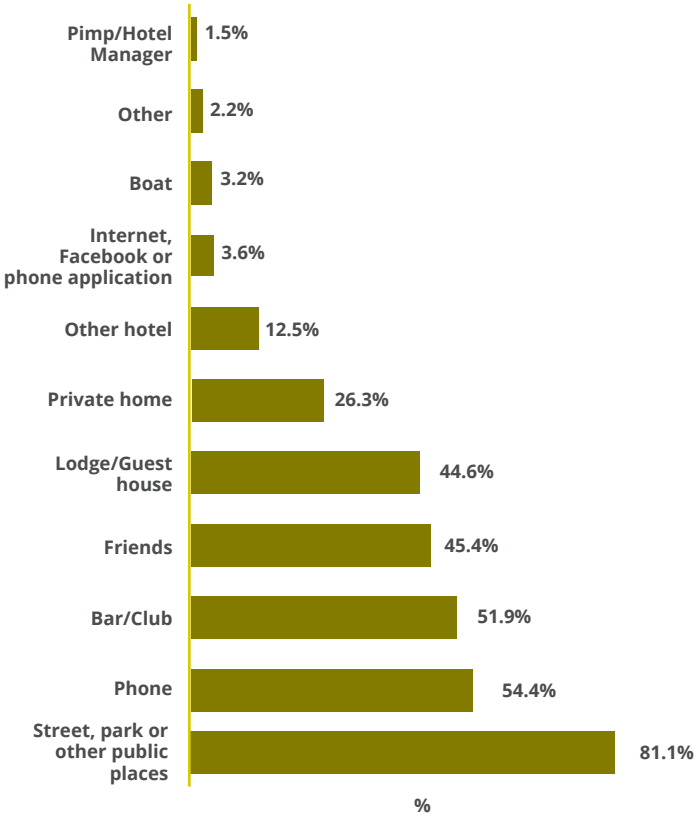

Figure 3.1: Avenues where clients are usually found*
***Multiple responses possible**

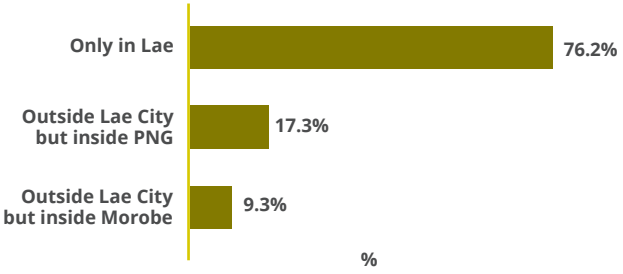

Figure 3.2 Sex sold or exchanged in Lae and elsewhere*
***Multiple responses possible**

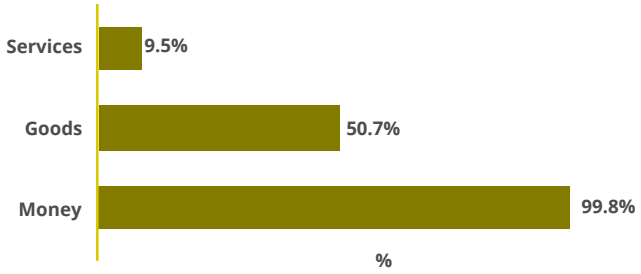

Figure 3.3: Method's of payment and exchange*
***Multiple responses possible**

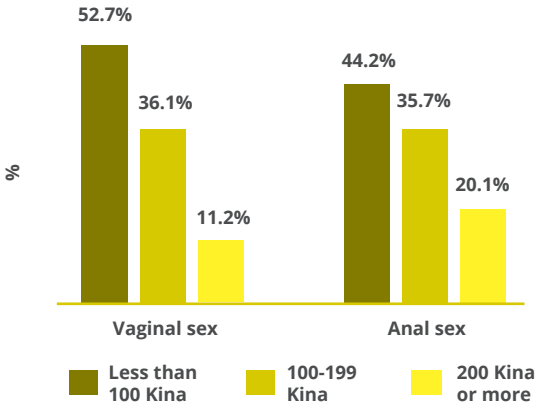

Figure 3.4: Income earned by selling anal or vaginal sex

Figure 3.5: Number of clients who gave money for sex in the last six months

The majority of FSW (61.0%) had at least one regular client in the last two weeks with whom they had vaginal or anal sex. **See Figure 3.6**. Of those who had a regular client during this period, 20.0% had vaginal sex with three or more regular clients. **See Figure 3.7**.

Almost half of FSW (44.5%) had a one-time client in the last two weeks. **See Figure 3.8**. Of FSW who had a one-time client during this period, only 32.3% sold or exchanged vaginal sex with three or more one-time clients. **See Figure 3.9**.

3.4 Condom use with clients

Only 19.8% of FSW used condoms with all clients who gave money in the last six months. The majority of FSW (80.2%) have had at

least one client with whom they did not use a condom. **See Figure 3.10**.

Of FSW who has sold or exchanged vaginal sex with a one-time client in the last two weeks, more than half (55.6%) used a condom

during last vaginal sex with a one-time client during this period. **See Figure 3.11**. Of those with a regular client, only 30.6% used

a condom in the last two weeks with a regular client. **See Figure 3.12**.

Less than half of FSW (39.4%) could frequently negotiate condom use with a client who refused to use one, while 25.2% could never or rarely do so. See **Figure 3.13**.

This man didn't have a safety and so I said no to have sex with him. I told him that I don't know his sexual practices and he doesn't know about me either but he told me that I was lying. He said that I was a well behaved person who stays at home and he insisted that I stayed with him. He gave me K45 and we had sex skin to skin inside his car. So when I go and have sex in the guest houses or anywhere, I sometimes would not recall if men used condom or not if I am dead drunk. — Mofa, 20 years.

I used to use condom when I was young but the I stopped. I started having sex without condom. I thought that I could use condom if I wanted to but I never seemed to have condoms with me when I go around. So I usually go and have sex without it.

— Yvonne 30 years.

One thing I know for sure is that there are infections. When I go for testing, I've always wondered whether if that man that had sex with me comes only to me or if he's is cautious or not. I've always wondered about that but I still go around and have sex without condom. Sometimes I also feel like I'm not actually having sex when I am using condom. — Stacey, 31 years.

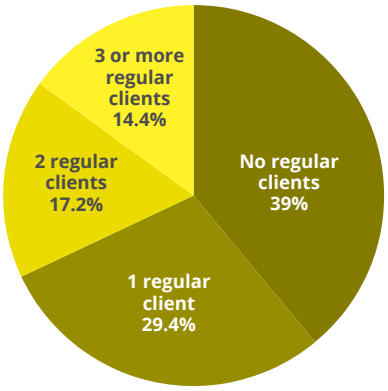

Figure 3.6: Number of regular clients with whom sold or exchanged vaginal or anal sex in the last two weeks

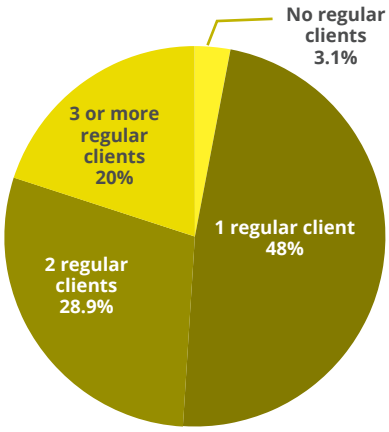

Figure 3.7: Number of regular clients with who sold or exchanged vaginal sex in the last two weeks

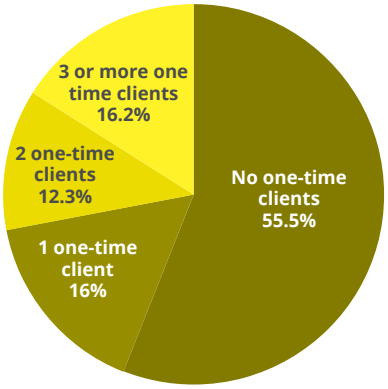

Figure 3.8: Number of one-time clients with whom sold or exchanged vaginal or anal sex in the last two weeks

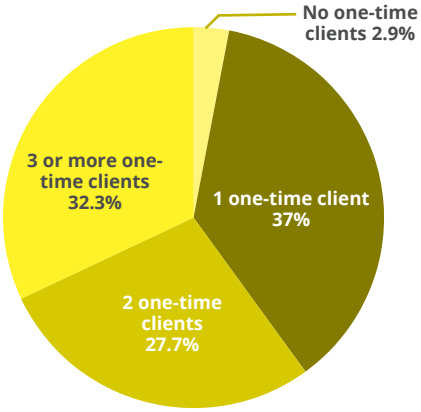

Figure 3.9: Number of one-time clients with whom had vaginal sex with in the last two weeks

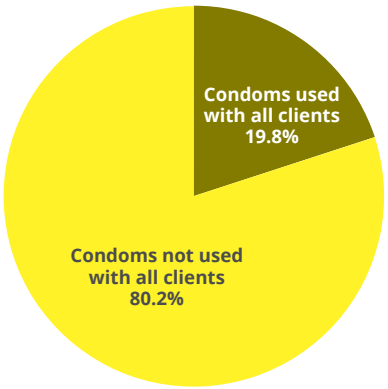

Figure 3.10: Condom use by clients who gave money in the last six months

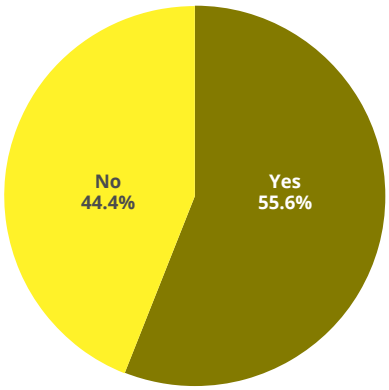

Figure 3.11: Condom use at last vaginal sex with one-time client in the last two weeks

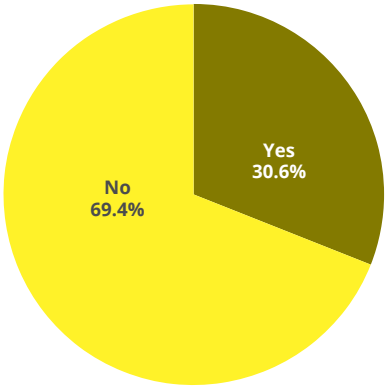

Figure 3.12: Condom use at last vaginal sex with a regular client in the last two weeks

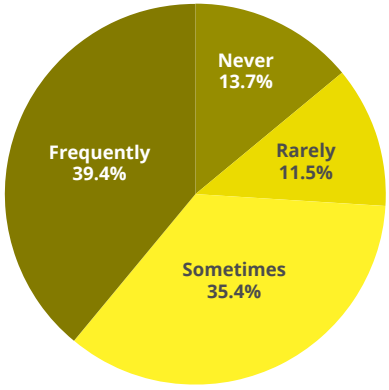

Figure 3.13: Ability to negotiate condom use with any client who refuses a condom in the last six months

There are times especially when we are out there when some men will ask us to use condom. Sometimes when we ask them to use it, they would refuse and if we insist, they usually become violent. That is why I usually use condom sometimes only. — Betty, 17 years

4. SEX WITH NON-PAYING PARTNERS

4.1 Main partners

More than half of FSW in Lae (53.6%) had no main non-paying sexual partners in the last six months. **See Figure 4.1**.

Condom use with a main non-paying partner during last anal sex (17.0%) was slightly more than that for vaginal sex (11.4%). Most FSW did not use a condom at last sex with main partners for either anal (83.0%) and vaginal (88.6%) sex. **See Figure 4.2**.

Condom use with a main partner in the last six months was relatively high with more than half reporting always using a condom during vaginal and anal sex (57.5% and 51.2% respectively). **See Figure 4.3**.

Over half (59.4%) of FSW with a main partner could ask their main partner to use a condom. **See Figure 4.4**.

4.2 Casual partners

Most FSW (82.6%) had no casual partners in the last six months. **See Figure 4.5**.

Of those FSW with a casual partner in the last six months, 26.4% had both vaginal and anal sex with their casual partners, with 73.6% having only vaginal sex. **See Figure 4.6**.

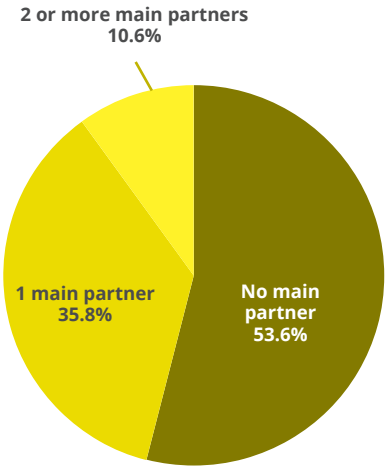

Figure 4.1: Number of main partners in the last six months

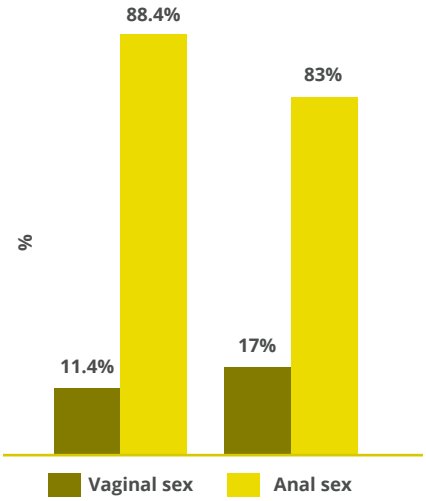

Figure 4.2: Condom use last vaginal and anal sex with a main partner

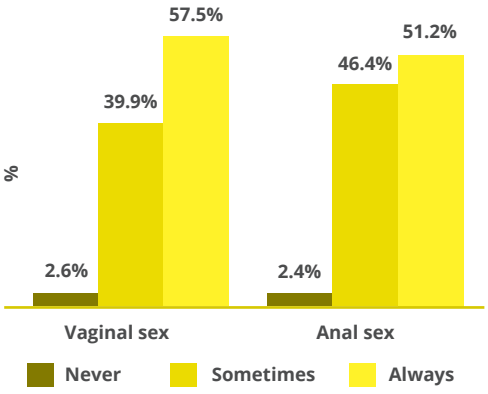

Figure 4.3: Frequency of condom use during vaginal and anal sex with a main partner in the last six months

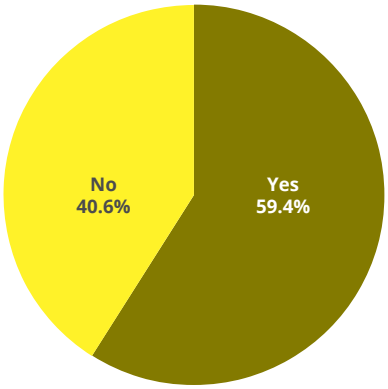

Figure 4.4: Could ask a main partner to use a condom

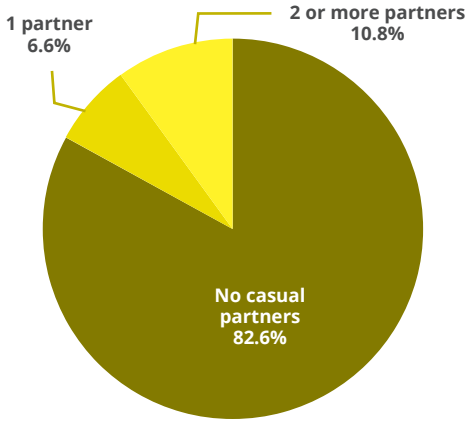

Figure 4.5: Number of casual partners in the last six months

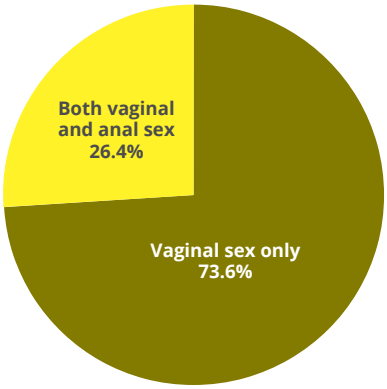

Figure 4.6: Type of sex with casual partners in the last six months

Only one of four FSW (25.8%) used condoms with all of their casual partners in the last six months. **See Figure 4.7**.

FSW reported slightly higher condom use at last sex with a casual partner during vaginal sex than during anal sex (43.9% versus 36.8% respectively). **See Figure 4.8**.

FSW were more likely to report never using a condom during vaginal sex than they were during anal sex (19.8% and 13.3% respectively). However, more FSW were likely to report always using a condom during vaginal sex than they were for anal sex (35.0% and 21.1% respectively). **See Figure 4.9**.

5. SOCIAL SUPPORT, MENTAL HEALTH AND STIGMA AND DISCRIMINATION

5.1 Social support

FSW were more readily able to rely on another FSW to deal with a difficult or violent situation with a client or partner than to accompany them to see a doctor (70.8% versus 62.9%, respectively). Almost all FSW had supported a peer in the last 12 months by negotiating or standing up to police (67.4%) or a pimp/madam/broker (98.9%). **See Figure 5.1**.

5.2 Depression

Based on the two-item Patient Health Questionnaire-2 screening tool for depression, almost two of five FSW (36.6%) experienced depression. **See Figure 5.2**.

5.3 Stigma and discrimination

About one in four FSW (23.0%) felt the need to hide that they sold or exchanged sex when accessing health services. **See Figure 5.3**. Most FSW were not denied health care because they sell or exchange sex (85.0%), but another 14.9% did not disclose that

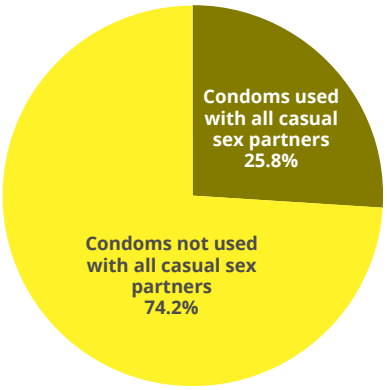

Figure 4.7: Condom use and casual partners

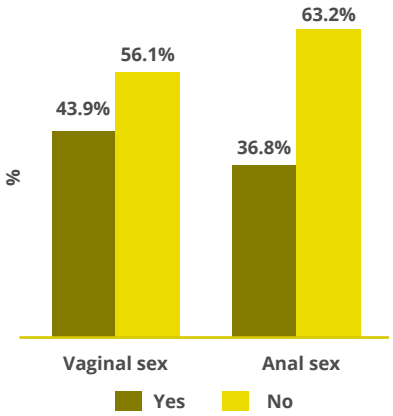

Figure 4.8: Condom use at last vaginal and anal sex with a casual partner

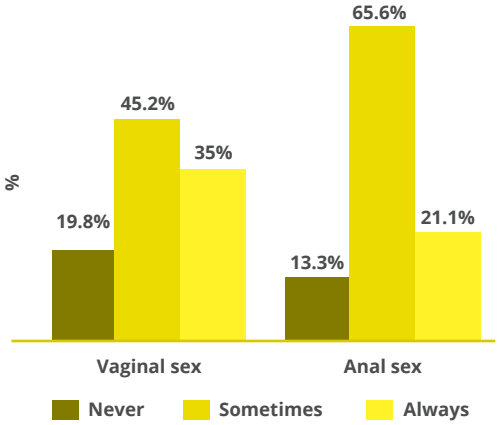

Figure 4.9: Frequency of condom use during vaginal and anal sex with a casual partner in the last six months

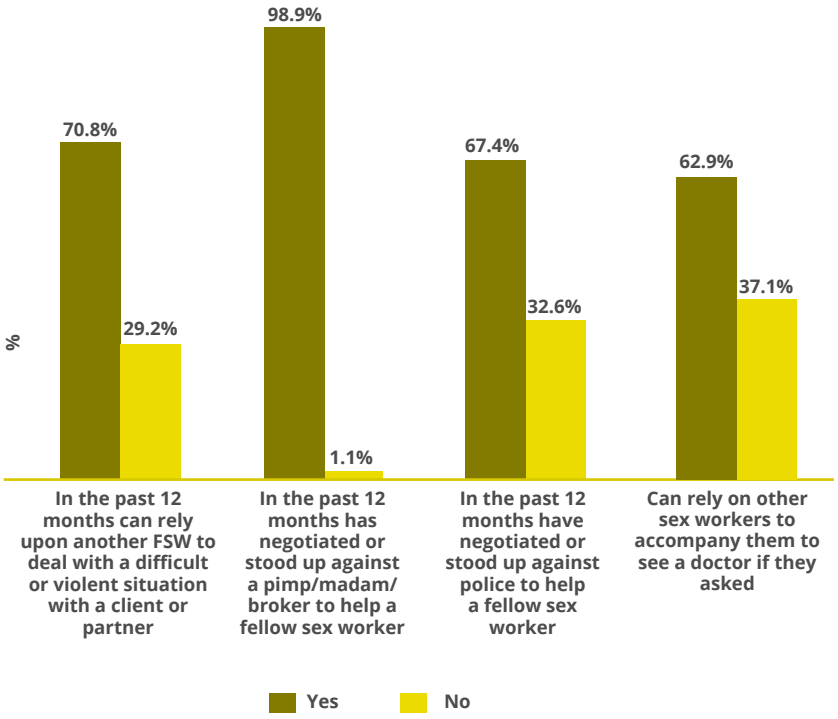

Figure 5.1: Social support

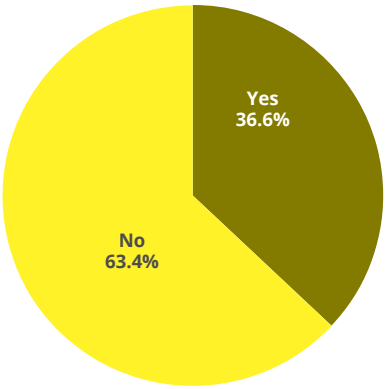

Figure 5.2: Depression

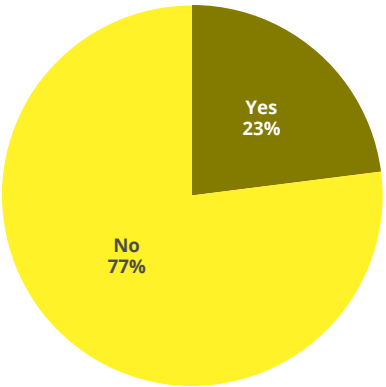

Figure 5.3: When accessing health services, they feel the need to hide that they sell and exchange sex

they sell sex and therefore were not denied health services. **See Figure 5.4**.

One in five FSW (20.6%) experienced some form of blackmail because they sell or exchange sex. **See Figure 5.5**. While most FSW had not experienced discriminatory practices by the police, 25.2% had given something to the police to avoid trouble in the last 12 months. A small minority of FSW (5.2%) had been arrested because of their involvement in the selling and exchanging of sex and 0.7% had been sent to prison because of this. **See Figure 5.6**.

Of the 25.2% of FSW who had given something to the police to avoid trouble in the last 12 months, 63.4% gave money. Another 47.5% exchanged sex with the police in order to avoid trouble. **See Figure 5.7**.

5.4 Drug use

Drug use was very low among FSW. Only 0.9% of FSW had ever taken illegal drugs, with none having taken illegal drugs in the last six months (data not shown).

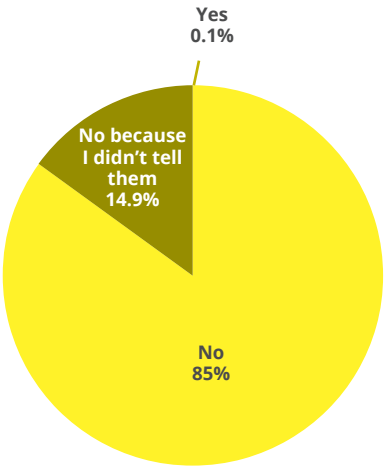

Figure 5.4: Denied health care because they sell or exchange sex

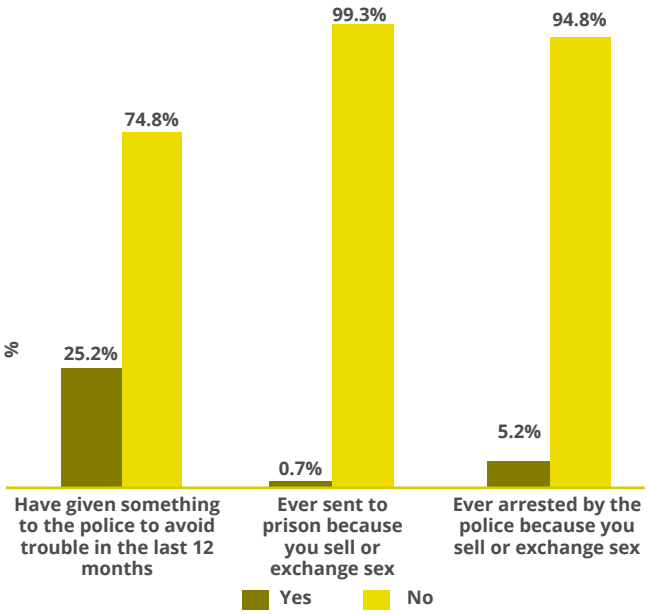

Figure 5.6: Experience with the police

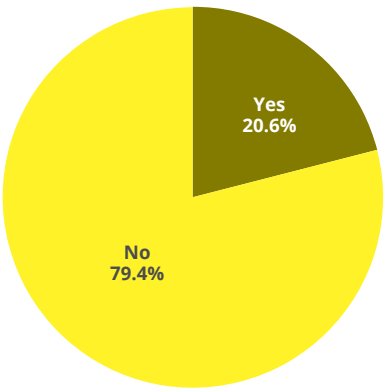

Figure 5.5: Blackmailed by someone because you sell or exchange sex

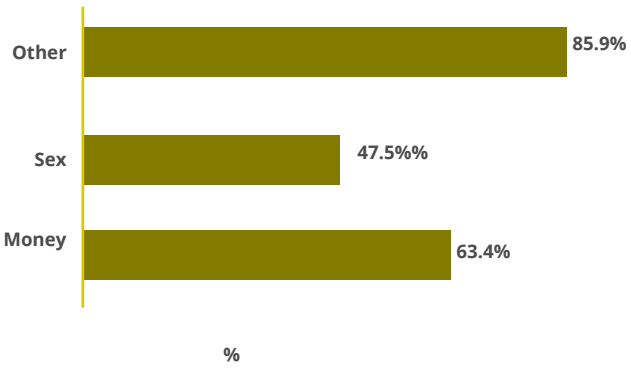

Figure 5.7: Things given to police to avoid trouble in the last 12 months

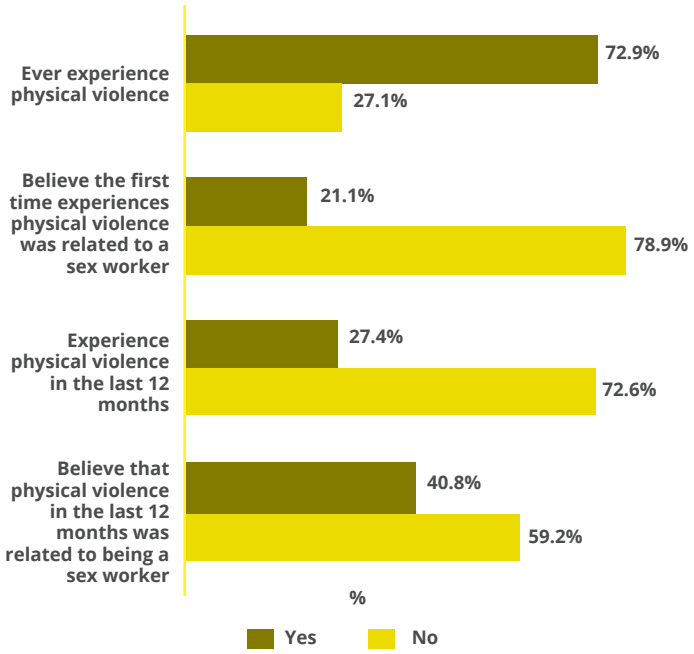

Figure 6.1: Experience of violence

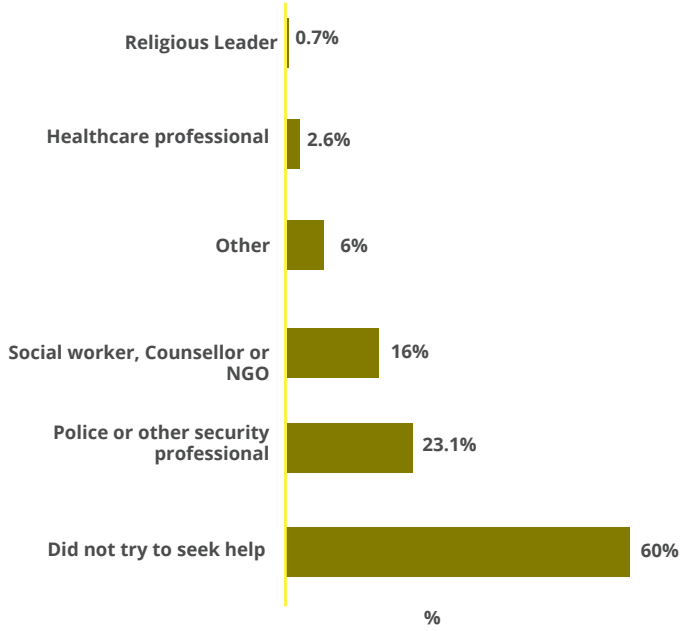

Figure 6.2: Access to support services after any physical violence
*Multiple responses possible

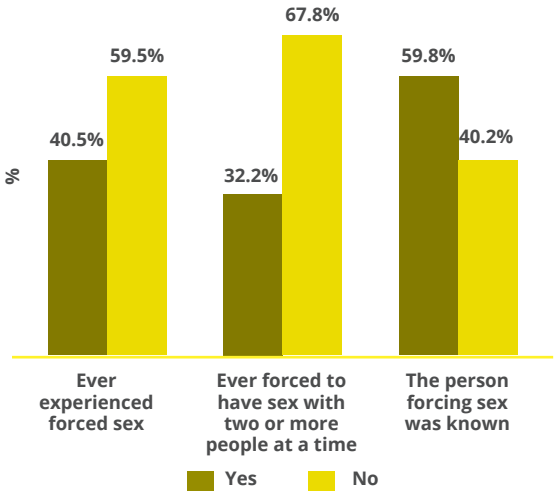

Figure 6.3: History of sexual violence

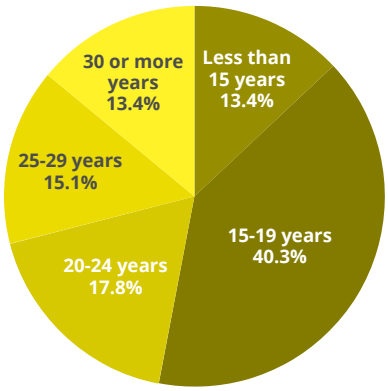

Figure 6.4: Age of first experience of sexual violence

6. VIOLENCE

6.1 Physical violence

More than half of FSW (72.9%) have ever experienced physical violence, with 21.3% of these survivors believing that the first time it happened was directly related to them selling or exchanging sex. In the past 12 months, 27.7% of FSW experienced physical violence, with 40.8% of survivors believing that this violence was related to being involved in the selling and or exchanging of sex. **See Figure 6.1**.

While 60.0% of FSW did not try to seek support after any experience of physical violence in the past 12 months, 23.1% sought support from police or other security personnel. Sixteen percent (16.0%) sought the support of a social worker, counsellor or non-government organisation. Few sought the professional support of health care professionals (2.6%). **See Figure 6.2**.

6.2 Sexual violence

Two of five FSW (40.5%) FSW had ever been forced to have sex. Of these survivors, 32.5% had been forced to have sex with two or more people at the same time. The perpetrator was known to the FSW in 58.1% of first cases of sexual violence. **See Figure 6.3**.

Among FSW who experienced sexual violence, 54.6% were abused before the age of 20 years, with 13.7% experiencing it under the age of 15 years. **See Figure 6.4**.

6.3 Last experience of sexual violence

FSW in Lae were more likely to be sexually abused by a known

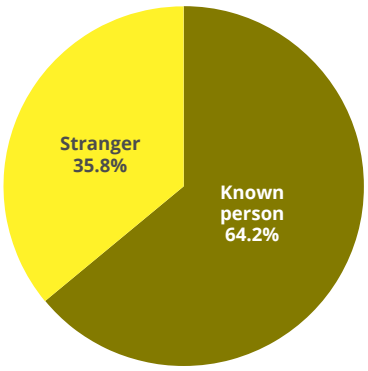

Figure 6.5: Identity of last perpetrator

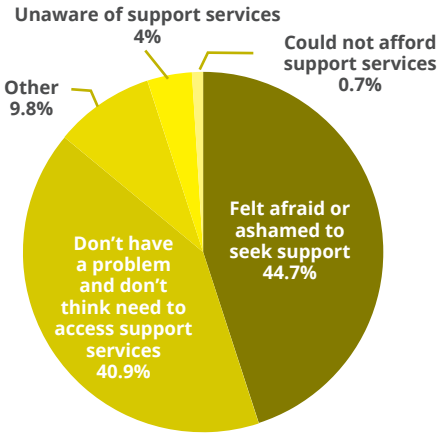

Figure 6.7: Reasons for not seeking support after most recent experience of sexual violence

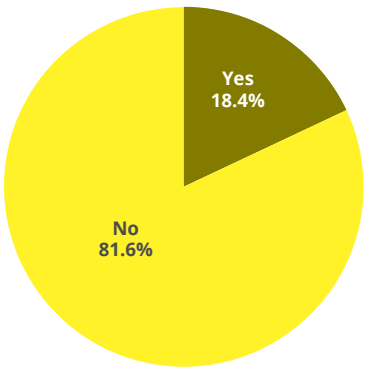

Figure 6.9: Any violence by client in the last six months

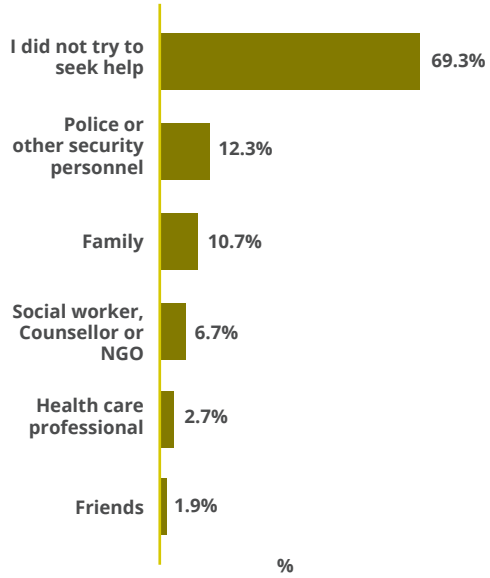

Figure 6.6: Source of help after last sexual violence

* Multiple responses allowed

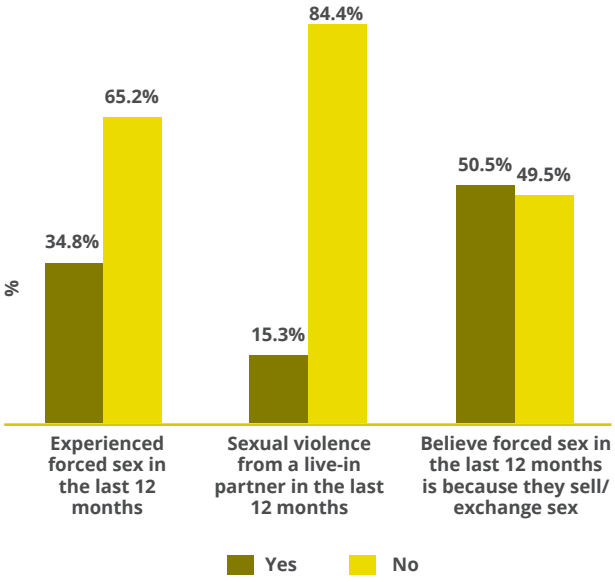

Figure 6.8: Sexual violence in the last 12 months

perpetrator (63.4%) on the last incident of sexual violence. **See Figure 6.5**.

Most FSW who experienced sexual violence never sought help after their last unwanted sexual encounter (68.3%). Common sources of help include police and other security personnel (13.2%) and family (11.1%). **See Figure 6.6**.

The two most common reasons for FSW not accessing support services after the most recent experience of sexual violence was because they felt ashamed or afraid to access these services (42.9%) or they felt that they did not have a problem and therefore did not require support services (42.0%). **See Figure 6.7**.

6.4 Sexual violence in the last 12 months

Of FSW who had ever experienced sexual violence, one in three (35.8%) were physically forced to have sex in the last 12 months. Among FSW who had been forced to have sex in the last 12 months and had a live-in partner, 16.5% were forced to do so by a live-in sexual partner. Of these women, half (51.9%) believed it was because they were involved in the selling and exchanging of sex. **See Figure 6.8**.

6.5 Violence from a client in the last six months

About one of five FSW (18.4%) experienced any form of violence from their clients in the last six months. **See Figure 6.9**. The most common form of client-perpetrated violence in the last six months was forced sex (14.9%) followed by physical abuse (10.5%) and threats (6.4%). **See Figure 6.10**.

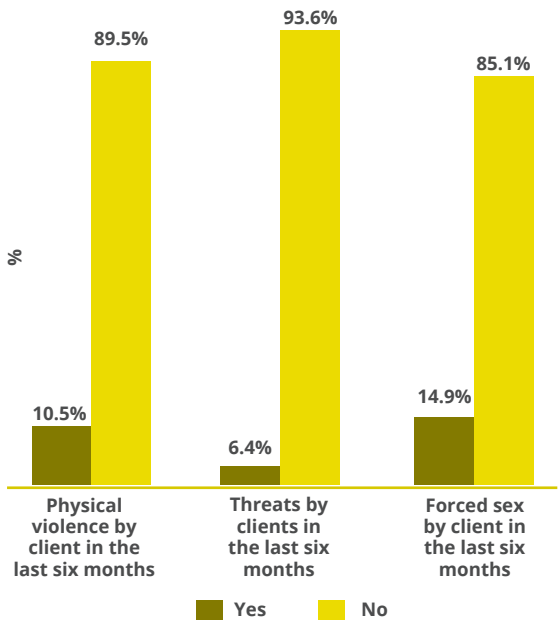

Figure 6.10: Type of violence perpetrated by a client in the last six months

7. REPRODUCTIVE HEALTH

7.1 History of pregnancy

Two-thirds (64.4%) of FSW had ever been pregnant. One-third (33.7%) of FSW were trying to get pregnant. **See Figure 7.1**.

Among FSW who had been pregnant, 73.2% had their last pregnancy more than three years ago. Very few FSW were either currently pregnant (0.8%) or had been pregnant in the past 12 months (4.8%). **See Figure 7.2**.

7.2 Induced abortion

Among FSW who had been pregnant, 18.6% tried to induce an abortion at least once (data not shown). Among these women, the most commonly used methods were: 1) applying external physical force to the abdomen (27.4%); 2) using traditional methods (26.8%); and 3) drinking large volumes of coffee or other substances (14.1%). **See Figure 7.3**.

7.3 Antenatal attendance

Of the 26.7% of FSW who had a pregnancy that resulted in a live birth in the last three years (data not shown), 90.3% attended an antenatal clinic at least once. **See Figure 7.4**.

7.4 HIV and syphilis testing during pregnancy

Of those who attended ANC, 72.4% were offered an HIV test and 100% of them were tested. None were HIV-positive (data not shown.

At last pregnancy that resulted in a live birth in the last three years, 27.4% were offered a syphilis test. Of the women offered a syphilis test, 87.6% of FSW were tested for syphilis, of the 19.9% who tested positive for syphilis 100% were treated. **See Figure 7.5**.

7.5 Family planning

Roughly equal proportions of FSW were using family planning as

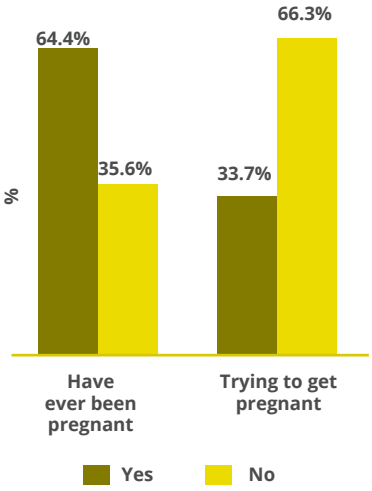

Figure 7.1: Pregnancy history

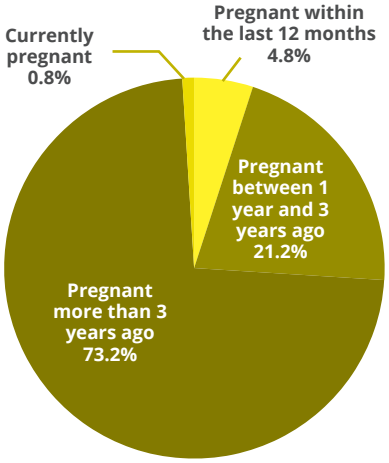

Figure 7.2: Time of most recent pregnancy

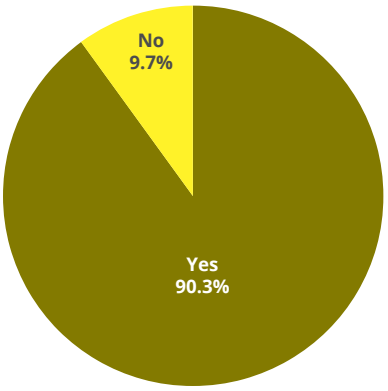

Figure 7.4: ANC attendance during last pregnancy

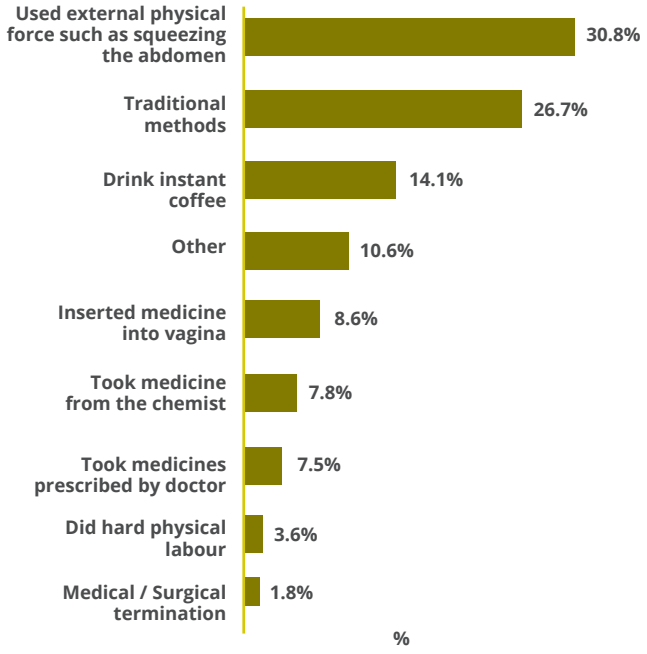

Figure 7.3: Methods of inducing an abortion*

*Multiple responses responsible

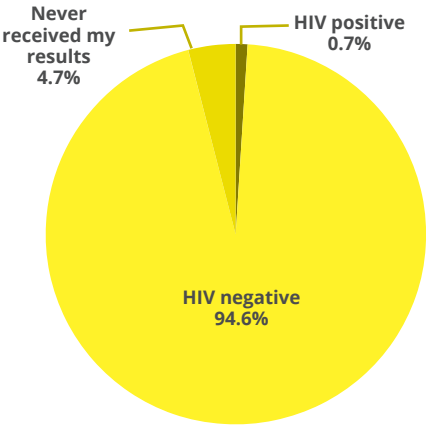

Figure 7.5: Results from HIV test during last pregnancy

those who were not (46.3% and 53.7% respectively). **See Figure 7.6**.

Of FSW using family planning methods, the most commonly used method was the injection/Depo Provera (24.5%) followed by the implant (18.9%). Others relied on a mixture of methods. **See Figure 7.7.**

8. KNOWLEDGE OF HIV AND ACCESS TO OUTREACH AND HIV PREVENTION SERVICES, INCLUDING PROPHYLACTIC TREATMENT

8.1 Knowledge of HIV

HIV knowledge (**See Figure 8.1**) was greatest for knowing that:

- A healthy-looking person can have HIV (89.3% correctly answered).
- You can reduce the risk of getting HIV by having sex with only one uninfected partner who has no other partners (87.4% correctly answered).
- Using a condom every time you have sex you can reduce the risk of getting HIV (86.7% correctly answered).

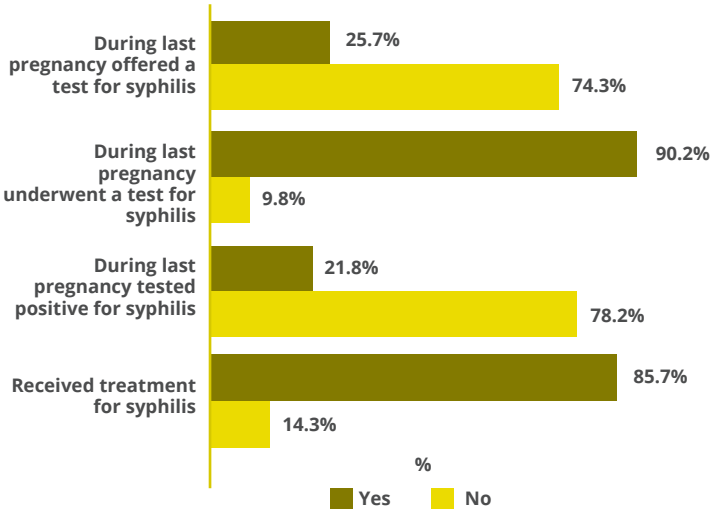

Figure 7.6: Syphilis testing and treatment during last pregnancy

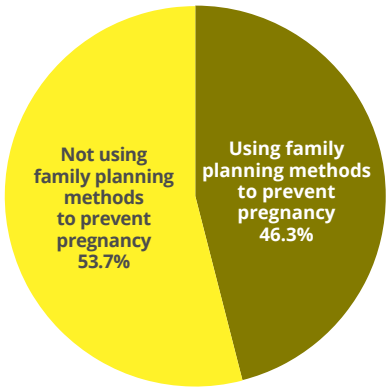

Figure 7.7: Family planning

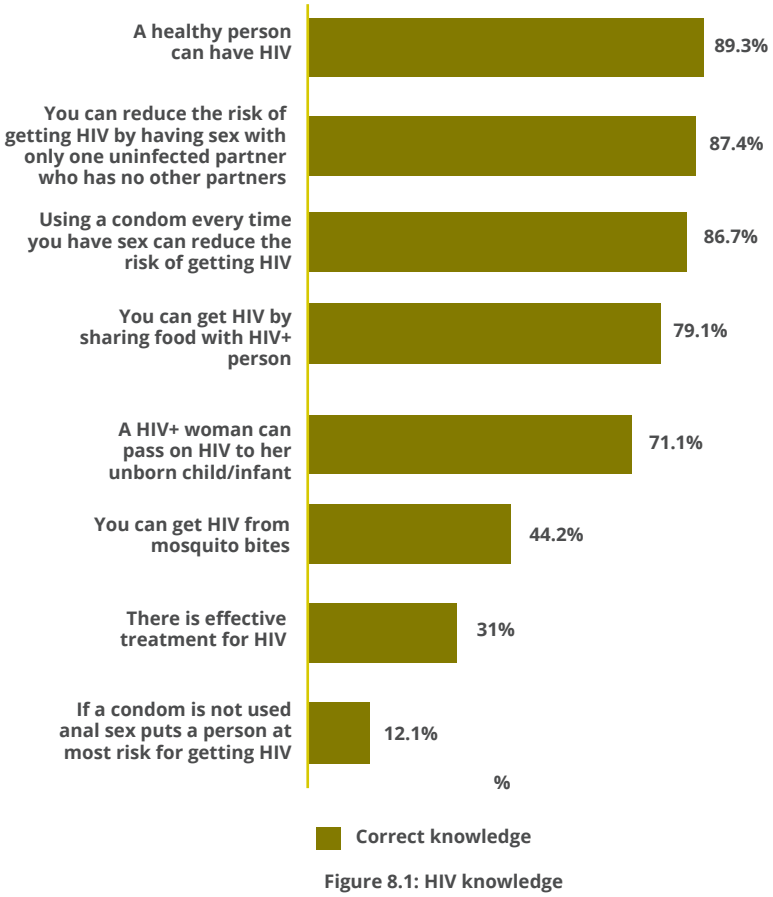

Figure 8.1: HIV knowledge

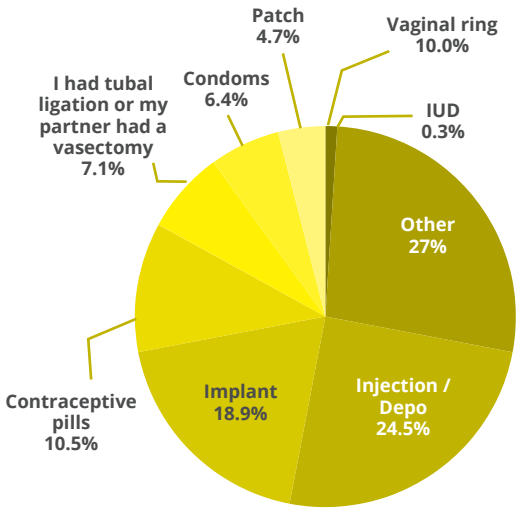

Figure 7.8: Main contraceptive method used

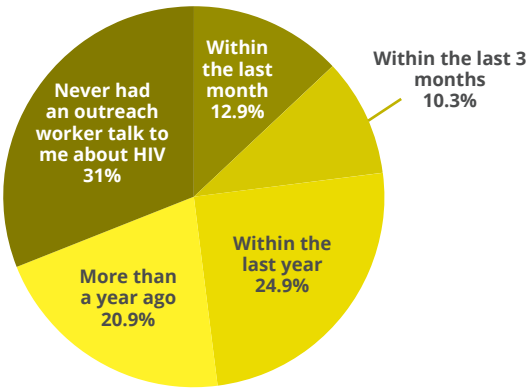

Figure 8.2: Last contact with peer outreach worker

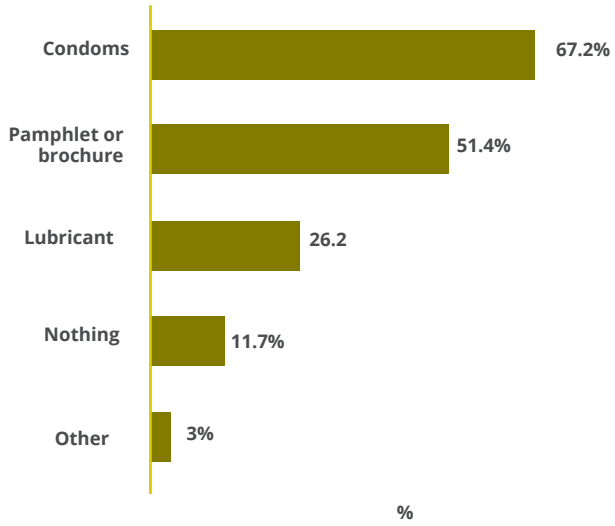

Figure 8.3: Products received at last peer outreach contact*

*Multiple responses possible

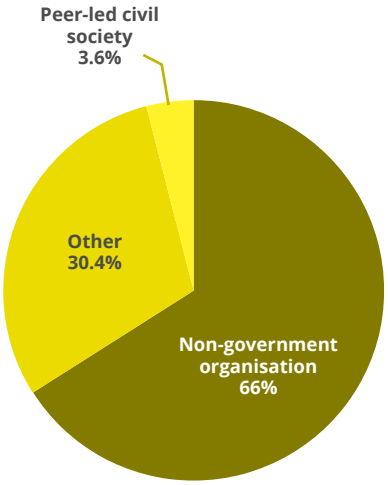

Figure 8.4: Organisation from where peer outreach worker comes from

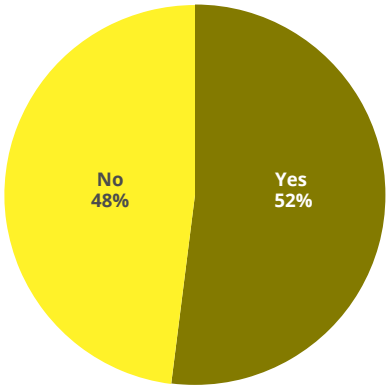

Figure 8.5: In the last 12 months received information on condom use and safer sex

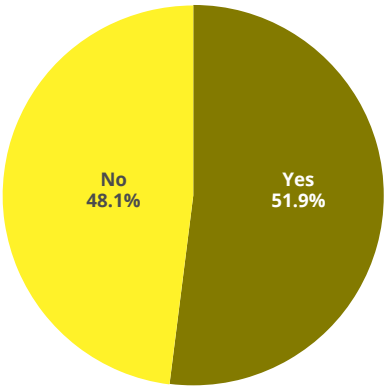

Figure 8.6: In the last 12 months been given condoms for free

HIV knowledge (**See Figure 8.1**) was poorest for knowing that:

- If a condom is not used, anal sex puts a person at greatest risk for getting HIV (12.1% correctly answered).
- There is effective treatment for HIV (31.0% correctly answered).
- You can get HIV from mosquito bites (44.2% correctly answered).

8.2 Peer outreach

Almost one-third of FSW (31.0%) have never been reached by a peer outreach worker in their lifetime. Only 23.2% have been reached within the last three months. **See Figure 8.2**.

Of those reached by a peer outreach worker, 11.7% received nothing. Condoms (67.2%) and pamphlets or brochures (51.4%) were the most common items received. **See Figure 8.3**. Most peer outreach workers belonged to non-government organisations (66.0%). **See Figure 8.4**.

8.3 Free condoms

Just over half (52.0%) of FSW received information on condom use and safer sex in the last 12 months. **See Figure 8.5**. A similar proportion (51.9%) received free condoms at the same time. **See Figure 8.6**.

8.4 Free lubricant and lubricant use

Less than one in five (18.4%) of FSW received free packets of lubricants in the last 12 months. **See Figure 8.7**. Most FSW (75.0%) did not use lubricants in the

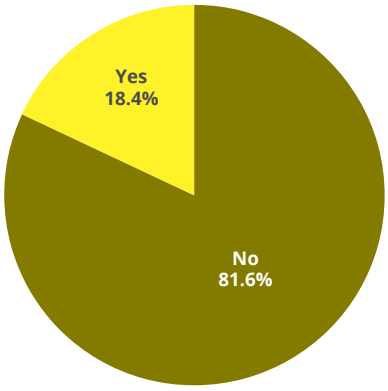

Figure 8.7: In the last 12 months given free packets of lubricant

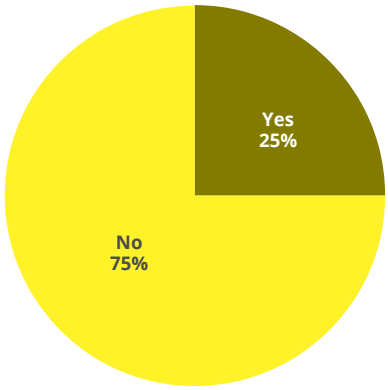

Figure 8.8: Used lubricant in the last six months for vaginal or anal sex

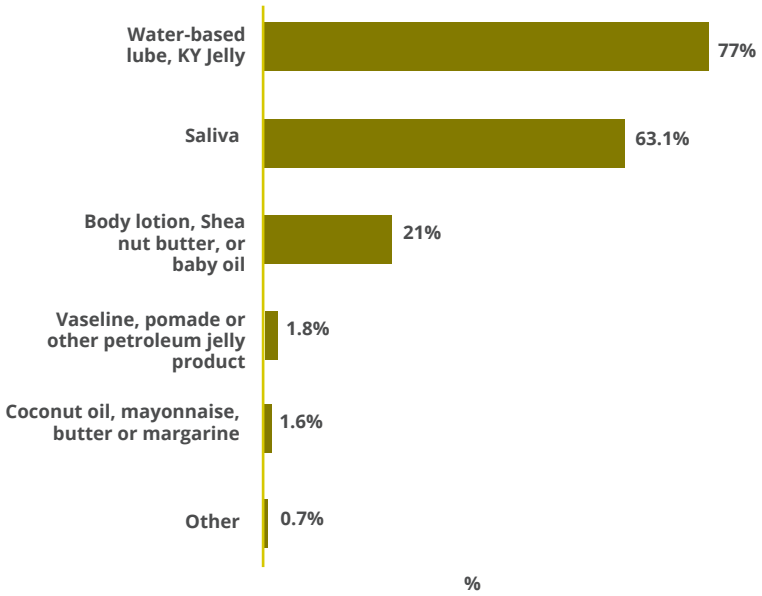

Figure 8.9: Type of lubricants used*

*Multiple responses possible

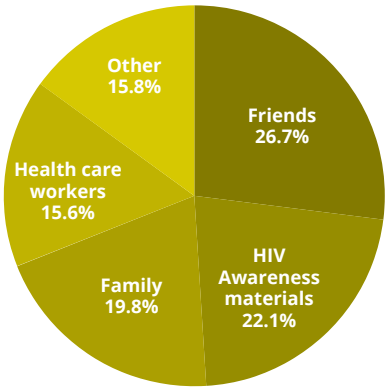

Figure 8.10: Sources of influences to protect self and others from HIV

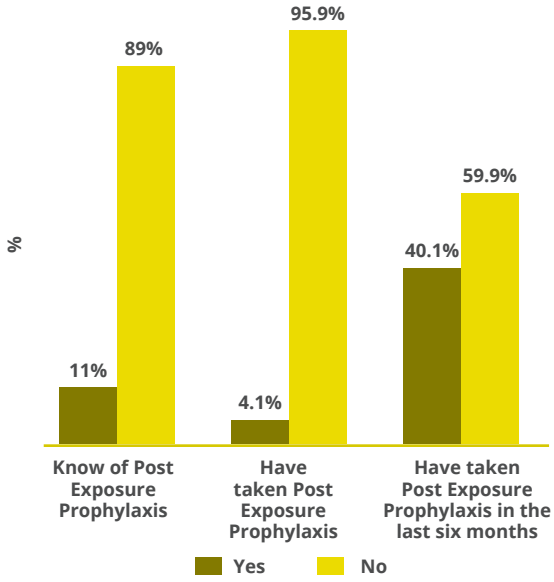

Figure 8.11: Post-exposure prophylaxis - knowledge and uptake

last six months for either vaginal or anal sex. **See Figure 8.8**.

Of FSW who had used lubricants in the last six months, 77.0% used water-based lubricants such as KY Jelly and 63.1% used saliva. Other popular lubricants included body lotion, shea butter and so forth (21.0%). **See Figure 8.9**.

8.5 Sources of influence

The most common influences were: 1) friends (26.7%); 2) HIV awareness materials (22.1%); and 3) family (19.8%). **See Figure 8.10**.

8.6 Post-Exposure and Pre-Exposure Prophylaxis

Only 11.0% of FSW had heard of post-exposure prophylaxis. Of these, few had ever taken post-exposure prophylaxis (4.2%). Of those who had taken post-exposure prophylaxis, 40.1% had done so in the last six months. **See Figure 8.11**.

Very few FSW had heard of pre-exposure prophylaxis (10.1.%), yet theoretical acceptability of pre-exposure prophylaxis was high (85.6%). **See Figure 8.12**.

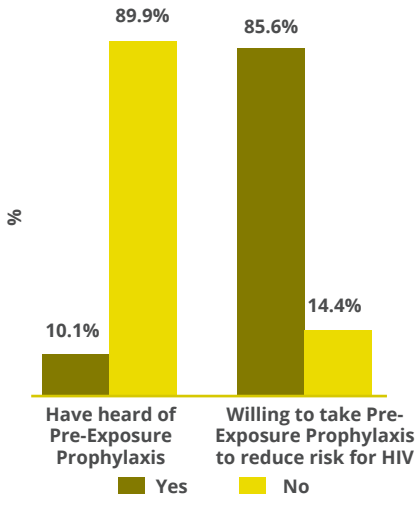

Figure 8.12: Pre-exposure prophylaxis - knowledge and acceptability

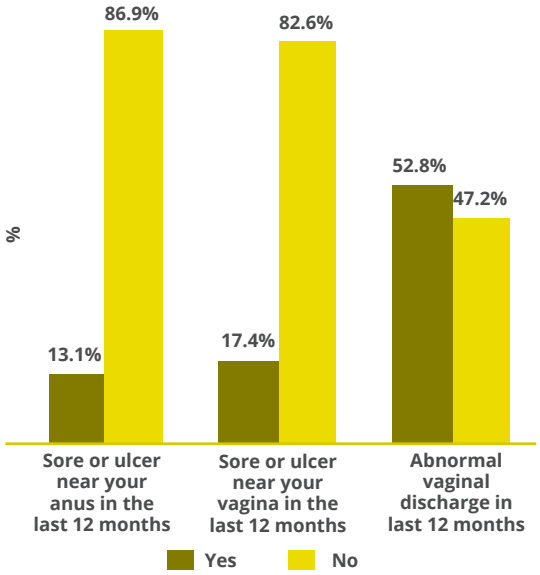

Figure 9.1: Symptoms of STIs in the past 12 months

9. SEXUALLY TRANSMITTED INFECTIONS

9.1 Self-reported STI symptoms and health seeking behaviours

More FSW experienced abnormal vaginal discharge (52.8%) in the last 12 months than experienced vaginal or anal sores or ulcers in the same period (17.4% and 13.1% respectively). **See Figure 9.1**. Of FSW with these symptoms, less than half saw a health-care worker (36.0%) (data not shown).

9.2 Prevalence of STI

Sexually transmitted infections were common with three in five of FSW (60.8%) experiencing one or more sexually transmitted infection (excluding HIV). **See Figure 9.2**. Chlamydia was the most common sexually transmitted infection among FSW. Prevalence of anorectal and urogenital chlamydia were roughly equal (32.1% and 35.3%, respectively). The next most common sexually transmitted infection was anorectal gonorrhea (22.6%) and urogenital gonorrhoea (21.5%). Syphilis was also common with 19.7% of FSW ever infected and 6.9% having active syphilis infection. More than one in ten FSW (10.7%) had Hepatitis B Virus. **See Figure 9.3**.

10. HIV TESTING, CARE AND TREATMENT

10.1 HIV testing prior to *Kauntim mi tu*

Over half of FSW (56.1%) had ever tested for HIV. Of those who had tested, 47.8% disclosed during their last test for HIV that they sold and/or exchanged sex. Among women who had had tested for HIV and had a main partner, 15.7% tested with their partner. **See Figure 10.1**.

> *I did test for HIV once and they said I was negative so I never went again. This was in 2016 up till now I've come here. I only go out with four men only with whom I trust so I won't have it [HIV]. I usually think like that so I have never gone for testing until now. — Monica, 25 years.*

Of FSW who had never tested for HIV, 8.8% had not tested because they felt healthy, while fear and stigma prevented 16.9% from ever testing. 20.1% did not know where they could be tested and 16.8% had no time to be tested. **See Figure 10.2**.

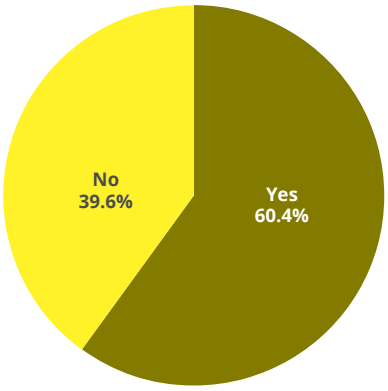

Figure 9.2: Proportion of FSW with one or more STIs

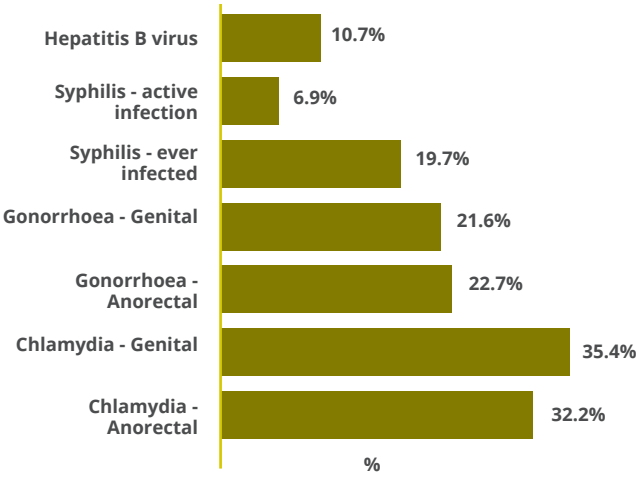

Figure 9.3: STI test results

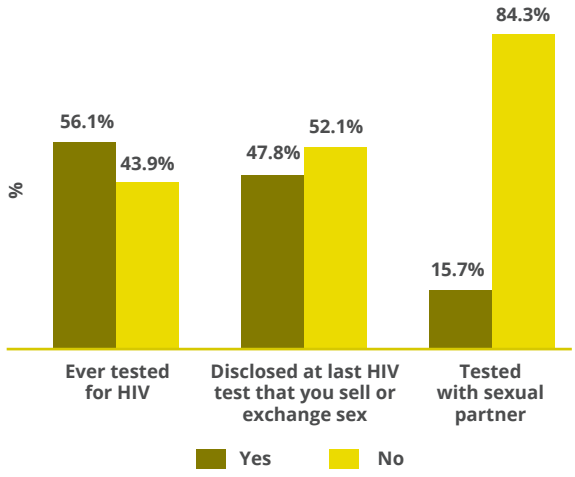

Figure 10.1: HIV testing history

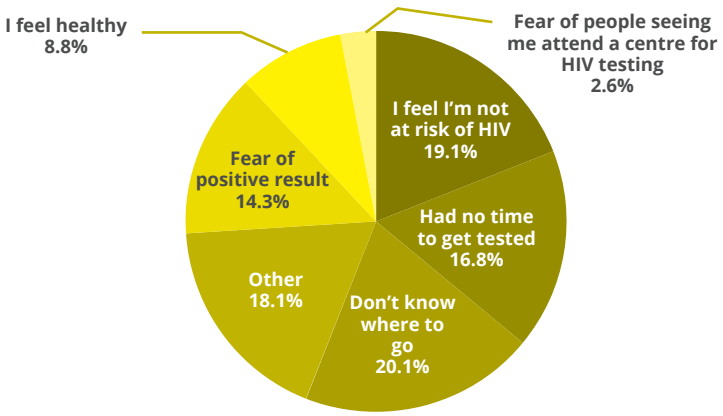

Figure 10.2: Reasons for never testing for HIV


Kaunrim
Kauntim mi tu
Kauntim mi tu

Of FSW who had ever tested for HIV, 26.4% tested within the last six months with most testing at a sexual health service (53.7%). **See Figures 10.3 and 10.4**.

Excluding those who knew that they were HIV positive, the most common reason for not testing for HIV in the last 12 months was not having time to get tested (41.2%), not feeling like testing (18.1%) and feeling fine (20.5%). **See Figure 10.5**.

Of those who tested for HIV prior to the study, 6.2% tested HIV positive and 7.4% did not know their result. **See Figure 10.6**.

While 14.5% of HIV positive FSW had not disclosed their HIV status to anyone, 69.9% disclosed it to a family member, 67.9% disclosed to a doctor, and 47.6% disclosed to a fellow sex worker friend. **See Figure 10.7**.

Many people don't know; I usually keep it to myself. I fear they might speak out and people might say I am a woman with bad disease. They would discriminate me or I will be stigmatised so I keep it to myself. — Sonia, 24 years.

There's a man who usually comes to my house. He's married and has two children but he doesn't know my status. He comes around quite often at night time but he is not my husband and so I don't tell him. My mother and I are the only two people that knows about my HIV status and no other family. They usually think that I am normal. This is my one year of living with HIV. — Pokaya, 24.

I fear my life. I am like the only child in the family and they will tell my father and he would chop me. He is a leader too and I have already tarnished his name. That is why I am afraid to tell anyone. People suspect and they try to get a hold of me but I hide from them. I would contact a client and I go off with him. I never settle at home. — Mofa, 20 years.

10.2. HIV care and treatment

All FSW who had previously been diagnosed with HIV had accessed HIV medical care (100.0%) (data not shown). All FSW aware of their HIV infection had taken ART (100.0%) (data not shown). Of them, 92.2% were currently on treatment. **See Figure 10.8**.

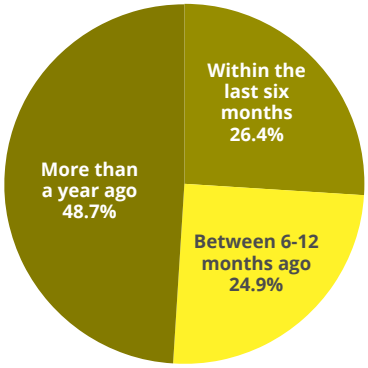

Figure 10.3: Timing of last HIV test

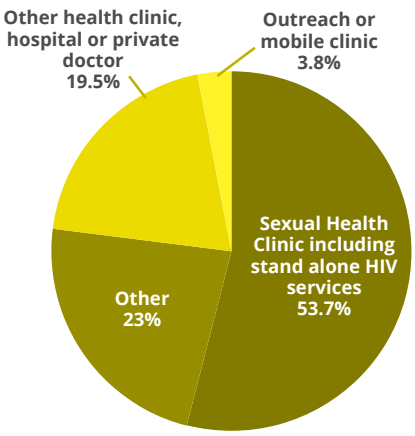

Figure 10.4: Location of last HIV test

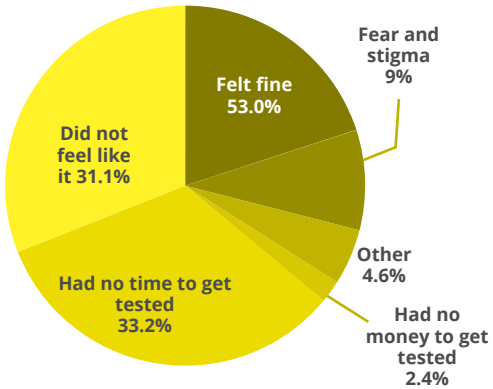

Figure 10.5: Reason for not testing in the last 12 months

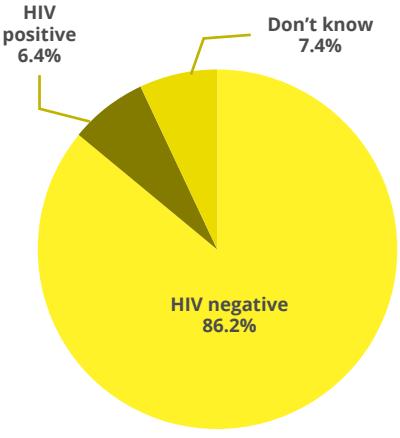

Figure 10.6: Result of last HIV test prior to *Kauntim mi tu*

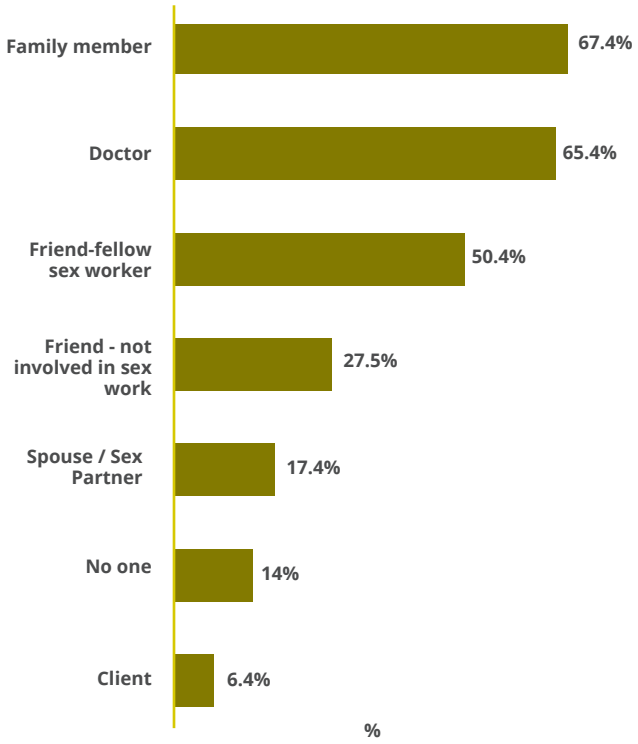

Figure 10.7: HIV disclosure

*Multiple responses possible

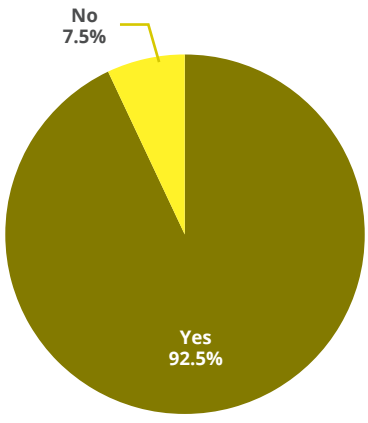

Figure 10.8: History of ART

Now that I am on treatment, I feel that I am regaining my weight. My skin tone has become light and normal again. My looks have gone back to what I was like before my diagnosis. I never miss it because the nurses and doctors told me that if I miss it, I will only be asking for my death. That is why I fear missing my medication and I take it with me wherever I go. — Sonia, 24 years.

ART is like my only life. It's not the money; I don't care about money. They say sister is important, she isn't, mother is life but she isn't too. I can say that ART is my whole heart. When I wake up, I get up with it and I go around with it. — Pokaya, 24 years

When I started taking that medicine, my body came back again. I felt that this medicine was an incredible medicine that I was taking so I decided not to go out so much. I took the advice of that female doctor not to spend too much time having sex with men. — Mofa, 20 years.

Among FSW who knew they were HIV positive, only 18.2% had undergone a CD4 cell test, 76.3% had one, seven to twelve months ago (data not shown).

Almost two in three (65.5%) FSW living with HIV were asked at their last HIV clinic appointment if they had any symptoms of TB. Almost half of HIV positive FSW had a symptom (cough, fever, night sweats or unexplained weight loss) of TB in the last 12 months (data not shown).

Of the 29 women in the study who indicated that they had been diagnosed with HIV and accessed care, 17 were screened for TB in the last 12 months. Eight had been told by a healthcare worker that they had TB, of whom all started treatment (data not shown). Of the 22 women in the study who were aware of their HIV status and had never had TB, six had taken intermittent prophylactic therapy to prevent TB (data not shown).

10,3 Prevalence of HIV

HIV prevalence among FSW was 11.9%. **See Figure 10.9**. Among the 29 FSW in the study who self-reported being aware of their infection in our study, 68.3% had less than 500 CD4 T cells/ uL (data not shown).

Among FSW who self-reported being on treatment for HIV, almost three quartes (71.6%) had suppressed HIV viral load (<1,000 copies/mL) (data not shown).

11. TUBERCULOSIS

In order to be eligible for TB testing in *Kauntim mi tu*, we applied the WHO screening for People with HIV, which is more sensitive than the algorithm for people without HIV. As a key population with a higher burden of HIV, this screening algorithm was decided upon to ensure that those with HIV who present with TB symptoms during study recruitment were tested for TB. Of all FSW:

- 37.9% had unexplained weight loss in the last two weeks
- 25.7% had a cough in the last two weeks
- 30.41% had a fever in the last two weeks
- 29.4% had night sweats in the last two weeks

About half (52.2%) of FSW experienced at least one of these symptoms of TB in the last two weeks and were tested for TB. Of FSW screened for tuberculosis, 2.0% had tuberculosis. Of the FSW in the study who had tuberculosis, none had a drug resistant form.

Of all FSW screened for TB, 0.7% had HIV/TB co-infection. Of the FSW with HIV (11.9%), 71.5% had at least one symptom of TB in the last two weeks. Among HIV positive FSW, 4.0% were coinfected with TB.

12. GLOBAL TARGETS: 90-90-90

In Lae, PNG is not reaching the first or the second of the global targets where 90% of people with HIV are aware of their status and of those aware of their status 90% are on ART. In 2016, only 71.8% of HIV positive FSW were aware that they had HIV, far below the target of 90%. In Lae, PNG is achieving the second target but is needing to improve the HIV viral load suppression amongst FSW on treatment, where only 70.4% have viral suppression, in order to achieve the third target. **See Figure 12.1**.

13. SIZE ESTIMATION

We distributed 790 unique objects to women who sell or exchange sex throughout Lae to estimate their population in the city utilizing the unique object multiplier method. Combining this distribution with the RDS IBBS where we estimated that 13.0% of the population received a unique object, we estimate that there are 6,100 FSW in Lae.

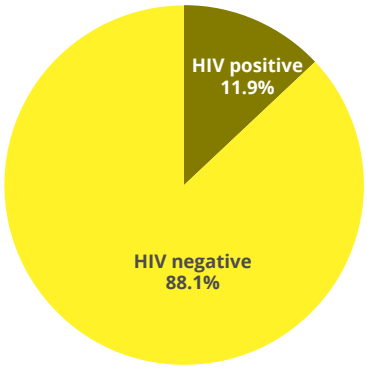

Figure 10.9: HIV prevalence

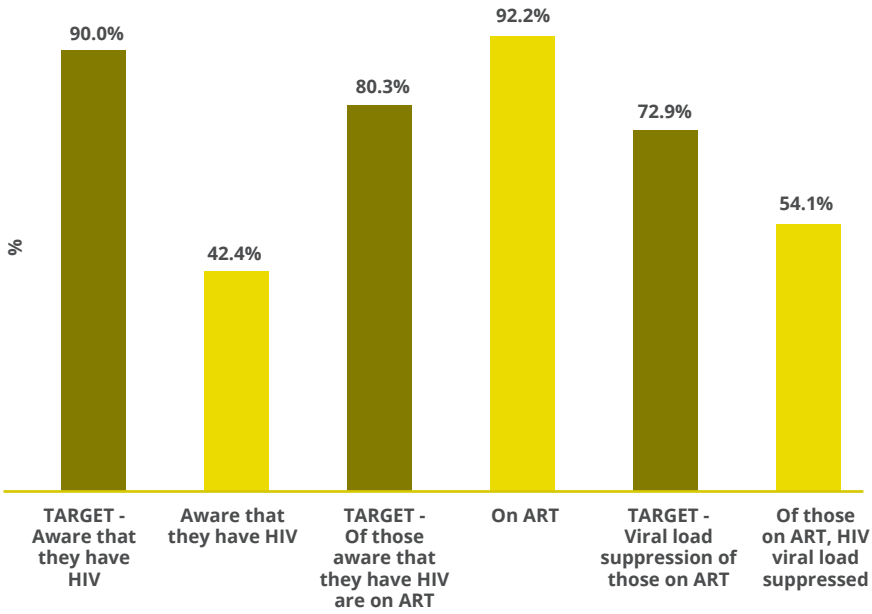

Figure 12.1: HIV cascade among FSW in Lae

Part 2

MEN WHO HAVE SEX WITH MEN, AND TRANSGENDER WOMEN

In Lae, 352 MSM and TG were eligible, provided informed consent and participated in the study. Per the RDS method, results presented here are weighted population proportions representing the entire population of MSM and TG in Lae who have had oral or anal sex with another MSM or TG in the last six months. Unless otherwise stated through reference to study participants and the specific number of people, all data here should be interpreted as weighted population proportions.

1. SOCIO-DEMOGRAPHIC INFORMATION

Almost half (46.0%) of MSM and TG were aged 15-24 years and approximately one-quarter (26.0%) were aged 25-29 years. Equal proportions were aged 30-34 years and 35 years or older (13.7% and 14.3% respectively). The median age of MSM and TG was 25 years. **See Figure 1.1**.

The Highlands Region was the single largest region of origin among MSM and TG in Lae (32.3%) followed by the New Guinea Islands Region (20.7%). Roughly equal proportions identified that they were from the Southern or Momase regions (11.8% and 11.6% respectively). Almost one-quarter of MSM and TG reported that they had mixed heritage of two or more regions (23.7%). **See Figure 1.2.**

Most MSM and TG were long-term residents of Lae, with close to three in five (59.0%) residing there for more than ten years. About two in five (41.0%) had lived in Lae for less than ten years. **See Figure 1.3**.

The most common religious affiliations of MSM and TG in Lae were the Seventh Day Adventist Church (26.7%), the Catholic Church (21.3%), and other Christian denominations (18.4%),

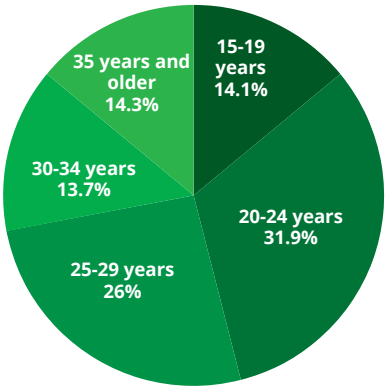

Figure 1.1: Distribution of age

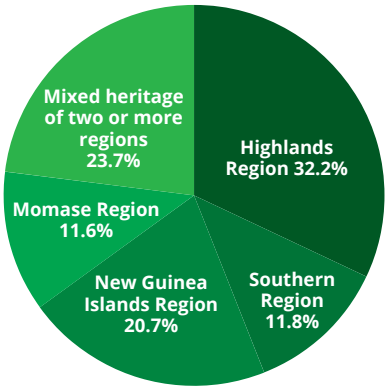

Figure 1.2: Region of origin

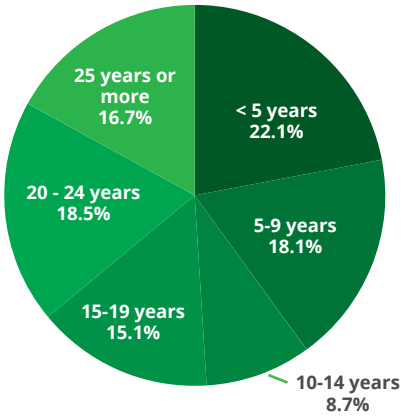

Figure 1.3: Years living in Lae

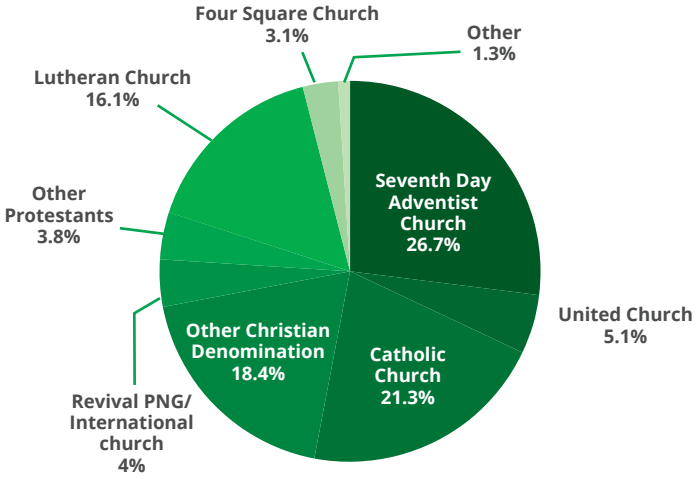

Figure 1.4: Religious affiliation

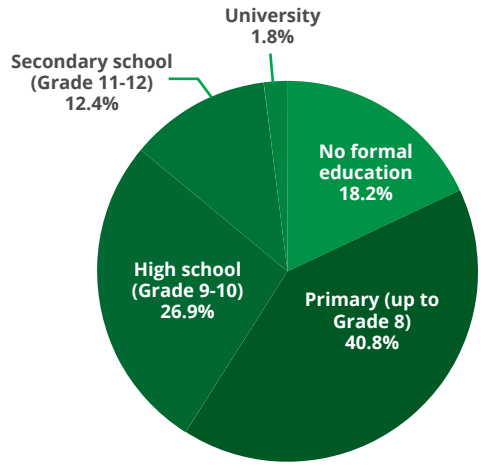

Figure 1.5: Educational level

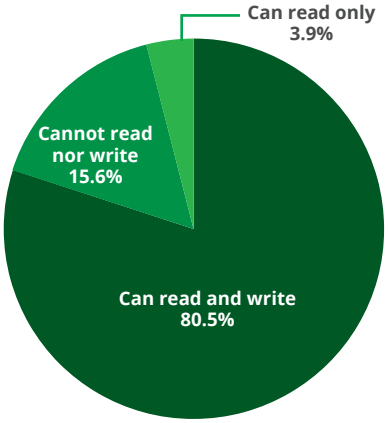

Figure 1.6: Literacy level

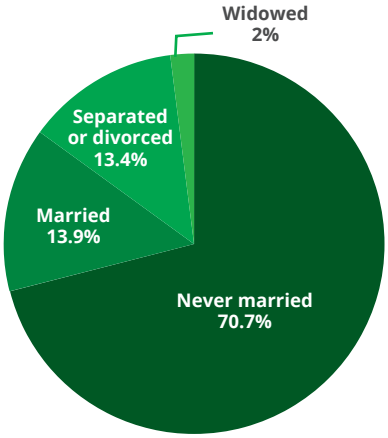

Figure 1.7: Marital Status

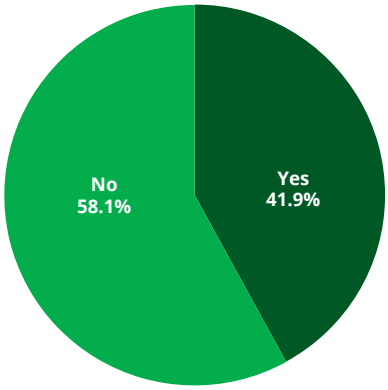

Figure 1.8: Time away from Port Moresby in last six months

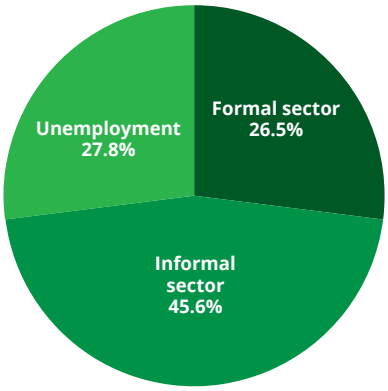

Figure 1.9: Main form of employment/income

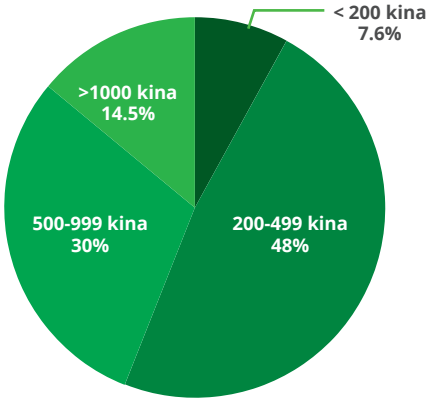

Figure 1.10: Average monthly income

where individual churches were combined due to small values. Other churches were less common, including United Church (5.1%) and the Revival Church (4.0%). **See Figure 1.4**.

Under half (40.8%) of MSM and TG in Lae had a primary school education, an additional 26.9% completed high school. Smaller proportions had completed secondary school (12.4%) and almost no one (1.8%) had completed university. Almost one in five had no formal education at all (18.2%). **See Figure 1.5**. Of all MSM and TG in Lae, 5.2% were currently in school (data not shown).

Most MSM and TG in Lae could both read and write (80.5%) with much smaller proportions either neither able to read nor write (15.6%), or only able to read (3.9%). **See Figure 1.6**.

1.1. Living arrangements and marital status

Most MSM and TG had never been married (70.7%). Another 13.9% were currently married and 13.4% were divorced or separated. **See Figure 1.7**.

Most MSM and TG (58.1%) in Lae were not mobile for extended periods of time, with 41.9% spending more than one month away from the city in the past six months. **See Figure 1.8**.

1.2. Income and employment

More than one-quarter (26.5%) of MSM and TG in Lae were employed in the formal sector while 45.6% worked in the informal sector. The remaining 27.8% were unemployed. **See Figure 1.9**. More than half of MSM and TG in Lae (55.6%) lived on less than 500 Kina per month. Another 30.0% earned between 500 and 999 Kina per month, while 14.5% earned more than 1,000 Kina per month. **See Figure 1.10**.

2. IDENTITY AND SEXUAL ATTRACTION

2.1 Sexual identity

More than half (62.4%) of MSM and TG in Lae identified their sexuality as a man who has sex with other men, or a man of diverse sexualities. Over one-quarter identified as heterosexual (26.0%) and 4.7% as transgender. **See Figure 2.1.**

I do not have sex with women but men only and I do not perform behaviours like a wife but behave in both ways. I'm identified as a gay man, but versatile. I can be a man and a woman at the same time. I dress up like a man but in terms of sexuality, yes, I categorize myself like that. I mean both insertive and receptive. — Kawas, 21 years.

2.2 Gender identity

The most common gender identity, as opposed to sex assigned at birth, was a man (93.8%) with 6.1% identifying as transgender, defined as a sexual identity of transgender or being born male but currently identify as a woman or not defining themselves as either male or female. **See Figure 2.2**.

2.3 Sexual attraction

Those who were 'exclusively attracted to men' (6.5%) or 'mostly attracted to men but sometimes women' (4.2%) constituted the smallest proportions of MSM and TG (10.7% combined). The largest share of MSM and TG reported being mostly attracted to women but sometimes men (52.3%) followed by only women (21.2%). Almost sixteen percent (15.8%) were equally attracted to men and women. **See Figure 2.3**.

I call myself or I regard myself as a gay man. Growing up [] I didn't know about myself in [] the early stage. I never had any abuses or anything like that. I was okay up until adolescence. That's when I had feelings for boys but then this feeling [was] so strong that I [sought] help. And then I also found out at [a] young age around 15 when I had my first [sexual] experience. So by the age of 17 I already came out publicly to my family and everyone. — Rocky, 25 years.

It was a very early thing so when I was a kid growing up; things about girls [] attracted me most than [] boys. I liked playing with dolls, cooking and playing with girls. Then the truth hits when I started [finding] boys more attractive than girls. So I started hanging out with girls a lot and I was sexually attracted to boys. I started to find boys attractive in primary school. With girls no, I haven't tried it yet. I've never been in a relationship with a girl and there are times when I kind of see girls as attractive, but not sexually. I've never been in a relationship with a girl and I'd never had sex with a girl, never! — Takai, 25 years.

I feel like I am gay so I have my feelings towards a man, now I wanted someone that, who could love me the same, respect me for who I am and I wanted to give the same thing back too as well so, I respect him and I would do anything for him. — Rocky, 25 years.

2.4 Living as a woman

Of those participants who were TG (6.8%), 29.8% had lived openly as a woman in the last six months (data not shown).

2.5 Familial acceptance

Most MSM and TG had not disclosed to their families their gender or sexual identities or sexual practices (83.2%). Of the 11.6% who had disclosed to their families, the majority were accepted by them. **See Figure 2.4**.

2.6 Use of hormones to change the body

Of the 352 MSM and TG in the study, 25 had a gender different from their birth gender. Of them, only one reported using hormones, but not with the supervision of a healthcare professional.

3. SEXUAL HISTORY AND MOST RECENT SEX

3.1 History of anal sex

Almost all MSM and TG in Lae (97.7%) had had anal sex with another man or TG. **See Figure 3.1.** Of those who had anal sex with a man or TG, almost all (98.3%) had done so in the last six months. **See Figure 3.2.** Of all MSM and

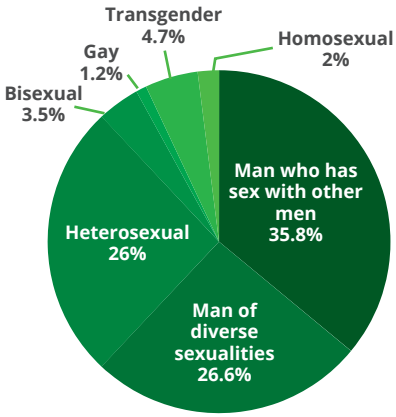

Figure 2.1: Sexual identity

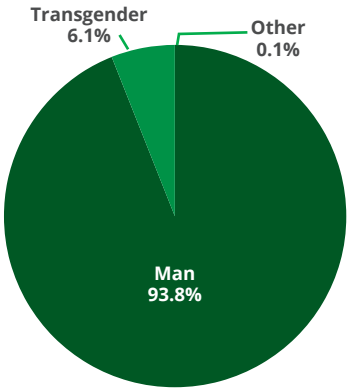

Figure 2.2: Gender identity

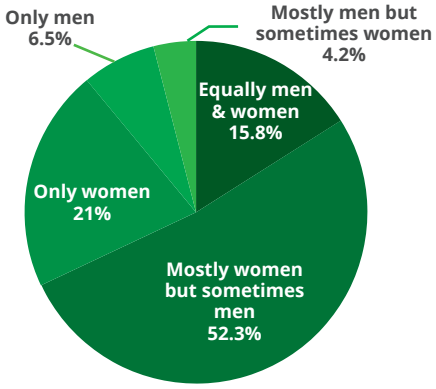

Figure 2.3: Sexual attraction

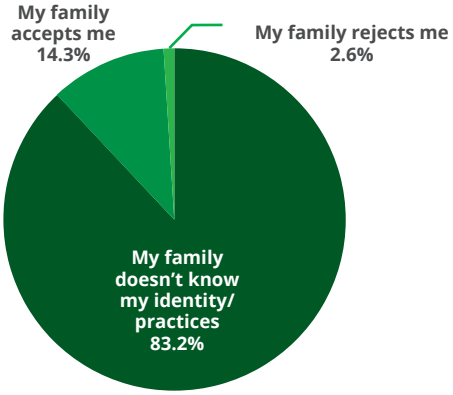

Figure 2.4: Family acceptance

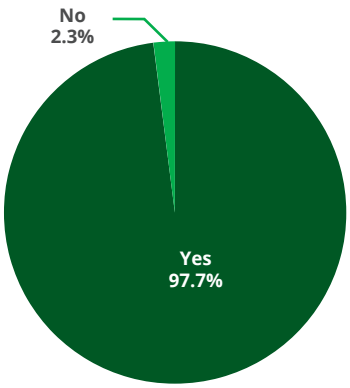

Figure 3.1: Ever had anal sex with a man or TG

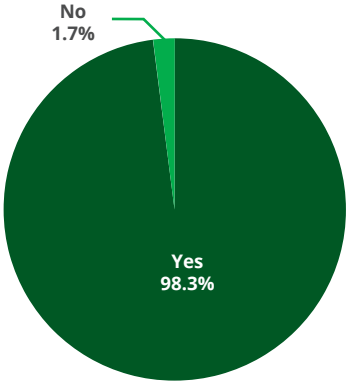

Figure 3.2: Had anal sex with a man or TG in the last six months

TG in Lae, 63.4% had had anal sex with a woman (not including transgender women). See Figure 3.3.

She is very experienced and she is going to pay. She will pay for it so whatever she needs, we would have to give it to her. It can be anal sex, oral or vaginal. We have oral sex, anal sex or the other way around but for anal, she is the receiver. We have all these kinds of sex during this time. — Bobby, 36 years.

3.2 Sexual debut

The median age for first anal sex with a man or TG was 20 years. Almost half of MSM and TG (48.2%) had anal sex the first time with a man or transgender woman between the ages of ten and 19 years. Another 29.4% did so at ages 20-24 years, with 22.3% doing so after the age of 25 years. **See Figure 3.4**. More than one-quarter (28.2%) of Lae MSM and TG received money, goods or services the first time they had anal sex with a man or TG. **See Figure 3.5**.

I started having penetrative sex when I was in high school. It's quite a long time ago [] and I started trying [it] out. I was actually attracted to boys so I tried out oral sex and then it proceeded to penetrated sex, anal sex. It started in high school when I was 17 or 18. — Takai, 25 years.

Most MSM and TG (78.8%) in Lae chose to have anal sex the first time they did so with a man or transgender woman. **See Figure 3.6**.

Of MSM and TG who first had anal sex because they were forced/coerced to, the means by which they were forced included being pressured (54.2%), paid (30.0%), and physically forced (7.4%). **See Figure 3.7**.

3.3 Number of lifetime male or transgender partners

Most MSM and TG in Lae had four or fewer male or TG sexual partners (60.7%) in their lifetime, with 25.0% having 5-9 partners and 14.3% having ten or more. **See Figure 3.8**.

I think I've had about five different relationships with different men. The current one and I attend the same school and then there are two white men and then there are two other boys as well. — Akowe, 20 years.

3.4 Meeting sexual partners

While most (75.8%) MSM and TG in Lae did not use the internet

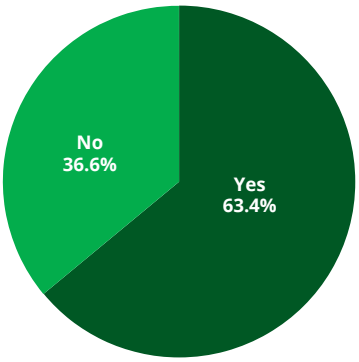

Figure 3.3: Had anal sex with a woman (not transgender)

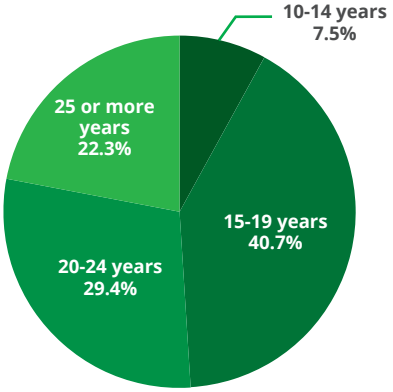

Figure 3.4: Age first had sex with a man or TG

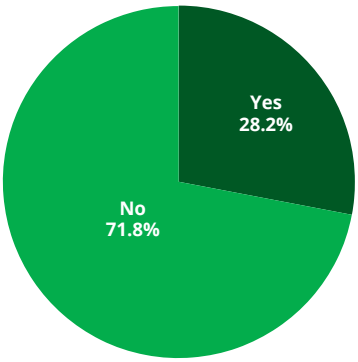

Figure 3.5: Received money, good or services the first time had sex with a man or TG

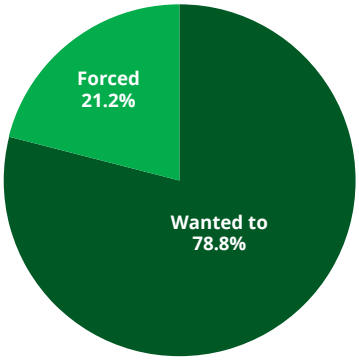

Figure 3.6: Reason for first having anal sex with a man or TG

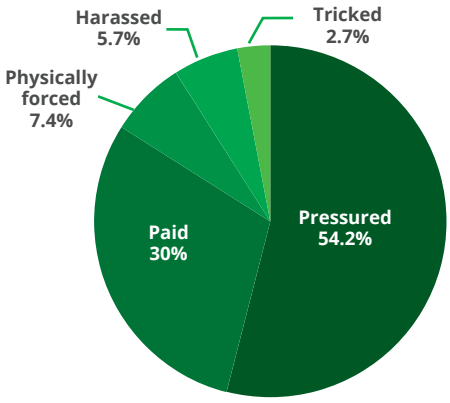

Figure 3.7: Means of being forced / coerced to have anal sex for the first time

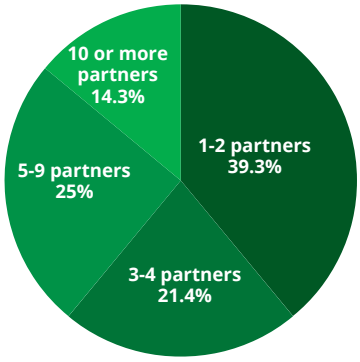

Figure 3.8: Number of lifetime partners

or mobile phone applications to meet sexual partners, almost one quarter (24.2%) did. **See Figure 3.9.**

3.5 Sex with female partners

Almost all MSM and TG (94.3%) have had sex with a female in their lifetime. Of them, 92.1% did so in the last six months. **See Figure 3.10**.

Among MSM and TG in Lae who had sex with a female in the last six months (92.1%), approximately three-quarters (71.6%) had only one main female partner during this period. **See Figure 3.11**.

So from these four partners, I think that I will make a selection of which one I would stay remain with. I did have a lot of sexual partners but I have left them and now I am left with four. So currently I have four female sexual partners. — Mukito, Age unknown.

These are street girls. Fucking their vaginas and after a while if I don't feel satisfied, I fuck their mouths. I have sex the same way, but I don't fuck their arses; I only fuck their mouths and vaginas. I usually like to fuck their arses but I get scared. They don't say anything. That is the usual route and so we would still go ahead and take it.— Yawa, 26 years.

3.6 Condom use

The most common reasons for not using a condom during anal sex were the lack of availability (66.0%) and being under the influence of alcohol or other drugs (65.2%), or when having sex with a main partner (50.7%). **See Figure 3.12**.

Condom is good when having sex. It protects the body from diseases around the place. Before having sex, condom has to be worn; that I understand but when the time comes for sex, I never use it. I have sex without it. I am already drunk or when I am drinking, the sexual feelings just overcome me that I don't bother using condom. I go ahead and have sex. — Ranu, 32 years.

I usually have sex with them. Sometimes I don't put on a condom. I see that thing right in front of me and when I want to look for condom, it's too late. That thing in front of me puts me under pressure and so I take would take out my penis and shove it in. I get the excitement feeling and then leave. — Yasa, 33 years.

I usually think that HIV does not pass during the process of sex. I use to think that some other diseases transmit when a man and women have sexual intercourse and not HIV. So I usually take advantage of my belief and I don't usually use condom. It doesn't really matter to me. — Kawas, 21 years.

The reason for not using condom regularly is when a man forces me. A man would usually force me. Sometimes I would see a man's cock and would picture that cock going inside my hole and I would feel it's sweetness; I don't like want to use condom so men cause me not to use condom. I want to feel the taste of cock. — Megusa, Age unknown.

Once in a while I use condom. When I use condom, it doesn't mean that they have diseases or that I am afraid of diseases, no. I don't want to get them pregnant and they also say that they are not at a stage of having children. I use condom when they say this and if they don't we go ahead and have sex without it. — Mukito, Age unknown.

It's like sometimes when there is condom in right before us, we take it; if there's none, then it there's nothing. That's when we do it without it. We don't think about the good or bad side of it. We simply go ahead. — Yawa, 26 years.

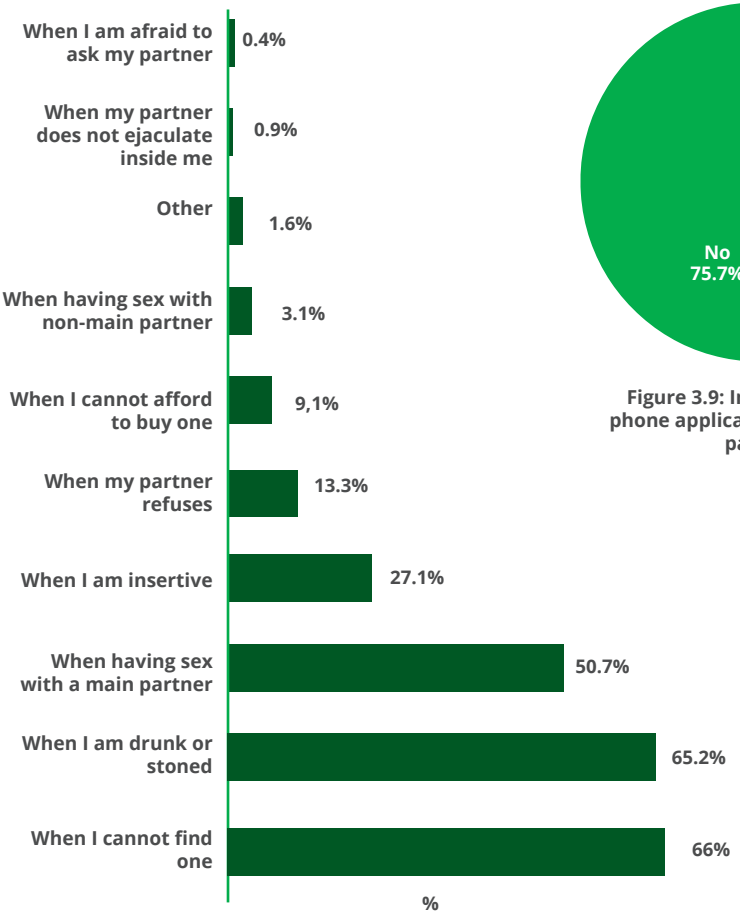

Figure 3.12: Reasons for not using a condom

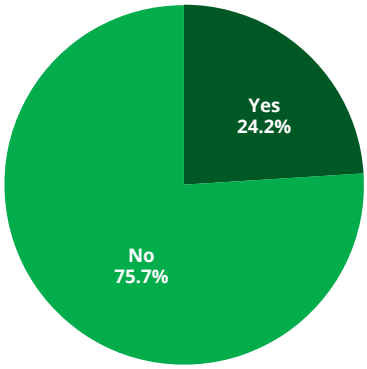

Figure 3.9: Internet or mobile phone applications used to meet partners

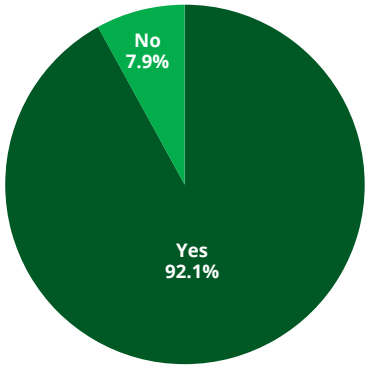

Figure 3.10: Sex with a female in the last six months

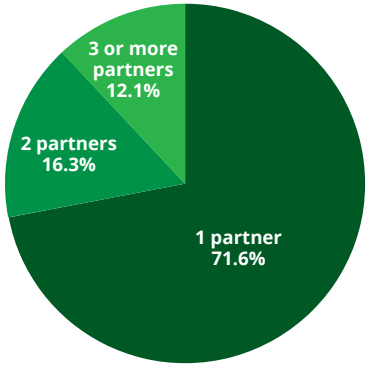

Figure 3.11: Number of main female partners in the last six months

4. MAIN NON-PAYING MALE AND TRANSGENDER PARTNER/S IN THE LAST SIX MONTHS

4.1 Number partners in the last six months

In Lae most MSM and TG did not have a main male or TG partner (80.0%) in the last six months, while 12.5% had one, and 7.5% had two or more. **See Figure 4.1**.

4.2 Sexual positioning

Among MSM and TG who had a main male or TG partner in the last six months, 66.5% were an insertive partner, 26.0% the receptive partner, and 7.5% both insertive and receptive. **See Figure 4.2**.

4.3 Condom use

Roughly one in three (35.5%) MSM and TG in Lae used a condom the last time that they had anal sex with a main male or TG partner. **See Figure 4.3**.

In the last six months, 16.8% of MSM and TG in Lae always used a condom with a main male or TG partner while 33.4% never used one. **See Figure 4.4**.

More than half of MSM and TG could ask a main male or TG partner to use a condom (57.5%), while 42.5% could not ask. **See Figure 4.5**.

I use condoms very regularly all the time. I have a regular boy who I have an intimate relationship with. If I'm away [or] I've been away from Lae, I just came back just this month. So seven months I think from Lae and like when I am back I usually ask them if you've gone to check up. I ask them and or usually I drag them along for a VCT check up and then we can, is to find out their results and then we have sex like unprotected sex. Or I go to the extent of producing the results and then we have unprotected sex but like if I am back now and they want to have [sex] then we have to use a condom. But with one night stands and strangers or people whom I just met if they want to have sex, I say, okay we have to use condom so I'd say I practice a lot safe sex. — Takai, 25 years.

5. CASUAL NON-PAYING MALE AND TG PARTNER/S

5.1 Number of partners

While 33.1% reported no casual partners in the last six months, 37.8% reported two or more casual male or TG partners. The median number of casual partners for MSM and TG in Lae in the last six months was one. **See Figure 5.1**.

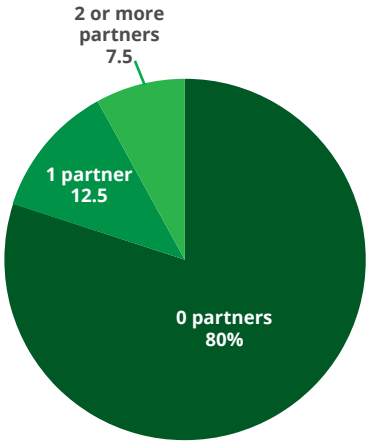

Figure 4.1: Number of main male or TG partners in the last six months

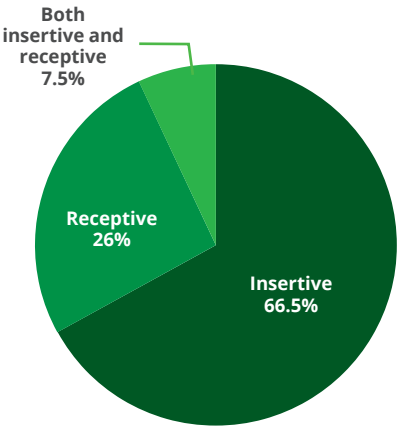

Figure 4.2: Usual sexual position when having anal sex with a main male or TG partner in the last six months

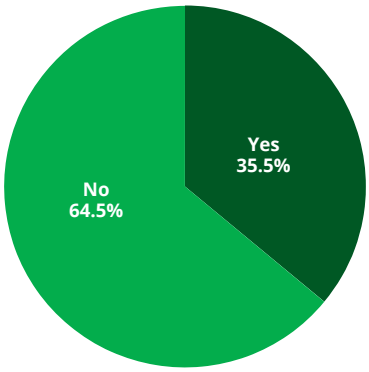

Figure 4.3: Condom use last time had anal sex with a main male or TG partner

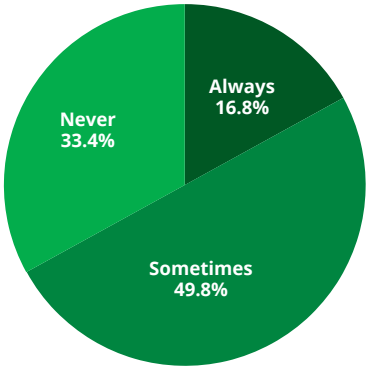

Figure 4.4: Frequency of condom use with a main male or TG partner in the last six months

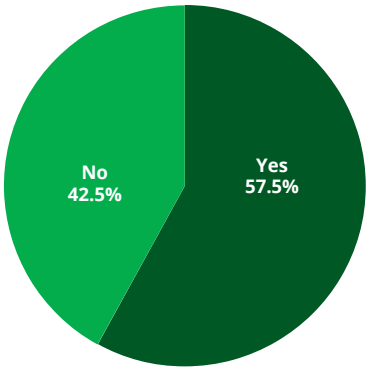

Figure 4.5: Could ask a main male or TG partner to use a condom

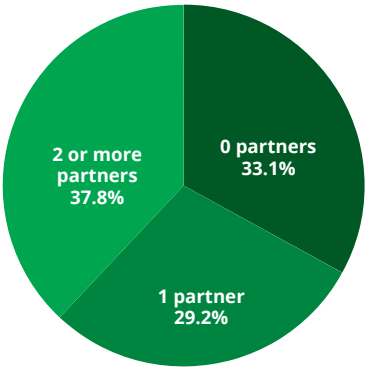

Figure 5.1: Number of casual male of TG partners in the last six months

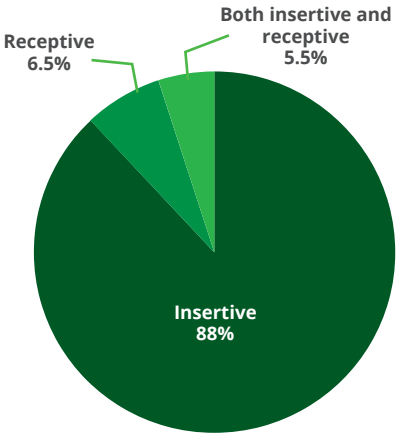

Figure 5.2: Usual sexual positioning with casual male or TG partners

Figure 5.3: Condom use with casual partners in the last six months

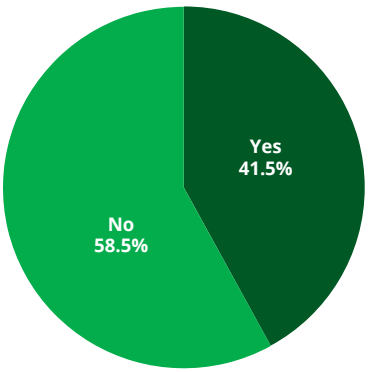

Figure 5.4: Condom use during last anal sex with a casual male or TG partner

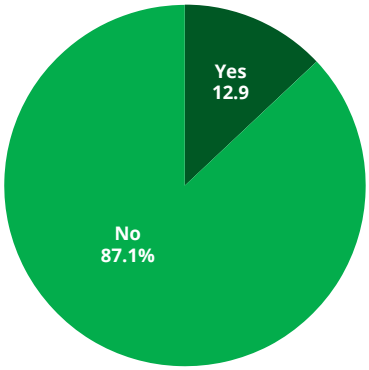

Figure 6.1: Paid another man or TG for sex in the last six months

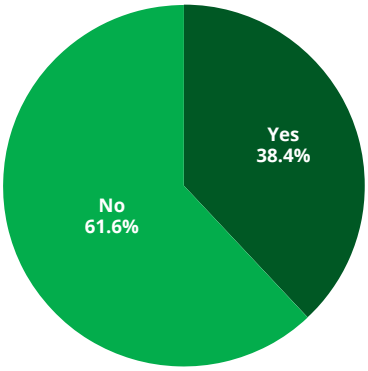

Figure 6.2: Ever sold or exchanged sex

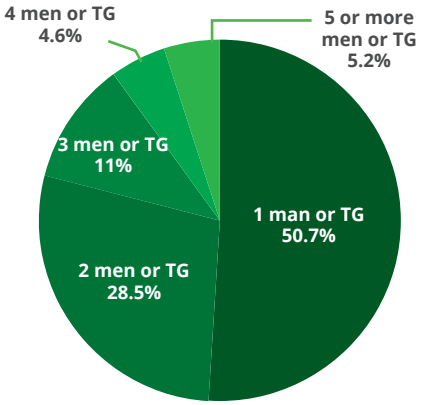

Figure 6.3: Number of clients

5.2 Sexual positioning

WWith casual male and TG partners, most MSM and TG were insertive (88.0%) with fewer being receptive (6.5%), or both insertive and receptive (5.5%). **See Figure 5.2**.

> I *identify myself as gay man but versatile. Like I cannot have relations with a woman but men only. I don't act as and behave as a wife but be both. I can be both male and female at the same time. Dress normal and live like a male and female at the same time but when it comes to my sexuality, I categorize myself under this meaning I can be both Insertive and receptive, I play both roles. — Kawas, 21 years.*

5.3 Condom use

Most MSM and TG did not use condoms with all of their casual partners in the last six months (75.4%), while 24.6% did so with all of them. **See Figure 5.3**.

> *Casual partners are, I would say, it's a one-night stand people that I just meet. Normally I meet them in the club, I don't need to know whatever these, where they belong, I don't need their contact what so ever but just one-night stand. Being a HIV positive person and because I normally get regular check-ups and knowing that an HIV person is more vulnerable to STIs so you can also spoil. So the use of condom is very consistent with me. I always use condom with casual partners. — Rocky, 25 years.*

Most MSM and TG (58.5%) in Lae did not use a condom the last time they had anal sex with a casual male or TG partner, while 41.5% did. **See Figure 5.4**.

6. BUYING, SELLING OR EXCHANGING SEX

6.1 Buying sex

In the last six months, 12.9% of MSM and TG in Lae paid another male or TG woman for sex. **See Figure 6.1.**

Of the 42 MSM or TG who paid another MSM or TG for sex only 17 used a condom on the last occasion (data not shown). Similar proportions bought sex from the same person (n=19) as from a different person (n=23) each time (data not shown).

6.2 Selling or exchanging sex

More than 1 in 3 (38.4%) MSM and TG in Lae received money, goods or services for sex in the last six months. **See Figure 6.2**.

Of those who sold or exchanged sex to other men or TG, about half (50.7%) did so with only one person in the last six months. **See Figure 6.3**.

> *I've come across a man who is almost 30 years older than me and he works at one of the government offices. He usually books a hotel room and we would go there and have sex and the he would give me money after afterwards. He tells me to buy whatever I need with the money. The other also pays me in Australia Dollars but I'm not too sure about him. He bought me a laptop and just recently he got me a big CD player. He likes my family and so he would buy gold rings or silver necklaces and sends them so he must have wasted over a thousand already. The other one who is in Moresby sends me T-shirts from his travel overseas and even sends me K100 or K200 through the post office. When he comes here, he would call me to wherever hotel he is in and I would go see him. He pays for my fares back home and give me around K200 or K250 spending money. — Kawas, 21 years.*

6.3 Sexual positioning with clients

Very few MSM and TG in Lae who sold sex were both receptive and insertive (8.8%), or receptive only (9.5%) with their clients, with most being insertive only (81.7%). **See Figure 6.4**.

The sex I have with him is me giving him my "cock to suck and he would suck on it." Then I realize that he is not a woman but man. So the only way is to have oral and then I would pay him. I did try taking his rear [anal]. I inserted my penis in his anus but I felt that it was not alright. It didn't 'match' and was like a woman so I told him to suck my penis only and then we went outside after we were done. — Ranu, 32 years.

6.4 Condom use with clients

Nearly three in four Lae MSM and TG (73.2%) who sold or exchanged sex did not use condoms with all of their male or transgender clients. **See Figure 6.5**.

There is always a consistence of condom use. I always use condom every time with anyone apart from my partner. Most of the times, I normally brought my own condoms but there are times that I ask them if they do have condoms. There are times that I try to negotiate or I try to know what they know about condom use. — Rocky, 25 years.

6.5 Contacting clients

The most common way to find clients was in public areas such as streets and parks (73.9%). Other common methods included bars and clubs (47.3%), through friends (23.5%), lodges and guest houses (16.9%) and phones (16.5%). **See Figure 6.6**.

I normally meet them on social networks like dating sites, face book and what do you call it; 'what's up blog and peer dating sites. [] Normally I just chat, I tell them what I want, like who I am but most of the times they ask. I don't like to let other people know about me wanting sex for money, so I like to like feel like being wanted than, like they needed [me]. — Rocky, 25 years.

They usually meet us at the motels. They call us by phone and we go meet them. You give them your number and that's, we've already established a relationship. Sometimes we meet them when we go shopping and they get our contacts and we think that that's it's nothing but then they would call us and from there we figure it out that they are these kinds of people. — Bobby, 36 years.

7. SOCIAL SUPPORT, MENTAL HEALTH AND STIGMA AND DISCRIMINATION

7.1 Social support

Slightly more MSM and TG could rely on another man who has sex with men or TG woman for peer support to help them deal with a difficult or violent situation with a partner than they could rely on one to accompany them to see a doctor (65.2% versus 58.6% respectively). In the last 12 months, 12.9% of MSM and TG supported a peer by negotiating with or standing up against the police. **See Figure 7.1**.

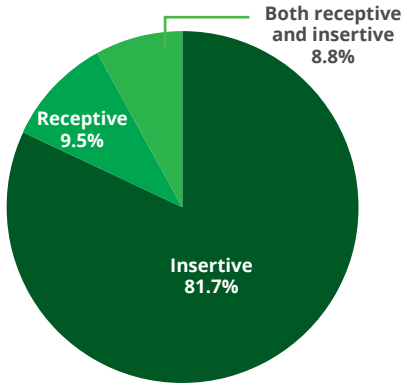

Figure 6.4: Usual sexual position with clients

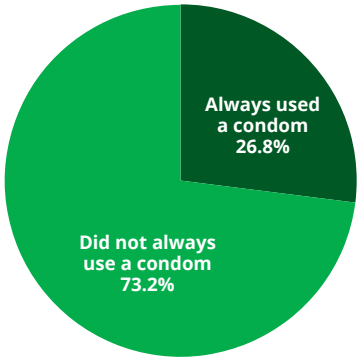

Figure 6.5: Condom use with male or transgender clients

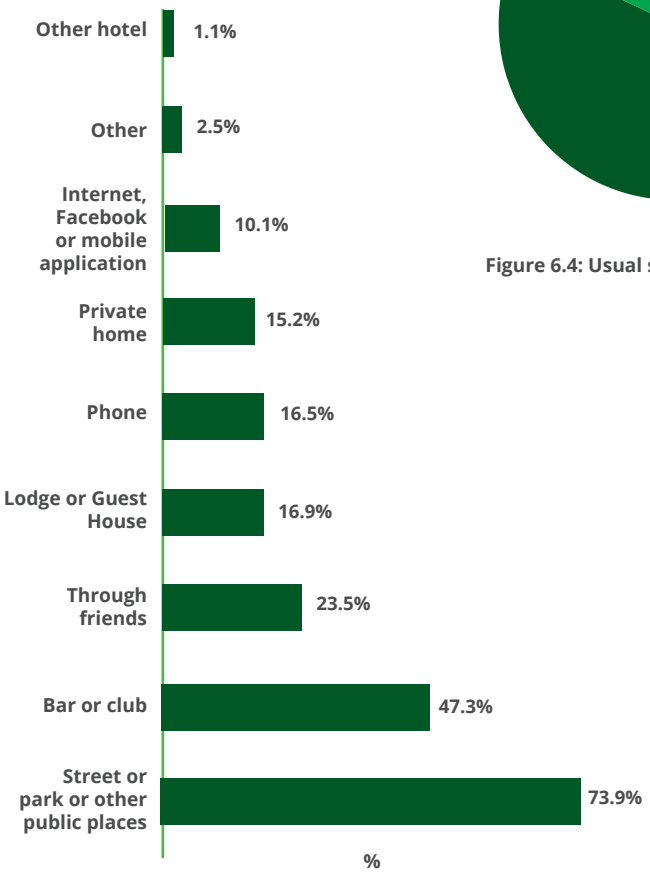

Figure 6.6: Number of clients

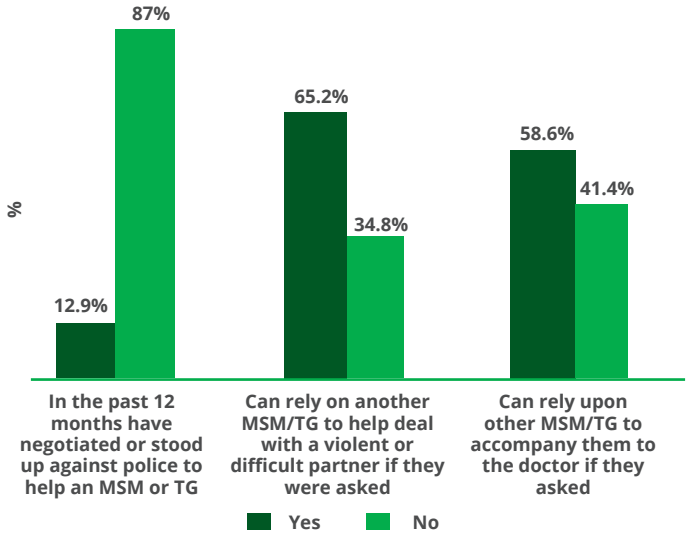

Figure 7.1: Social support

7.2 Depression and shame

BBased on the two-item Patient Health Questionnaire-2 screening tool for depression, more than half had depression (54.4%). See Figure 7.2. While 70.2% of MSM and TG in Lae did not feel ashamed of themselves based on their sexual practices or gender identity, 29.8% did. **See Figure 7.3**.

7.3 Stigma and discrimination

Although only1.0% of MSM and TG in Lae who access sexual health services have been denied health care because of their sexual practices or gender identity (data not shown), nearly half (44.9%) felt the need to hide their sexual practices or gender identity when accessing services. **See Figure 7.4**.

Very few MSM or TG in Lae had been terminated from a job because of their sexual practices or gender identity (1.1%) (data not shown). However, 8.7% had experienced some form of blackmail because of their sexual practices or gender identity. **See Figure 7.5**.

Almost no MSM or TG had been arrested because of their sexual practices or gender identity (99.4%), but 4.7% had given something to the police in order to avoid trouble in the last 12 months. **See Figure 7.6.**

7.4 Drug use

Only 1.8% of MSM and TG in Lae have ever smoked, inhaled, or snorted marijuana, crystal meth, cocaine, crack, ecstasy, heroin, or opium (data not shown). Only 0.4% had ever injected drugs (data not shown).

8. VIOLENCE

8.1 Physical violence

Approximately three in four MSM and TG had ever experienced physical violence (75.8%). A small proportion (3.5%) of those who had experienced physical violence believed that the violence was directly related to their sexual behaviours or gender identity. **See Figure 8.1**.

Of those who had ever experienced physical violence, 28.5% experienced physical violence in the past 12 months. Of them, 6.4% believed it was related to their sexual practices or gender identity. **See Figure 8.1**.

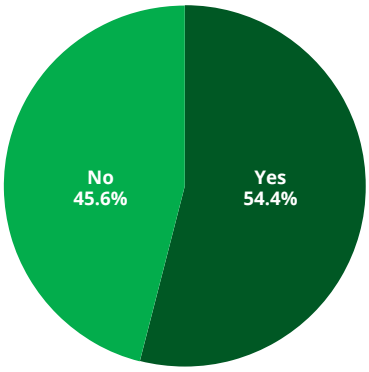

Figure 7.2: Depression

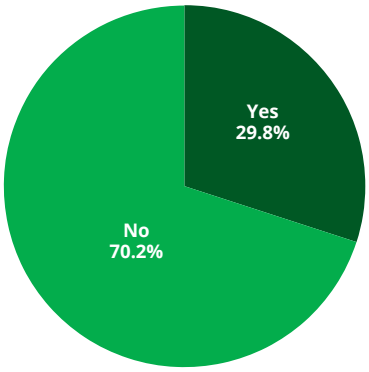

Figure 7.3: Feel ashamed of sexual practices or gender identity

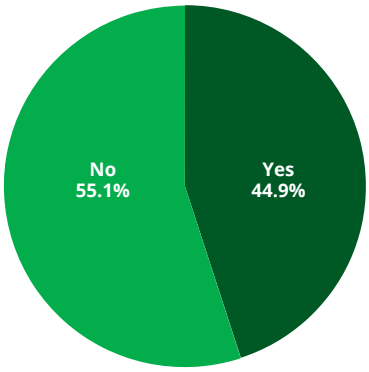

Figure 7.4: Felt the need to hide sexual practices or gender identity when accessing sexual health services

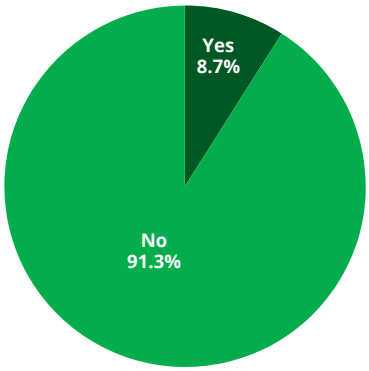

Figure 7.5: Blackmailed because of sexual practices or gender identity

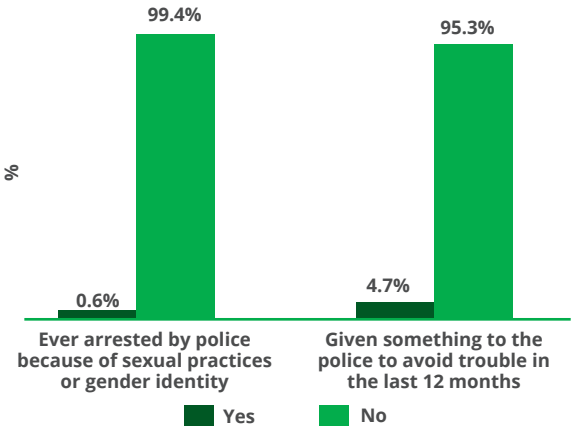

Figure 7.6: Experience with the police

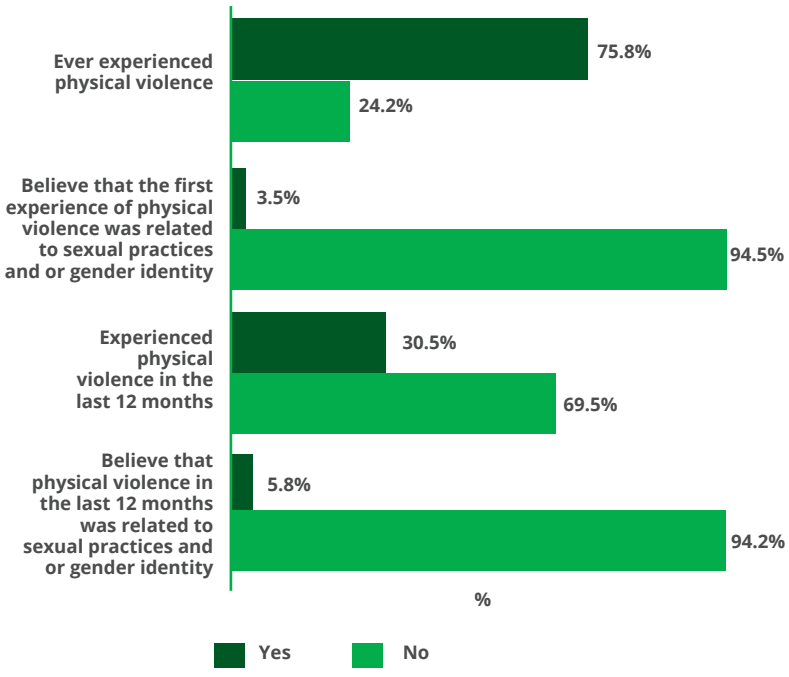

Figure 8.1: Experience of violence

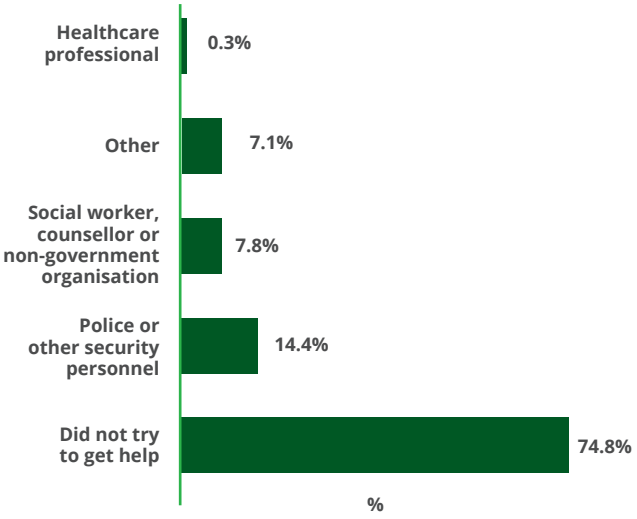

Figure 8.2: Access to support services after physical violence * Multiple responses possible

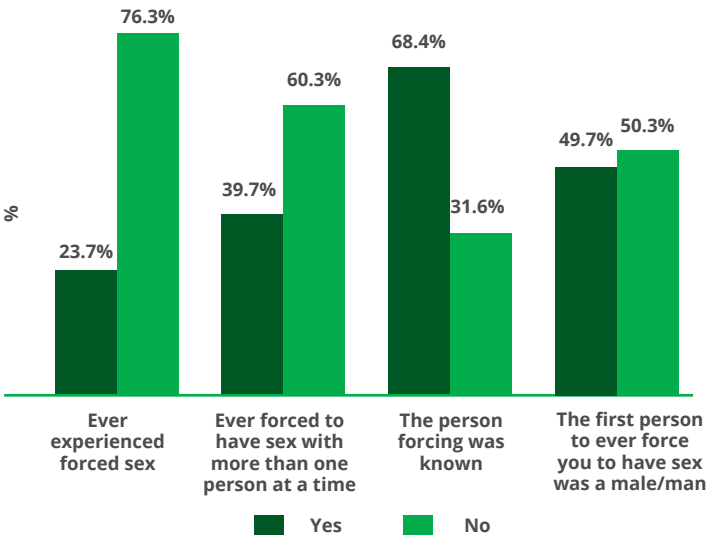

Figure 8.3: History of sexual violence

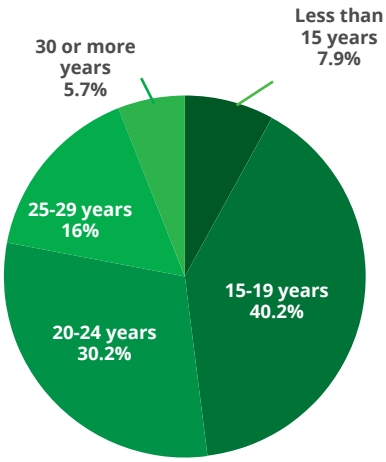

Figure 8.4: Age of first sexual violence

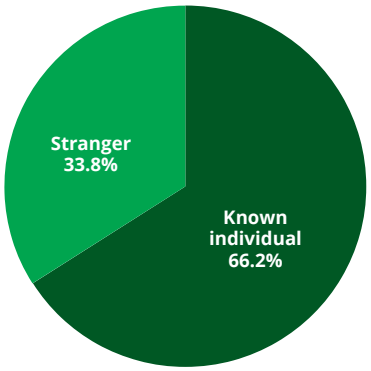

Figure 8.5: Identity of last perpetrator

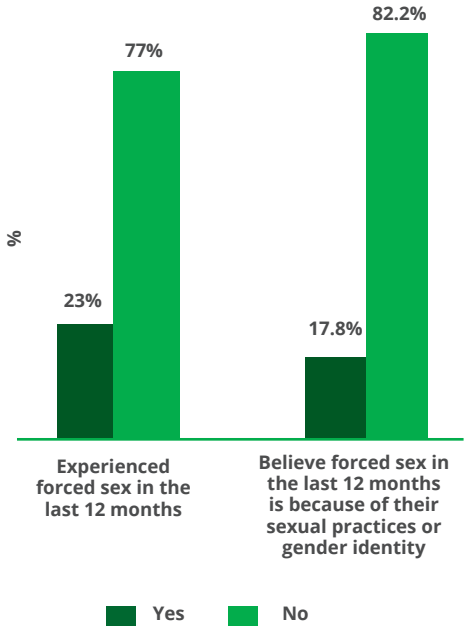

Figure 8.6: Sexual violence in the last 12 months

Among those who experienced physical violence in the last 12 months, 73.2% did not seek support after the incident. Of those who did seek support, 15.0% did so from a social worker, counsellor or non-government organisation. Fewer sought the professional support of police or security services (7.9%) or healthcare professionals (0.3%). **See Figure 8.2**.

8.2 Sexual violence

Nearly one in four (23.7%) MSM and TG in Lae had ever been forced to have sex. Of these, 39.7% were forced to have sex with more than one perpetrator at the same time. Of those who have been forced to have sex, the perpetrator was known in most cases (68.4%). Women (50.3%) were the most common perpetrator of sexual violence the first time it occurred. See Figure 8.3.

Most experienced sexual violence for the first time between the ages of 15 and 24 years (70.4%), with 7.9% experiencing it before the age of 15 years. **See Figure 8.4**.

8.3 Last experience of sexual violence

During the last experience of forced sex, the perpetrator was known 66.2% of the time. **See Figure 8.5**.

8.4 Sexual violence in the last 12 months

Of the MSM and TG in Lae who had ever experienced sexual violence, 23.0% experienced it in the last 12 months. Of these MSM and TG, 17.8% believed that they were sexually assaulted because of their gender identity/sexual practices. **See Figure 8.6**.

8.5 Forced sex by a sexual partner in the last 12 months

Slightly more than one in ten (11.8%) MSM and TG in Lae who

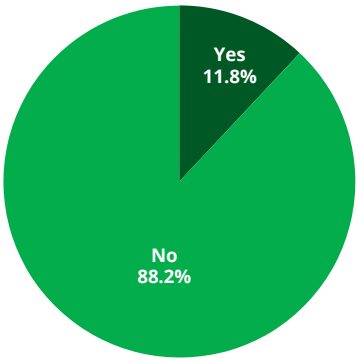

Figure 8.7: Sexual violence from partner in the last 12 months

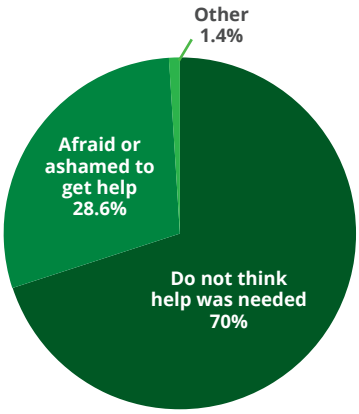

Figure 8.9: Reason for not seeking support after any experience of sexual violence

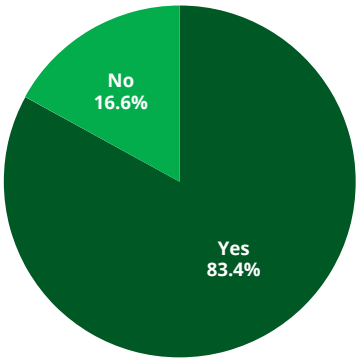

Figure 9.1: Have cut foreskin

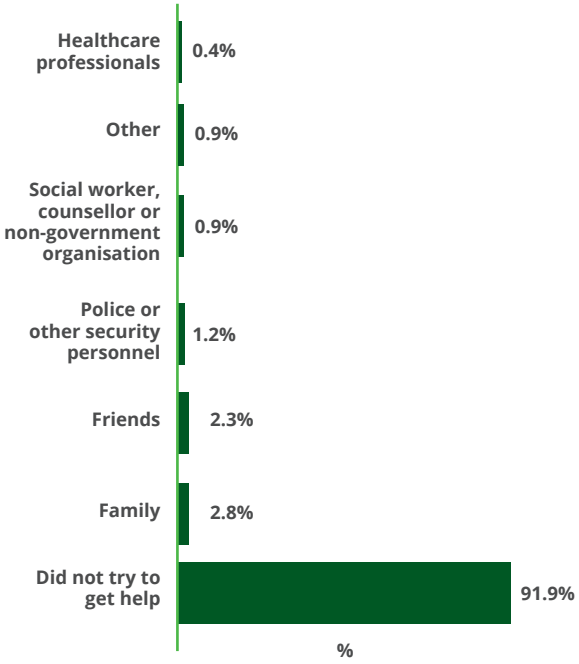

Figure 8.8: Services sought after any experience of sexual violence

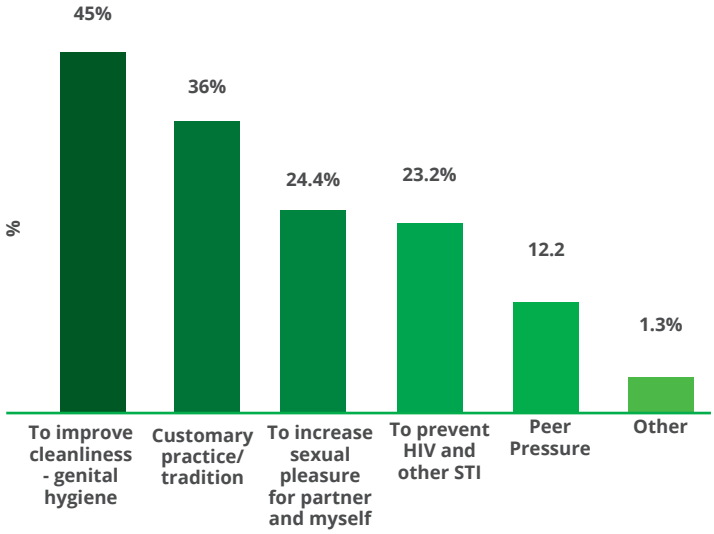

Figure 9.2: Reasons for cutting foreskin

were forced to have sex in the last 12 months were forced to have sex by a live-in sexual partner. **See Figure 8.7**.

8.6 Accessing support

Almost all MSM and TG (91.1%) did not seek support after an experience of sexual violence. **See Figure 8.8**. Among those who did not seek support,70.0% thought they did not need it and 28.6% were afraid or ashamed to do so. **See Figure 8.9**.

9. PENILE MODIFICATION

Penile modification was common among MSM and TG in Lae, with 83.4% having cut the foreskin of their penis. **See Figure 9.1**. The most common reasons MSM and TG had their foreskin cut was to improve cleanliness and genital hygiene (45.7%). They also did it as part of custom/tradition (36.6%) and prevent HIV or other STIs (23.6%). **See Figure 9.2**.

I told him that my penis is always dry. Then he said that he usually prefers giving oral to such penises for they are clean, nice and healthy. He said to me that penis with foreskin still intact usually contains germs. — Solo, Age unknown.

Some (12.4%) MSM and TG had inserted something into their penis and 19.2% had injected substances into their penis. **See Figure 9.3**.

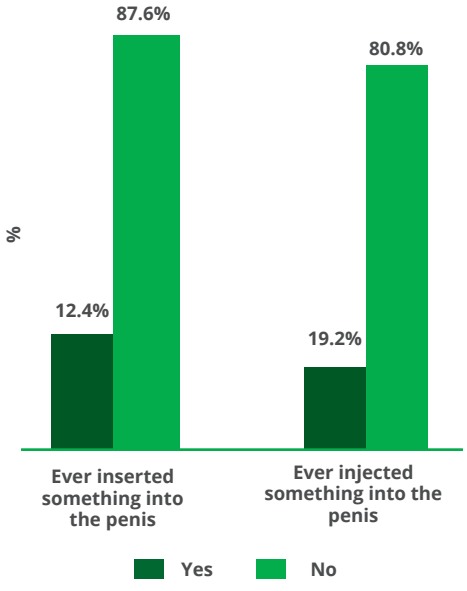

Figure 9.3: Penile inserts and penile injection

10. KNOWLEDGE OF HIV AND ACCESS TO OUTREACH AND HIV PREVENTION SERVICES, INCLUDING PROPHYLACTIC TREATMENT

10.1. Knowledge of HIV

HIV knowledge (**See Figure 10.1**) was greatest amongst MSM and TG for knowing that::

- A person can reduce the risk of getting HIV by having sex with only one uninfected partner who has no other partners (96.6% had correctly answered)
- A person can reduce the risk of getting HIV by using a condom every time you have sex (94.3% had correctly answered)
- A healthy-looking person can have HIV (90.7% had correctly answered)

HIV knowledge (**See Figure 10.1**) was poorest for knowing that:

- If a condom is not used, receptive anal sex puts a person at greatest risk for getting HIV (13.4% had correctly answered)
- If a condom is not used, anal sex puts a person at greatest risk for getting HIV (14.2% had correctly answered)
- There is effective treatment for HIV (27.4% had correctly answered)
- You can get HIV from mosquito bites (56.8% had correctly answered)

I know that HIV is not curable. Now it is pandemic [and] is on the rise and mostly for people, vulnerable people like us, the homosexuals and the female sex workers are most at risk to contract HIV virus. That's why we are trying to tell more people and disseminate information about health and well-being [of] the people. — Rocky, 25 years.

In my understanding, to contract this disease, a man has to have sex with not only one person but goes on to have sex with another woman who also has sex with another man. So during this time, a certain kind of disease develops when I a man or a woman do not wash and clean themselves. So when you have sex with that person, maybe AIDS develops from this practice. — Ranu, 32 years.

STI and HIV is like when I'm having sex, when I'm not using condom, I will be infected and if I use the condom I will not be infected. In any kind of way, on the mouth or deep kissing; [] even the needle, razor blade [], I will be infected. I must keep myself away from those open cuts and like using the razor the other TGs are using or like having sex unprotected sex I would say, not using condom. — Negiso, 30 years.

10.2. Peer outreach

Approximately one-quarter (25.9%) of MSM and TG had never been reached by an HIV peer outreach worker. Contact with an HIV peer outreach worker was low in the past month (10.7%) and in the last three months (24.2%). **See Figure 10.2**.

Among those who were ever reached by an HIV peer outreach worker, condoms (74.6%), pamphlets and brochures (68.4%) and lubricant (29.8%) were the most common items received at the last contact with an outreach worker. **See Figure 10.3**.

Most peer outreach workers belonged to non-government

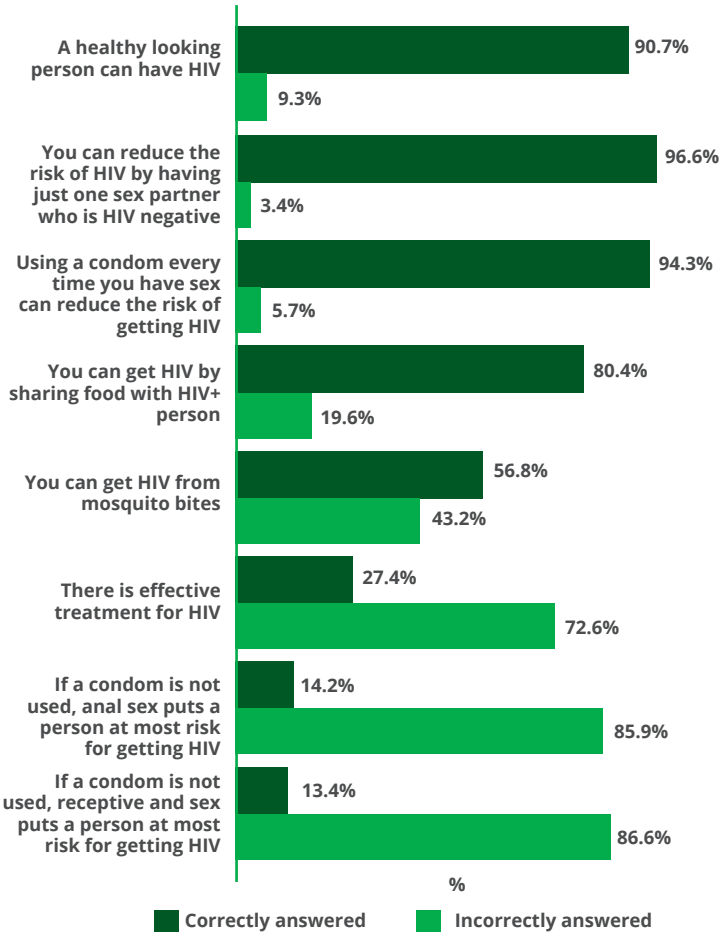

Figure 10.1: HIV knowledge

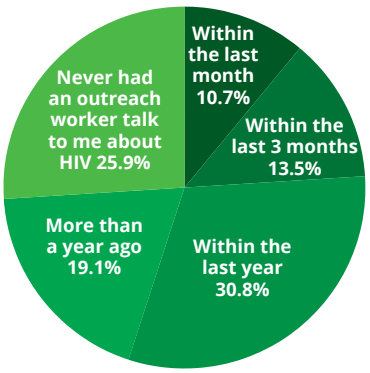

Figure 10.2: Last contact with peer outreach worker

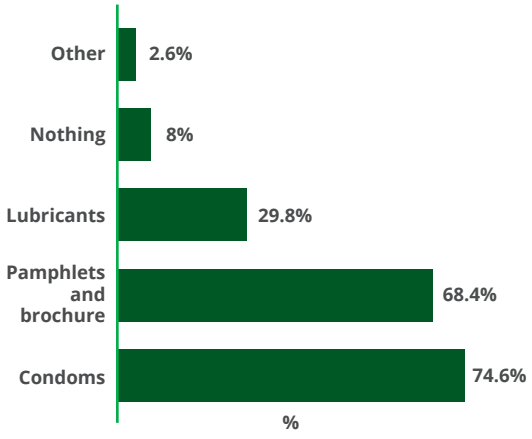

Figure 10.3: Products received at last peer outreach contact
*Multiple responses possible

organisations (57.8%). **See Figure 10.4**.

10.3. Free condoms

About half (51.1%) of MSM and TG received information on condom use and safer sex in the last 12 months. **See Figure 10.5**. Almost the same proportion (48.1%) received free condoms. **See Figure 10.6.**

10.4. Free lubricant and lubricant use

About one-third (64.4%) of MSM and TG used lubricants during anal sex in the last six months. **See Figure 10.7**.

Approximately two-thirds (30.6%) of MSM and TG in Lae were provided free lubricant in the last 12 months. **See Figure 10.8.** Of MSM and TG who had used a lubricant in the last six months, most (75.6%) used water-based lubricants such as KY Jelly as recommended. Half (51.1%) used saliva (51.1%) and a small proportion (10.2%) used shea butter, baby oil, or other body lotions (10.2%). **See Figure 10.9**.

They are friendly there and all of the gay community goes there. It's quite secluded so you won't get harassed if you are go there. So I get most of the service [there], I go there for blood work, and for condom distribution, lubricants and stuff like that I get it from Save The Children. Like I present myself as a gay person so they know that I am gay. Most of the staff out there are really friendly towards gay people. So they don't mind you can go and talk and make fun and they'll just look at you and laugh and they might even join in the conversation. — Takai, 25 years.

10.5. Sources of influence

After HIV awareness materials (32.4%), friends (22.8%) and family (22.1%) provided the greatest sources of influence to MSM and TG in Lae to protect themselves and others from HIV. **See Figure 10.10**.

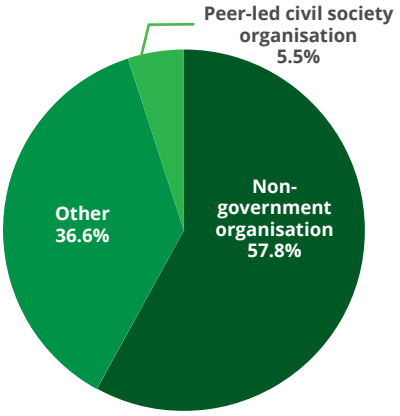

Figure 10.4: Organisation from where peer outreach worker comes from

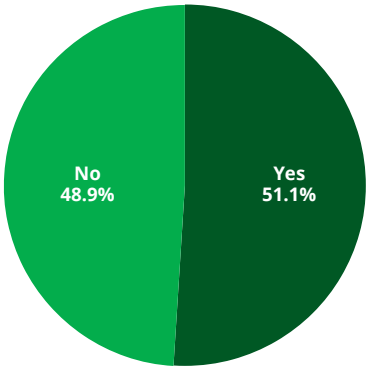

Figure 10.5: In the last 12 months received information on condom use and safer sex

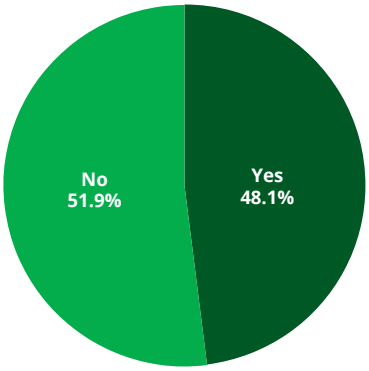

Figure 10.6: In the last 12 months been given condoms for free

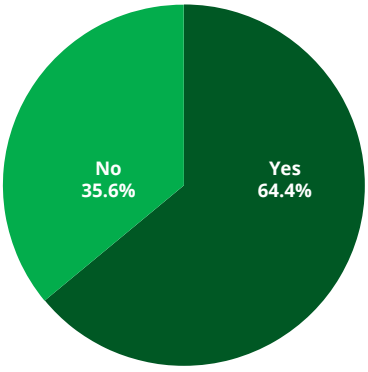

Figure 10.7: Used lubricant in the last six months for anal sex

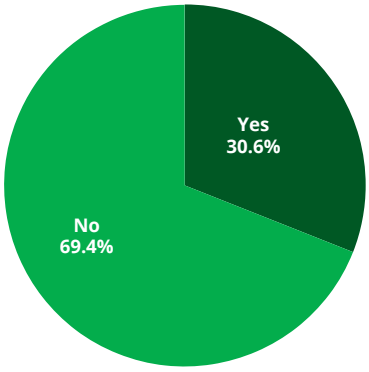

Figure 10.8: Given free packets of lubricant in the last 12 months

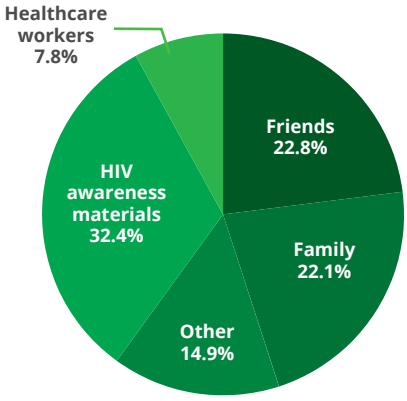

Figure 10.10: Sources of influence to protect self and others from HIV

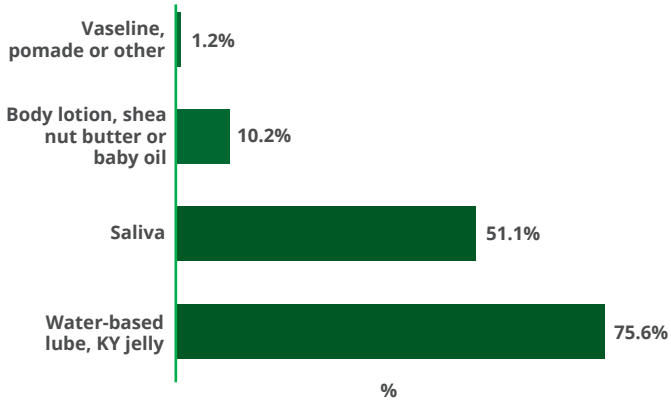

Figure 10.9: Types of lubricant used
*Multiple responses possible

When I was in my late teens, my parents [taught me] how to use a condom because they are well educated. They [told] me that you were grown up now so you need to have your sex education so my dad [was] teaching me males' side and my mum on the female side on how to react and do all these other things. It was a way back at home when I was young. First discipline was at home and then I bred from home and went out so it was not a problem to me when I joined those NGOs and those things. I knew from home [] first and then I went out. — Negiso, 30 years.

Most MSM and TG (61.8%) in Lae believed that HIV messaging was relevant to them. **See Figure 11.11**. Among the 38.2% who felt HIV messaging did not relate to them, 78.6% felt the messages were not relevant because they were not about anal sex and 19.7% said that they were not about MSM and TG. **See Figure 10.12**.

10.6. Post-Exposure and Pre-Exposure Prophylaxis

Knowledge of pre-exposure prophylaxis (PrEP) (10.1%) was slightly less than that for post-exposure prophylaxis (PEP) (12.7% - data not shown). Theoretical acceptability of PrEP was high (86.1%). **See Figure 10.13**.

Of the 49 MSM and TG who knew of PEP, only six had ever taken it to prevent infection (data not shown).

11. SEXUALLY TRANSMITTED INFECTIONS

11.1. Self-reported STI symptoms and health seeking behaviours

MSM and TG in Lae experienced high rates of STI symptoms in the last 12 months. The most common STI symptoms experienced by MSM and TG in the last 12 months were having pain on urination (36.1%) and abnormal discharge from the penis (23.3%), an ulcer or sore near the penis (9.2%), or near the anus (5.1%). **See Figure 11.1**. Of men and transgender women with these symptoms, most did not see a health care worker (62.3%) (data not shown).

11.2. Prevalence of STI

MMore than 2 out of every 5 (47.3%) MSM and TG in Lae had one or more sexually transmitted infections (STIs), excluding HIV. **See Figure 11.2**.

Hepatitis B virus was the most common STI (13.8%) followed by genital chlamydia (14.5%). Genital infections are higher in MSM and TG than anorectal infections. While 21.1% had ever been

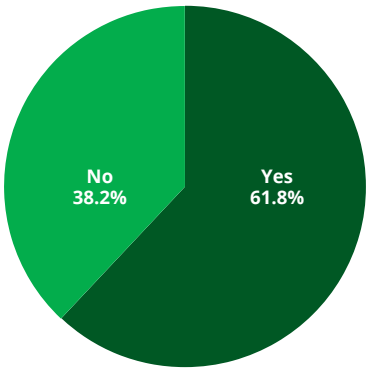

Figure 10.11: Relevance of HIV messaging to MSM and transgender

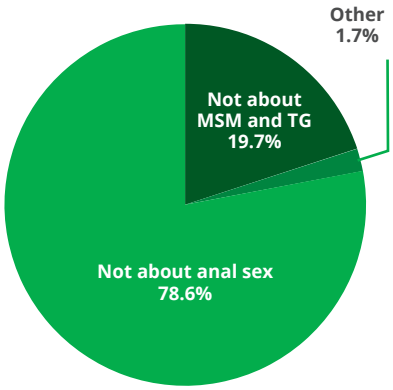

Figure 10.12: Reasons why HIV messaging does not apply to men who have sex with men and transgenders

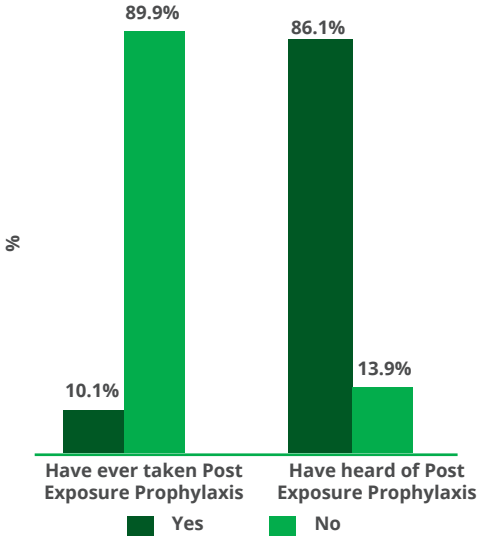

Figure 10.13: Post-Exposure Prophylaxis - knowledge and uptake

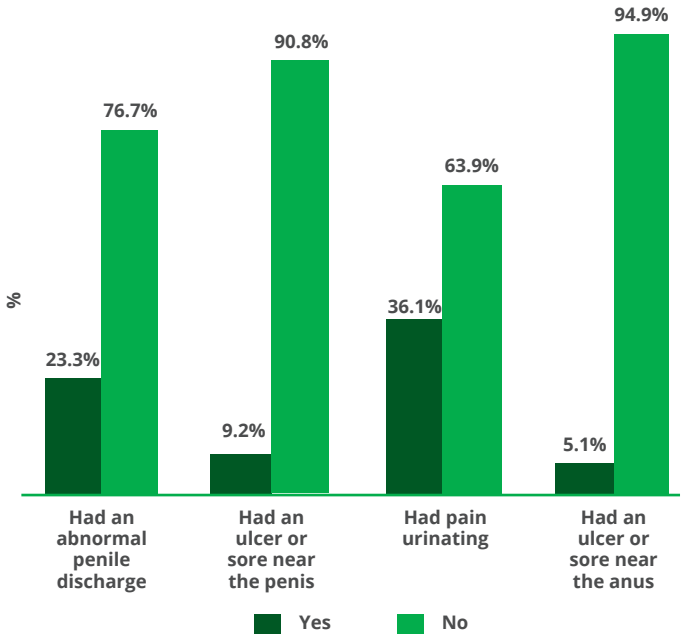

Figure 11.1: Symptoms of STIs in the past 12 months

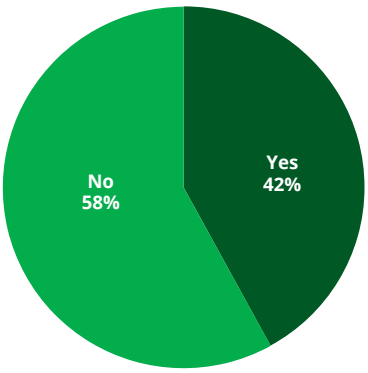

Figure 11.2: Proportion of MSM and TG with one or more STIS

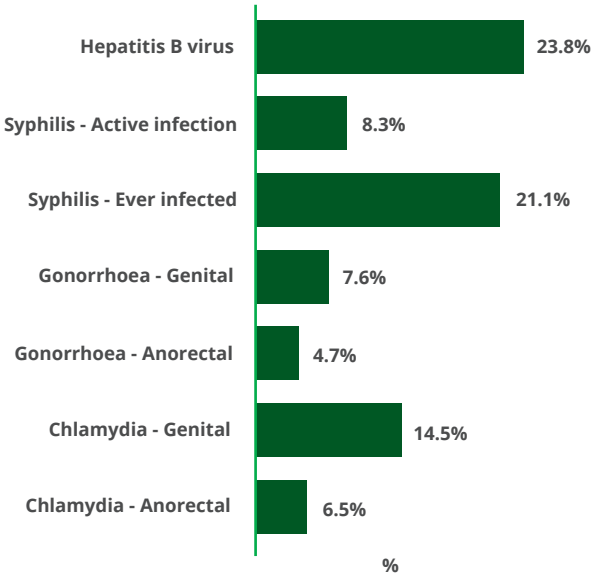

Figure 11.3: STI test results

infected with syphilis, 8.3% had active syphilis. **See Figure 11.3**.

12. HIV TESTING, CARE AND TREATMENT

12.1. HIV testing prior to *Kauntim mi tu*

The majority (67.9%) of MSM and TG in Lae had never tested for HIV. **See Figure 12.1**. Of those who had tested for HIV (32.1%), 45.2% disclosed that they have sex with other men or identify as transgender during their last HIV test and 13.9% tested with a sexual partner. **See Figure 12.1**.

> *I was scared and I have never done it. My brother who brought me here persuaded me to come so I came. I have never done any testing. I thought that I was infected already and I did so many things and this scared me and I never go to the hospital. — Nori, 36 years.*

Of those who had never tested for HIV, reasons for not testing included feeling not at risk of HIV (28.9%), and no time to get tested (19.3%). **See Figure 12.2**.

> *I was afraid to know my result and it took me quite a while to test again. I was waiting to see if I would fall sick or not. I had such thoughts even though I was a volunteer, I had these fears. All kinds of thoughts were filling my head. — Megusa, Age unknown.*

> *People usually come and talk about it but I have never been interested in taking in taking the test. I lived a care free life. — Yawa, 26 years.*

Of those who had tested for HIV, 37.4% had done so in the last six months, 21.2% between six and 12 months ago, and 41.4% last tested more than 12 months ago. **See Figure 12.3**.

Of MSM and TG who had tested, most (64.1%) received HIV testing in sexual health clinics, including stand-alone HIV testing facilities. About one in five tested in other clinics, hospital or with a private doctor (22.3%). Some (9.2%) tested through outreach or a mobile clinic. **See Figure 12.4**.

Excluding those who knew that they were HIV positive and had tested for HIV more than 12 months ago, the most common reason for not testing in the last 12 months was largely that people said that they did not have time (n=23), they felt fine (n=4) and other, including stigma and feeling fine (n=10). (Data not

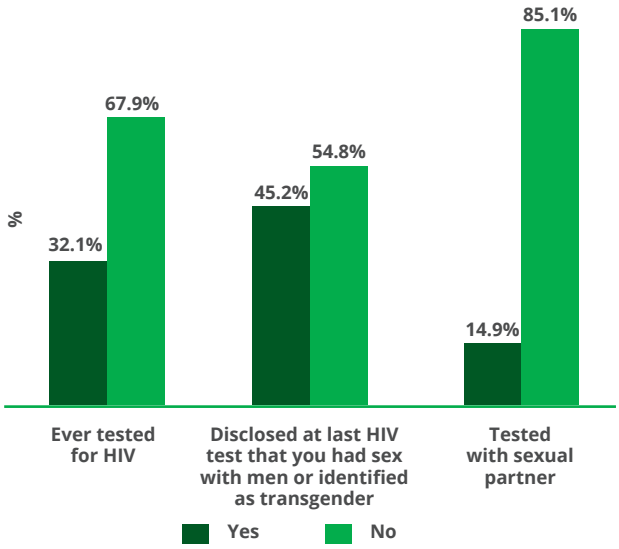

Figure 12.1: HIV testing history

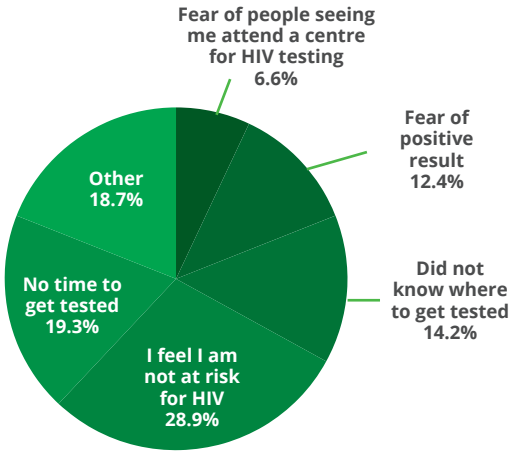

Figure 12.2: Reasons for never testing for HIV

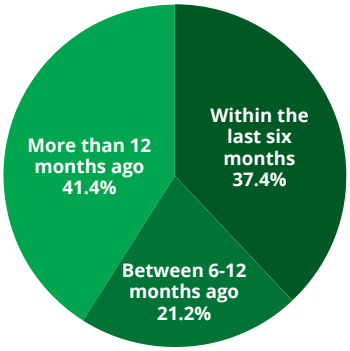

Figure 12.3: Timing of last HIV test

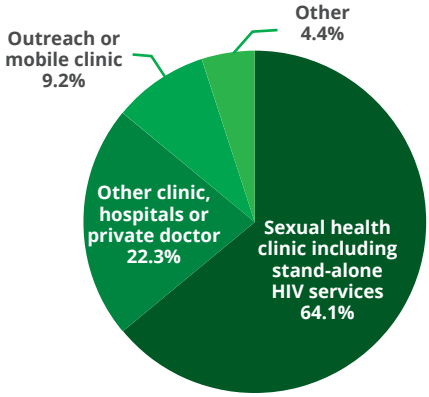

Figure 12.4: Location of last HIV test

shown) Of MSM and TG who ever tested for HIV, 2.9% reported never receiving their results (data not shown). Of those who had tested for HIV previously and received their results, 2.5% had returned a HIV-positive result the last time that they tested. **See Figure 12.5**.

I do regular check-up [s] …every 3 months. The last time I did my HIV test was [in] January, 2013. It's a long time after the last time [] when I took the test and was diagnosed with HIV so then on I could not go back for any check-ups. I was very accepting of what I've become or become of my status, the stage I am in so I [am] okay. — Rocky, 25 years.

Of the seven people in the study previously diagnosed with HIV, four were self-identified TG. One disclosed their status to no one, two to a spouse/ sex partner, one to a client, two to a doctor, three to a friend who is a fellow MSM or TG, and four to a family member.

I feel that if I disclose my (HIV status), it will go from one person to the next and so I don't want anyone to know. Their reaction won't be good or I might be beaten and kicked out of the house, anything can happen to me. My parents favour me and have hopes in me that I will get a well-paid job and take care of them because my elders are not working. — Kawas, 21 years.

I disclosed my status to my younger sister because she was very supportive while I was at Angau doing volunteer work. She accepted it and she is quite happy to help me. However, she advised me not to tell the family until we find the right time to do it. She said we might tell the family now and then there would be issues. — Bobby, 36 years.

12.2. HIV care and treatment

Of the seven HIV-positive MSM and TG who were aware that they had HIV prior to participation in the study, all seven had been linked to medical care (data not shown). Of these seven, all had started treatment and six were still on treatment and four were virally suppressed (data not shown).

I always use condom but it so happened that the condom broke so in one way or the other it's like I knew the risk already so when finding out, I accepted it. The transmission was kind of consensual. I knew who I slept with and knew the risk. So it was like after that I always use condom. I waited [] about 20 months, before I was on ((treatment)) so let's say January 2013 till November, 2015 that I went on ART. The other thing too is that my partner who is an expatriate [and] he is on medication. He gets his medicine from overseas so I wanted him to be responsible of what has happened to me so I want[ed] him to give me the drugs. So in one way or the other I held him accountable. So I have to wait for him to get me on the drugs. At the moment no; I was on drugs for 5 months and then I went off again because he couldn't give me the drugs again. — Rocky, 25 years.

Three of the seven MSM and TG who accessed HIV care received at least one CD4 result. Of the three people who received a CD4 result, one received one in the last six months, one in the last 7-12 months, one more than 12 months ago, and one does not know when it was received (data not shown).

Of the seven MSM and TG who accessed care, three were taking prophylactic medication in the form of Cotrimoxazole (data not shown). Five were asked at their last HIV clinic appointment if they had any symptoms of TB. Two of the seven MSM and TG aware of their HIV positive status experienced at least one symptom of TB in the last 12 months (data not shown).

12.3. Prevalence of HIV

HIV prevalence among MSM and TG in Lae was 6.9%. See Figure 12.6. Three-quarters (89.2%) of MSM and transgender women living with HIV were unaware that they had HIV (data not shown).

13. TUBERCULOSIS

In *Kauntim mi tu* the WHO screening algorithm for people with HIV, which is more sensitive than the one for people without HIV, was applied. As a key population with a higher burden of HIV, this screening algorithm was decided upon to ensure that those with HIV who presented TB symptoms during study recruitment were tested for TB. Of all MSM and TG:

- 39.0% had unexplained weight loss in the last two weeks
- 24.6% had a cough in the last two weeks
- 25.2% had a fever in the last two weeks
- 29.1% had night sweats in the last two weeks

Over half (52.6%) of MSM and TG experienced at least one of these symptoms of TB in the last two weeks.

Of the 194 MSM and TG tested for TB, valid results were only available for 123. Invalid results were due to high betel nut debris in the sputum. Of the 123 who had valid results, five had tuberculosis. Of those five, none had a drug resistant form (data not shown).

Among MSM and TG screened for TB, none had HIV/TB co-infection (data not shown).

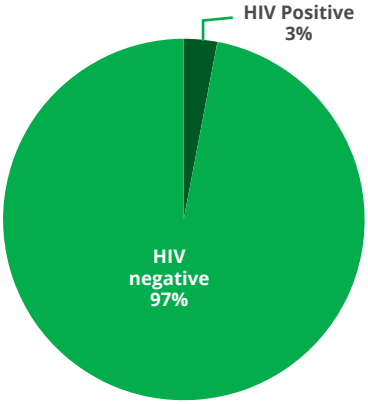

Figure 12.5: Result of last HIV test prior to *Kauntim Mi Tu*

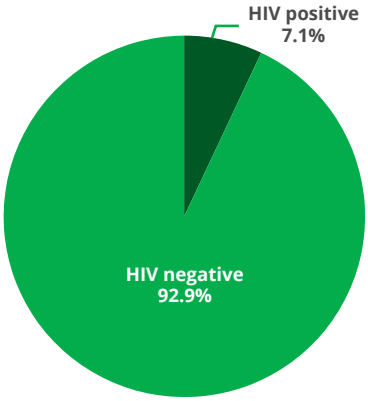

Figure 12.6: HIV prevalence

14. GLOBAL TARGETS: 90-90-90

The results presented here are unweighted due to the small number of HIV-positive individuals in our study. In Lae, PNG is not reaching the global targets where 90% of people with HIV are aware of their status, of those aware of their status, 90% of people who know they have HIV are on ART and of those on treatment, 90% are virally suppressed. Of the 22 HIV-positive MSM and TG in our study, only six individuals were aware of their infection. Of these individuals who were aware, five were on treatment. Finally, of these five individuals who were on treatment, four were virally suppressed. Much more work remains in supporting MSM and TG in order for PNG to reach the UNAIDS 90-90-90 global targets.

15. SIZE ESTIMATION

Volunteers distributed 777 unique objects to MSM and TG throughout Lae to estimate their population in Lae utilizing the unique object multiplier method. Combining this distribution with the RDS IBBS where we estimated that 16.6% of the population received a unique object, we estimate that there are 4,700 MSM and TG in Lae..

Statement by Port Moresby members of Friends Frangipani

As female sex workers in Lae, nongovernment organisations come and go and we are left to ourselves. We were so happy when the *Kauntim mi tu* team came. Some of us had been involved in the previous IMR Transex project and were happy to participate again. We were able to get tests done at the study site that we cannot get at any other clinic in Lae. We were tested for HIV, STIs and TB. It is really important that we also tested for TB as people with HIV are at risk for TB. We were happy and comfortable to be provided with these self-collection swabs to tests for anorectal and vaginal STIs. For those of us who were positive we received treatment on the same day. After knowing our results and knew we were clean we felt able to protect ourselves.

Through the *Kauntim mi tu* study we have benefited a lot, not just being tested and treated. We have learned a lot of things such as a positive woman on treatment can have a negative baby and now we know the different risks between unprotected vaginal and anal sex. As peer educators receiving these study results we also came to learn about HIV viral load. We now know what to tell people about HIV risk when having unprotected sex with a person on ART.

We are learning this because the team have come back and presented us the data; data that belongs to us. *Kauntim mi tu* put the data back in our hands. We are concerned with the low use of condoms among our friends. The shortage of condoms has seen some unpleasant activities with the selling of condoms in order to try and earn money. We want free condoms to be readily available so that our friends' lives can be saved. Condoms should be placed at "hot spots" where our friends meet their clients and the locations where they have sex.

In many settings we don't feel that our rights are respected. The staff in *Kauntim mi tu* respected us and they knew our rights. We were treated for STIs without having to bring in our last sexual partner. Many clinics won't treat us on the spot until we bring in our partners; we are thankful to the *Kauntim mi tu* team for understanding that we don't always know our last sexual partner and that we ourselves deserve treatment straight away.

People in the community continue to disrespect us, beat us up and in some cases the police make us still blow up condoms and ask for free sex in exchange for being served at the station when putting in a complaint. Sometimes it's forceful. The older police are respectful because they were trained but the newer recruits need to be sensitised, as do many of the health care workers. Very few people specifically work with us members of key populations. We need to partner with the police and government to make sure all female sex workers are safe from HIV and from violence. Our members are trained and skilled. We need to be involved meaningfully n the response, not just as volunteers but as paid staff. We need better provincial HIV collaboration and coordination.

Many of us live very difficult lives. We live in drains, cardboard boxes and in football fields. We don't all have access to clean water, healthy food or a safe space. We are struggling. Yet we are told to look after ourselves, protect ourselves from HIV and if HIV positive stay healthy. That is very hard for many of us. People need to understand our lives better. *Kauntim mi tu* has done that through the survey and the qualitative interviews.

As members of Friends Frangipani in Morobe Province, we also want to be viewed and valued as women, wives, mothers, sister's, daughter and friends. There is more to us than sex work. We seek a life where we can move freely, are not labelled and not discriminated against or abused. We want to lead a normal, healthy and productive life. We want to advocate to our peers and be role models to them where we are agents of change. We want to show them how to care for and respect themselves and try and prevent each of them from being infected with HIV, or if they are already positive, look after themselves so they can live a long and fruitful life.

RECOMMENDATIONS

- We urge for the continued fight to decriminalise sex work.
- We want the community, health care workers and the police to be sensitised to our issues.
- Members of our community need support to find safe and affordable housing.
- Our community needs a one stop shop where we can access HIV prevention, testing, treatment and care, STI testing and treatment, family planning and TB testing.
- We want to be treated without the need for contact tracing.
- Strong referral pathways as shown by *Kauntim mi tu* need to continue in our community to ensure linkages are made.
- Increase awareness on the importance of condom use, particularly for anal sex.
- Increased access to condoms in places where we socialise, meet clients and have sex is critical.
- The information on HIV that we and our peer educators have is outdated and needs to be updated and expanded to address STIs, reproductive health issues and TB.
- A mobile clinic would be an important step forward in increasing access to sexual and reproductive health services for women and girls in our community.
- We need adult literacy training and to identify new and innovative ways to provide information (not just pamphlets).

Statement by Port Moresby members of
Kapul Champions

The Kauntim mi tu team from the PNGIMR were very friendly and we felt comfortable talking to them. We were treated in a manner where we felt welcomed, respected and could open up honestly about who we are and what we do. We felt safe to express and tell them everything about ourselves; we told them some dark secrets.

We would like to have such welcoming and comfortable treatment when we access services in other places. They were well trained to fit in with our population and at the same time they had the equipment (GeneXpert Machines and other rapid diagnostic tests) for testing different sexually transmitted infections (STIs) that we never heard of. Testing was done the same day in a timely manner; we were able to do all our testings, receive our tests results and treatment on the same day. This allowed us to still have time to do our other work/ business. We were also properly linked to other services for further care and support.

We would like to have a one stop shop where all services are provided in the same place rather than having to go to multiple clinics for HIV, STIs and TB. We were invited to self-collect an anal swab for STI testing which was new to us. With this, we felt that we were being properly checked for the different STIs (gonorrhoea, chlamydia, syphilis, Hepatitis B virus and HIV) that we have. If we were positive for any one or more of these STIs, we were counselled and treated accordingly. We were not treated syndromically.

We have gained more knowledge by going into *Kauntim mi tu* study. Most us didnot know about other STIs like chlamydia, syphilis and Hepatitis B virus. All we know about is gonorrhea and "gono packs". Prior to this study, we were thinking that all STIs can be treatment with "gono packs", but now we know better and that specific infections have specific treatments. We also learned that although so many of us have Hepatitis B virus there is no treatment for us. The clinicians sat with us and described specifically what infections we had and did not have. We liked this detailed information.

At *Kauntim mi tu* study, they sat down with us and have time to explain the different STIs, on how it spreads, complications it can cause, the treatments that are available and how to prevent transmitting or acquiring them. Therefore, we would like to have such services where we can be provided with more STI counselling screening, and treatment rather than a single or dual screening for one or two STIs and get specific treatments respectively.

From the study, we learnt and can reflect that most of our peer educators lacked the knowledge on the different types of STIs. Most peer educators generalise STIs as gonorrhoea and therefore we need workshops and refresher courses for peer educators.

We also learnt about viral load, which helped us to understand why we should remain faithful to taking ART every day and on time. Therefore, we would like to have viral load testing done clinics that provided HIV testing, treatment and care.

The study showed issues of gender based violence. This is a real and ongoing issue for our community. We need to address this and ensure safe spaces for our community to report and get support.

Kauntim mi tu study did not have any geographical boundaries, like most non-government organisations do. The coupons from *Kauntim mi tu* reached our population from within Lae city and beyond into settlement areas and other unsafe places where people in our community live. They reached all walks of life. *Kauntim mi tu* recognised that we are unique and not like other parts of the country, places where decisions about us and the programs that affect us are usually made.

RECOMMENDATIONS

- The diversity of our community here in Morobe Province needs to be recognised and responded to.
- We need to reach out beyond the boundaries identified by non-government organisations. We need to be flexible to find our peers where they live and socialize, not always in Lae town.
- We need to have an environment where we are respected in our families, homes and communities. Decriminalisation will contribute to this, but additional sensitisation and support needs to happen at the same time.
- Members of our community need to be updated on advances in HIV and innovative biomedical technologies that are available and may benefit our community.
- We no longer want to be treated on the basis of symptoms. We want to be tested and treated for specific STIs using point of care technology. We waste our time having to go and come back for results.
- We want one stop shops where we are treated along a continuum of care.
- We need to trial and test new and different approaches to reaching our community. The results of *Kauntim mi tu* showed what we have done in the past has not worked.We cannot keep repeating the same approaches while our friends die.
- Peer education need to have updated knowledge around HIV, STIs, other sexual and reproductive health issues and TB.
- Members of our community need to be provided with certified training to be specialist mentors who can be employed in sexual and reproductive health clinics to ensure the clinics are friendly and welcoming to our community and we can provide peer counselling and support.
- With so many of our community infected with Hepatitis B Virus we want treatment to be available for it.
- The Family Sexual Violence Unit (FSVU) needs to be sensitized to our issues and recognise that violence against us is gender based violence (GBV). We need support to access other GBV services and receive the same support as women. We would like the PNG DLA to be reinstated to assist us with legal issues or otherwise have an NGO take responsibility for assisting us in these matters.
- Include indicators for GBV in data collection forms at clinics
- Issues with the UIC (unique identification code) need to be addressed, especially for people who do not want to be registered in this way.

Recommendations from
All Stakeholders*

- The discriminatory laws currently in existence that affect key populations need to be revised. Decriminalisation is an important step to change the mind sets and attitudes of the general public towards the key populations.
- Undertake effective awareness to the community and community leaders, church groups and families of key populations regarding the negative effects of stigma and discrimination and on issues about gender, sexuality, HIV, STIs and TB.
- Health facilities need to be enhanced to meet the demands of the community who want to know their health status using point of care tests and the use of STI specific treatment including having up to date information on HIV, STIs, TB, sexual reproductive health issues for key populations to access.
- Outreach coverage needs to be improved and expanded outside of Lae town to areas where members of the key populations reside including peri-urban and settlement areas.
- Ensure safe houses are established to address and meets the needs of members of key populations who experience gender-based violence, including transgender women.
- Provision of a special help desk in each law enforcement establishments to allow safe reporting of sexual violence by members of key populations.
- A consistent supply of free condoms is needed across the province and in areas readily accessible by the community.
- Better coordination between government departments, nongovernment organisations, partners and stakeholders is needed order to work more effectively and efficiently.
- The PNG school curriculum needs to educate children in age appropriate ways on matters of sexual and reproductive health, including sexuality and gender diversity.
- Develop an effective training module for peer educators, service providers and community leaders in order that they be fully equipped with accurate and up to date information on communicable and non-communicable diseases.
- Adult literacy programs for members of the key populations needs to be provided by partner organisations working with the key populations.
- Trainings for the key populations in small medium entrepreneur is needed for financial independence and to support people to find other means of earning an income, or by supplementing their current income by sex work.
- Exit plans for all the projects with non-governmental organisations and facilities are needed so that key populations can sustain themselves when funders and donor withdraw.
- Urbanisation laws have to be implemented to reduce drug abuse within the urban areas of Morobe Province
- Partners and stakeholders to design a training module on TB, sexual and reproductive health issues and other health issues facing key populations. The program is to be implemented before the fourth quarter of the 2018.

* A one day workshop was held with representatives from the Government of Papua New Guinea, international and local non-government organisations, faith based organisations and civil societies representing key populations.

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