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BEHAVIOURAL SURVEILLANCE RESEARCH IN RURAL DEVELOPMENT ENCLAVES IN PAPUA NEW GUINEA
A Study with the Oil Search Limited Workforce

by
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This project was conducted by the National Research Institute as part of Behavioural Surveillance Surveys Round 2 (an OSL Baseline Survey, 2008–2009), in collaboration with Oil Search Limited, the National Department of Health (NDoH) Surveillance Unit, the NDoH/Asian Development Bank HIV Prevention in Rural Economic Enclaves Project and the Australian Research Centre in Sex, Health and Society at La Trobe University.

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PREFACE

To reduce the number of new HIV infections in PNG, there is a need to understand people's practices, including their sexual practices, their knowledge about HIV, and their ideas, beliefs and attitudes about sex and relationships, in order to understand why people do what they do. Most importantly, the contexts of people's daily lives can structure their vulnerability to and risk of contracting HIV. Prevention and treatment efforts and policies need to be more evidence-informed and tailored to particular population groups in particular situations.

Oil Search Limited (OSL) operates in the Southern Highlands Province, in a region of high HIV prevalence. It employs large numbers of workers from the Highlands provinces and from across PNG. In 2008, Oil Search Limited was invited by the National Department of Health to be a priority for national HIV behavioural surveillance survey research. The data from this report creates a baseline to support NDoH behavioural surveillance monitoring and trend data collection over time.

This research on OSL workers' practices, understanding and attitudes towards HIV and AIDS provides an opportunity for OSL to enhance existing programs and create more evidence-based and tailored HIV prevention and treatment programs for their workforce and the surrounding communities. This research is also a baseline from which to monitor behaviour, knowledge and attitudinal changes of the OSL workforce over time from repeat behavioural surveillance surveys.

The NRI would like to thank the OSL management for their approval of and collaboration in this study, which falls within the strategic objectives of OSL's own HIV prevention and treatment programs for their workers and the communities surrounding these sites. Much gratitude is expressed to the male and female workers who gave their time and completed surveys. OSL workers and women who exchanged sex outside the gates of OSL sites also gave individual one-on-one interviews. When considering HIV prevention that is best tailored for these groups, these stories provide a rich and valuable insight into people's experiences, what they mean and how they affect people's lives.

The NRI encourages dissemination of HIV research, engagement with the findings and the translation of these results into locally-tailored HIV prevention strategies and company policies. The research data illustrates that the long working hours and the regulations around sex on site for OSL petroleum development workers, affect workers' sexual desires, their concurrency of sexual relationships and sexual practices. Long shifts, transiting to and from work, and sites located in areas where there is flow of money and where sex can be exchanged, are all factors that can constitute contexts that heighten vulnerability to and risk of HIV infection for OSL workers. The data highlight the need to analyze and assess the policy-related issues around sexuality and sexual health, and the structural factors within the work environment that impact on OSL workers' practices. This will help creative solutions to be developed that can decrease the potential for risk of HIV transmission within the OSL workforce.

These BSS research findings can also be considered within the broader context of other petroleum developments in Papua New Guinea, and are certainly relevant for the LNG project and how it develops its response to HIV. This research provides insight into how work environments and economic development can influence sexualities and sexual practices, marital lives and the concurrency of sexual partners of mobile workers. The research explores what this means for workers personally and for the HIV epidemic in Papua New Guinea.

The baseline research findings also indicate the degree to which Oil Search Limited workers have understood information on HIV that has been provided to them; how they seek treatment for sexually transmitted infections; their access to condoms, HIV counseling and testing; and where the company can build on successes and where there could be room for improvement.

Insights into what could create more enabling working and living environments for people living with HIV, and how stigma and discrimination could be reduced within the workforce and surrounding communities are also found within the data.

We invite more analysis of these findings to increase understanding of the factors that can reduce the HIV epidemic in Papua New Guinea and decrease the potential for the spread of HIV among Oil Search Limited workers.

Dr. Thomas Webster
Director, National Research Institute

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The NRI sincerely acknowledges the workers from Oil Search Limited and contractor companies for their participation in the survey, and for giving their time and personal information. We also thank the women from outside the gates of OSL, who took part in one-on-one interviews and who gave valuable insights by sharing their stories.

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The principal and co-investigators of this research took leadership and monitored data collection to ensure that it was ethical and conducted within the research design. They are: Dr. Holly Buchanan, Francis Kupe, Frances Akuani, Thomas Kawage, Dr. Isimel Kitur (NDoH), Murray Couch (ARCSHS) and Lawrencia Pirpir. We express gratitude to Francis Kupe (NRI), Patrick Rawstorne (UNSW) and Fumihiko Yokota (ADB/NDoH) for their technical advice on sampling design for BSS economic enclave sites. Great appreciation is expressed to Dr. Buchanan and Dr. Kitur for their ongoing monitoring and technical support.

Many thanks are expressed to the NRI BSS team of data collectors for their hard work interviewing 463 of the OSL workforce across five sites. They include: Lawrencia Pirpir, Frances Akuani, Thomas Kawage, Francis Be, Nickson Kawage, and Veronica Samof. We thank Veronica Samof who created maps of the OSL behavioural surveillance sites, and Abel Simon who later edited and recreated the maps for this report.

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ACRONYMS

AASI	Audio-assisted self-interviewing
ACASI	Audio Computer-Assisted Self-Interviewing
ADB	Asian Development Bank
AIDS	Acquired Immunodeficiency Syndrome
ARCSHS	Australian Research Centre in Sex, Health and Society
ART	Antiretroviral Therapy
AusAID	Australian Agency for International Development
BSS	Behavioural Surveillance Surveys
CBO	Community Based Organization
CDI	Community Development Initiative
F	Female
FHI	Family Health International
GPS	Global Positioning System
HIV	Human Immunodeficiency Virus
HR	Human Resources
HRS	High Risk Setting
IMR	Institute of Medical Research
KAPB	Knowledge, Attitude, Practice and Behaviour
M	Male
MARPS	Most (More) at Risk Populations
MRAC	Medical Research Advisory Council
MSM	Men who have male to male sex
NAC	National AIDS Council
NACS	National AIDS Council Secretariat
NDoH	National Department of Health
NGO	Non-Governmental Organization
NHASP	National HIV/AIDS Support Project
NRI	National Research Institute
OSL	Oil Search Limited
PAC	Provincial AIDS Committee
PI	Principal Investigator
PLHIV	Person Living with HIV
PSI	Population Services International
RAC	Research Advisory Committee
RAI	Ramu Agri Industries
SDA	Seventh Day Adventist
SHP PAC	Southern Highlands Provincial AIDS Committee
SOP	Standard Operating Procedures
SPSS	Statistical Package for Social Sciences
SRO	Senior Research Officer
STI	Sexually Transmitted Infections
STWG	Surveillance Technical Working Group
TS	Transactional Sex
UNGASS	United Nations General Assembly Special Session (on HIV and AIDS)
UNSW	University of New South Wales
VCT	Voluntary HIV Counseling and Testing
WHP	Western Highlands Province
WRC	WR Carpenters

EXECUTIVE SUMMARY

Oil Search Limited (OSL) is an oil and gas exploration and development company operating in Southern Highlands Province, an area of higher HIV prevalence. Its workforce are either directly employed by OSL, or by companies contracted to OSL. Permanent and casual workers are mobile and work on a shift rotation across a number of sites in the Southern Highlands and Gulf Provinces of Papua New Guinea.

The behavioural surveillance survey (BSS) research conducted by the National Research Institute at Oil Search Limited provides data for the NDoH National Surveillance System for monitoring behavioural trends with more-at-risk populations over time. The research is also conducted for OSL and the NDoH/ADB HIV Prevention in Rural Enclaves Project, to be used as a baseline for the monitoring and evaluation of their HIV project. The BSS research findings are based on a representative sample of 463 OSL workers, and can support further tailoring of the OSL HIV prevention response to minimize the impact of the HIV epidemic on their workforce and their surrounding communities.

Place of origin, age and education

Almost all (93.7%) of the 463 Oil Search workers surveyed were Papua New Guineans and 6.3% (29) were from seven other countries. The PNG workers came from across all the provinces of Papua New Guinea, however most workers were from the Highlands (62.8%) and Southern (16.2%) Regions. Most (68.4%) were between 25 and 44 years old, with most of that group between 25 and 39, meaning that most workers were in their productive and reproductive years. Also of interest is that more than a tenth (11.2%) of those interviewed did not know their age. Most (78.1%) of the OSL workforce had secondary, technical, tertiary or university education. Almost a fifth had completed only primary school (18.2%:83). A small number (3.7%; 17) had never been to school.

Marital status, change in marital status, and polygamy

Complex patterns of marital partner change were reported, illustrating the changing nature of marriage and living arrangements over time in this population group. A majority (87.2%) reported having been married at least once. Nearly a third (29.6%), and more men than women, reported that they had married more than once. A third (30.0%) of those who had married more than once had married three or more times. Proportionately, more male workers than female workers had married two or more times.

Polygamous marriage, with men marrying more than one wife, is a common cultural practice in the Highlands Region. Within the sample, 14.2% were in polygamous marriages, involving between two to four wives. Most of those reporting polygamous marriages were between the ages of 25 to 39. The age range of women in polygamous marriages (20 to 34 years with mean of 27) tended to be younger then for men (20 to 59 years with mean of 35). Polygamy is an important consideration in assessing the potential effectiveness of HIV prevention messages. ‘Being faithful to one partner’ does not fit with the experiences of a proportion of the workforce population surveyed that are in polygamous marriages.

While 91.2% of those who had ever married were married at the time of the survey, a quarter (26.1%; 105) reported that they had experienced a change in their marital partners, through separation, being widowed or divorced. Most had then remarried. Of those who had a change

in marital status, some had been widowed (14.3%), but most reported being separated (39.0%) or divorced (46.7%). Just over a fifth (22.4%; 90) of all workers interviewed who had ever married, had been separated or divorced and more women who were divorced or separated had not remarried. The reasons given for divorce and separation included the infertility of a woman, spouses taking other sexual partners, men taking other wives and violence. The duration and patterns of working time were also identified as factors in separation and divorce. In some cases the increased sexual desires of workers away from their marital partners contributed to them taking additional partners. As a consequence, this led to some breakdown of marriage.

Patterns of marriage, including the practice of polygamy, are important for understanding HIV epidemics. Changes in monogamous serial marital partners, multiple concurrent marital partners and steady live-in sexual partners over time can increase transmission of HIV. This is particularly the case as condom use with regular partners was lower than with non-regular or transactional sex partners, and concurrency of sexual partners was high. The data shows great variability of sex partners creating opportunities for the transmission of the HIV virus over time between marriages and marital sexual networks, and between these and other sexual networks with non-marital partners. Working extended periods of time away from 'home' appeared to have an impact on marital, family and sex life, as well as on drinking patterns.

Alcohol and drugs

Alcohol

Nearly three quarters of the workers interviewed reported that they drank alcohol such as beer, hard stuff or home brew. More than a quarter (27.6%) reported that they did not drink. There is a statistically significant association between a person's sex and drinking alcohol. Among those who drank alcohol, more male workers (73.5 %) than female workers (47.4%) drank alcohol [***Chi-Square analysis produced significant result at $p<0.013$].

Among those workers who drank alcohol, there was a high number of drinks taken on a typical day when drinking. Of the workers who drank, most (84.7%) did not drink during times of work, but 15.3% did. Most (96.3%) workers reported that they drank alcohol when they were on break. OSL workers drank greater quantities of alcohol and drank more frequently during breaks, including during the time spent transiting between work sites. 45.2% reported drinking ten or more drinks and 27.1% reported drinking between five and nine drinks on a typical day on break.

The assertion that alcohol and drugs significantly reduce condom use, when compared with sex practices when not drunk or stoned, is not well supported by the data. A fifth of the sample (19.6%) reported that they had not used a condom when they had been drunk or stoned. However links were made in qualitative interviews between drinking alcohol and decreased inhibitions, increased sexual desires, increased sexual activities and rape. Drunkness was also associated with violence, threats, phycial abuse, disturbance and destruction of property.

Drugs

Of the OSL workforce, 85 (81M; 4F; 18.5%) reported ever having taken drugs. Workers reported taking a range of different types of drugs. Of those who reported ever trying drugs, only men reported taking drugs in the last year, and this was predominately marijuana. Over a quarter reported taking drugs including ice (11.9%), cocaine (4.8%) or ecstasy (2.4%) and another 9.5 % who did not specify the type of drugs. Three male workers reported that they had injected a drug in the last year that had not been prescribed to them by a doctor.

Condom use when drunk or stoned

Near a fifth (19.6%; 60) of workers who have had sex and drank alcohol and/or taken drugs reported that there had been a time when they had been so drunk or stoned when they had sex that they had not used a condom. But 80.4% had never had a time when they had not used a condom when drunk or stoned. This does not support the view that alcohol and drugs reduce condom use considerably more in the OSL workforce, than compared to condom use at other times when people are not drunk or stoned. As will be discussed, in the survey, there was a lower level of condom use reported across different types of partners, particularly regular partners where only a quarter (25.6%) had used a condom at last sex, but 74.4% had not. While condom use was considerably higher with other partners, still a third (32.3%) of workers had not used with non-regular partners and a quarter (25.0%) had not used a condom with a paid or transactional sex partner.

Work context and sex

Patterns of work and break

Employees of OSL and the contractor companies reported a variety of work patterns regarding their shifts and breaks. Three main patterns for breaks were evident when workers were asked how many days they worked before they went on break: 39.0% took a break after four weeks (28 days) and close to half (48.2%) reported having breaks after six weeks (42 days), with 2.9% reporting working even longer periods before having a break.

During the interviews, workers expressed that they missed their partners and the comfort and intimacy of their relationships. Accounts were given of how the duration and pattern of their working time on site disrupted patterns of having time and sex with one's wife. Nearly half (47.3%) of sexually active workers said that their work arrangements affected their sex life. Those affected said that they had increased desires to have sex, became frustrated, or would watch pornography, masturbate or look for sex inside and outside of the gates of OSL. Some 15.8% said that they sometimes have sex when on site during rotation and 1.6% said that they always have sex while on site during rotation.

Over a quarter (29.7%) of workers traveled and transited overnight in Port Moresby, Lae or Mt. Hagen during breaks. Many of those interviewed connected alcohol consumption with an increase in the desire to have sex when on site, but particularly during their transit times and during their break. This includes drinking with transactional or other extramarital sex partners and drinking in groups and having group sex.

Sexual practices and partners

First sex

Nearly all (97.6%; 452) of those surveyed reported that they had had anal or vaginal penetrative sex. The reasons given for not having sex included religious beliefs, fear of HIV and other sexually transmitted infections (STIs) and waiting for the right person.

Sexual debut was early for some and quite late for others, and 15.4% (68) did not know their age at first sex. The median age of first sex was 19 years old (19 for men and 20 for women). By 19 years of age, 60.3% of the workers sampled had had sex. By 24, 91.7% had had sex and all female workers sampled had had sex. Some other men (8.3%; 31) had their first sexual debut after the age of 25.

Sexual networks and number of sexual partners

The petroleum workers were asked questions about the frequency of sex across three different partner types:

- regular (spouse, girlfriend/boyfriend or live in sexual partners);
- non-regular (partner not married to, did not live with, and who was not a steady girlfriend or boyfriend);
- paid or transactional sex partners (had sex in exchange for money or other gifts, favors or services); and
- same sex partners.

The patterns reported are complex, with a relatively high concurrency of sexual partners across partner types, as workers also tended to have additional regular partners. This becomes more complex in the context of polygamy and when other non-regular and paid partners are involved.

Nearly a half (49.2 %) of those who had had sex reported having one sex partner in the past year. Consequently 50.8 % reported that they had had more than one sexual partner. Nearly a third of workers (29.2 %) had between two to four partners and over a fifth (21.6 %) said they had five or more partners. Male workers tended to have greater numbers of multiple sexual partners than female workers.

Detailed accounts of multiple sexual partners and networks of partners were also present in the qualitative interviews. This was linked with the demands of their work schedule. These accounts indicate extramarital sex and paid or transactional sex. In some cases, this extramarital sex resulted in pregnancies and other obligations. Sometimes taking extramarital sex partners resulted in polygamous marriages, and sometimes separation and divorce.

Regular partners and condom use

When asked about regular partners in the past twelve months, three quarters (75.5%) reported that they had one regular partner, while a quarter (24.5 %) of the workers reported they had two or more regular partners. Only 25 (6.1%) of those 409 workers who had sexual partners in the past year reported having had no (0) regular partners. Some of those who reported no additional regular partners reported multiple non-regular and transactional sex partners.

Condom use at last sex with regular partners in the last year was very low (25.6 %) compared to other partner types. The most common reason for not using a condom at last sex was trust in their partner (54.9%). Other main reasons given for not using a condom at last sex, included that workers didn't think it was needed, and that condoms reduce pleasure, were not comfortable or not available. When asked how often they had used a condom with a regular partner during the last three months, over half (58.9 %) reported that they never used a condom.

Non-regular partners and condom use

More than forty percent (41.1%; 168) of those who had had sex in the last year had one or more non-regular partners. More men than women had non-regular sexual partners in the past year, and men had more non-regular sexual partners and a higher frequency of sex with their non-regular partners in the past year. Of those who had no non-regular partners and that specified their numbers of regular partners, 144 had only one regular partner and three had only one transactional partner; however the rest — 52 male workers and one female worker — reported having either concurrent regular partners, concurrent transactional sex partners or concurrent regular and transactional sex partners.

Condom use among the workforce with non-regular partners was higher than condom use with regular partners, with 67.6% reporting having used a condom the last time they had sex with a non-regular partner. The suggestion to use a condom, came mainly (54.7%) from the workers themselves.

Almost a third (32.4%) reported not having used a condom at last sex. Of those who had not used a condom at last sex, the reasons given included trusting their partner (34.6%), that condoms were not available (15.4%), that condoms reduce pleasure (13.5%), that they were drunk, (11.5%), that they were not comfortable (7.7%), that they did not think of it (5.8%), that they simply don't like condoms (3.8%) or that their partner objected (3.8%). When asked how often they had used a condom with a non-regular partner during the last three months, nearly a half (48.6 %) reported that they always use a condom.

Same sex partners

Twenty-two (5%; 21M; 1F) workers who had ever had sex reported that they had had same sex partners at some point in their lives. Of the male workers who had had same sex partners, 38.5% had had sex with one sexual partner in the past year; 15.4% had had two sex partners; and 7.7% had had three sexual partners. The rest (38.5%) did not know how many partners that they had had in the past year.

Of those men who had had sex with same-sex partners at some point, nearly a half (47.4%; 9) had paid one or more men to have sex with them. Of these nine men, six said that they were presently married to a woman, two were not married and one man did not answer. The data indicates that workers have concurrent sexual partners from networks of marital, same sex, non-regular and other regular partners.

Transactional sex partners and condom use

Close to a quarter (23.7%; 104) of the OSL workforce surveyed who had had sex in the last year, reported having paid for sex with either cash or other goods. There is a statistically

significant association between a person's sex (male and female) and having a transactional (paid or paying) partner in the last 12 months. Significantly only male workers (24.1%) and no female workers (0.0%) reported having had a transactional sex partner in the past year [***Chi-Square analysis produced a significant result at $p<0.044$].

Three quarters (75.0%) reported that they had used a condom the last time they had transactional sex. Of those who had used a condom, over half (56.9%) of workers suggested that a condom be used, and many more (38.9%) had agreed with their transactional partner. Of those who had not used a condom with a paid sexual partner, the main reasons given included that they trusted their partner (33.3%), that condoms were not comfortable (18.5%) and that condoms reduce pleasure (14.8%).

Most (84.6%; 88 of 104) of those who paid for sex in the last 12 months also paid for sex in the last three months. Most of these men (42.1%) reported giving something to one woman to have sex, and 30.3% reported giving something to either two women (15.8%) or three women (14.5%). Some (27.6%) reported even greater numbers of women that they gave something to for sex in the last three months. Six of these 88 men also reported that they had given men money or other gifts for sex in the last three months

Over half (51.2%) of the men who reported that they had transactional sex in the last three months also reported that they always used a condom, but a third of workers were inconsistent in using condoms and 15.5% had not used a condom with their transactional sex partners in the past three months.

In the qualitative interviews, both workers and women exchanging sex gave accounts of transactional sex between women outside the gates and men from the workforce. This is reported as a common practice around the OSL sites. The form of payment was most commonly money, ranging from as low as K5 up to K500. The differences in prices related to the types of sex (e.g. vaginal, anal or oral sex) and styles of sex performed. Most women exchanging sex reported their strategies to ensure condom use and reduce personal risk through examination of clients for visual signs of STI.

Anal sex and condom use

Anal sex between men and men, and between men and women, poses a higher risk of HIV transmission during unprotected sex than vaginal sex. In response to a question about condom use at last anal sex with a male sex partner in the last year — remembering that numbers are small — 55.6% (10/21) of male workers who had anal sex with men said they had used a condom. Within the sample, 13 women had had sex in the last year, and most (84.6%; 11/13) had had anal sex with men, and most (81.8%) had not used a condom at last anal sex with their male partner. Of those male workers who had anal sex with a male partner, 26.3% (5) reported that they had had anal sex with a man when the partner did not want to, indicating some forced anal sex between men.

Condom use, preference and access

Condom negotiation and use varied between partner types. A quarter (25.8%) used condoms at their last sex with their regular partners. Most workers (55.9%) mutually agreed with their regular partners when a condom was to be used, or condom use was initiated by the workers (40.9%). Around two-thirds (67.6%) used condoms with their non-regular partners at last sex.

Workers (54.7%) initiated condom use with their non-regular partners, or there was considerable mutual agreement (43.2%). More (75.0%) male workers used condoms at last sex with their transactional sex partners. Over half (56.9%) were first to suggest condom use, or instead mutually agreed (38.9%) with their transactional sex partners to use condoms.

Workers were asked if they had used a condom at their last sex, irrespective of partner type, and only (35.8%) said that they had. The majority (64.2%) reported that they had not used a condom at last sex, and more men than women had used a condom.

Across regular, non-regular and paid partners, the most common reason given for why condoms were not used at last sex was because of trust in partner: regular (54.9%) non-regular (34.6%), and transactional sex partners (33.3%). Apart from trust, a variety of other reasons were given and they varied by partner type. A lack of condom availability was the most identified reason why a condom was not used with a non-regular partner (15.4%); a transactional sex partner (7.4%); and a regular partner (4.9%). Not feeling comfortable using a condom was another reason given for why a condom was not used with transactional sex partners (18.5%); non-regular partners (7.7%); and regular partners (5.5%). Not needing a condom was also a reason given for why a condom was not used: with regular partners (8.3%); non-regular partner (1.9%) and transactional sex partner (3.7%).

Both the quantitative and the qualitative data indicate that most workers can access condoms from a variety of sources accessible to them within OSL and outside the camp. In the previous 12 months, close to two thirds (61.1%; 266) of the workforce said that they had been given condoms. Most (75.4%) workers surveyed had not bought any condoms in the last year and a quarter reported buying condoms. When asked where male condoms could be accessed, the most common places identified were the OSL dispensers (19.0%), OSL clinic (18.8%) and other health facility (17.6%). The OSL clinic was indicated as the most common place (24.6%) where a female condom can be accessed alongside other health facilities (18.7%) and OSL dispensers (16.7%). Over three quarters (76.6%) also reported that they could obtain a condom every time they needed one. This degree of access when needed is extremely positive. A majority (81.8%) believed that a person could reduce their risk of HIV by using a condom correctly every time they had sex. But less (65.0%) said people could protect themselves from HIV, the virus that causes AIDS, by using a condom correctly every time they have sex. There is still some promotion of the efficacy of condoms needed.

Sexual violence

Sixty-nine male workers (15.8%) said that they had forced a woman to have sex. No female worker said that they had ever been forced to have sex. Most (93.4%; 57) of the 69 male workers that had forced women to have sex did this individually. A fifth (19.6%) of these men reported that they had forced a woman to have sex in the context of a group. Half of the men reported that they had used a condom the last time they had forced a woman to have sex while the other half did not.

Five men and one woman reported that they had forced a man to have sex. In relation to the forced sex between men, three men reported that they had forced a man to have sex in the context of a group, and three men said that they forced a man individually to have anal sex. The male workers involved reported that the last time they had forced a man to have sex, four had used a condom while the one female who forced a man to have sex did not use a condom and one man did not answer this question.

Penile cutting and modification

Under a third (29.2%; 127) of male workers reported that they had been circumcised. Two female workers had had partners who were circumcised. Many (30.6%) had been circumcised in the context of an initiation, but more had been circumcised in the context of a clinic or hospital (44.3%).

A third of the men (33.3%; 148) reported that they had had their penis foreskin slit, and only one female worker had had a male partner whose foreskin had been slit. Most dorsal slits had been done by a friend (55.2%; 80), while a fifth done at a clinic (19.3%; 28). A razor blade (64.3%; 90) was mostly used to cut the skin.

Inserts were not very commonly reported by the male and female OSL workers. Of the total, only 6.7% (30) reported that they or their partners had penile inserts and half (14) of the men who reported to have inserts still had them. The most common types of objects inserted were pieces of toothbrush, ball bearings and string. Other objects included wire, plastic, rubber (plastic rubber) and a condom. The razor blade (64.3%; 18) was the tool generally used to cut the skin when inserting small objects under the foreskin, with a scalpel (14.3%; 4) and a sharpened toothbrush (10.7%; 3) was also used.

More male workers, 34 male workers (7.8%) said that they had injected their penises with a substance than having inserts. No women had had a sex partner who had penile injection. Penile injection with a substance was being done to make the penis stronger (31.7%), wider (34.1%), longer (24.4%) and to have an insert (7.3%). The reasons for enlarging the penis were elaborated in the qualitative data.

Sex products

A range of sex products that are derived from traditional knowledge and available locally or bought from Indonesia or America were mentioned. Products to enlarge the penis included solutions and substances to be injected in the penis, rubbed on the penis, tablets taken orally, or a penis pump. Other sex products used to create greater sexual desires, included Spanish Fly and other tablets, which are taken orally.

Sexually transmitted infections — STI

When asked if they had ever heard of infections that can be transmitted through sex, a majority (86.1%) of the workers said that they had heard about sexually transmitted infections. More than two fifths (43.1%) of the workforce were able to identify an STI symptom in women, while over half (54.1%) of the workforce were able to identify STI symptoms in a man. Others did not identify any STI symptoms occurring in a woman or a man, or mentioned a variety of symptoms not associated with STI in either women or men.

Of those 78 workers who reported having STI symptoms in the past year, 57.7% sought advice and/or medicine from either a clinic or hospital (40.9%), from a pharmacy (11.7%) or from a traditional doctor (5.1%). Some took prevention measures and abstained from sex (14.6%), used a condom until symptoms cleared (6.6%), or informed their sexual partner of discharge or ulcer (8.0%). Some others (7.2%) self medicated and took medicine that they had at home or that friends or relatives had given them.

HIV testing

Most (70.2%) of the workers had not had an HIV test in the last 12 months. When asked if they knew where to go if they wanted to get an HIV test, a majority (85.9%) said they knew where to go to get tested, but only 29.8% had had a test in the past year. A majority (82.2%) of the workforce agreed that it is possible for someone in the community to have an HIV test and for no one to know the results unless the person wanted them to know.

HIV related knowledge

Knowledge on HIV transmission was relatively common in the workforce and many workers rejected misconceptions about HIV transmission. Most (90.2%) agreed that a person can get HIV from injections with a needle that was already used by someone else. It was also well understood that a pregnant woman who is HIV positive can transmit HIV to her unborn child (88.5%), and that she can transmit the virus during delivery (83.1%) and breast feeding (82.7%).

Most knew that a person was unable to get HIV from mosquito bites (70.4%) or from sharing a meal with PLHIV (81.3%). But there were still more than a quarter (29.6%) that believed that mosquitoes could transmit HIV and near a fifth (18.7%) that believed that it could be spread by sharing a meal with a person living with HIV. While 81.3% of the sample understood that a person could not contract HIV from sharing a meal with someone living with HIV, nearly a third (28.9%) reported not being willing to eat a meal that has been cooked by a person living with HIV or AIDS, indicating one area for the generation of stigma could be associated with eating food cooked by someone living with HIV.

Stigma and HIV

A majority (85.3%) understood that a healthy-looking person could have HIV, and when asked if a worker should be allowed to continue working at OSL if they are diagnosed with HIV, most (69.3%) said they should be allowed to continue working. Over eighty percent (83.5%) reported that they would be willing to work with someone who is infected with HIV and two thirds (64.4%) also said that they would not be worried about sharing the same office with a person who is infected with HIV.

Information on HIV

A large majority of workers (85.5%) reported that someone had come to their community to talk about STI, HIV or AIDS. When asked about the best means of disseminating information on sexual health and HIV to the OSL workforce, the answers most commonly chosen were through talking (22.7%), providing books and pamphlets (21.8), through video (18.3%), posters (13.8%), drama (9.9%), internet sites (9.3%) and 4.2% mentioned other sources.

Policy

When asked if OSL had an HIV policy, around two thirds (63.4%) said that OSL had an HIV policy. A quarter (25.9%) said they don't know, a tenth (10.2%) said no and only 0.5% said they were unsure, indicating a need to promote the existing HIV policy. A majority of the workforce (86.8%) thought that the management of OSL was addressing HIV. More than half

(51.9 %) have the view that the company's management would deal fairly and sympathetically with any employees living with HIV, but the other half did not think so. A majority (88.0%) of the workers interviewed thought that the employees of OSL should be more concerned about HIV and AIDS, and most believed that HIV and AIDS could have a serious or some impact on the productivity of the company.

INTRODUCTION — THE HIV EPIDEMIC IN PAPUA NEW GUINEA

The HIV epidemic in Papua New Guinea (PNG) has steadily increased over the past 20 years. In 2003, the epidemic in PNG was categorized as a generalized epidemic when HIV prevalence in antenatal mothers surpassed 1% at the Port Moresby General Hospital ANC clinic. Data at the end of 2006 produced an estimated national HIV prevalence of 1.28%, with projected sharper increasing trends in new infections and in rural areas (NDoH and NACS 2007).

It was more recently estimated in 2010 that the national prevalence was perhaps slightly less than previously estimated when based on more and more available data and better quality data from more sites (0.9%) Regionally, prevalence estimates for the Highlands is at 1.09%; and 1.17% Southern while both Momase (0.63%) and New Guinea Islands (0.61%) have less prevalence, but are showing increasing growth in numbers diagnosed and prevalence in particular areas (NACS and NDoH, 2010).

The numbers of people diagnosed with HIV in PNG increased annually since 1987, with a stabilization of numbers testing HIV positive between 2007 and 2008, and then a reduction in numbers testing positive between 2008 and 2009. This may be contributed to stronger quality data and earlier overestimations, but these are important trends to monitor overtime, particularly at regional and provincial levels with the increase in access to testing and more people being tested annually.

In 2009, 3,711 people were diagnosed with HIV and by the end of 2009, 32,005 people had been diagnosed in PNG since 1987. Overtime there has been a shift from more men being diagnosed to more women being diagnosed. During 2009, less men (37.3%) than women (61.4%) were diagnosed with HIV, and similarly by the end of 2009, accumulatively less men (43.2%) than women (52.7%) had been diagnosed since the epidemic began.

In 2009, it is found that concentrations of new and accumulative HIV infections are in younger age groups, particularly younger women (15–24 and 25–34 year old groups), and in men aged 25 to 34 and slightly older men aged 35 to 44. Median ages of those diagnosed with HIV are younger for women at 26 years, than men at 32 years (NDoH 2008; NDoH 2009; NDoH, 2010). Places where there are concentrations of infections locally or where prevalence is higher, are areas where more understanding through bio-behavioural and other social research is needed.

Since 2007, there has been a marked improvement in the reporting and recording of how people thought that HIV was being transmitted, and there is more of a diversity of modes of transmission being documented. Where data was reported in 2009, 91.1% were through heterosexual sex, 3.6% through parent to child transmission, 2.6% through homosexual sex, through body piercing or tattooing (1.3%), occupational exposure (0.4%), and blood transfusion (0.1%). Injecting drug use was not documented in 2009, but appeared in surveillance HIV mode of transmission data for 2003, 2007 and 2008 (NDoH, 2010).

At the end of 2009, NCD continues to have the highest HIV prevalence. Other high prevalence areas include the Highlands region (Western Highlands, and Eastern Highlands, Enga, Simbu and Southern Highlands provinces) and Morobe. HIV prevalence is higher in urban areas, such as Mt. Hagen and Port Moresby, as well as along and at the end of transport routes such as the Highlands Highway, and around some rural economic development areas

(NDoH, 2010). However, even in lower prevalence areas there is a need for biological and behavioural research.

HIV and STI in Southern Highlands Province

HIV

In 2009, 6.1% of all new HIV infections were detected in the Southern Highlands Province. Where province of origin was known for those diagnosed HIV positive nationally from across testing sites in PNG; 15.2% came from the Southern Highlands Province. There has been increased testing in the Southern Highlands over the past five years: from 0 HIV testing sites and 0 tests performed in 2005; to 4 sites and 3,935 tested in 2007; to 20 testing sites and 11,139 tested in 2008; and in 2009 there were 30 testing sites and 12,114 people tested for HIV (NDoH, 2010). Increased testing has contributed to more people being diagnosed.

In 2009, 12,114 people were tested for HIV in the Southern Highlands Province, and 345 (141M, 204F) were confirmed HIV positive. Prevalence of HIV in SHP varied across testing sites, and by gender. For example, HIV prevalence at VCT sites increased from 2.5% in 2008 to 4.7% in 2009 with 6,045 tested; with considerably more women testing positive and 3.6% prevalence in men, and 6.1% in women.

From those 1,063 tested at STI clinics in SHP, 3% were positive. A third more women than men tested for HIV at STI clinics, but there was a higher HIV prevalence in men (3.4%) than women (2.7%). Less than 1% HIV prevalence was reported from ANC clinics (.1% of 3973 women tested) and blood banks (.4% of 756 tested). While three times more men tested at blood banks, the only person diagnosed was a woman. A high HIV prevalence of 4.1% (4.4%M, 3.7%F) was found for those attending health facilities for other reasons, but only 271 people were tested. Of only 6 people (3M, 3F) who were referred for HIV testing from TB facilities in SHP in 2009, a third (2; 33.3%) was positive and both were men (NDoH, 2010).

While routine reporting of HIV through testing sites has greatly expanded, there was no sentinel surveillance data collected in Southern Highlands in 2009. Sentinel surveillance is an important area to expand and strengthen in the Southern Highlands Province at health facility levels, to monitor the HIV epidemic more closely at a number of sites with different population groups.

STI

Other studies in both urban and rural areas have long shown high prevalence of STI in both high and low risk populations in the Highlands and other areas (Hughes 1991, 2002; Mgone et al. 1999a, 1999b; Mgone et al. 2002; Passey et al. 1998).

In 2005, a progressive report by the PNGIMR on the sero-surveillance of HIV and STI around Moro in the Southern Highlands Province, highlighted high prevalence of sexually transmitted infections. From between a sample of 205 to 238 people tested for each infection, trichomonas (20%), was highest in prevalence, followed by chlamydia (18.0%), gonorrhea (15.1%), and syphilis (9.6%). From 18 of the Oil Search Limited (OSL) employees who participated in testing in OSL operational site areas, none had HIV or syphilis, but three employees had trichomonas, gonorrhea, or chlamydia. The two women who tested positive

for HIV in the Moro study were linked with the exchange of sex in the local area (PNG IMR, 2005; IMR 2007a).

From the National Health Information System (NHIS) data for 2009, over 71,025 were diagnosed with an STI in PNG and 3,309 or 1% (.7%M, 1.3%F) were diagnosed with a sexually transmitted infection from Southern Highlands' facilities. More women than men were diagnosed with a STI. Between 2000 and 2009, the SHP reported high numbers of diagnosed sexually transmitted infections, and between 3,061 (2001) and 5,636 (2008) people were annually reported to have been diagnosed with an STI through the National Health Information system (NHIS).

Given that a sexually transmitted infection can increase risk of HIV transmission during unprotected sex, sentinel surveillance for HIV in STI clinics, and increased diagnosis and treatment of existing infections, will decrease degree of sexually transmitted infections in the sexual networks of these environments and decrease risk of HIV transmission because of the presence of an STI. This association of STI with HIV must not be underestimated; while a focus on STI treatment, and access to medication and condoms, continue to be pressing national priorities in response to existing sexual practices and networking (IRG Presentation September 9th 2008).

Cultural and sexual practices and sexual networking — what is known from the literature

Early in the HIV epidemic, the first national survey of sexual behaviour in PNG was done by the Institute of Medical Research (NSRRT and Jenkins, 1994), and this study illustrated the complexity of socio-cultural factors and practices that could impact on the growth of the HIV epidemic. The study interviewed people non-randomly across cultural areas.

This early study identified practices and contexts in PNG predictive of growing HIV epidemics. These factors included: early sexual debut and high numbers of premarital sex partners; male to male sex was reported by male youth and men (12%); and the great majority of men (71%) had high numbers of extramarital and concurrent partners. Exchange and buying of sex with 27% of women reporting having received gifts and cash for sex; while 36% of men reported paying cash for sex, with 33% of these exchanges usually paid in gifts. There was a lack of condom use and consistent condom use and reported untreated STI (NSRRT and Jenkins, 1994). Most women (63% of 126) said that they knew their husband had extramarital partners; while 21% reported extramarital sex and polygamy that created concurrency of partners. Many (45%) were influenced by beliefs around childbearing, and in some areas lactation was used to justify extramarital sex.

Sexual violence against women occurred for the majority where 55% of women had been forced to have sex, most with more than one person, 30% had bled and weapons were involved. Over half of 95 married women interviewed had been forced to have sex with their husbands, with alcohol, threats and coercion involved (NSRRT and Jenkins, 1994).

It has also been found that similar sexual practices can be found in numerous areas of PNG with different meanings. Studies also indicate a great variation in traditional sexual cultures from highly permissive (Trobriand Islands) to repressive (Huli), and sometimes in close geographic proximity (Clark, 1997; Jenkins, 2007a; Lepani, 2002; Wardlow, 2002, 2007). Diversity presents both opportunity and challenges in responding to a primarily sexually

transmitted epidemic, in diverse and remote locations, with diverse languages and cultural groups, beliefs and practices.

The Southern Highlands Province, development, change and the HIV epidemic

Social mapping was done ten years later (2004) in all provinces by the National AIDS Council. Social mapping emphasized the importance of the land and its resources for communities in the Southern Highlands Province. The Highlands Highway and other major roads were valued for the transport of crops and goods, and access to health, employment, education, social and religious life. The highway also allowed for the development of other social problems with the movement of alcohol, marijuana, guns and large numbers of people. Alcohol and marijuana, tribal warfare, domestic and sexual violence, extramarital sex, exchange of sex, polygamy, land disputes, royalty payments, and gambling were identified as some issues in SHP communities in 2005 (NHASP and NAC, 2005a; NHASP and NAC, 2005b).

Further studies mapped high risk settings and practices within particular groups along the Highlands Highway, while the first behavioural surveillance survey (BSS) data collected in private industries identified that there is great variability between male workforce populations in their sexual practices and the degree in which these occur, their exchange of sex for payment in cash, goods, and services (favors), and their condom use with regular, non-regular and paid partners. BSS data suggests that workforces differ in vulnerabilities and risk of HIV infection, depending on the type of work, their work environments, duration of time at work, mobility and sexual practices. It was found that there was a need for targeted and tailored research and policy approaches with private industry workforces, and for the women who make a living, or subsidize their living, through the exchange of sex in these areas (NHASP and NAC 2005b; NHASP and NACS, 2007).

Wardlow (2007), in her work with the Huli in the Tari area, found that men's labour migration to mines and petroleum development sites such as Porgera and Oil Search Limited resulted in long absences from home, and that their migration patterns and access to money influenced their decisions to have extra-marital sex. Socio-cultural norms perpetuated extra-marital sex for men and double standards around sexuality between men and women. At the same time, the consequences of a married woman having a sexual relationship with another man would normally involve violence.

Wardlow (2002 and 2007) also found that a growing number of Huli women were having sexual relations for money (*pasindia meri* – passenger woman) and that there were changing gender relations in the Tari Basin. Women were having sex for money not always for the purpose of making money, but for revenge and to cause shame on their husband and male kin for not punishing men who sexually or physically abused their women. When husbands were gone for long periods of time, some wives were raped or became victims of other abuse, but their perpetrators were not punished. Neither their husbands, who were absent, nor their male kin protected them, and this angered women, who argued that they were mistreated and not respected and that their men had failed them by not fulfilling their customary duties.

Resource extraction and petroleum development create contexts of mobility, long working hours and absence from family, spouse and other partners, and situations where men are having extramarital sex with a variety of partners and men and women are exchanging money or a variety of other goods and services for sex. This is no different in PNG than in many

other parts of the world. While it is often said that people do not understand what is socio-behaviourally 'driving' the HIV epidemic in different parts of PNG, the literature identifies some important factors to consider.

The Southern Highlands has been affected by the Highlands Highway and its ongoing extension, other main road systems, development projects and resource extraction that have increased the movement of people and goods. This has been positive for economic growth, but in the process socio-economic change has created other issues and disruptions in familial and sexual relationships. More normative socially sanctioned extramarital sex for men and double standards for women, changes in labour processes, gender relations, social obligations, and increased mobility, have created contexts where both men and women have concurrency of sexual partners and exchange of sex occurs, while condom use can be limited allowing for STI and HIV to spread.

The progressive report of IMR (2005b) identified high levels of STI and reported that there were sexual networks amongst OSL employees, employees of landowner contractor companies, police men and security guards and women exchanging sex outside the gates of their site areas in the Moro area of the Southern Highlands. Many women exchanging sex reported travelling from the Hagen, Mendi and Tari areas. There was physical evidence, such as used condoms and condom packages, in surrounding communities. Condom access was found to be limited in the general communities, but OSL employees and contractors were identified as having more access from the Moro and Ridge Clinics than others (IMR, 2005b).

BEHAVIORAL SURVEILLANCE SURVEYS (BSS) — OIL SEARCH LIMITED

Behavioral surveillance surveys (BSS)

Behavioral surveillance surveys (BSS) identify the sexual and other practices that are occurring in a population group, and establishes the level of their occurrence. The data is used to assess if particular groups are at greater or less risk of HIV infection because of their practices, at particular sites over time, as well as increasing understanding of the sexual networks and linkages between more at risk populations and the general population. Collecting BSS data with the same population group over time will produce trend data that can help explain changes in HIV prevalence by changes in behavioral practices and other characteristics. BSS findings can act as an alert system about what may be increasing the potential for transmission of HIV, providing opportunities to create change in the course of the epidemic.

Based in an area of higher and growing HIV prevalence, the OSL workforce was prioritized by the NDoH and the Surveillance Technical Working Group as a priority site for a baseline study as part of BSS surveillance research 2008–2009. The behavioural surveillance research discussed in this report was collected at the end of 2008 and early 2009 across OSL sites. This BSS survey increased the geographic coverage by type of private industry being monitored by the NDoH National HIV behavioural surveillance, and provides baseline data for monitoring behavioural trends with more at risk populations in the private sector over time.

Most importantly, this baseline data can be used by Oil Search Limited and the NDoH/ADB HIV Prevention in Rural Enclaves project to support HIV prevention and treatment strategies and responses that are evidenced based and tailored to minimize the impact of the HIV epidemic on the OSL workforce and their surrounding communities, and for monitoring and evaluating the impact of their responses to HIV overtime (See Appendix 1: Collaboration and endorsement for research).

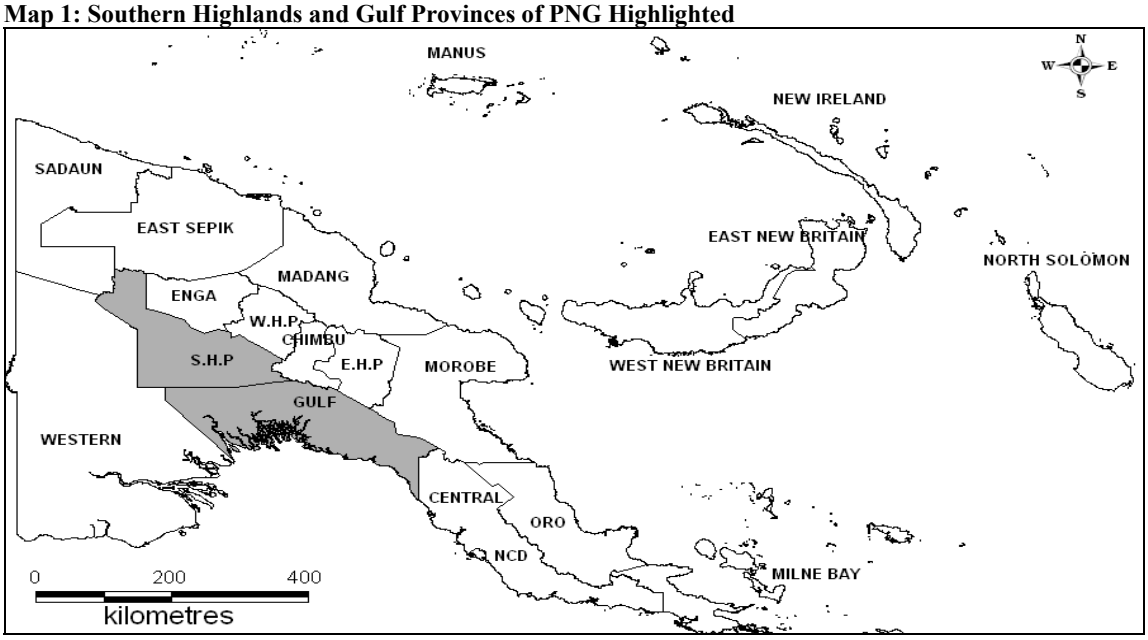
This report will provide analysis on the relationships between behavioural and demographic data, and other contextual factors which may be creating greater or less vulnerability and risk for the private sector and their workforce. The findings provide insight into the lives, understandings and practices of the Oil Search Limited workforce and how sexualities and sexual relationships are negotiated in the context of petroleum development, both inside and outside of the camp site gates.

Oil Search Limited (OSL)

Oil Search Limited is an oil and gas exploration and development company that has been operating in Papua New Guinea since 1929. In 2003 it acquired all of the shares in Chevron Niugini (the PNG subsidiary of Chevron Texaco), making it the largest oil and gas producer in the country, with an expanding workforce.

As PNG's largest oil and gas producer, it operates all of PNG’s producing oil and gas fields, and has a 29% interest in the world scale PNG LNG Project, operated by ExxonMobil, which commenced full construction in March 2010. Oil Search Limited is one of PNG’s largest companies and tax payers. It has approximately 1,000 full-time staff and over 1,000 contractors located in PNG and Australia, and beyond in its exploration activities.

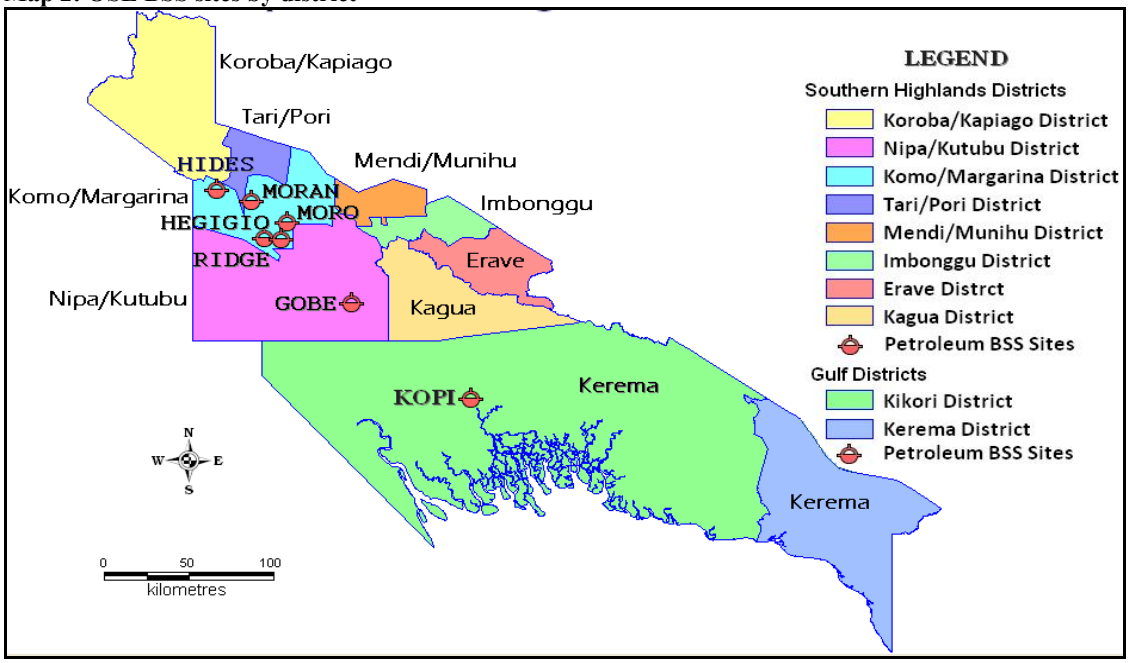
Map 1: Southern Highlands and Gulf Provinces of PNG Highlighted



Within PNG, Oil Search-operated facilities, production and pipeline licenses cover more than 1.800 square kilometers, straddle several provinces and impact 10 local-level government areas, 13 language groups, hundreds of clans and more than 25,000 people in 110 villages. The Southern Highlands Province shares borders with Gulf, Western, Simbu, Western Highlands, Enga and Sandaun Provinces.

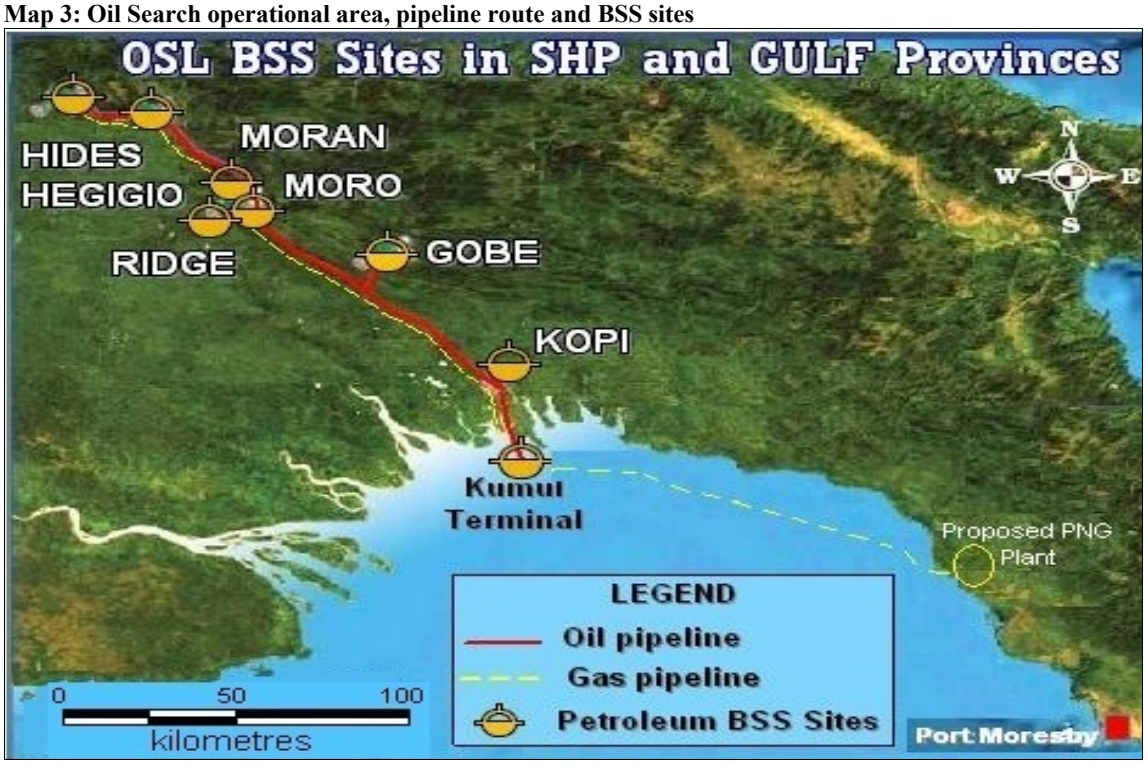
At the time the data was collected, the Southern Highlands Province was divided into the eight districts of: Ialibu, Imbongu, Komo/Magarina, Koroba/Kopiago Mendi, Nipa/Kutubu and Tari/Pori. In July 2009, the Hela region became a province encompassing the districts of Komo/Magarina, Koroba/Kopiago, and Tari/Pori.

Map 2: OSL BSS sites by district



OSL sites span the Southern Highlands and Gulf Provinces. The seven sites operated by Oil Search represented in this research sample are Hides, the Ridge, Moro, Gobe, Kopi (Kikori), Moran and Hegigio.

Map 3: Oil Search operational area, pipeline route and BSS sites



Sustainability and development

OSL strategically maintains that the meaningful development of relationships and partnerships in sustainable development with government and communities affected by their operations is their social responsibility and essential to their success and production, and for the livelihoods and wellbeing of those in areas of their development.

Oil Search has established a multi-disciplinary Community Affairs team, which is a major interface with communities in the Company's operational areas and their representative local, provincial and national governments.

Oil Search also places importance on the development of the skills and capabilities of its workers. This is seen through its training programmes, its identification, mentoring and support of future leaders in senior roles within Oil Search, and its commitment to the protection and improvement of health and well being (Oil Search Annual Report 2009).

Improving Health and Wellbeing

Oil Search is committed to optimising the health of its people and provides a comprehensive Occupational Health and Safety programme, and a holistic Health and Wellbeing programme for all staff, which includes regular health and fitness checks, nutritional and exercise advice, scheduled activities, psychological support, workplace ergonomics and ongoing health and wellbeing education.

In collaboration with government and non-government organisations, Oil Search's long established social and environmental activities in all operating areas promote the UN's Millennium Development Goals (MDG) focused on "Universal access to treatment for HIV/AIDS for all those who need it" and "Halt and begin to reverse the incidence of malaria (and other diseases)" (Oil Search Annual Report 2009:17).

Health Services and HIV

Oil Search Limited (OSL) operates a dedicated health service unit which provides healthcare to both employees and people in the local community. The company operates six permanent clinics with 43 staff governed by contemporary procedures and medical protocols. In 2006 OSL signed an MOA with the PNG National Department of Health (NDOH) and the Asian Development Bank (ADB) to join a Public Private Partnership (PPP) for a Health project focused on HIV prevention and care in rural economic development areas. The PPP is a collaborative partnership between the Population Services International (PSI), NDoH, and the ADB and OSL. The NRI joins this partnership through its MOA for behavioural surveillance research data collection with the NDoH.

The HIV prevention and care in rural economic development areas project has provided funding for clinical staff professional development to enable HIV Counselling and Testing and medical management of those with HIV, including ART provision. During 2009, 402 HIV tests were conducted within the company. Of these, seven tests were positive, and six workers were on treatment. More HIV tests (3,116) were conducted within the community. Of these, 54 tests were positive, and 38 (accumulative) were on treatment (Oil Search Annual Report 2009:42).

In 2009 Oil Search was active in 20 health facilities, including six Oil Search and 14 community clinics, which have the ability to carry out HIV testing. 15 of these facilities have been accredited by the NDoH. A total of 3,300 people from the local community have presented for HIV testing in the two years since the program commenced. Where necessary, those tested positive have commenced anti-retroviral treatment and are managed by the Oil Search HIV team.

Apart from the provision of health services, Oil Search is involved in raising awareness of HIV in the community and conducting behavioural change education in all of its operational area communities. In 2009 small group workshops targeting men and their sexual health was delivered to approximately 600 men in the Kutubu, Hides and Kikori areas with funding from the ADB and technical assistance provided by Population Services International (PSI). The NACS curriculum "Introduction to HIV" course was attended by several hundred people across the area. This course was delivered for community leaders, teachers and pastors. The project supported training and mentoring of local area health workers on the provision of counseling, testing and case management of HIV and STIs in their communities, and was ongoing during the year (Oil Search Annual Report 2009:43).

It is within the context of Oil Search Limited's public health approach to improve the health and wellbeing of their workforce and surrounding communities, and prevent and treat HIV infections, that the collaboration and development of this research took place.

Formative Consultations and Research at OSL

In 2008, the principal investigator visited OSL and had consultations with the Manager of Public Health Unit, Ross Hutton and other members of the public and community health teams. Initial discussions were held around the contexts and structure and schedules of work, policy around sexuality and sexual health, context of HIV programs and understandings of risk for the workforce. A review and editing of the first BSS survey was done with Ross Hutton to ensure contextual issues were addressed, and this draft survey was submitted to the management of OSL so they could see what an example of a draft BSS survey would include for their workforce (see Appendix 1 for letter of endorsement of research from OSL management in June 2008).

From the 23rd to 26th August 2008, the NRI team visited the OSL sites at Moro and the Ridge to conduct formative research. An email was circulated among management, supervisors and women about the NRI formative research visit. Formative research was conducted to pilot the questionnaires, make observations, gather sampling and other information about work rosters, scheduling and logistics, and to conduct individual and focus group discussions to begin to understand the workforce, their ideas and local sexual cultures of Oil Search Limited workers and those engaged in the exchange of sex outside of the enclave gates.

Focus group and individual discussions were done to pilot the BSS questionnaires in both English and Tok Pisin, a total of three women were individually interviewed and all preferred English. There were eight refusals and three women were interested but did not have time to spare. Women who participated said the questions asked were too slow and preferred to answer the questions without listening to the tape. Seven men were also interviewed using AASI and only one out of the seven men preferred to be interviewed individually because he did not have the time. The male workforce indicated more willingness to participate in the pilot surveys and focus groups than women.

The pilot demonstrated that some questions were not clear and needed to be reworded or translated, but mostly skip patterns were adjusted. The audio-assisted self-interviewing method used among the OSL workforce was generally accepted as they expressed a need for privacy and to self administer, but there was a need for ability to quicken or slow down the audio. Audio cassettes were adapted into digital format after the pilot to improve speed and control by the interviewee of the audio. Overall, the AASI method was accepted because it would allow workers to fill out the questionnaire by oneself with more privacy. Literacy was identified to be a possible factor for those workers who did not know how to read and write and who would require individual assistance; while feedback indicated the need to allow for self-interviewing without audio for workers who were literate and understand how to fill out the questionnaire.

Four gender specific focus group discussions among the OSL workforce, (3M, 1F), were conducted at the Moro (2M, 1F) and Ridge (1M) sites over the four-day formative research trip. A total of 28 workers (21M, 7F,) took part in the focus groups. Focus groups identified the workforce ideas and understanding of local sexual cultures, HIV and STI, the exchange of sex outside the gates of the sites of OSL, access to condoms, drugs and alcohol, rosters and relationships, and issues raised by the workers in relation to culture or workplace policies in relation to sex.

The pilot identified practical and logistical issues to address prior to conducting the surveys across the five sites in relation to movement of the team, sampling and the production orientation of the workforce created a pressure for time and timing of the interviews. Lists of workers were compiled for the random selection of individuals across stratifications of work types and gender across the five sites from lists provided by Oil Search Limited. A sampling interval was then calculated with every n^{th} selected of the targeted workforce population, depending on the sampling interval because of proportional distribution of the work type and gender distribution, until the required sample size of 460 was obtained.

TARGET POPULATIONS, METHODS, AND SAMPLING

Operational definitions of targeted populations

Sub-population groups targeted in this BSS research included: male and female workers in the private industries of Oil Search, and women exchanging sex for money, favours or resources outside the gates of OSL sites.

Workers were defined as men and women over the age of 15 who work at Oil Search from across all job categories, including permanent and contractor or seasonal workers from employee lists at the time of the sample.

Women exchanging sex or having transactional sex were defined as women over the age of 15 who exchanged sex for money, resources, services and favours outside of the gates of OSL camp sites.

Quantitative and Qualitative Methods

The BSS research collected in 2008 and 2009 with the OSL workforce aimed to improve BSS data quality and quantity, with complementary qualitative studies with the workforce, and with women exchanging sex outside the gates. Probability sampling and tailored interviewing methods were integrated into the research methods and sampling design.

Questionnaire

A standardized validated questionnaire (BSS) for the female and male workforce was used. The survey was adapted from the first BSS to ensure repeatability and that it took into account the specific socio-cultural realities of Papua New Guinea for the targeted population. Surveys were translated into Tok Pisin and back-translated into English in the processes of piloting and questionnaire verification. The survey was developed from standardized tools including the first BSS survey for private industry workers done in PNG (NHASP and NACS 2007), which was based on Family Health International (FHI) BSS surveys, and the second round BSS survey done with plantation workers. Additional adaptations were made to the OSL survey after formative research and piloting of the survey with the workforce. Questionnaire data was collected using an audio-assisted self administered (AASI) method with digital recordings of the surveys loaded into MP3 players.

There were several limitations to the questionnaire and the AASI interviewing method that was used at OSL. There were two questions that were asked to just female or male in the areas of sexual violence and anal sex and some areas could have benefited from more leading questions that would better define subsets. While audio assisted interviewing allowed for more privacy which was what the workers had asked for during formative research; self administered surveys cannot control for missing data from a lack of response to some questions and not others, and those interviewed did not always synchronize with the skip patterns creating some inconsistencies in data response patterns, that required rigorous data editing and filtering during the analysis process until the team was assured that subsets were maintained where inconsistencies in responses had occurred across the variables. One of the strategies used to create consistency of subset numbers, was by identifying data that was purely “missing” as well as, those respondents who “did not specify”, but who belonged to

the particular subset because of their answers in one place or another in that particular section.

AASI survey interviewing

Social science and health researchers have found it difficult to accommodate accurate measurement of private and socially stigmatized behavior, and it has been noted that inaccurate reports of sexual behaviors are inevitable in survey-based evaluations (Newman et al. 2002). In an effort to minimize this problem, researchers have developed approaches that extract more accurate responses on sensitive or highly stigmatized behaviors. There is a growing body of evidence that shows that increasing privacy of an individual during an interview can improve the completeness and accuracy of reporting sensitive and illegal behaviors in population based surveys (NIMH 2007; Turner et al. 1998; Turner et al. 2002; Krawczyk et al. 2003). Audio computer-assisted self-interviewing (ACASI) has been found to allow greater respondent privacy than traditional face to face interviews. Studies conducted showed that the method reduced under-reporting of sensitive behaviors compared with traditional face-to-face interviews or self-administered questionnaires (Turner C.F. et al. 1998a, 1998b; Miller et al. 1998; and Jarlias et al. 1999).

Audio-assisted self-interviewing (AASI) was used among the Oil Search workers and contractors during the time of the survey. The questionnaire was self-administered and workers either came to a large interviewing area just before lunch and after dinner. The sitting arrangement was organized so that no one could view what the other was writing. However, due to slow recruitment in groups, some workers were individually given survey questionnaires with MP3 players and were filled in by themselves within their own comfortable time and space that is done within their room or office.

The workers played the MP3 player and listened to the recorded questions using headphones and filled in the survey questionnaire as they went along. The questions were in Pidgin and English and language preference was selected by the workers. Due to literacy issues with a couple of technical and semi skilled workers, the interviewers did a face to face interview. There were no incentives given out after the interview; however drinks and light refreshments were made available in the interview area during the time of survey being conducted.

Qualitative interviews

Some male and female employees and women exchanging sex outside the gate had qualitative interviews. Twenty-two (13M, 9F) qualitative interviews were conducted overall with the workforce (12M, 5F) and those involved in transactional sex outside of the gate (4F, 1M). Using a purposively selected sample, interviewing was informed by on and off site conditions, local insight and strong research ethics. The interviews, alongside the quantitative survey data, helped to provide meaning and understanding to the contexts, motivations and practices of the workforce and women exchanging sex.

Each person identified for the qualitative survey sample was asked if they wanted to participate in a one-to-one interview. The workers who participated were informed through an information and ethics statement, which explained the reason for the study, the type of questions that would be asked, and that the interview would be audio-taped if they agreed. The ethics statement gave an assurance about confidentiality, anonymity, the security of the

information collected, and a request for consent. For all interviews the information on the consent form was read to the interviewee and further explained.

After the person had agreed to be interviewed, they signed or marked on the line on a consent form to indicate that they have been informed about the study, and that they gave consent to participate. The consent form was given back to the interviewer and was numbered to identify the interview for transcribing. The interview does not have an identifying name attached to it, but an unidentifiable number. The consent forms and the transcripts are stored separately.

Field Data Monitoring, Security and Management

There were several measures taken to monitor and ensure that the survey was conducted with informed consent and obtained according to the approved protocol and ethics statement. During the survey co-principal investigators were on-site daily throughout and were responsible for close monitoring of survey data collection. They ensured: adherence to survey protocols and sampling procedures; the maintenance of ethical standards and completion of consent; and other field survey checks and data management. There were team debriefs to provide daily feedback to the Principal Investigator, who was with the team during most of the data collection. A Standard Operating Procedure was used to standardize approaches in interviewing, for informed consent and to assure the rights of those being interviewed, and for monitoring data security, management and supervision.

Ethics

Ethical approaches aimed to ensure that recruitment and participation in interviews were voluntary and with informed consent, and sampling strategies and measures were designed to ensure that a no-harm approach was maintained. Anonymity of those interviewed and confidentiality of the data was paramount, and there are no links from the data to individual names prior to, during and after data collection, or in the reporting and dissemination of the BSS to target populations and their stakeholders. Data back-up, data management and security were addressed in and out of the field. Development of questionnaires, research design and implementation was participatory with OSL employees, with the dissemination and translation of results given back to OSL management and stakeholders and to the target population, prior to release of the BSS published report (See Appendix 2: Standard Operational Procedures (SOP) for Interviewing and Appendix 3: Data Management and Security).

Storing, securing and managing of the Oil Search Limited data and forms

At Oil Search Limited, completed surveys and forms were locked in the patrol box in a locked room. Accessibility to this room was limited to only the Principal and Co-Investigators. The data manager was responsible for checking completed forms and locking them before transferring the surveys and forms to the National Research Institute (NRI). At the end of each day the completed surveys were transferred to the principal or co-investigators in charge for data check and for reasons of security and confidentiality they were then locked into the patrol box.

The Data Manager (SRO) and the PI carried completed surveys from the field sites to NRI office. The completed surveys and forms when received at NRI from the survey sites were

counted and ensured that the same number from the field had been received. The Data Manager signed for the surveys and forms as the recipient per the date received. During and after data entry they were locked in a cabinet in a secured alarmed office to avoid data loss and to ensure confidentiality and ethics were kept at all times.

The data entry staff members who worked on the database were the only staff who had access to the database. Access to these files was password protected on all computers. The Data Manager supervised the backing up of all data in external hard drives and were later stored in a fire proof safe to avoid loss of data. To prevent loss of data from internet virus, the computers used for data entry were not connected to the existing network in the office.

Sample Size Calculations

A probability sample size of 460 was calculated for the randomized stratified sampling frame among three categories of work types (professional; technical; and semi-skilled) across seven sites at Oil Search. Those surveyed were randomly selected by types of work and by male and female gender, proportional to the overall workforce and gender distribution at each site during the time of data collection.

Overall sample sizes for each site included in this survey were calculated on the basis of factors typically used in surveys with probability samples. The size is calculated with having 95% significance, with 90% confidence of detecting a 15 percentage point increases from P_1 to P_2. The expected baseline value of key indicator used in the sample size computations was 'condom use at last sex across all partner types' (P_1=.50 –P_2=.65), with a magnitude of 15% change desired in condom use. The actual proportion being used in calculations is conservative at 50% and most available data indicates that this indicator would be significantly less. After data collection this can be adjusted with the proportion determined by the survey. The design effect of 2 was applied as the sites were cluster like and this was a conservative sampling choice and gave more robustness to the sample size. A multiplier of 1.25 was also used in the calculations as the core indicator would not be applicable to the entire workforce as a proportion may not have had sex. From previous Behavioural Surveillance Surveys (BSS) at private industries, the proportion that has not had sex is usually much less than 20% of workforce samples. After calculation, the required sample size for the OSL workforce was 460 (See Appendix 4: Sample Size Calculations).

Sampling Frame and Selection

Stratified random sampling frames for this BSS research were informed by the OSL staff involved and designed by the NRI BSS Specialist, the BSS Data Manager, NDoH Surveillance Coordinator, the NDoH epidemiologist, and an international HIV BSS researcher at the University of New South Wales. The numbers of enclave employees, the sites and their structures were integral for the sampling frame development and to determine the sample size estimations for BSS. To ensure the random sampling of the workforce, the data manager verified the numbers and structure of the workforce sample of the workforce during formative consultations with OSL compiling all adjustments to ensure randomness.

Sampling lists were adjusted again at the beginning of fieldwork when situations on the ground impacted on access to some parts of the workforce. The changes in the proportions across the sites occurred because of: land disputes; a strike; Kumul had a ship up-loading and the sampled worker was not able to go in by helicopter when the team was in the Gobe area.

Some of the female overall numbers across the sites shifted because of the exclusion of Port Moresby based female workers. Some of the sampled workforce was at Hegigio and Moran and they were interviewed as part of the Moro sampling.

Initially there were five sites selected (Hides, Moro, Ridge, Kopi, and Gobe); then the sites increased to six with the addition of Kumul, then the removal of Kumul, and then there was an addition of workers from the two sites of Moran and Hegigio.

During data collection, there was land disputes which caused some of the workforce of Moran Development Corporation (MDC) not to go to work, therefore the need to adjust the amounts from the other sites. The strike of MDC during the time of the sampling greatly contributed to the re-adjustment of sampling list by site as these were not able to be sampled. To compensate for this, more of the workforce was sampled from the Ridge from the categories of workforce strata required for the different proportions.

The initial lists also included the women that were based in Port Moresby and after these were adjusted the numbers of female workforce was also adjusted from 27 to 19 for the overall proportion sampled across the sites outside of Port Moresby.

Overall, factors effected the calculation of the sampling distribution across the workforce more than initially projected and these were then proportionately recalculated for the sample stratified by site, types of work (professional, technical or skilled work) and gender. Random sampling was maintained within the new workforce sampling lists after revisions; however there was considerable replacement with back-to-back workers during collection.

If the workers randomly selected were not available, then their alternate back-to-back was approached (two people cover each position), asked to participate and was recruited to complete the survey after they gave their consent. If the replacement was not available, then the next available person on the randomized list was chosen and contacted by phone or through their direct supervisors. Challenges were experienced in not only locating the randomly selected workers (or their replacements) from the companies and sites, but due to their schedules and long hours, it took longer to recruit the sample than initially anticipated.

The tables below show the total population and sampling distribution by site and sampling frame. The sample was distributed across the following seven OSL sites of Moro, Ridge, Gobe, Hides, Kopi, Moran, and Hegigio.

Table 1: Breakdown of site and proportion of sample

Site	n	% of sample
Moro	187	40.4%
Ridge	163	35.2%
Gobe	67	14.5%
Hides	21	4.5%
Kopi	18	3.9%
Moran	6	1.3%
Hegigio	1	0.2%
Total	**463**	**100.0%**

A total of 463 randomly selected surveys (444M, 19F) were collected from the OSL workforce between the 31st of October to the 12th of November 2008 (break in collection) and from the 9th until the 20th of December 2008. The last 25 surveys that had been

distributed at end of December were self administered and were returned to NRI on the 27th of January 2009. Of those who participated, 444 (95.9%) were male and 19 (4.1%) were female reflecting the proportion of women in the overall composition of the workforce at sites outside of Port Moresby when the sampling frame was finalized.

Qualitative interviews were conducted using convenience sampling with members of the OSL workforce, as well as with men who arrange and negotiate transactional sex partners, and women who exchange sex outside the gates of OSL sites.

Table 2: Distribution of OSL workforce sample size by site and gender

Site	Sex				Total	
	Male		Female			
	n	%	n	%	n	%
Moro	182	39.3%	5	1.1%	187	40.4%
Ridge	151	32.6%	12	2.6%	163	35.2%
Gobe	66	14.3%	1	0.2%	67	14.5%
Hides	20	4.3%	1	0.2%	21	4.5%
Kopi	18	3.9%	0	0.0%	18	3.9%
Moran	6	1.3%	0	0.0%	6	1.3%
Hegigio	1	0.2%	0	0.0%	1	0.2%
Total	**444**	**95.9%**	**19**	**4.1%**	**463**	**100.0%**

Table 3: Breakdown of qualitative interviews by sex and type of interviewee

Type of Interviewee	Number
Male OSL worker	12
Female OSL worker	5
Women exchanging sex	4
Men who arrange and negotiate transactional sex	1
Total	22

*1 male OSL worker interview was inaudible and not included

Both quantitative surveys and qualitative interviews contributed to an understanding of marital patterns and experiences of polygamy, sexual cultures, sexual networks and concurrency of sexual partners. Sexual desires and practices are explored, including the use of pornography and sex products, and penile modification practices, including circumcision, slitting, inserting and injecting. Perceptions about condoms and condom use, and alcohol and drug use, and their influence on condom use were discussed. Some talked about or reported sexual violence and forced sex.

Workers knowledge about HIV and AIDS, attitudes towards people living with HIV in the context of the community and workplace, and HIV and sexuality-related policies were also topics of discussion. Workers were asked about: their knowledge of sexually transmitted disease; what they did if they had symptoms; and if they would go to an OSL clinic for treatment.

The data from the qualitative interviews, and selected quotes, are used throughout the report to add to the understanding of the survey data; sometimes through confirmation and the creation of themes and sometimes through variation and disagreement.

BSS RESEARCH FINDINGS

DEMOGRAPHICS

Country, Gender, Region and Province of Origin

By far, the majority of the 463 Oil Search Ltd workforce surveyed were Papua New Guineans. The workforce originated from across all of the regions and provinces of Papua New Guinea, with most workers coming from the Highlands Region (62.8%), and the rest coming from the Southern (16.2%), Momase (7.3%) and the Islands (4.7%) regions. From within the regions, the Southern, Western, and Eastern Highlands, Central, and Gulf provinces contributed most of the workforce.

Only 6.3% of the workforce came from other countries, such as: Australia (17), Bangladesh (1), Cyprus (1), Malaysia (1), New Zealand (2), United Kingdom (6), and Zimbabwe (1). Twelve people did not identify their province or country of origin.

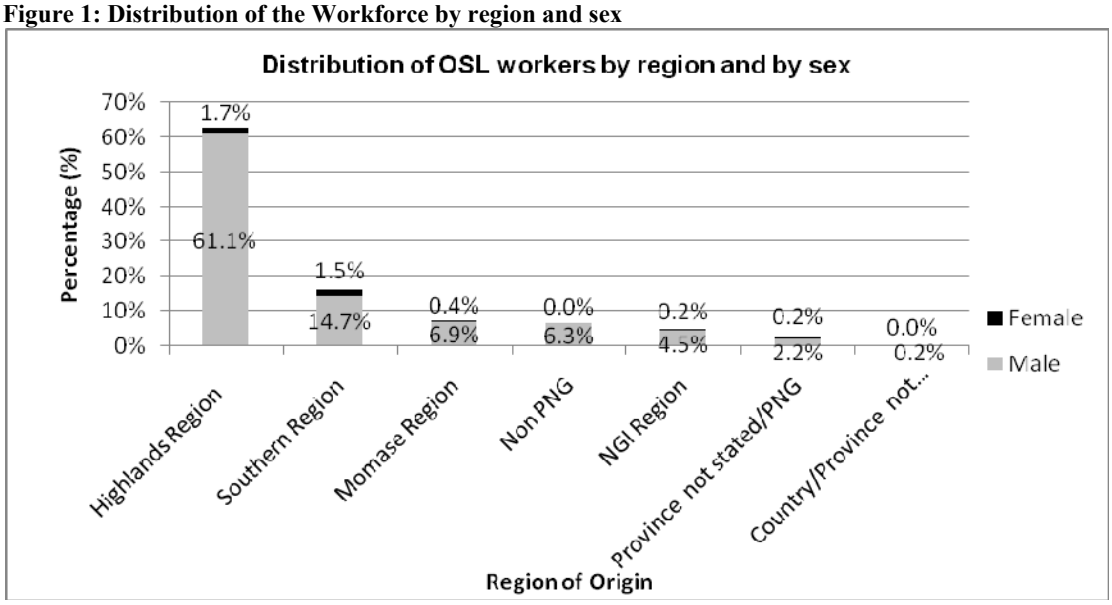
Table 4: Distribution of country or province of origin by sex

Province of Origin	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Southern Highlands	203	45.7%	43.8%	7	36.8%	1.5%	210	45.4%
Western Highlands	44	9.9%	9.5%	0	0.0%	0.0%	44	9.5%
Eastern Highlands	17	3.8%	3.7%	1	5.3%	0.2%	18	3.9%
Simbu	11	2.5%	2.4%	0	0.0%	0.0%	11	2.4%
Enga	8	1.8%	1.7%	0	0.0%	0.0%	8	1.7%
Highlands Region Subtotal	**283**	**63.7%**	**61.1%**	**8**	**42.1%**	**1.7%**	**291**	**62.8%**
Central	23	5.2%	5.0%	2	10.5%	0.4%	25	5.4%
Gulf	18	4.1%	3.9%	1	5.3%	0.2%	19	4.1%
National Capital District	11	2.5%	2.4%	1	5.3%	0.2%	12	2.6%
Milne Bay	9	2.0%	1.9%	2	10.5%	0.4%	11	2.4%
Western	5	1.1%	1.1%	1	5.3%	0.2%	6	1.3%
Oro	2	0.5%	0.4%	0	0.0%	0.0%	2	0.4%
Southern Region Subtotal	**68**	**15.3%**	**14.7%**	**7**	**36.8%**	**1.5%**	**75**	**16.2%**
East Sepik	12	2.7%	2.6%	0	0.0%	0.0%	12	2.6%
Morobe	8	1.8%	1.7%	2	10.5%	0.4%	10	2.2%
West Sepik	7	1.6%	1.5%	0	0.0%	0.0%	7	1.5%
Madang	5	1.1%	1.1%	0	0.0%	0.0%	5	1.1%
Momase Region Subtotal	**32**	**7.2%**	**6.9%**	**2**	**10.5%**	**0.4%**	**34**	**7.3%**
East New Britain	8	1.8%	1.7%	0	0.0%	0.0%	8	1.7%
Manus	4	0.9%	0.9%	1	5.3%	0.2%	5	1.1%
North Solomons	4	0.9%	0.9%	0	0.0%	0.0%	4	0.9%
New Ireland	3	0.7%	0.6%	0	0.0%	0.0%	3	0.6%
West New Britain	2	0.5%	0.4%	0	0.0%	0.0%	2	0.4%
NGI Region Subtotal	**21**	**4.7%**	**4.5%**	**1**	**5.3%**	**0.2%**	**22**	**4.7%**
Other Country	29	6.5%	6.3%	0	0.0%	0.0%	29	6.3%
Province not stated/PNG	10	2.3%	2.2%	1	5.3%	0.2%	11	2.4%
Country or Province not stated	1	0.2%	0.2%	0	0.0%	0.0%	1	0.2%
Total	**444**	**100.0%**	**95.9%**	**19**	**100.0%**	**4.1%**	**463**	**100.0%**

*All percentages in all results tables are rounded to the first decimal

Only 4.1% (19) of the sample were female and as previously noted, this was proportional to the gendered distribution of the overall workforce outside of OSL Port Moresby office sites.

Figure 1: Distribution of the Workforce by region and sex



Age Distribution

Just over ten percent (11.2%; 46) did not know their age. Of those who knew their age, the youngest reported being 16 and the oldest was over 65 years old. Most (68.4%) were between the ages of 25 and 44 years old, and in their productive and reproductive years. There were concentrations of workers in particular age groups, with overall more men and women interviewed from the 25–29 (21.0%), 30–34 (18.3%), and 35–39 (16.7%) age groups.

Table 5: How old were you at last birthday by sex

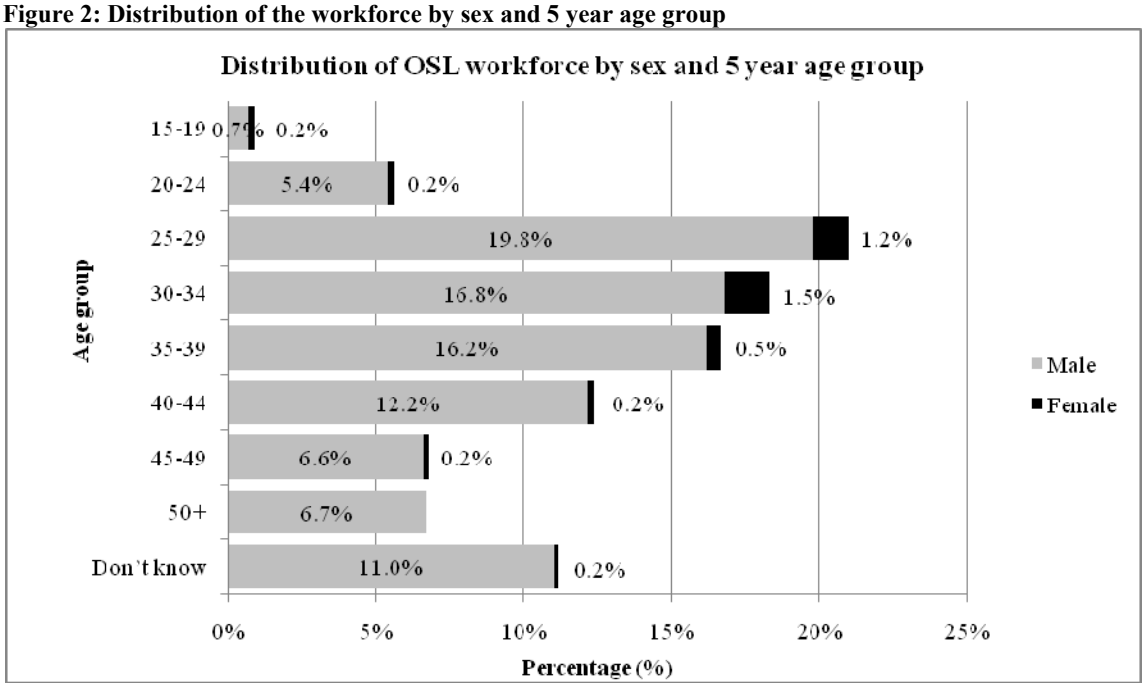
Age at last birthday	Male			Female			Total	
	n	% within sex	%	N	% within sex	%	n	%
15-19	3	0.8%	0.7%	1	5.6%	0.2%	4	0.9%
20-24	22	5.6%	5.4%	1	5.6%	0.2%	23	5.6%
25-29	81	20.7%	19.8%	5	27.8%	1.2%	86	21.0%
30-34	69	17.6%	16.8%	6	33.3%	1.5%	75	18.3%
35-39	67	17.1%	16.2%	2	11.1%	0.5%	69	16.7%
40-44	50	12.8%	12.2%	1	5.6%	0.2%	51	12.4%
45-49	27	6.9%	6.6%	1	5.6%	0.2%	28	6.8%
50-54	16	4.1%	3.9%	0	0.0%	0.0%	16	3.9%
55-59	7	1.8%	1.7%	0	0.0%	0.0%	7	1.7%
60-64	1	0.3%	0.2%	0	0.0%	0.0%	1	0.2%
65-69	2	0.5%	0.5%	0	0.0%	0.0%	2	0.5%
70-74	0	0.0%	0.0%	0	0.0%	0.0%	0	0.0%
75-79	1	0.3%	0.2%	0	0.0%	0.0%	1	0.2%
80-84	1	0.3%	0.2%	0	0.0%	0.0%	1	0.2%
Don't know	45	11.5%	11.0%	1	5.6%	0.2%	46	11.2%
Total	**392**	**100.0%**	**95.6%**	**18**	**100.0%**	**4.4%**	**410**	**100.0%**

*Missing = 53

Other smaller concentrations were younger workers between the ages of 40 and 44 (12.4%) and in the 15 to 24 (6.6%) age group, with the rest over 45 (13.5%). While 6.8% were over the age of fifty, there were more (24) between the ages of 50 and 60 years and only four men

said they were over the age of sixty-five. Some ages appeared out of range and fifty-three (11.5%) workers of the total sample did not answer (missing data), perhaps indicating that there were others unsure of their ages (See Appendix 5, Table 172 for additional table of age breakdown by year).

Figure 2: Distribution of the workforce by sex and 5 year age group



Highest Level of Education

Most of the OSL workforce had secondary, technical, tertiary or university education. Only a small number (3.7%; 17) had never been to school, and nearly a fifth had completed primary school (18.2%). Most had secondary (33.7%) or postsecondary education (44.4%), including having a university education (16.4%), tertiary or college (17.5%), or other vocational or technical training (10.5%).

Table 6: Highest level of formal education completed by sex

Highest level of formal education completed	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Haven't gone to school	16	3.7%	3.5%	1	5.3%	0.2%	17	3.7%
Primary education	82	18.7%	17.9%	1	5.3%	0.2%	83	18.2%
Secondary school	151	34.5%	33.0%	3	15.8%	0.7%	154	33.7%
Vocational/technical	47	10.7%	10.3%	1	5.3%	0.2%	48	10.5%
Tertiary/college	76	17.4%	16.6%	4	21.1%	0.9%	80	17.5%
University	66	15.1%	14.4%	9	47.4%	2.0%	75	16.4%
Total	**438**	**100.0%**	**95.8%**	**19**	**100.0%**	**4.2%**	**457**	**100.0%**

* Missing = 6

Of those workers who answered this question, 29.2% had more than 12 years of education and 7.8% had between 17 and 23 years. Of those who reported having been to school, 12.7%, across all levels of education, did not answer how many years of formal education they had had.

Table 7: Years of formal education completed by sex

Years of formal education completed	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
2- 6 years	56	15.1%	14.4%	2	12.5%	0.5%	58	14.9%
7 - 10 years	150	40.3%	38.7%	2	12.4%	0.6%	152	39.1%
11 - 12 years	64	17.2%	16.5%	1	6.2%	0.3%	65	16.8%
13 - 16 years	73	19.7%	18.8%	10	62.5%	2.6%	83	21.4%
17 - 18 years	20	5.4%	5.1%	1	6.2%	0.3%	21	5.4%
19 - 23 years	9	2.5%	2.4%	0	0.0%	0.0%	9	2.4%
Total	**372**	**100.0%**	**95.9%**	**16**	**100.0%**	**4.1%**	**388**	**100.0%**

* Missing = 58 **17 had never been to school

Religion

Almost all of the workers (98.0%) reported that they were Christian; the remaining 1.9% were either Muslim (1) or had no reported religion (8).

Table 8: Type of religion by sex

Religion	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Christian	431	98.0%	93.9%	19	100.0%	4.1%	450	98.0%
Muslim	1	0.2%	0.2%	0	0.0%	0.0%	1	0.2%
None	8	1.8%	1.7%	0	0.0%	0.0%	8	1.7%
Total	**440**	**100.0%**	**95.9%**	**19**	**100.0%**	**4.1%**	**459**	**100.0%**

*Missing = 4

Catholicism was the most common denomination (21.6%), followed by the United (15.1%); and Pentecostal Churches (13.1%); the Seventh Day Adventists (SDA) (12.9%), Evangelical Churches (11.1%) the PNG Bible Church (9.6%) and the Lutherans (7.3%).

Table 9: Type of Christian denomination by sex

Name of Denomination	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Catholic	95	22.0%	21.1%	2	10.5%	0.4%	97	21.6%
United	64	14.8%	14.2%	4	21.1%	0.9%	68	15.1%
Pentecostal	55	12.8%	12.2%	4	21.1%	0.9%	59	13.1%
SDA	56	13.0%	12.4%	2	10.5%	0.4%	58	12.9%
Evangelical	47	10.9%	10.4%	3	15.8%	0.7%	50	11.1%
PNG Bible	43	10.0%	9.6%	0	0.0%	0.0%	43	9.6%
Lutheran	31	7.2%	6.9%	2	10.5%	0.4%	33	7.3%
Revival	17	3.9%	3.8%	0	0.0%	0.0%	17	3.8%
Anglican	14	3.2%	3.1%	0	0.0%	0.0%	14	3.1%
Jehovah Witness	1	0.2%	0.2%	0	0.0%	0.0%	1	0.2%
Mormon	1	0.2%	0.2%	0	0.0%	0.0%	1	0.2%
Other	7	1.6%	1.6%	2	10.5%	0.4%	9	2.0%
Total	**431**	**100.0%**	**95.8%**	**19**	**100.0%**	**4.2%**	**450**	**100.0%**

*Missing = 4 ** 9 were not Christian

There was some discussion in the qualitative interviews about religion as a protective factor from HIV, self control and commitment. It was identified that there is a lack of engagement of the church in talking about issues around sexuality and condoms, and of the HIV epidemic. There were connections made between 'liberal' sexual practices, sin, morality, judgment and the end of life, and workers spoke of the contradictions between religion and what people actually do.

When we take alcohol we do not think about anything. When we see a woman, our good conscious to control ourselves until our death just somehow gets lost. We do not have a strong will to decide and to control ourselves. So, in our case I would say …maybe in regards to religion and the church it is true, I think from the way we are going, maybe it's a fulfillment in the biblical sense, of what is going to happen in the last days and the end of the world whatever. Otherwise, it would be hard for us to control ourselves unless each individual is committed. But one of the things that I've seen along the way, in church, all these other different kinds of things that we do have no meaning, but individually if you are committed and follow the laws of the church and you are right in the eyes of God, God is the only one, and he is the one to protect you. Otherwise, it is sin (Male worker).

Well most of all, this is interesting. When I worked in other countries, its takes a long time when you build a camp…if you know what that means, it's doing the exploration right…we build a camp, remote camp and the first that comes up will be the beer, we had beer in those days. I mean the people were quite at front about it in those countries that have a big sex trade…you know this place is very back way, very conservative compared to other places I have worked. Although, the sexual practice, I think here are quite liberal, but the actual organization of it, there's no organization …and if…you go to … an Islamic country it's just as bad there, it's not a Christian thing, and all the bullshit things you hear… [Everywhere] is full of prostitution and sexually practices you know (Male worker).

I've heard stories about using condoms; they talk about it in the church too. But actually from where I come from, I have not heard any discussion in the church to talk about this [using condoms], or safe sex and talk regarding sex outside of marriage – that I have not heard it. I have not heard it in the church [where I come from] (Male worker).

The men here they've got big cocks, the men that we have sex with. They find it hard to control themselves when the women strip off. If he has or hasn't got condom he would still say forget it (to using). I'm serious about what I'm saying… Every man here is like that and it is better that all the men and women must go to church and repent give their life to the big man (God) and they will live, otherwise they will die. You will see many young people dying like that (Female worker).

And I give my life to God and my family go to church…[before] I would come on site and when I go for break I would at least drink beer. When I go back to the camp site after my field break I try and practice my faith by reading the bible and praying. Some of my colleagues would then influence me by asking me to join them for a few drinks on the next field break before we all go on our separate ways and I will just do that by going and drinking beer with them and do other things. During that time I was going through mid-life crisis in my personal and family life and I had to make a decision and so I fully committed my life to the almighty God. So now I go to church and worship God almighty. So this HIV AIDS has no cure. It's serious because people seem to listen to all the talk on HIV AIDS awareness and when they go away they forget about it.

> Once they are under the influence of liquor or get involved in sex and they can get this disease (HIV) easily. But the only thing we can do is to turn to God and give our lives to Him. When we worship God then the children we bear we must educate them about these practices. If we do so I think the rate at which the sickness is increasing, can drop by doing this (Male worker).

Employment

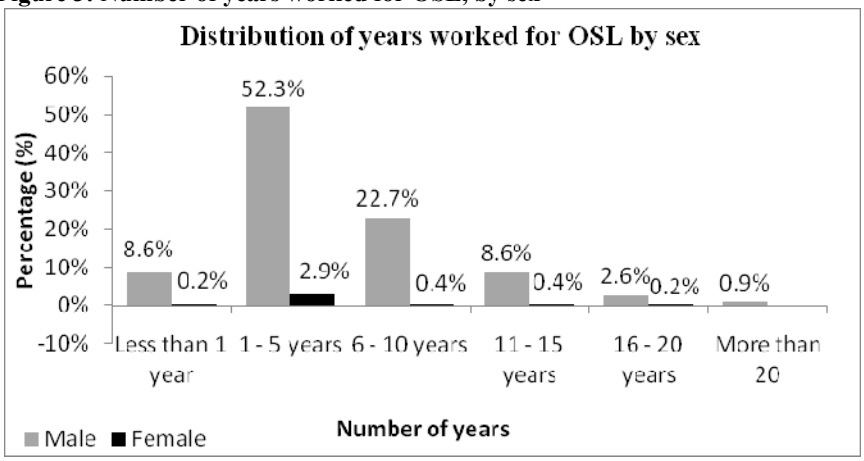
Most of the workers surveyed (55.2%), had been employed with OSL for between one and five years, or between six and ten years (23.1%). Some (12.7%) had worked for Oil Search from eleven to over twenty years, and only 8.8% had worked at OSL for less than a year

Table 10: Number of years worked at OSL by sex

Number of years worked with OSL	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Less than 1 year	39	9.0%	8.6%	1	5.3%	0.2%	40	8.8%
1-5 years	237	54.6%	52.3%	13	68.4%	2.9%	250	55.2%
6-10 years	103	23.7%	22.7%	2	10.5%	0.4%	105	23.1%
11-15 years	39	9.0%	8.6%	2	10.5%	0.4%	41	9.0%
16-20 years	12	2.8%	2.6%	1	5.3%	0.2%	13	2.8%
More than 20	4	0.9%	0.9%	0	0.0%	0.0%	4	0.9%
Total	**434**	**100.0%**	**95.8%**	**19**	**100.0%**	**4.1%**	**453**	**100.0%**

*Missing= 10

Figure 3: Number of years worked for OSL, by sex



OSL is a primary employer, while local contractor companies employ large numbers of workers engaged in a variety of full and part-time roles, such as: maintenance of buildings and roads, building of roads and other infrastructure, camp services (transport, accommodation, catering, laundry), and security services. OSL and some local and international contracted companies have employees that provide more technically specialized skills and managerial roles.

Income and support

Workers explained that income varied according to education and type of job. Salaries or wages are paid fortnightly, with OSL employees enjoying the benefit of getting paid during their field breaks, and the contractor company employees get paid when working on site, facilitating a flow of cash in the working environments. They didn't complain about the level

of their income; but workers reported that they supported large numbers of dependants and other people on their wages. The shortage of alternative local employment, coupled with adequate income, while needing to support many, was expressed by one interviewee in this way:

> It is not a bad living…So there's no shortage of money. But the trouble is there is no other work [in this area]. There's nothing, we are the biggest employer. So its extended family and [wages] have to go a long way (Male worker).

Apart from two workers (0.4%) who reported not supporting anyone, those surveyed supported other people with their income. A majority of those surveyed (69.7%) supported up to 10 people: 1 to 5 (26.0%) and 6 to 10 (43.7%). A fifth (20.1%) supported between 11 and 20, with a tenth (9.7%) supporting more than 20 people.

Table 11: Number of people supported by income by sex

Number of people supported by income	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Support no one (0)	2	0.50%	0.40%	0	0.00%	0.00%	2	0.40%
1-5 people	110	25.80%	24.70%	6	31.60%	1.30%	116	26.00%
6-10 people	185	43.30%	41.50%	10	52.60%	2.20%	195	43.70%
11-15 people	58	13.60%	13.00%	1	5.30%	0.20%	59	13.20%
16-20 people	29	6.80%	6.50%	2	10.50%	0.40%	31	6.90%
21-25 people	15	3.50%	3.40%	0	0.00%	0.00%	15	3.40%
26-50 people	16	3.70%	3.60%	0	0.00%	0.00%	16	3.60%
51-100 people	8	1.90%	1.80%	0	0.00%	0.00%	8	1.80%
101-300 people	4	0.90%	0.90%	0	0.00%	0.00%	4	0.90%
Total	**427**	**100.00%**	**95.70%**	**19**	**100.00%**	**4.30%**	**446**	**100.00%**

*Missing = 17 **Percentages rounded off

While most workers reported supporting many people with their wages, some mentioned that there were times when workers gave less financial or other support when they were removed from their families. Others expressed that they experienced stress when situations occurred when they were not with their families.

> You know, some blokes come on crew; they leave their wife with no money and all these sorts of things. They seem to ignore their family when they get away they don't take responsibility for their family when they are away from them (Male worker).

One single mother explained that it was difficult being away from her children, but that she had been able to manage, through arrangements with family members and *wantoks*, to provide support and accommodation for her children while she was working. She expresses a mix of emotions — she is working for the benefit of the children, she is separated from them, and needs to explain herself to them, and believes 'they understand'.

> I'm a single mother and I work for my children. And I'm separated and the others are with their father and the small ones live with my *wantok*. Working here, I don't have accommodation at home, I live with *wantok*. And when I work outside, they have space. And I don't really get to spend most of my time with my children but every time I talk to them and they understand (Female worker).

Accommodation for married couples is not provided on site. This means that working spouses and single parents leave their children and family for long periods of time. For many it is for half of the year, or more. Most workers travel to, and from, their worksites and homes in PNG and overseas.

Marital Status

Most (87.2%; 402) of those surveyed reported that they had been married at least once.

Table 12: Ever married by sex

Ever married	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	390	88.2%	84.6%	12	63.2%	2.6%	402	87.2%
No	52	11.8%	11.3%	7	36.8%	1.5%	59	12.8%
Total	**442**	**100.0%**	**95.9%**	**19**	**100.0%**	**4.1%**	**461**	**100.0%**

*Missing=2

Age at first marriage

Of those who ever married, 10.6% didn't know how old they were when they got married. Of those who knew their age, most married between the ages of 20–24 (40.2%) and 25–29 (33.7%). Women married younger than men, and proportionately more women (83.3%) than men (56.9%) married before they were twenty-five. All women who had ever been married, had married by the age of twenty-nine.

Of those who had ever been married, some (16.0%; 57) married between the ages of 15 and 19 years. A third of female workers reported being married in that age group. Six male workers (1.7%) reported being married when they were less than 15 years old; and six men married later in life between the ages of 35 and 39 years old. One had married over the age of forty.

Table 13: Age at first marriage by sex

Age at first marriage	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Less than 15	6	1.7%	1.7%	0	0.0%	0.0%	6	1.7%
15-19	53	15.4%	14.9%	4	33.3%	1.1%	57	16.0%
20-24	137	39.8%	38.5%	6	50.0%	1.7%	143	40.2%
25-29	118	34.3%	33.1%	2	16.7%	0.6%	120	33.7%
30-34	23	6.7%	6.5%	0	0.0%	0.0%	23	6.5%
35-39	6	1.7%	1.7%	0	0.0%	0.0%	6	1.7%
40-44	1	0.3%	0.3%	0	0.0%	0.0%	1	0.3%
Subtotal	344	100.0%	96.6%	12	100.0%	3.4%	356	100.0%
Don't know	40			0			40	
Total	**384**			**12**			**396**	

*Missing=6

In general, men and women reported on their experience of and thoughts about bride price in different ways.

> I think, that because he has paid bride price, that's his wife. He did not get her freely. He wants her removed or loves her or does whatever to her it's up to him (Male worker).

In qualitative interviews with women outside the gate, arranged marriages had occurred for some women at young ages based on bride price payments, and sometimes women were forced by their parents to get married to a man because they wanted to have the bride price.

> This man was looking for me. I was not old enough to get married. But my parents agreed already for him to marry me so I just had to marry the man. My parents said to me, "We wanted to have pigs and money and that's why we gave birth to you." Mama and Papa said this. They advised me how to look after children, make gardens and to cook food in the husband's village. I was so young and was not strong enough to do all these chores and I was thinking how I would get married (Woman who exchanged sex).

Bride price was referred to as part of custom in some of the areas from where workers came. In formative research, one explanation that was given was that, traditionally, women in areas of the Southern Highlands Province, near OSL sites, were, strictly, not to have sexual relationships before marriage. In this view, sex before marriage devalued the bride wealth and the status of the woman. The explanation went on to claim that it is now more common for women to have sexual relationships without bride price payment in some areas around the sites. When there were changes in marital status initiated by the woman, there would be a need for the woman to repay the bride price to her husband's family.

One woman who exchanged sex explained that she had left her husband and repaid the bride price, while another reported that she wanted to leave her husband, as he was having sex with other women and was married to more than one woman, but she could not leave him because she had to repay the bride price and she did not have the money.

Number of marriages

In the context of HIV, patterns of marriage are important for understanding changes in steady and multiple concurrent marital and sexual partners over time. Of those (87.2%; 402) who had ever been married once or more; 91.2% (361) were married at the time of the interview. Most people (70.4%) had been married only once; while nearly a third (29.6%; 110), and more men than women, had been married more than once.

Of those (110) who had married more than once, 70.0% (77) had been married twice, a fifth (21.8%; 24) had married three times and 8.2% (9) had married between 4 and 13 wives. Proportionately, more male workers than female workers were married two or more times.

Table 14: Number of times workers married by sex

Number of times married	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
1	251	69.9%	67.7%	10	83.3%	2.7%	261	70.4%
2	75	20.9%	20.2%	2	16.7%	0.5%	77	20.7%
3	24	6.7%	6.5%	0	0.0%	0.0%	24	6.5%
4	5	1.4%	1.3%	0	0.0%	0.0%	5	1.3%
5	2	0.6%	0.5%	0	0.0%	0.0%	2	0.5%
7	1	0.3%	0.3%	0	0.0%	0.0%	1	0.3%
13	1	0.3%	0.3%	0	0.0%	0.0%	1	0.3%
Total	**359**	**100.0%**	**96.8%**	**12**	**100.0%**	**3.2%**	**371**	**100.0%**

* Missing = 31

While most people reported having been married only once; however serial monogamous marriages; that is, a person having one spouse at a time but changing spouses over time, were common. This is further illustrated in the section below on separation, divorce and being widowed.

Some 14.2% reported being in polygamous marriages; that is, a marriage in which a man had more than one wife at the same time. Polygamy as discussed below, adds a layer of multiple concurrent marital sexual partnerships within networks, which can include other types of extramarital sexual partners.

Polygamous marriages

Polygamy is a pattern of marriage in which a person has more than one spouse at the same time i.e. concurrently. Polygyny refers to the pattern of a man having more than one wife at the same time and polyandry refers to the practices of a woman having more than one husband. While polyandry is not common; the practice of polygynous marriages, with men marrying more than one wife, is a common socio-cultural practice in the Highlands and Momase Regions, but is also found in all regions of PNG.

The recent Demographic Health Survey (DHS) (2006) identified that, nationally, 18% of currently married women and 4% of currently married men reported being in polygamous marriages. Polygyny was most prevalent in the Highlands and Momase Regions. According to the DHS, of the women involved in polygynous marriages, just over a half (55.6%) were in marriages with one other wife, and just under a half (44.4%) were in marriages with more than one co-wife. In this national survey, the older women and men, particularly those aged between 45 and 49 years old, were more often in polygynous relationships in rural areas, while more female youth 15 to 19 years, and men under forty, were involved in polygynous marriages in urban areas. The DHS report showed that there had been a 4% increase (from 14% to 18%) in women being involved in polygynous marriages between 1996 and 2006 (PNG NSO, 2009).

Traditionally, polygyny in PNG has been associated with men who have enough wealth to maintain their wives and children, and in the interest of perpetuating their line, power, wealth and land. A man, having a number of wives who looked after pigs and gardens, increased his wealth and his power, and the social capital in systems of reciprocity and exchange. OSL workers gave accounts of the practices of polygyny, and its perceived underlying benefit, still being maintained in their village areas.

> In my village there are men who have more than one wife or they are trying to get another one. The practice of marrying more than one wife is still strong in my village. These practices are there (Male worker).

> In my village, there are men who have two wives. If the man is already married he can marry another one again. This is strong in the village….I'm married already and I have one wife and a 13 year old son. My wife could not bear me children anymore, and that's why I want to marry another women. I want to have a lot of children and they will look after the land as there is no one to look after the land. I have these thoughts (Male worker).

When male workers were asked how many wives they had and female workers were asked how many wives their husband had, a majority (85.8%) reported that they were in marriages with only one spouse. However, 14.2% of married workers were involved in polygamous marriages and had more than one spouse. Forty-six male workers (13.7% of married male workers) had from two to four wives, and three female workers (37.5%) had husbands who had two wives. Most of those involved in polygamous marriages in this sample were between the ages of 25 to 39 (overall mean 35), with the age of men in polygamous marriages ranging from 20 to 59 (mean 35) and women from 20 to 34 years old (mean 27).

Table 15: Number of wives (male) and number of wives husband has by sex

Number of wives man has and number of wives husband has	Male – number of wives			Female – number of wives husband has			Total	
	n	% within sex	%	n	% within sex	%	n	%
1	290	86.3%	84.3%	5	62.5%	1.5%	295	85.8%
2	38	11.3%	11.0%	3	37.5%	0.9%	41	11.9%
3	7	2.1%	2.0%	0	0.0%	0.0%	7	2.0%
4	1	0.3%	0.3%	0	0.0%	0.0%	1	0.3%
Sub total	**336**	**100.0%**	**97.7%**	**8**	**100.0%**	**2.3%**	**344**	**100.0%**
0	19			1			20**	
Total	**355**			**9**			**364**	

*Missing=38 **20 of the missing data came from those who had been previously married but were now separated, widowed or divorced and had no spouse at the time of the interview.

The reasons given for polygyny from the qualitative data varied and were mostly related to: customs, finances, bride price, pregnancy of a non-marital partner, when a wife could not bear children, or having many children and wives to generate wealth and to look after the land, family, and tribe. One male worker who had a wife at home, entered into a polygamous marriage near his work because he had an affair with a local woman and she got pregnant, so he took this woman as his second wife. One woman said that other women wanted to marry her husband because her husband worked at OSL and had money. Patterns of polygynous marriages and ways of living are influenced both by tradition and by socio-cultural change. Some of the dynamics involved in the generation of polygynous marriages, and the networks of interconnections, are illustrated by the accounts of these two men.

> The woman I'm married to is from a coastal area. I have four children with her. In 2006, I'd been away for a while and I got into a relationship with a local woman. She got pregnant and I had a child with her. They asked me to pay maintenance. I brought them [other wife and children] to stay with us (Male worker).

> Yes I am married. I have my first wife and she is from the Highlands. I have six children from her and she left me and got married to a man because I got a second wife. At the moment I'm living with my second wife. We had three children but the third one died. I have nine children altogether. I'm also looking after my brothers and sisters children. I look after 17 children with food and their other needs (Male worker).

In some cases, polygyny generates a variety of problems. These related mostly to relationships between the wives, or between the husband and his wives, which sometimes ended in arguments, domestic violence, separation or divorce. Some men did not always support their wives equally, and neglected them, and distribution of unequal resources caused

wives to argue with their husband or amongst themselves. Some women identified that they could face violence, including being badly beaten or being cut with a knife, from their husbands within their polygamous marriage. Here are two examples of the anger generated within woman as a consequence of such arrangements.

> He usually takes the boat down the river, saw her and [got] married to her there. When I saw this second wife, I thought I really wanted to kill her. I wanted to kill her but I didn't do it (Female worker).

> In my custom, too many [men have more than one wife]. Men know they can marry many wives. My husband has three wives. I am the first wife. I get angry and fight with my husband (Woman exchanging sex).

Polygamous marriages add a layer of concurrent multiple marital sexual partners within sexual networks of other non-marital regular, non-regular and transactional sex partners. The lived reality of polygyny raises questions about the appropriateness of some HIV prevention messages used to date: 'being faithful to one partner' does not fit the reality of socio-cultural marital norms in many areas of PNG, and does not accord with the experience of a segment of the OSL workforce.

Changes in marital status – being widowed, separated or divorced

A little more than a quarter (26.1%; 105) of those workers who had ever been married reported that they had had a change in marital status. Of those who had a change in marital status, some had been widowed (14.3%), but most reported being separated (39.0%) or divorced (46.7%). Just over a fifth (22.4%; 90) of all workers interviewed, who had ever married, had experienced being separated or divorced.

Table 16: Marital status of those who had been married by sex

Marital status of those who had been married	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Widowed	15	15.3%	14.3%	0	0.0%	0.0%	15	14.3%
Separated	36	36.7%	34.3%	5	71.4%	4.8%	41	39.0%
Divorced	47	48.0%	44.8%	2	28.6%	1.9%	49	46.7%
Subtotal	98	100.0%	93.3%	7	100.0%	6.7%	105	100.0%
Currently married	291			5			296	
Total	**389**			**12**			**401**	

*Missing=1

While in numbers, more male workers had been separated or divorced than female workers; proportionately more of the female workforce (58.3%) than the male workforce (21.3%) who had married, had been separated or divorced. No women in this survey reported ever being widowed.

In the national Demographic Health Survey (2006), more women than men also reported being separated (3.2%F 1.2%M) or divorced (1.6%F 1.1%M). However, national percentages for both categories are considerably lower than those reported in this workforce population (PNG NSO, 2009).

In the 2000 National Census, more women were married than men and more women (10.6%) than men (4.5%) were separated, divorced or widowed. Of the total female population 3.9% had been separated or divorced and 6.7% widowed. At the provincial level (Southern

Highlands), again, more women than men were married and 9.6% of women were separated or divorced (4.3%) or widowed (5.3%); compared to 3.7% of men who had been separated or divorced (2.3%) and 1.4% widowed (NSO, 2002; NSO 2003).

Of those 402 OSL workers who had ever married, the majority (91.2%) reported that they were presently married at the time of the interview. However, changes had taken place in marital status for many since first married, creating a complex pattern of changing marital and living arrangements overtime. Of those who said they had once married, and then had been separated, widowed or divorced; most had remarried.

Table 17: Current marital status of those ever married by sex

Currently married	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	354	92.2%	89.4%	7	58.3%	1.8%	361	91.2%
No	30	7.8%	7.6%	5	41.7%	1.3%	35	8.8%
Total	**384**	**100.0%**	**97.0%**	**12**	**100.0%**	**3.0%**	**396**	**100.0%**

*Missing=6

While most had remarried, some were still separated, widowed or divorced and had not remarried, but it is not clear whether they have another sexual partner living with them. There is a statistically significant association between a person's sex (male and female) and whether they had remarried after a divorce or separation. There were significantly more female (41.7%) than male (7.8%) workers who did not remarry after a change in marital status [*Chi-Square analysis produced significant result at $p<0.002$].

Table 18 illustrates the complexity and changeability of marital status, marital sexual relationships and the living arrangements of Oil Search workers. The data shows great variability of marital and other sex partners, creating opportunities for the movement of HIV infection over time between marriages and marital sexual networks, and between these and other sexual networks with non-marital partners.

As will be shown later, the workforce used condoms less within their regular and marital sexual relationships, more with non-regular sex partners and most in contexts of transactional sex. However, lack of consistency in condom use across these networks creates more opportunities for HIV transmission.

The degree of divorce and separation illustrated in the BSS data for OSL, poses the question why this may be particularly so in this workforce population. A range of reasons were given in qualitative interviews as to why people had divorced or separated and these included infertility of the woman, spouses taking other sexual partners, men taking other wives, and violence. In interviews some men gave infertility as a reason to have a new wife. They left their wives to have more children, or in some cases not leaving their wife but taking an additional wife or wives. On the other hand, one male worker's wife had left him with their children and married another man.

Table 18: Present marital status and living arrangements of those ever married by sex

Present marital status and living arrangements	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Divorced but now living with a sexual partner	4	1.0%	1.0%	0	0.0%	0.0%	4	1.0%
Divorced but now married	25	6.4%	6.0%	1	9.1%	0.3%	26	6.5%
Divorced but now married (polygamous) lives with more than 1 spouse	5	1.3%	1.3%	0	0.0%	0.0%	5	1.3%
Divorced, now married but live with other sexual partner	3	0.8%	0.8%	0	0.0%	0.0%	3	0.8%
Still divorced, not married and not living with a sexual partner	9	2.3%	2.3%	1	9.1%	0.3%	10	2.5%
Still divorced, not married and not living with a sexual partner, but in sexual relationship	1	0.3%	0.3%	0	0.0%	0.0%	1	0.3%
Presently married - never widowed/separated/divorced	253	65.0%	63.3%	5	45.5%	1.3%	258	64.5%
Presently married - never widowed/separated/divorced but live with other sexual partner	10	2.6%	2.5%	0	0.0%	0.0%	10	2.5%
Presently married (polygamous) - never widowed, separated, or divorced	24	6.2%	6.0%	0	0.0%	0.0%	24	6.0%
Presently married but lives on his own	3	0.8%	0.8%	0	0.0%	0.0%	3	0.8%
Separated but now lives with a sexual partner	6	1.5%	1.5%	0	0.0%	0.0%	6	1.5%
Separated, not married, not living with a sexual partner but in a sexual relationship	1	0.3%	0.3%	1	9.1%	0.3%	2	0.5%
Separated, now married but lives with other sexual partner	1	0.3%	0.3%	0	0.0%	0.0%	1	0.3%
Separated but now married	26	6.7%	6.8%	1	9.1%	0.3%	27	6.8%
Still separated, not married, not living with sexual partner	3	0.8%	0.8%	2	18.2%	0.5%	5	1.3%
Still widowed, not married, not living with sexual partner	1	0.3%	0.3%	0	0.0%	0.0%	1	0.3%
Widowed but now married but live with more than one spouse	1	0.3%	0.3%	0	0.0%	0.0%	1	0.3%
Widowed but now live with sexual partner	1	0.3%	0.3%	0	0.0%	0.0%	1	0.3%
Widowed but now married	12	3.1%	3.0%	0	0.0%	0.0%	12	3.0%
Total	**389**	**100.0%**	**97.3%**	**11**	**100.0%**	**2.8%**	**400**	**100.0%**

*Missing=2

Some women identified that abuse from their husbands and domestic violence made them afraid and they left. The violence, as well as the extramarital sexual affairs of their spouses, or being left by their husbands when he married another woman, caused some other women to experience a loss of trust in men. Separation and divorce occurred for many and most female workers surveyed who were divorced or separated did not remarry.

> I am married and have a wife and a child. And because of this [having only one child] sometimes I have these thoughts that my wife is not going to have any more child and I want to marry another woman. I want my generation to go on with new children. The children will look after the land as there is no one to look after the land. I am a man from my village and I do have these thoughts (Male worker).

> Ok firstly, I'm a single mother working here, and I work for my children…I'm separated…I also live with my family and when I work outside it gives them space. I just want to find that one man, in my life who can take care of me and my children, I really want to take my children back from their father … but I cannot because I am one and I don't have my own place …So when I'm on break I go down to their school and visit them and buy them what they want and then I go back home (Female worker).

> I was married but my husband left me and got married to another woman… He went and got one woman after another… I'm working at the moment and I don't want to get married again…I look after my child and provide school fees… Once in a while my ex-husband comes and asks me for things. He is a lazy man and he comes and asks me for money and he is not working. At the moment I'm living with my family in my village (Female worker**).**

> I feel independent yeah I feel like, okay personally I was abused by my children's father very badly and I get scared of men… when there's fights or arguments, I'm already freaking out. Then working on the site has sort of brought my confidence back and I can like, talk to men, I can stand up against him and say what I want to say; but when he starts swearing and all that, he sort of puts me off and I'm already getting scared. But I sort of built my confidence back … and I'm independent I don't have to rely on a man like some man think that oh because you a single mother and only you are the only person that's earning and I can just get you just like that… and I get angry at myself too, yeah I don't like it but these are some things that I'm going through which sometimes I sit down and just think (Female worker)

Some of the women who exchanged sex outside the gate had experienced a change in their marital status after they left their husbands because their husbands were not treating them well. They experienced domestic violence, or their husbands were having sex with other women.

> My first husband... He usually works with a company here… We did not have any children. We stayed together for a while until I saw that my husband was not treating me well and I left him. He does not come and give me money (Woman exchanging sex).

Rates of divorce and separation and marital partner change were reported from male and female OSL workers for a variety of reasons stated above, and as discussed later, the duration of time working was also identified as a factor in separation and divorce, as it increased workers sexual desires when they were away from their marital partners and then taking additional partners that led to a breakdown of marriage. Sometimes workers felt jealous or worried that their sexual partners whom they left behind could also have another sexual partner. The degree of concurrent steady, casual and transactional sexual partners, for those workers both married and not married, is elaborated in the upcoming 'Sexual History' section. However, working extended periods of time away from 'home' appeared to have an impact on marital, family and sex life, as well as on drinking patterns.

ALCOHOL AND DRUG USE

Alcohol Use

A majority of the workforce (72.4%) reported that they drink alcohol, and over a quarter (27.6%) said that they didn't. There is a statistically significant association between a person's sex, and drinking alcohol, such as beer, hard stuff or home brew. Among those who drank alcohol, more male workers (73.5%) than female workers (47.4%) drank alcohol [***Chi-Square analysis produced significant result at p<0. 013].

Table 19: Drinks alcohol by sex

Drinks alcohol like beer, hard staff or home brew	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	324	73.5%	70.4%	9	47.4%	2.0%	333	72.4%
No	117	26.5%	25.4%	10	52.6%	2.2%	127	27.6%
Total	**441**	**100.0%**	**95.9%**	**19**	**100.0%**	**4.1%**	**460**	**100.0%**

*Missing = 3

Of those who drank, most (76.4%) said they drank beer. Others reported wine (10.3%), hard stuff or spirits (8.8%) or homebrew (3.0%). Male and female workers reported drinking mostly beer or wine.

Table 20: Types of alcohol that the workforce drank by sex

Types of alcohol	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Beer	300	78.3%	75.4%	4	26.7%	1.0%	304	76.4%
Wine	36	9.4%	9.0%	5	33.3%	1.3%	41	10.3%
Homebrew	11	2.9%	2.8%	1	6.7%	0.3%	12	3.0%
Hard stuff	30	7.8%	7.5%	5	33.3%	1.3%	35	8.8%
Did not specify	6	1.6%	1.5%	0	0.0%	0.0%	6	1.5%
Total	**383**	**100.0%**	**96.2%**	**15**	**100.0%**	**3.8%**	**398**	**100.0%**

*Percentages and totals are based on responses **Missing = 3

Of those workers who drank alcohol, most drank a large number of drinks on a typical day when they were drinking. Half (50.4%) of the workers interviewed drank ten or more drinks and 29.9% drank five to nine drinks on a typical day when they were drinking. Nearly a fifth (19.6%) drank less and had between one and four alcoholic drinks on a typical day when drinking. More men drank more drinks than women when drinking.

Table 21: Number of drinks containing alcohol on a typical day when drinking by sex

Number of alcoholic drinks on a typical day when drinking	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
1-2 drinks	47	14.8%	14.4%	2	22.2%	0.6%	49	15.0%
3-4 drinks	15	4.7%	4.6%	0	0.0%	0.0%	15	4.6%
5-6 drinks	51	16.0%	15.6%	3	33.3%	0.9%	54	16.5%
7-9 drinks	42	13.2%	12.8%	2	22.2%	0.6%	44	13.4%
10 or more drinks	163	51.3%	49.8%	2	22.2%	0.6%	165	50.4%
Total	**318**	**100.0%**	**97.2%**	**9**	**100.0%**	**2.8%**	**327**	**100.0%**

*Missing = 6

Alcohol use during periods of work

Most of the workers who drank (84.7%) did not drink during times of work. Of the workforce who drank alcohol, 15.3% reported that they drank alcohol during periods of work.

In qualitative interviews, workers referred to the OSL company's policy of no alcohol and drug consumption when on site during periods of work. Despite the policy, it was reported that some workers smuggled in drugs or went outside the gate to black markets to buy and drink beer. Those interviewed gave accounts of the workforce consuming alcohol when on site, including contractor workers and OSL employees.

Table 22: Frequency of alcoholic drinks taken on a typical day when at work by sex

How often worker drinks alcohol when at work	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Every day	4	1.3%	1.2%	0	0.0%	0.0%	4	1.2%
Once or twice a week	8	2.6%	2.5%	0	0.0%	0.0%	8	2.5%
Three or more times a week	5	1.6%	1.6%	0	0.0%	0.0%	5	1.6%
Once or twice a fortnight	10	3.2%	3.1%	0	0.0%	0.0%	10	3.1%
Once or twice a month	21	6.8%	6.6%	1	11.1%	0.3%	22	6.9%
Never drinks during work	263	84.6%	82.2%	8	88.9%	2.5%	271	84.7%
Total	**311**	**100.0%**	**97.2%**	**9**	**100.0%**	**2.8%**	**320**	**100.0%**

*Missing = 13

Of those who did drink during periods when at work (15.3%, or 49 workers) most drank either once or twice a month (44.9%), or once or twice a fortnight (20.4%). The rest who drank during periods when at work, 26.5% reported that they drank every week and close to ten percent (8.2%) drank on a daily basis.

Table 23: Frequency of drinking alcohol when at work by sex

How often worker drinks alcohol when at work	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Every day	4	8.3%	8.2%	0	0.0%	0.0%	4	8.2%
Once or twice a week	8	16.7%	16.3%	0	0.0%	0.0%	8	16.3%
Three or more times a week	5	10.4%	10.2%	0	0.0%	0.0%	5	10.2%
Once or twice a fortnight	10	20.8%	20.4%	0	0.0%	0.0%	10	20.4%
Once or twice a month	21	43.8%	42.9%	1	100.0%	2.0%	22	44.9%
Sub-total	**48**	**100.0%**	**98.0%**	**1**	**100.0%**	**2.0%**	**49**	**100.0%**
Never drinks during work	263			8			271	
Total	**311**			**9**			**320**	

*Missing = 13

It was identified that sometimes male workers gave alcohol to men who arranged sex for them with women exchanging sex outside the gates where they worked. Workers could buy beer and drink with women exchanging sex and alcohol could also be used as a form of payment for sex. The exchange of sex or transactional sex practices of the workforce are discussed in the following sections on work contexts, sexual history, partners and practices.

Alcohol use when on break

More workers drank alcohol during break than during periods of work. Most (96.3%) of the 333 workers who drank alcohol, reported that they drank alcohol when they were on break.

Table 24: Frequency of drinking alcohol when on break by sex

How often worker drinks alcohol when on break	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Every day	8	2.5%	2.4%	0	0.0%	0.0%	8	2.4%
Once or twice a week	99	31.1%	30.3%	2	22.2%	0.6%	101	30.9%
Three or more times a week	34	10.7%	10.4%	0	0.0%	0.0%	34	10.4%
Once or twice a fortnight	59	18.6%	18.0%	1	11.1%	0.3%	60	18.3%
Once or twice a month	106	33.3%	32.4%	6	66.7%	1.8%	112	34.2 %
Never drinks during break	12	3.8%	3.7%	0	0.0%	0.0%	12	3.7%
Total	**318**	**100.0%**	**97.2%**	**9**	**100.0%**	**2.8%**	**327**	**100.0%**

*Missing=6 **Percentages have been rounded off to the first decimal point.

Around half (54.6%) of the workers who drank on break, drank once or twice a month (35.6%) or once or twice a fortnight (19.0%). Around half (45.4%) drank more often during their break time; with a few men (8; 2.5%) who drank daily, to men and women who drank once or twice a week (32.1%) or three or more times a week (10.8%).

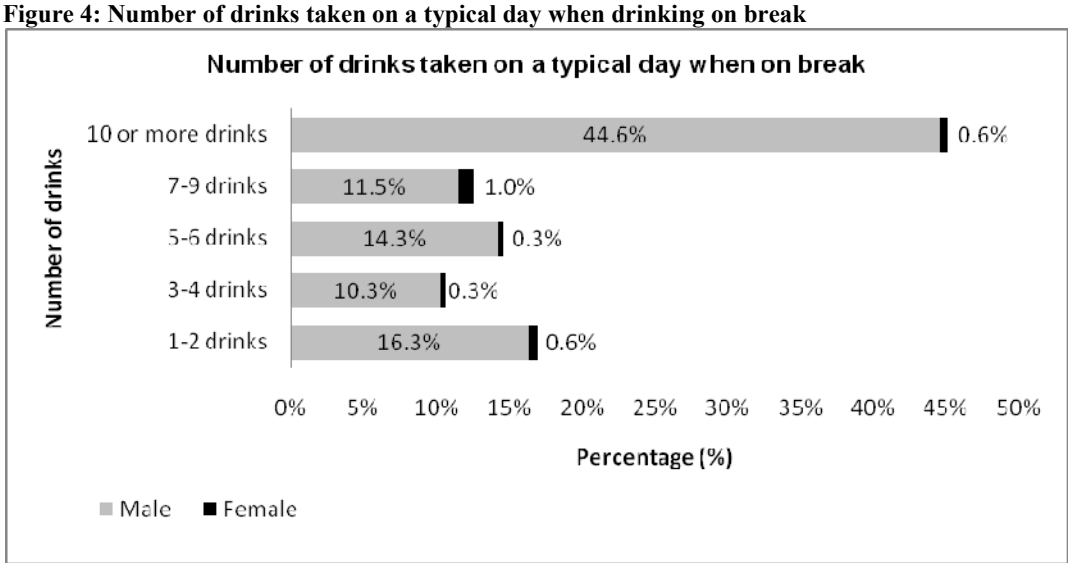
Table 25: Frequency of drinking alcohol when on break by sex

How often worker drinks alcohol when on break	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Every day	8	2.6%	2.5%	0	0.0%	0.0%	8	2.5%
Once or twice a week	99	32.4%	31.4%	2	22.2%	0.6%	101	32.1%
Three or more times a week	34	11.1%	10.8%	0	0.0%	0.0%	34	10.8%
Once or twice a fortnight	59	19.3%	18.7%	1	11.1%	0.3%	60	19.0%
Once or twice a month	106	34.6%	33.7%	6	66.7%	1.9%	112	35.6%
Subtotal	**306**	**100.0%**	**97.1%**	**9**	**100.0%**	**2.9%**	**315**	**100.0%**
Never drinks during break	12			0			12	
Total	**318**			**9**			**327**	

*Missing =6

The survey indicates that more than two fifths (45.2%) of the workers drink a considerable amount, with 10 or more drinks on a typical day when they were drinking on break and just over a quarter (27.1%) reported drinking between 5–9 drinks.

Figure 4: Number of drinks taken on a typical day when drinking on break



While more male workers drank ten or more drinks on a day when drinking during break; both male and female workers drank considerable with proportionately over half drinking between seven and 10 or more drinks on a typical day when on break.

Table 26: Number of drinks taken on a typical day when drinking on break by sex

Number of drinks on typical day on break	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
1-2 drinks	51	16.8%	16.3%	2	22.2%	0.6%	53	16.9%
3-4 drinks	32	10.6%	10.3%	1	11.1%	0.3%	33	10.6%
5-6 drinks	45	14.9%	14.3%	1	11.1%	0.3%	46	14.6%
7-9 drinks	36	11.9%	11.5%	3	33.3%	1.0%	39	12.5%
10 or more drinks	139	45.9%	44.6%	2	22.2%	0.6%	141	45.2%
Total	**303**	**100.0%**	**97.1%**	**9**	**100.0%**	**2.9%**	**312**	**100.0%**

*Missing = 3

Some workers talked about the link between alcohol and decreasing inhibitions, while increasing sexual desires and having sex.

> While under the influence of alcohol it makes it easier for me to approach a lady than when I'm sober. Even the person who walks around as dumb and doesn't talk, the moment he takes alcohol, he marches right up to a woman and says "I love you"…. That's company money. Even he has no intention to pull out the money from his pocket but now he has a bit of chance, "hi sister would you like to have a drink?" They will say that straight forward and not beat around the bush…So if a woman also takes alcohol and both of them are drunk and they are in the mood, their sexual feelings are higher than when they are sober…and this contributes to increased sexual activities (Male workforce).

> Beer is one of the things that often influence [behavior]. So when a man gets drunk, they think a lot about sex…. Only a few men have strong wills. They can get drunk anywhere but they will still make their way home to their family. But most of the time beer controls them. So they sleep with sex workers and that's when they are likely to end up contracting AIDS (Male workforce).

It was also expressed that there was an increased use of alcohol and exchange of sex in the areas surrounding OSL sites when royalty payments were made to landowners. Landowners were said to have multiple sex partners and to pay considerably for drink and women exchanging sex. Land disputes and violence could also occur in these contexts during the payment of royalties, and while women were said not to receive an equitable share of royalty payments, some received a share through the exchange of sex.

> You hear this all with the clan here, it's a one or two individuals doing things in the name of the clan…there's no equity, not in royalty...I mean its millions of dollars, you know and it goes to hookers and it gets used to go down to Moresby, into the hotels, and the bars there. Now it [money] tends to just go locally, most of it goes to stores for a lot of beer. I mean he'll sell 30 or 40 pallets of beer in one day and they get drunk (Male worker).

There are accounts in the qualitative interviews of male workers making a link between being drunk and not using a condom during sex, but women exchanging sex talked about using a condom in the context of transactional sex when they and workers were drinking alcohol.

> I do drink beer. The man buys me beer and we drink together. We go and have sex but we use a condom. I use my mind when I do it. I don't get condoms from people; I carry them around and fit them on a man to have sex (Woman exchanging sex).

Links were also made between drinking alcohol and rape, violence, threats and phycial abuse, disturbance and destruction of property. Some workers, male and female, talked about how alcohol affected sexual desire and preferred practices. However, as later reported, less than a fifth said that they had even been too drunk or stoned and had not used a condom.

Drug use

There are a range of different types of drugs that are taken by people for many reasons, and the workforce was asked whether they had ever taken drugs. Over the last year, 18.5% (85) reported ever taking drugs (81M; 4F).

Table 27: Ever taken drugs by sex

Ever taken drugs	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	81	18.4%	17.6%	4	21.1%	0.9%	85	18.5%
No	360	81.6%	78.3%	15	78.9%	3.3%	375	81.5%
Total	**441**	**100.0%**	**95.9%**	**19**	**100.0%**	**4.1%**	**460**	**100.0%**

*Missing = 3

More men than women surveyed had ever taken drugs and there is an association between a person's sex (male) and trying a range of different types of drugs in the past year. Of those who reported ever trying drugs, only men reported taking drugs in the last year.

Of those who had taken drugs in the last year, most (71.4%) had taken marijuana in the last 12 months. Over a quarter reported taking drugs such as, ice (11.9%), cocaine (4.8%), ecstasy (2.4%) and 9.5% who did not specify the type of drugs they took. For those who took marijuana in the last year, four fifths were Papua New Guineans; of those others who took ice, cocaine and ecstasy, all were Papua New Guineans except one.

Table 28: Drugs tried in the last 12 months by sex

Drugs tried in last 12 months	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Marijuana	30	71.4%	71.4%	0	0.0%	0.0%	30	71.4%
Ice	5	11.9%	11.9%	0	0.0%	0.0%	5	11.9%
Cocaine	2	4.8%	4.8%	0	0.0%	0.0%	2	4.8%
Ecstasy	1	2.4%	2.4%	0	0.0%	0.0%	1	2.4%
Other (Did not specify)	4	9.5%	9.5%	0	0.0%	0.0%	4	9.5%
Sub-total	**42**	**100.0%**	**100.0%**	**0**	**0.0%**	**0.0%**	**42**	**100.0%**
None	26			4			30	
Total	**68**			**4**			**72**	

*Missing = 16 **Percentages based on total responses

There was some secrecy about drug use and drug networking within the workforce, and women who exchanged sex also reported using marijuana which was considered widely available.

> As for alcohol and drugs, there are only few guys who do drugs. To my knowledge, they hide …They hide and no one knows about that. Those who do not smoke do not know about it. Whoever the person's close friend is, he would know (Male worker).

> We don't know where it is planted. We only buy and smoke it when it is sold. I hide and smoke, although I'm a lady, I do smoke….All my brothers around who know me, call me 'drugie,' drugie' [and say] just let her. …Different [amounts] and different types like Niugini Gold are sold (Woman exchanging sex).

Injecting Drug Use

Some people inject drugs using a needle and a syringe, and workers were asked if they had injected themselves with a drug that was not prescribed by a doctor in the last twelve months. Three (3) male workers from the Highlands Region said that they had injected a drug in the past twelve months that had not been prescribed to them.

Table 29: Injected drug not prescribed by a doctor in the last 12 months by sex

Injected drugs last 12 months	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	3	6.3%	6.3%	0	0.0%	0.0%	3	6.3%
No	45	93.8%	93.8%	0	0.0%	0.0%	45	93.8%
Total	**48**	**100.0%**	**100.0%**	**0**	**0.0%**	**0.0%**	**48**	**100.0%**

*Missing = 10

Of those three who reported injecting, one male worker reported using a needle and a syringe that was used by someone else and was not cleaned the last time when he injected drugs. Other men also later report penile injections (see the section on penile modification practices).

Table 30: Injected drugs using needle and syringe used by someone else and not cleaned by sex

Injected drugs not using sterilized needle and syringe	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	1	33.3%	33.3%	0	0.0%	0.0%	1	33.3%
No	2	66.7%	66.7%	0	0.0%	0.0%	2	66.7%
Total	**3**	**100.0%**	**100.0%**	**0**	**0.0%**	**0.0%**	**3**	**100.0%**

The use of unclean needles for injecting drugs and penile modification creates contexts of higher risk of transmission of HIV and other blood borne diseases, and information about cleaning needles and re-using needles is an area for attention.

Condom use when drunk and stoned

Workers were asked about the impact of drugs and alcohol use on condom use. A majority (80.4%) of those who had sex and drank alcohol or had sex and took drugs reported that they

had never been so drunk or stoned when they had sex that they had not used a condom. A fifth (19.6%; 60) of workers reported that there had been a time when they had had sex when they were drunk and stoned and had not used a condom.

While a fifth had been drunk or stoned and had not used a condom; the assertion that alcohol and drugs significantly reduce condom use, when compared to sex practices when not drunk or stoned, is not well supported by the data.

Table 31: Been too drunk or stoned and did not use a condom by sex

Been too drunk or stoned and did not use a condom	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	58	19.4%	19.0%	2	28.6%	0.7%	60	19.6%
No	241	80.6%	78.8%	5	71.4%	1.6%	246	80.4%
Total	**299**	**100.0%**	**97.7%**	**7**	**100.0%**	**2.3%**	**306**	**100.0%**

*Missing=34

However, OSL workers drank alcohol more and more frequently during breaks, including during the time transiting.

WORK CONTEXT AND SEX

Patterns of work and break

There are clear distinctions for OSL workers between talking about working, transiting and being on break. Oil Search Limited operational sites were areas of focused work and rest, with strict regulations, security and safety measures and a busy workforce and pace. Days and hours of work were rostered and schedules had tight timelines and food was served in site cafeterias and at designated eating times. Gates closed for business movement after 8pm with drive in access only for incoming campsite residents. Driving out of the camp gates was restricted unless a person had written permission from their immediate supervisor stating release for overnight duties.

It was also highlighted that there are variations of work patterns, shifts and breaks between (OSL) workers and those with contracting companies. OSL employees take 28 days break after 28 days on site and some employees with contractor companies do six weeks on site and two weeks field break. Locals employed in duties such as laborers, gardeners and some laundry staff and other service areas do normal daily working hours and commute to work from their home villages. Workforce also rotates in different OSL sites.

Three main patterns for breaks were evident when workers were asked how many days they worked before they went on break: 39.0% took a break after four weeks (28 days) and close to half (48.2%) reported having breaks after six weeks (42 days), with 2.9% reporting working even longer periods before having a break. Some others were rostered off after one, two or three weeks.

Figure 5: Number of days worked before break

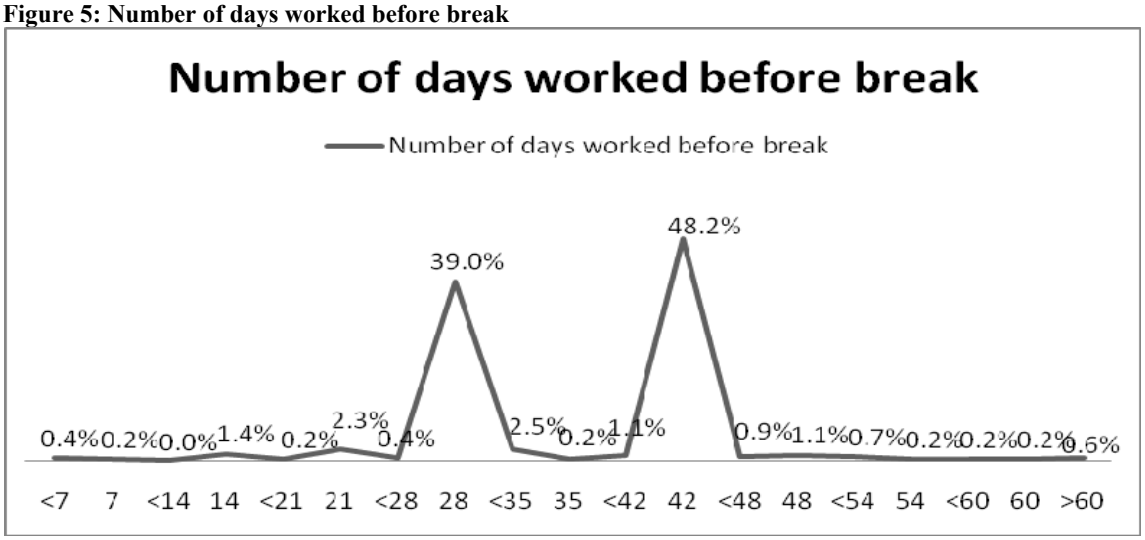


Table 32 : Number of days worked before break

Days worked before break	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
0	1	0.2%	0.2%	0	0.0%	0.0%	1	0.2%
6	1	0.2%	0.2%	0	0.0%	0.0%	1	0.2%
7	0	0.0%	0.0%	1	6.7%	0.2%	1	0.2%
14	6	1.4%	1.4%	0	0.0%	0.0%	6	1.4%
20	1	0.2%	0.2%	0	0.0%	0.0%	1	0.2%
21	10	2.3%	2.3%	0	0.0%	0.0%	10	2.3%
22	1	0.2%	0.2%	0	0.0%	0.0%	1	0.2%
25	1	0.2%	0.2%	0	0.0%	0.0%	1	0.2%
28	161	37.5%	36.3%	12	80.0%	2.7%	173	39.0%
30	10	2.3%	2.3%	0	0.0%	0.0%	10	2.3%
31	1	0.2%	0.2%	0	0.0%	0.0%	1	0.2%
35	1	0.2%	0.2%	0	0.0%	0.0%	1	0.2%
41	5	1.2%	1.1%	0	0.0%	0.0%	5	1.1%
42	212	49.4%	47.7%	2	13.3%	0.5%	214	48.2%
43	2	0.5%	0.5%	0	0.0%	0.0%	2	0.5%
44	1	0.2%	0.2%	0	0.0%	0.0%	1	0.2%
45	1	0.2%	0.2%	0	0.0%	0.0%	1	0.2%
48	5	1.2%	1.1%	0	0.0%	0.0%	5	1.1%
49	2	0.5%	0.5%	0	0.0%	0.0%	2	0.5%
52	1	0.2%	0.2%	0	0.0%	0.0%	1	0.2%
54	1	0.2%	0.2%	0	0.0%	0.0%	1	0.2%
56	1	0.2%	0.2%	0	0.0%	0.0%	1	0.2%
60	1	0.2%	0.2%	0	0.0%	0.0%	1	0.2%
62	1	0.2%	0.2%	0	0.0%	0.0%	1	0.2%
84	1	0.2%	0.2%	0	0.0%	0.0%	1	0.2%
90	1	0.2%	0.2%	0	0.0%	0.0%	1	0.2%
Total	**429**	**100.0%**	**96.6%**	**15**	**100.0%**	**3.4%**	**444**	**100.0%**

*Missing 19

One male worker described OSL as having a particular shared culture of work that was 'homogenous, bland and polite', within 'an extreme environment'. When on site there is a focus on following rules, while the environment [structure], the worker said 'forces one to get on with it [the job]'. He reported that while he 'called home a couple of times, after hanging up, there would be a sense of distance... When one was off [on break] there was a sense of detachment and it was harder to link when at home (Male worker).

The workers talked about their sexual desires and how they were affected by the time period that they stayed away from their partners (husbands, wives, boyfriends and girlfriends).

> Some of us we have sex regularly and is not very helpful when we stay on site for a long period (Male worker).
>
> Six weeks on site is too much to live without sex… (Male worker)
>
> Rotational shifts here is too long for someone up here, especially married people, they become unfaithful to their partners, and this is a concern for me (Female worker).
>
> It's better to work outside, but workers we do not stay with our wives and children and these thought and desire of having sex, is very high. Many things happen. The men do not care, and there are a lot of street women. The good

> men, young men, handsome men, clever men, they come and then go. I have seen this from the very beginning when the mine started (Male worker)
>
> When I am at the work place during these 42 weeks, I really feel like having sex, in the mess or outside the camp when I see women's asses, my penis gets erect and I ejaculate. So I go … and have sex because I really find it hard to control myself (Male worker).

Overall, nearly half of sexually active workers (47.3%) said that their work arrangements affected their sex life, and both female (31.3%) and male (47.9%) reported this.

Table 33: Working arrangement affect sex life by sex

Work arrangement affects sex life	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	206	47.9%	46.2%	5	31.3%	1.1%	211	47.3%
No	224	52.1%	50.2%	11	68.8%	2.5%	235	52.7%
Total	430	100.0%	96.4%	16	100.0%	3.6%	446	100.0%

*Missing= 6

Most affected said that they had increased desires to have sex, became frustrated or would watch pornography, masturbate or look for sex inside and outside of the gates. Some others did not specify (3; 2M, 1F), and one man said that he would call and talk to his wife and another felt that he was missing his chance to have children.

Table 34: Reasons how work arrangement affects sex life by sex

How work arrangement affects sex life	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Increasing feelings and desire for sex	157	58.1%	56.7%	5	71.4%	1.8%	162	58.5%
Look for sex inside /outside of gate	24	8.9%	8.7%	0	0.0%	0.0%	24	8.7%
Frustration	32	11.9%	11. 6%	1	14.3%	0.4%	33	11.9%
Watch pornography	27	10.0%	9.7%	0	0.0%	0.0%	27	9.7%
Masturbate	25	9.3%	9.0%	0	0.0%	0.0%	25	9.0%
Other	5	1.9%	1.8%	1	14.3%	0.4%	6	2.2%
Total	**270**	**100.0%**	**97.5%**	**7**	**100.0%**	**2.5%**	**277**	**100.0%**

Missing= 7* Percentages based on multiple responses and numbers rounded

There was also in the qualitative data the intimation of missing ones partner and the comfort and intimacy of this relationship, and how duration of time on site disrupted patterns of having time and sex with one's wife:

> When I first started working twenty eight days [onsite] … it really affected my sex life. Because I was single when I started working up in the field, when I started marrying, when I got married, I worked up in the field. And you know most of the time, most of the time, we men we spend time…when it comes to the night we spend time with wives in the bed, and it's always you know, your wife is always there, anything to do, ah even sex or stories, bed time stories, but coming out like this, is…it's very hard. It's really, it's really hard for…some of us, especially myself, it's really hard….sometimes I really feel like having sex, but you can't have it here (Male worker).

While most workers who had sex, did not have sex either inside or outside the gate when at work (82.6%), few (7; 1.6%) said that they always had sex while at work and more (15.8%) said that they sometimes had sex when at work.

Table 35: Ever had sex inside or outside camp when at work by sex

Ever had sex in or outside of camp when at work	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Always	6	1.4%	1.4%	1	10.0%	0.2%	7	1.6%
Sometimes	59	14.0%	13.7%	9	90.0%	2.1%	68	15.8%
Never	356	84.6%	82.6%	0	0.0%	0.0%	356	82.6%
Total	**421**	**100.0%**	**97.7%**	**10**	**100.0%**	**2.3%**	**431**	**100.0%**

*Missing= 21

One male worker described being at home or work as having a dual life style with what could feel like different personalities, with another 'third lifestyle' of travelling and transiting that was 'not within social norms, where there were no rules and no one was watching'. Over a quarter (29.7%) of workers travelled and transited overnight in Port Moresby, Lae or Mt. Hagen during breaks.

Table 36: Transit overnight through Port Moresby, Lae or Mt. Hagen during breaks by sex

During breaks, do you transit through Port Moresby, Lae or Hagen and need overnight accommodation	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	127	30.3%	29.2%	2	12.5%	0.5%	129	29.7%
No	292	69.7%	67.1%	14	87.5%	3.2%	306	70.3%
Total	**419**	**100.0%**	**96.3%**	**16**	**100.0%**	**3.7%**	**435**	**100.0%**

*Missing=17

Nearly half of male workers who transited had ever paid for sex when transiting.

Table 37: Ever had paid for sex while transiting through Port Moresby, Lae or Mt. Hagen by sex

Ever had paid for sex while transiting	Male			Total	
	n	% within sex	%	n	%
Yes	45	45.0%	45.0%	45	45.0%
No	55	55.0%	55.0%	55	55.0%
Total	100	100.0%	100.0%	100	100.0%

*Missing= 46

Many qualitatively interviewed related alcohol consumption with increasing the desire of the workforce to have sex when on site, but particularly during their transit times and during their break, including drinking with transactional or other extramarital sex partners and drinking in groups and having group sex. For example, a female worker said that she was told by her boyfriend that workmen make plans with female workers — those whom they knew within their network and they would drink and have sex in their rooms when on breaks.

> I had a relationship with a guy who was working here, before sometime back, and he was telling me what they used to do before I started going out with him and he thought that I was that kind of person too and then he realised that I wasn't that kind but they used to do that you know they get numbers they see that lady they are easy to get and they call them up and they tell her oh we are coming up coming down at this time and then they are three or four guys and with her they drink in a room and then while drinking the other one can just have sex on the side with her that was what he was telling me, I said that's really disgusting yeah, he said well that's what they do, some do that (Female worker).

> When I'm at work, I think a lot about having sex and I always feel like I want to have sex. So when I go on break, I have sex with other women when I'm drunk and I meet them on the road (Male worker).

> Sometimes they just want to have a good time, like I said the man arranged with a woman and they go and just to drink and have sex and some women, they like it that way….yeah just for drinks just to drink and have sex and that's it there's nothing to it. So that's an understanding the workers have when they go for break. Break yeah (Female worker).

Sex, policy and the sociology of work

A regulation in the mid 1990's Residents Information Book from the Chevron NiuGini Limited Kutubu Project states that a "visit to opposite sex in accommodation room is not allowed" (Chevron Niugini Ltd, n.d.:16). A letter dated 29th September, 1995 from Chevron Human Resources on freedom from harassment in the workplace, reinforced that 'unwelcome sexual advances, requests for sexual favours, or other verbal or physical conduct of a sexual nature' are seen as examples of harassment. During data collection for this research, there was more of a focus by OSL workers on the rule that no one of the opposite sex was allowed in each other's rooms and that sex on site would lead to termination.

> When I'm tiding up the rooms, one male worker would come and knock on the door and try to entice me into having sex. He would tell me directly that he wants to have sex with me…. You know it is against the law and the foremost thing is that I have a job and I don't want to lose it (Female worker). .

There were a few incidents reported of male and female workers who had sex on site in the camp and were terminated; female workers having sex together were terminated and stories of men trying to go into women's rooms or the public bathroom for sex. The latter was not seen as consensual.

> In here, as our colleague (brother) has mentioned, we have caught some female employees for practicing what they call gay sex, this kind of practice where women have sex with each other. We caught them in their room and both were naked. They were terminated right then on the spot (Male worker).

> At all the camps everything is worse *olgeta samting* [having sex on site] is just as bad. Here too it's much worse. Some they go overnight. They say we did not complete the job so we are going to complete it…some they go to their rooms because even the securities are also restricted from going to women's rooms so it's difficult to check in women's rooms. That's why, it's hard for us to go and check so that's why men go in and stay (have sex) and then go. Sometimes the woman use the other room, and the man use the other room, and the shower room is in the middle, so they do it (have sex) in the shower room. That's why it's hard for security to catch them or control them (Male workers).

From a sociological point of view the sex that the people have, and can have, is embedded not only in the location itself and its environment, but in the labour process itself. The intensity of control and surveillance, and the way that work is scheduled, arranged and paced, striving to work harder to keep up productivity and quality, and the time spent on site and the time spent

off site, provides more than a mere backdrop, or stage on which the workers sexual experiences are played out. The very process of being an OSL worker creates the possibilities and limitations of work, life and human experience, including sexual relationships when on or off work, and when inside or outside of the OSL site gates.

The possibilities of sex become a consequence of the petroleum development industry — where, with whom, under what conditions, how fast, how pleasurable, how safe, or how risky. Long periods of time on site and long periods of time off site, allow for the development of multiple relationships for OSL workers, through marriage, including polygamy and other concurrent regular partners, and through more casual non-regular sexual relationships, as well as with women where something is exchanged for sex.

Given the long time periods at work and the intensity of management control presently over not having sex on site, it is less stressful and economically risky for workers to have sex outside the gates, while the risk of HIV and other disease may increase in these contexts if condoms are less accessible for women who have broad sexual networks with many partners in different locations and workers who have sexual networks of more than one sexual partner in different locations.

SEXUAL HISTORY, PARTNERS AND PRACTICES

First Sex

Close to all (97.6%) of the workforce reported that they had had either vaginal or anal penetrative sex before.

Table 38: Ever had sexual intercourse by sex

Ever had sexual intercourse	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	436	98.2%	94.2%	16	84.2%	3.5%	452	97.6%
No	8	1.8%	1.7%	3	15.8%	0.6%	11	2.4%
Total	**444**	**100.0%**	**95.9%**	**19**	**100.0%**	**4.1%**	**463**	**100.0%**

Very few, and only 2.4% (11) of workers reported that they had never had sex. Religious beliefs (46.2%), fear of HIV and other sexually transmitted infections (23.1%) and waiting for the right person (30.8%) were reasons given for not yet having sex.

Table 39: Reasons for not having sex by sex

Reasons for not having sex	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Religious beliefs	5	55.6%	38.5%	1	25.0%	7.7%	6	46.2%
Waiting for the right person	2	22.2%	15.4%	2	50.0%	15.4%	4	30.8%
Afraid of HIV/STIs	2	22.2%	15.4%	1	25.0%	7.7%	3	23.1%
Total	**9**	**100.0%**	**69.2%**	**4**	**100.0%**	**30.8%**	**13**	**100.0%**

**Multiple responses and rounded percentages

Sexual debut was early for some and quite late for others, and of the workers that had had sex, 15.4% (68) did not know their age at first sex. Of those who knew their age, 4% (15) of men had had their first sex before they turned 15 years old. The median age of first sex was 19 years old (19 for male and 20 for female).

Table 40: Age group at first sexual debut by sex

Age at first penetrative sex	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
<15	15	4.2%	4.1%	0	0.0%	0.0%	15	4.0%
15-19	204	56.8%	55.1%	6	42.9%	1.6%	210	56.3%
20-24	109	30.4%	29.5%	8	57.1%	2.1%	117	31.4%
25-29	22	6.1%	5.9%	0	0.0%	0.0%	22	5.9%
30+	9	2.5%	2.4%	0	0.0%	0.0%	9	2.4%
Sub-Total	**359**	**100.0%**	**97.0%**	**14**	**100.0%**	**3.8%**	**373**	**100.0%**
Don't know	67			1			68	
Total	426			15			441	

*Missing=11 **11 did not have sex

By 19 years old, 60.3% of the total sample had had sex. By 24 years old, 91.7% all female workers sampled had had sex. Some other men (8.3%; 31) had their first sex when they were older than 25 years (see Appendix 5, Table 173 for additional table of age of sexual debut by year).

UNGASS Indicator 15 is the percentage of young women and men aged 15–24 who have had sexual intercourse before the age of 15, and at OSL, 18.5% of young male and female petroleum workers aged 15–24 had had sexual intercourse before the age of 15. [1]

Table 41: Percentage of workers aged 15–24 who had sexual intercourse before the age of 15 by sex

Sex disaggregation		Age disaggregation		Total
Female	**Male**	**15-19**	**20-24**	
Number of young petroleum development workers who reported having first sexual intercourse before the age of 15				
0	5	1	4	5
Number of young petroleum development workers interviewed				
2	25	4	23	27
Percentage of young petroleum development workers having sexual intercourse before the age of 15				
0.0%	20.0%	25.0%	17.4%	18.5%

Oral Sex

Those who had had sex were asked if they had had oral sex the last time that they had sex and 29.2% reported that they had, although the type of oral sex (that is, fellatio: oral sex using the mouth, lips or tongue on a penis; or cunnilingus: using the mouth, lips or tongue to stimulate the female genitals) was not identified.

Table 42: Had oral sex by sex

The last time you had sex, did you have oral sex	Male			Female			Total	
	n	**% within sex**	**%**	**n**	**% within sex**	**%**	**n**	**%**
Yes	116	29.3%	28.2%	4	26.7%	1.0%	120	29.2%
No	280	70.7%	68.1%	11	73.3%	2.7%	291	70.8%
Total	**396**	**100.0%**	**96.4%**	**15**	**100.0%**	**3.6%**	**411**	**100.0%**

* Missing = 41

Oral sex (referred to as a 'blow job', 'sucking cock' (or 'dick', 'blowing trumpet' or 'sucking vagina') was regarded as a 'new style' imported into PNG by outsiders. Women exchanging sex outside the gate referred to the practice as an 'introduced style of sex', which workers taught them how to do, which they learned through watching pornography. Some women described oral sex as a game that they did with men to get pleasure and stimulation; others questioned the safety of oral sex practices from diseases, and some disliked it.

> Men ask women to suck their cocks…and the other is to have anal sex…the other is in the mouth. They suck men's cocks and they do it in their mouths. The practices they have, are they safe or not? …These ideas of having anal sex, sucking men's cocks and having oral sex and releasing semen inside [their mouths] ….All of these ideas, we had never experienced them before. The workmen carried these practices outside and told the street women to do it to them like that …(Women exchanging sex).

> When the men tell us women to suck their cocks…, I tell them, you tell me to suck your cock; you suck my vagina, that is what I tell them. Your cock has

[1] Differences in calculation of percentage of women and men aged 15-24 who had sex before the age of 15 for UNGASS Indicator 15, Table 40 and Table 41, is based on the need for age disaggregation for this indicator for only those 27 workers who knew their ages and were between 15 and 24 years old at the time of the survey.

> had sex with many different women and your cock is used up — *kok blong yu pipia olgeta*; as if you are 16 years old and you are telling me to suck your cock. Yes, I can suck your cock, it's a game. To do it (have vaginal penetrative sex) is actually when you get real pleasure…If you are my husband, I can do it as I like, but you are another man. We see company men like you who have sex with different women...I see it, so why do you tell me to suck your cock. Your cock is full of dirty rubbish AIDS – *pipia rabis AIDS*. I tell them to go…That's what I say (Women exchanging sex).

Sexual intercourse in the last 12 months

Of those who had ever had sex, 91.1% (409) reported that they had had sex in the last 12 months.

Table 43: Sexual intercourse in the last 12 months by sex

Had sex in last 12 months	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	396	91.5%	88.2%	13	81.3%	2.9%	409	91.1%
No	37	8.5%	8.3%	3	18.8%	0.7%	40	8.9%
Total	**433**	**100.0%**	**96.4%**	**16**	**100.0%**	**3.6%**	**449**	**100.0%**

*Missing =3

Most people reported having sex in the last 12 months. The following section on sexual networking illustrates how often people were having sex, the types of sex and with what type of partner, if condoms were being used, who initiated condom use and why condoms were not used. The layers of types of sexual partners are illustrated to heighten understanding of sexual partner concurrency, while qualitative data integrated throughout illustrates why sexual partner concurrency may be present in these contexts.

Sexual Partners and Networks

In the BSS survey and qualitative data there is evidence and description of a complex set of multiple concurrent sexual relationships situated across a number of sites and time periods, including: at home when on break; outside the home when on break; while transiting to and from work; outside the camp site area and within the camp area while working. The workers had sex with a variety of heterosexual and same sex partners, including marital and regular sexual or live-in partners, non-regular and transactional (paid for or paying for) sexual partners. The workers practices create broad sexual networks between a wide range of people and places, having implications for the spread of HIV and other STI across greater distances.

Number of Sexual Partners (in last 12 months)

Most workers had sexual partners in the past year, although nearly a half (49.2%) had just one partner. But just more than half (50.8%) of workers reported having more than one sexual partner in the past year. A fifth (21.6%) had two or three sexual partners and another fifth (21.8%) had four to 10 sex partners in the last 12 months.

Almost all female workers reported having only one sexual partner (all regular) in the last year, while one female worker reported having had two sex partners – one non-regular and one paid. For men the data were different, with most male workers having had two or more

sexual partners (regular, non-regular and/or transactional) and more male workers reporting having more than three sex partners in the past year, with a range from four to 117.

Table 44: Number of sexual partners in the last 12 months by sex

Number of partners in the last 12 months	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
1	184	48.0%	46.7%	10	90.9%	2.5%	194	49.2%
2	44	11.5%	11.2%	1	9.1%	0.3%	45	11.4%
3	40	10.4%	10.2%	0	0.0%	0.0%	40	10.2%
4	30	7.8%	7.6%	0	0.0%	0.0%	30	7.6%
5	18	4.7%	4.6%	0	0.0%	0.0%	18	4.6%
6-10'	38	9.9%	9.6%	0	0.0%	0.0%	38	9.6%
11-15'	9	2.3%	2.3%	0	0.0%	0.0%	9	2.3%
16-20	5	1.3%	1.3%	0	0.0%	0.0%	5	1.3%
21-25	4	1.0%	1.0%	0	0.0%	0.0%	4	1.0%
26-30	2	0.5%	0.5%	0	0.0%	0.0%	2	0.5%
32	1	0.3%	0.3%	0	0.0%	0.0%	1	0.3%
35-40	3	0.8%	0.8%	0	0.0%	0.0%	3	0.8%
43	1	0.3%	0.3%	0	0.0%	0.0%	1	0.3%
51	1	0.3%	0.3%	0	0.0%	0.0%	1	0.3%
68	1	0.3%	0.3%	0	0.0%	0.0%	1	0.3%
69	1	0.3%	0.3%	0	0.0%	0.0%	1	0.3%
117	1	0.3%	0.3%	0	0.0%	0.0%	1	0.3%
Total	**383**	**100.0%**	**97.2%**	**11**	**100.0%**	**2.8%**	**394**	**100.0%**

*Missing=15

As calculated, the UNGASS Indicator 16 is the percentage of women and men aged 15—49 who have had sexual intercourse with more than one partner in the last 12 months, and at OSL, 46.7% of petroleum development workers aged 15–49 had had sexual intercourse with more than one partner in the last 12 months.[2]

Table 45: Percentage of women and men aged 15-49 who have had sexual intercourse with more than one partner in the last 12 months by sex

Sex disaggregation		Age disaggregation			Total
Female	Male	15-19	20-24	25-49	
Number of petroleum development workers who have had sexual intercourse with more than one partner in the last 12 months					
1	147	2	6	140	148
Number of petroleum development workers interviewed					
17	319	4	23	309	336
Percentage of petroleum development workers who have had sexual intercourse with more than one partner in the last 12 months					
5.9%	46.1%	50.0%	26.1%	45.3%	44.0%

Over half (54.0%) of the workers who had reported having more than one sexual partner in the last 12 month's used a condom at last sex.

[2] Differences in calculation of percentage of women and men aged 15-49 who had sex with more than one partner in the past 12 months for UNGASS Indicator 16, Table 45 and Table 44, is based on the need for age disaggregation for those aged 15-49 for this indicator and 336 responded to this indicator, 46 did not know their age while 28 were in the upper age band (50+) and 53 did not answer.

Table 46: More than one sexual partner in the last 12 months and used a condom at last sex by sex

Workers that had more than 1 sexual partner in the last 12 months and used a condom at last sex	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	101	54.3%	54.0%	0	0.0%	0.0%	101	54.0%
No	85	45.7%	45.5%	1	100.0%	0.5%	86	46.0%
Total	**186**	**100.0%**	**99.5%**	**1**	**100.0%**	**0.5%**	**187**	**100.0%**

*Missing=13

UNGASS Indicator 17 is the percentage of women and men aged 15–49 who had more than one partner in the past 12 months who used a condom during their last sexual intercourse. From the OSL sample, 52.7% of petroleum development workers aged 15–49 had more than one partner in the past 12 months and used a condom during their last sexual intercourse. [3]

Table 47: Percentage of women and men aged 15–49 who had more than one partner in the past 12 months and who used a condom during their last sexual intercourse by sex

Sex disaggregation		Age disaggregation			Total
Female	Male	15-19	20-24	25-49	
Number of petroleum development workers who have had sexual intercourse with more than one partner and used a condom in their last sexual intercourse					
0	78	1	3	74	78
Number of petroleum development workers who have had sexual intercourse with more than one partner in the last 12 months					
1	147	2	6	140	148
Percentage of petroleum development workers who have had sexual intercourse with more than one partner in the last 12 months and used a condom in their last sexual intercourse					
0.0%	53.1%	50.0%	50.0%	52.9%	52.7%

Some male workers gave accounts of how their sexual desires and engagement in extramarital sex and the type of relationships they had, were shaped by the context of their work, including the period of time that they stayed away from their regular partners (husbands, wives, boyfriends and girlfriends). Sometimes their extramarital sex led to pregnancy and other obligations, and as earlier discussed, sometimes having extramarital sex partners led to having polygamous marriages, or caused separation and divorce. The impacts of work arrangements are experienced by both male and female workers.

> I married to another area. In 2006 a local woman came and we became friends (became his sex partner). That time she got pregnant and I had a child here. They said to pay maintenance and I thought we were just friends (going around, having sex together but not married) but she was pregnant and I paid maintenance for this and I have a baby girl (Male worker)

Some female workers talked about their patterns of work creating less of a sex life when there was no regular sex partner.

> Like you don't have that man in your life to turn to for comfort…I didn't have like sex in a very long time to and I'm….is just that you know sometimes we

[3] Differences in calculation of percentage of women and men aged 15-49 who had more than one partner in the past 12 months and who used a condom during their last sexual intercourse by sex for UNGASS Indicator 17 Table 47 and Table 46, is based on the need for age disaggregation 15-49 and overall 11 male workers did not know their age, 14 were in the upper age band (50+) and eight did not answer both of these questions.

> say funny things like the cob webs are full inside [the vagina] — *cob web em pulap pinis*. No sex… like I live that life where you don't have a regular partner and then four weeks you are up here, and when you go four weeks you just stay home and then you come up and work and go down and that's it that's my life (Female worker).

Regular Sexual Partners (in last 12 months)

Regular partners were defined within the survey as a spouse, a steady girlfriend or boyfriend or live-in sexual partner. Of those people who had regular partners in the past year, three-quarters (75.5%; 247) reported having only one regular partner and close to a quarter (24.5%; 80) reported having more than one regular sex partner in the past 12 months. Of these, most reported having from two to five regular sexual partners. Less had had seven to 19 partners and one man said that he had 70 regular sex partners in the past year. As later discussed, of the 25 reporting not having sex in the last year with regular partners, all had one or more non-regular or paid partners.

Table 48: Number of regular sex partners in the last 12 months by sex

Regular partners in the last 12 months	Male			Female			Total	
	n	% within sex	%	N	% within sex	%	n	%
1	237	74.8%	72.5%	10	100.0%	3.1%	247	75.5%
2	43	13.6%	13.1%	0	0.0%	0.0%	43	13.1%
3	13	4.1%	4.0%	0	0.0%	0.0%	13	4.0%
4	9	2.8%	2.8%	0	0.0%	0.0%	9	2.8%
5	6	1.9%	1.8%	0	0.0%	0.0%	6	1.8%
7	2	0.6%	0.6%	0	0.0%	0.0%	2	0.6%
8	1	0.3%	0.3%	0	0.0%	0.0%	1	0.3%
12	1	0.3%	0.3%	0	0.0%	0.0%	1	0.3%
13	2	0.6%	0.6%	0	0.0%	0.0%	2	0.6%
18	1	0.3%	0.3%	0	0.0%	0.0%	1	0.3%
19	1	0.3%	0.3%	0	0.0%	0.0%	1	0.3%
70	1	0.3%	0.3%	0	0.0%	0.0%	1	0.3%
Subtotal	**317**	**100.0%**	**96.9%**	**10**	**100.0%**	**3.1%**	**327**	**100.0%**
No regular partners in last the 12 months	24			1			25	
Did not specify	39			2			41	
Total	**380**			**13**			**393**	

Workers were asked how many times they had had sexual intercourse with their regular partners in the last year, and close to half 48.9% didn't know how many times they had had sex with their regular partners in the past year. Of those who knew or estimated, a quarter (25.8%) had had sex between one and 10 times with their regular partners.

The remainder reported that they had had sex more frequently, with a fifth (20.8%) having sex with a regular partner from 11 to 50 times and some (4.5%; 16) having had sex more than 50 times in the past year.

Table 49: Number of times had sex with regular partner(s) in the last 12 months by sex

Number of times of times had sex with regular partner(s)	Male			Female			Total	
	n	% within sex	%	N	% within sex	%	N	%
1-10 times	90	26.1%	25.3%	2	18.2%	0.6%	92	25.8%
11-20 times	40	11.6%	11.2%	0	0.0%	0.0%	40	11.2%
21 - 30 times	17	4.9%	4.8%	0	0.0%	0.0%	17	4.8%
31-50 times	17	4.9%	4.8%	0	0.0%	0.0%	17	4.8%
5-90 times	4	1.2%	1.1%	2	18.2%	0.6%	6	1.7%
100 + times	9	2.6%	2.5%	1	9.1%	0.3%	10	2.8%
Don't know	168	48.7%	47.2%	6	54.5%	1.7%	174	48.9%
Sub total	**345**	**100.0%**	**96.9%**	**11**	**100.0%**	**3.1%**	**356**	**100.0%**
No sex in last 12 months with regular partner	16			0			16	
Did not specify	35			2			37	
Total	**396**			**13**			**409**	

Throughout the data on different partner types male workers would identify that they had a certain number of regular, non-regular or transactional sex partners in the last year but then report that they had not had sex with them in the past year. This is an interesting dynamic and this data indicates that men can have sexual partners in their lives and perceive them as such, but not have sex with them. These men are exerting a sense of inclusiveness and sometimes with a sense of 'ownership' of these partners, that they can draw on to have sex and maintain these relationships in their networks but not always have sex with them.

The context of the working arrangements and long shifts affect the number of times the workforce have sex with their regular partners when compared to a marriage where a partner is not mobile and absent for longer periods of time. In the qualitative data, there were accounts of workers talking about their wives, husbands, steady girlfriends and boyfriends and how they felt and thought about them while they are at work. They expressed their desire and longing for their partners, their wish to be faithful to one partner, and to their suspicion and jealousy in their absence. Here are two examples, marked by expressions of yearning for partners, from male workers:

> When I am here, I think a lot about my girlfriend every time I am here. What I do when I am here, I think of and I make plans, my thoughts just think of making a plan to go and just get her [and have sex]. So when my break comes, I go straight [to her]. So I have one woman there. I would work and tell her that you are my sex partner. You are not married to me and I am not married too. So I tell her that we will get married….And the other ones, I do not want because I know that woman is there. I want to stick to only one partner (Male worker).

> It very much frustrates me and you know sometimes when I call my wife I get the feeling I kind of think, I'm out here and what's my wife doing, and I'm not there and what is she doing, is she leaving my children alone and going out somewhere, doing something, planning something with some other men and all that. But I have come to know that it's just my mind, just my emotions and my feelings, creating that in my mind. It's just my mind, just my emotions and my feelings, creating that in my mind (Male worker).

Condom use at last sex with regular sex partner

All workers who had had sex (452) were asked if they had used a condom at last sex with their regular partner, and most had not. Only a quarter (25.6%) reported using a condom the last time they had had sex with a regular partner irrespective of the time frame and a quarter (25.3%) of workers had used a condom at last sex with their regular sex partner in the past year.

Table 50: Condom use at last sex with a regular sex partner by sex

Condom use at last sex	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	109	26.0%	25.1%	3	20.0%	0.7%	112	25.8%
No	310	74.0%	71.4%	12	80.0%	2.8%	322	74.2%
Total	**419**	**100.0%**	**96.5%**	**15**	**100.0%**	**3.5%**	**434**	**100.0%**

*Missing = 18

Table 51: Condom use at last sex with a regular sex partner in the last year by sex

Condom use at last sex	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	95	25.9%	25.1%	2	16.7%	0.5%	97	25.6%
No	272	74.1%	71.8%	10	83.3%	2.6%	282	74.4%
Total	**367**	**100.0%**	**96.8%**	**12**	**100.0%**	**3.2%**	**379**	**100.0%**

*Missing=14

Of the quarter (25.8%) that had used condoms at last sex with a regular partner irrespective of the time frame, while condom use with regular partners in polygamous marriages was less (18.8%). Most (57.4%) who used a condom with a regular partner, said that they and their regular partner both agreed to use a condom, indicating negotiation between just over half of regular sexual partners about condom use. Close to two-fifths (39.8%) and only men took initiative and suggested condom use, while only three workers (2M, 1F) said that the other regular partner (2.8%) had suggested condom use.

Table 52: Regular partner that suggested condom use at last sex by sex

Who suggested condom use	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Myself	43	41.0%	39.8%	0	0.0%	0.0%	43	39.8%
My partner	2	1.9%	1.9%	1	33.3%	0.9%	3	2.8%
Both agreed	60	57.1%	55.6%	2	66.7%	1.9%	62	57.4%
Total	**105**	**100.0%**	**97.2%**	**3**	**100.0%**	**2.8%**	**108**	**100.0%**

*Missing=4

> Interviewer: Do you and your husband use condoms?
> Res: Yes, but I don't know how to use it.
> Interviewer: When he uses it on you, how do you feel, do you like it?
> Res: Yes.
> Interviewer: And when the two of you use a condom, does he make the decision or do both of you agree to use it?
> Res: Both of us agree and use it (Female worker).

There was only a slight difference in who suggested condom use at last sex with a regular partner irrespective of time frame, and those who suggested condom use with a regular partner in the past year.

Table 53: Regular partner that suggested condom use at last sex in the past year by sex

Who suggested condom use	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
My self	38	41.8%	40.9%	0	0.0%	0.0%	38	40.9%
My partner	2	2.2%	2.2%	1	50.0%	1.1%	3	3.2%
Both agreed	51	56.0%	54.8%	1	50.0%	1.1%	52	55.9%
Total	**91**	**100.0%**	**97.8%**	**2**	**100.0%**	**2.2%**	**93**	**100.0%**

*Missing=4

Of the three-quarters (74.4%) of the male and female workers who said that they had not used a condom at last sex with a regular partner in the past year, most said it was because they trusted their partner (54.9%). One male worker speaks about trusting his partner and not using a condom with her, but also weighing his risks and using a condom when he has sex with other sex partners, particularly when going on break. This is an excellent example of someone preventing the spread of HIV and being able to maintain protection in his regular marital relationship even when not using a condom with this partner, but though using a condom with his other sexual partners.

> Interviewer: The time you have sex [with regular partner], do you use a condom with them?
> Male worker: *Ha em em nogat… Mi trastim em so nogat.* No, I trusted her so I did not [use a condom].
> Interviewer: Could you talk a little about why you didn't use a condom with your girlfriend and how you trust each other.
> Male worker: Ok, it's like the two of us, we became friends [girl/boyfriends], and after we were friends for a while we talked about getting married.
> Interviewer: My brother, you never use a condom with her and do you think that it is safe or not safe… what do you think?
> Male worker: But I trust her. When I want to have sex with her, I weigh it first. *mi save skelim pastaim.* So, so before I have sex with her, I usually say to her, do I use a condom? And when I say this, she says, 'no, trust me'. She tells me that and I say that it is true. Yes. There are good women, good women. Not every time, this is like every break I go and I do this [lie and have sex with women]… that is, I see that in the village…there are good women, from my village they are good women, I trust them and I just do it like that [have sex with them and not use a condom]. If I see that they are going around a bit (having sex with other men), and if I go around and feel like having sex…I use a condom *mi raunraun igo na mi feel like..olsem mi yusim condom* (Male worker).

The rest of the workers surveyed had a variety of reasons for not using a condom with a regular partner, including: a reduction of pleasure and comfort (11.9%); not thinking that a condom was needed (8.3%) or did not think of using (1.2%); problems accessing condoms when they were not available (4.9%) or were too expensive (0.6%); some partners objected (4.0%); some others disliked condoms as they could have holes and distrusted them (3.7%); a few were too drunk (1.8%); and a few others (0.9%) did not use condoms as they wanted children or used other forms of contraception.

Table 54: Reasons for not using condom with regular partner at last sex in the past year by sex

Reasons for not using condoms with regular partner(s)	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
I trust my partner	171	54.5%	52.5%	8	66.7%	2.5%	179	54.9%
Didn't think it was needed	27	8.6%	8.3%	0	0.0%	0.0%	27	8.3%
Condom reduces pleasure	21	6.7%	6.4%	0	0.0%	0.0%	21	6.4%
Not comfortable	18	5.7%	5.5%	0	0.0%	0.0%	18	5.5%
Not available	16	5.1%	4.9%	0	0.0%	0.0%	16	4.9%
Partner objected	13	4.1%	4.0%	0	0.0%	0.0%	13	4.0%
Don't like condoms as they may have holes	12	3.8%	3.7%	0	0.0%	0.0%	12	3.7%
Don't like condoms	7	2.2%	2.1%	1	8.3%	0.3%	8	2.5%
I was drunk]	5	1.6%	1.5%	1	8.3%	0.3%	6	1.8%
Didn't think of it	3	1.0%	0.9%	1	8.3%	0.3%	4	1.2%
Pregnancy, want children use contraceptive	2	0.6%	0.6%	1	8.3%	0.3%	3	0.9%
Too expensive	2	0.6%	0.6%	0	0.0%	0.0%	2	0.6%
Did not specify	17	5.4%	5.2%	0	0.0%	0.0%	17	5.2%
Total	**314**	**100.0%**	**96.3%**	**12**	**100.0%**	**3.7%**	**326**	**100.0%**

*Missing=20 ** Percentages based on multiple responses and numbers rounded

In qualitative interviews, one male worker said that there had previously been problems with accessing condoms when he was young mostly from denial that there was HIV or a problem to be worried about. Some female workers had fears, dislike, and expressed feelings of embarrassment about condoms and had sexual desires to feel more pleasure through direct skin contact.

> Yeah of course I did it was a part of the game. Except in those days, there wasn't AIDS. [Condoms] weren't available in most places… I mean they probably were, but we never thought of them. I don't think honestly that really young, young people [think of them], I may be wrong, but I don't think we gave a consideration to using condoms, it's was mostly someone else's problem, you know (Male worker).

> When I think about it, I used to think, what do I get out of it, I might hurt myself. I don't like condoms. That's the reason why I get scared…. I haven't tried it and I don't know. But I heard from some people that they have different types and tastes and smells and sometimes it's embarrassing (Female worker).

When asked how often they had used a condom with a regular partner over the last three months, most (58.9%) answered 'never'. Inconsistent condom use was reported by 26.7%, and consistent condom use, or always using a condom with a regular partner in the last three months, reported by 14.4 %.

Table 55: Condom use with regular partner(s) in last three months by sex

Frequency of condom use with regular partners	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Always	52	14.6%	14.2%	1	8.3%	0.3%	53	14.4%
Sometimes	95	26.8%	25.9%	3	25.0%	0.8%	98	26.7%
Never	208	58.6%	56.7%	8	66.7%	2.2%	216	58.9%
Total	**355**	**100.0%**	**96.7%**	**12**	**100.0%**	**3.3%**	**367**	**100.0%**

*Missing=26

Among the workers, 27 workers reported having had no regular partners, but having had other sexual partners.

Had no regular partners but had other sexual partners

Of those 409 workers who had sexual partners in the past year, some workers (6.1%; 25) reported having no regular partners. All of those that did not have regular partners had other sex partners. The following table illustrates the sexual partners of those 25 who reported not having a regular partner, but who had other transactional or non-regular partners.

Table 56: Number of non-regular and paid sex partners of workers who did not have regular partners in the last 12 months by sex

Partner types of workers with no regular partners			Number of Paid Partners						Total
			0	1	2	3	5	7	
Male	**Number of non regular partners**	**0**	0	1	3	0	0	0	4
		1	3	4	0	0	0	0	7
		2	4	1	1	1	0	0	7
		3	2	0	0	0	0	0	2
		5	0	0	0	0	1	0	1
		7	1	0	0	0	0	1	2
		12	1	0	0	0	0	0	1
	Sub Total		11	6	4	1	1	1	24
Female	**Number of non regular partners**	**1**	1	0	0	0	0	0	1
	Sub Total		1	0	0	0	0	0	1
	Total		**12**	**6**	**4**	**1**	**1**	**1**	**25**

*Filter = Those that have no regular partners

Of the 25 workers who reported that they had no regular partners, about half (12) had had no paid but only non-regular partners. Four male workers reported that they did not have any non-regular sex partners, but they had either one or two paid partners in the past year. Nine workers had both paid and non-regular partners. As the next sections illustrate, there are greater numbers and complexity in the non-regular and transactional sex partners of those workers who had regular partners.

Non-Regular Sexual Partners

Non–regular sexual partners were defined as partners that workers were not married to, who they did not live with, and who were not a steady girlfriend or boyfriend. When first asked, nearly two-fifths (39.6%; 162) of all workers who had had sex (409) said that they had one or more non-regular partners; six people did not specify an answer, but they proceeded to answer as part of this subset (168) in the following questions, so they are included in calculation of proportions for this variable and the subset of those having non-regular partners in the past year. In this way, 41.1% had one or more non-regular partners in the past year.

Table 57: Had one or more non-regular partners in the past year by sex

One or more non-regular partners	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	160	40.4%	39.1%	2	15.4%	0.5%	162	39.6%
No	230	58.1%	56.2%	11	84.6%	2.7%	241	58.9%
Did not specify	6	1.5%	1.5%	0	0.0%	0.0%	6	1.5%
Total	**396**	**100.0%**	**96.8%**	**13**	**100.0%**	**3.2%**	**409**	**100.0%**

Of those 168 workers who had sex in the past year with non-regular partners, 118 reported that they had between one and 37 non-regular partners. Some 43 others had non-regular partners but chose not to specify their number of partners. Seven people said that while they had non-regular partners, they had not had sex with them last year.

Two hundred and forty-one workers (58.9%) said that they did not have non-regular partners, but as discussed below, some of these workers who did not have a non-regular partner, had a variety of one or more regular or/and paid partner in the last year.

Table 58: Number of non-regular partners in the last 12 months by sex

Number of non-regular partners	Male			Female			Total	
	Number of non-regular sexual partners you are not married to, do not live with and are not your girlfriend			Number of non-regular sexual partners you are not married to, do not live with and are not your boyfriend				
	n	% within sex	%	n	% within sex	%	n	%
1	31	26.5%	26.3%	1	100.0%	0.8%	32	27.1%
2	39	33.3%	33.1%	0	0.0%	0.0%	39	33.1%
3	16	13.7%	13.6%	0	0.0%	0.0%	16	13.6%
4	11	9.4%	9.3%	0	0.0%	0.0%	11	9.3%
5	2	1.7%	1.7%	0	0.0%	0.0%	2	1.7%
6	1	0.9%	0.8%	0	0.0%	0.0%	1	0.8%
7	2	1.7%	1.7%	0	0.0%	0.0%	2	1.7%
8	1	0.9%	0.8%	0	0.0%	0.0%	1	0.8%
9	1	0.9%	0.8%	0	0.0%	0.0%	1	0.8%
10	1	0.9%	0.8%	0	0.0%	0.0%	1	0.8%
11	1	0.9%	0.8%	0	0.0%	0.0%	1	0.8%
12	2	1.7%	1.7%	0	0.0%	0.0%	2	1.7%
13	2	1.7%	1.7%	0	0.0%	0.0%	2	1.7%
15	2	1.7%	1.7%	0	0.0%	0.0%	2	1.7%
16	1	0.9%	0.8%	0	0.0%	0.0%	1	0.8%
18	1	0.9%	0.8%	0	0.0%	0.0%	1	0.8%
19	1	0.9%	0.8%	0	0.0%	0.0%	1	0.8%
25	1	0.9%	0.8%	0	0.0%	0.0%	1	0.8%
37	1	0.9%	0.8%	0	0.0%	0.0%	1	0.8%
Sub-Total	**117**	**100.0%**	**99.2%**	**1**	**100.0%**	**0.8%**	**118**	**100.0%**
Did not specify number	42			1			43	
Had no sex with non-regular partner past year	7			0			7	
Total	**166**			**2**			**168**	
Had no non-regular partners	230			11			241	
Total	**400**			**9**			**409**	

Of those who had non-regular partners in the past year, most reported having one or two (60.2%) and three or four (22.9%) non-regular partners. Another (16.1%) had greater numbers of non-regular partners ranging from five to 10 (6.6%), 11 to 19 (8.3%) and two male workers (1.6%) had 25 or 37 non-regular partners in the past year.

Workers were asked how many times they had had sex with their non-regular partners in the last year, and a fifth (20.1%) said that they did not know the number of times they had had sex with their non-regular partners. Fourteen workers said that they had non-regular partners

but they did not have sex with them in the past year.[4] Nearly a third (31.9%) had had sex from one to two times with non-regular partners in the last year; more had had higher frequency of sex with their non-regular partners in the past year and a third had had sex from three to 10 times (36.8%) and 10.4% had had sex 12 to 35 times. One man reported higher frequency of having sex (68 times) in the last year with his non-regular partners; he had not used a condom at last sex.

Table 59: Number of times had sex with a non-regular partner in the last 12 months by sex

Number of times had sex with non-regular partner in last 12 months	Sex						Total	
	Male			Female				
	n	% within sex	%	n	% within sex	%	n	%
1 to 2 times	44	31.0%	30.6%	2	100.0%	1.4%	46	31.9%
3 to 4 times	22	15.5%	15.3%	0	0.0%	0.0%	22	15.3%
5 to 10 times	31	21.8%	21.5%	0	0.0%	0.0%	31	21.5%
12 to 21 times	12	8.5%	8.3%	0	0.0%	0.0%	12	8.3%
30 to 35 times	3	2.1%	2.1%	0	0.0%	0.0%	3	2.1%
68 times	1	0.7%	0.7%	0	0.0%	0.0%	1	0.7%
Did not know	29	20.4%	20.1%	0	0.0%	0.0%	29	20.1%
Subtotal	**142**	**100.0%**	**98.6%**	**2**	**100.0%**	**1.4%**	**144**	**100.0%**
No sex with non-regular partners last year	**14**			0			**14**	
Did not specify	**10**			**0**			**10**	
Total	**156**			**2**			**168**	

Condom use during non-regular sex

Most and only male workers (67.6 %) reported using a condom the last time they had had sex with a non-regular partner in the past year. Of the two women who had non-regular partners, neither used a condom at last sex with their non-regular sex partner.

Table 60: Condom used at last sex with non-regular partner in the past year by sex

Condom used at last sex	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	98	68.5%	67.6%	0	0.0%	0.0%	98	67.6%
No	45	31.5%	31.0%	2	100.0%	1.4%	47	32.4%
Sub total	**143**	**100.0%**	**98.6%**	**2**	**100.0%**	**1.4%**	**145**	**100.0%**
Did not specify	**9**			**0**			**9**	
Total	**152**			**2**			**154**	

The suggestion to use a condom had come primarily from the workers themselves (54.7%), from both the workers and their non-regular sex partner (43.2%); and only a few workers (2.1%), reported that their partners suggested that a condom be used. Data on initiating condom use indicates considerable negotiation for the use of condoms by male workers with their non-regular partners when condoms were used; however still over a third did not use a condom in the past year with their non-regular partners.

[4] This is also seen with other partner types, where workers identify that they have these partners as part of their networks, but they did not always have sex with them within certain time periods, but still exerted a sense of inclusion of them as their sexual partner.

Table 61: Who suggested condom use at last sex with non-regular partner in the past year, by sex

Who suggested condom use	Male			
	n	% within sex	n	% Total
Myself	**52**	**54.7%**	**52**	**54.7%**
My partner	**2**	**2.1%**	**2**	**2.1%**
Both agree	**41**	**43.2%**	**41**	**43.2%**
Total	**95**	**100.0%**	**95**	**100.0%**

*Missing=12

Of those workers who had not used a condom with a non-regular partner, the reasons given varied, but similarly to the lack of condom use with regular partners, most said that they did not use a condom with their non-regular partners as they trusted them (34.6%). After trust, not having condoms available (15.4%), reduction of pleasure (13.5%) and being drunk (11.5%) were identified as more important reasons for not using a condom with a non-regular partner; whereas with a regular partner, trust, not thinking a condom was needed and reduction of pleasure and comfort were more often mentioned. A quarter with non-regular partners found that the reduction of pleasure (13.5%), discomfort (7.7%) and dislike (3.8%) outweighed condom use, while less just didn't think of it (5.8%) or didn't think it was needed (1.9%), or experienced obstacles when their partners objected (3.8%).

> Honestly I hate those things. I don't like those things [condoms]. It takes away the pleasure, I should say (Female worker).

Table 62: Reasons for not using a condom with a non-regular partner at last sex by sex

Reasons	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Trust partner	18	36.0%	34.6%	0	0.0%	0.0%	18	34.6%
Not available	8	16.0%	15.4%	0	0.0%	0.0%	8	15.4%
Condoms reduce pleasure	6	12.0%	11.5%	1	50.0%	1.9%	7	13.5%
I was drunk	6	12.0%	11.5%	0	0.0%	0.0%	6	11.5%
Not comfortable	4	8.0%	7.7%	0	0.0%	0.0%	4	7.7%
Didn't think of it	2	4.0%	3.8%	1	50.0%	1.9%	3	5.8%
Don't like condoms	2	4.0%	3.8%	0	0.0%	0.0%	2	3.8%
Partner objected	2	4.0%	3.8%	0	0.0%	0.0%	2	3.8%
Didn't think was needed	1	2.0%	1.9%	0	0.0%	0.0%	1	1.9%
Other	1	2.0%	1.9%	0	0.0%	0.0%	1	1.9%
Total	**50**	**100.0%**	**96.2%**	**2**	**100.0%**	**3.9%**	**52**	**100.0%**

*Missing= 9 * Percentages and totals based on total number of responses

When asked how often they had used a condom with a non-regular partner during the last three months, 19.0% reported that they had 'never' used a condom and 35.4% said they did 'sometimes'. Less than half (45.6%) said that they consistently or 'always' used a condom with their non-regular partners; indicating that a majority of the workforce did not use condoms consistently with non-regular partners. This broadens the sexual networks and possibility of HIV transmission between different places and networks of marital, regular and non-regular partners, some of whom also have same sex or transactional sex partners.

Table 63: Frequency of condom use with non-regular partner(s) over the last three months by sex

How often was a condom used	Male			Female			Total	
	N	% within sex	%	n	% within sex	%	n	%
Always	69	48.9%	48.6%	0	0.0%	0.0%	69	48.6%
Sometimes	52	36.9%	36.6%	0	0.0%	0.0%	52	36.6%
Never	20	14.2%	14.1%	1	100.0%	0.7%	21	14.8%
Total	**141**	**100.0%**	**99.3%**	**1**	**100.0%**	**0.7%**	**142**	**100.0%**

*Missing=12

As previously discussed, of those who had sex in the last year, 168 had had non-regular partners and 241 workers identified that they did not have a non-regular partner. Of these who had no non-regular partners, 144 had only one regular partner and three had only one transactional partner. Of the rest that specified their numbers of partners, 52 male workers and one female worker reported having either concurrent regular, concurrent transactional sex partners or concurrent regular and transactional sex partners.

Table 64: Number of regular and transactional sex partners of those workers who do not have non-regular partners in the last 12 months by sex

Sex			Transactional partners								Total
			0	**1**	**2**	**3**	**4**	**12**	**59**	**Did not specify**	
Male	**Regular partner(s)**	**0**	0	3	1	1	0	0	0	0	**11**
		1	136	19	5	3	0	0	0	0	**163**
		2	9	4	3	0	0	0	0	0	**16**
		3	1	0	0	0	0	0	0	0	**1**
		4	0	0	0	1	0	1	1	0	**3**
		5	0	1	1	0	0	0	0	0	**2**
		18	0	0	0	0	1	0	0	0	**1**
		Did not specify	0	0	0	0	0	0	0	39	**33**
	Total		**146**	**27**	**10**	**5**	**1**	**1**	**1**	**39**	**230**
Female	**Regular Partner(s)**	**1**	8	1	0	0	0	0	0	0	**9**
		Did not specify	0	0	0	0	0	0	0	2	**2**
	Total		**8**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**11**

Same Sex Partners

Of workers who had ever had sex, five percent reported having had same sex partners at some point in their lives.

Table 65: Ever had same sex sexual partners by sex

Ever had same sex partners	Male			Female			Total	
	n	**% within sex**	**%**	**n**	**% within sex**	**%**	**n**	**%**
Yes	21	5.0%	4.8%	1	7.1%	0.2%	22	5.0%
No	403	95.0%	91.8%	14	93.3%	3.2%	417	95.0%
Sub total	**424**	**100.0%**	**96.6%**	**15**	**100.0%**	**3.4%**	**439**	**100.0%**

*Missing = 13

One male worker expresses a view about same-sex sex in terms similar to those expressed by others earlier in relation to oral sex and anal sex — that it represents a new style and is one of the contemporary changes to local sexual practice.

> The practices of gay, or male to male sex is happening and even woman and woman is happening. These days we see different men and women, with different ways [styles] of having sex. A man has sex with a man, and women with women and women and men. These styles of sex practices are now happening a lot here ... (Male worker).

While numbers are small, of those male workers who have had same sex partners, 38.5% had had sex with one sexual partner in the past year; 15.4% had had two sex partners; and 7.7% had had three sexual partners in the past year. The remainder (38.5%) did not know how many partners that they had had in the past year.

Table 66: Number of same sex sexual partners in the last 12 months by sex

Number of same sex partners in past year	Had male sexual partners			Had female sexual partners			Total	
	Male			Female				
	n	% within sex	%	n	% within sex	%	n	%
1	5	38.5%	38.5%	0	0.0%	0.0%	5	38.5%
2	2	15.4%	15.4%	0	0.0%	0.0%	2	15.4%
3	1	7.7%	7.7%	0	0.0%	0.0%	1	7.7%
Don't know	5	38.5%	38.5%	0	0.0%	0.0%	5	38.5%
Sub total	**13**	**100.0%**	**100.0%**	**0**	**0.0%**	**0.0%**	**13**	**100.0%**
No sex with same sex partner last year	**3**			**1**			**4**	
Total	**16**			**1**			**17**	

*Missing =5

Four workers (3M, 1F) said that they had had same-sex partners, but that they had not had sex with them in the past year. This is similar with other partner types, when workers identify that they have a relationship with a sexual partner in their networks of partner types, but may not have had sex with them in the past year.

Of those men who had had sex with same-sex partners, 50.0% had, at some point, ever paid one or more men to have sex with them. Of the nine men that had paid same sex partners, six (66.6%) said that they were presently married, two (22.2%) were not married and one man did not answer.

Table 67: Ever paid to have sex with same sex partner by sex

Ever paid same sex partner	Ever paid a man to have sex with you			Ever paid a woman to have sex with you			Total	
	Male			Female				
	n	% within sex	%	n	% within sex	%	n	%
Yes	9	50.0%	47.4%	0	0.0%	0.0%	9	47.4%
No	9	50.0%	47.4%	1	100.0%	5.3%	10	52.6%
Total	**18**	**100.0%**	**94.7%**	**1**	**100.0%**	**5.3%**	**19**	**100.0%**

*Missing= 3

Of those men and woman who had had sex with same-sex partners, one man reported living with his same sex partner. This subset of workers fit a variety of network patterns in relation to partners, including same-sex partners, non-regular, and concurrent marital and regular partners.

Condom use during anal sex in last year

Anal sex between men and between men and women poses a higher risk of HIV transmission during unprotected sex. Overall, only 41.4% of men and women said that they had used a condom at last anal sex. In response to a question about condom use at last anal sex with a male sex partner in the last year, while numbers are small, 55.6% of male workers who had anal sex with men said they had used a condom. Considering that 13 women had had sex in the last year, most (84.6%; 11/13) had had anal sex with men, and most (81.8%) had not used a condom at last anal sex with their male partner. Anal sex between men and women is an important area for prevention efforts.

Table 68: Condom use at last anal sex by sex

Condom use at last anal sex with male partner	Male			Female			Total	
	Condom use at last anal sex with male partner			Condom use at last anal sex with a male partner				
	n	% within sex	%	n	% within sex	%	n	%
Yes	10	55.6%	34.5%	2	18.2%	6.9%	12	41.4%
No	8	44.4%	27.6%	9	81.8%	31.0%	17	58.6%
Total	**18**	**100.0%**	**62.1%**	**11**	**100.0%**	**37.9%**	**29**	**100.0%**

*Missing = 8 (3M is from subset of 21 men that had anal sex with a man and F5 is from the subset of 16 women who had ever had sex)

Of the 21 men who had anal sex with a male partner, 23.8% (5) reported that they had anal sex with a man when he did not want to, indicating considerable forced anal sex between men.

A limitation of the survey was that it did not ask men their frequency of anal sex with women. Based on the percent of anal sex that women reported with men and the lack of condom use, the need to focus prevention in the area of anal sex between men and women and men and men, is certainly indicated.

As calculated, the UNGASS Indicator 19 is the percentage of men reporting the use of a condom the last time they had anal sex with a male partner, under and above the age of 25. Of those male petroleum workers who had anal sex with another man in the past 12 months and who knew their age and answered; 46.7% reported the use of a condom the last time they had anal sex with a male partner. [5]

Table 69: Condom use at last anal sex with a man

Age disaggregation		Total months
<25	**>=25**	
Number of petroleum development workers who reported that a condom was used the last time they had anal sex with another man		
1	6	7
Number of petroleum development workers who had anal sex with another man in the last 12 months		
3	12	15
Percentage of MSM among petroleum development workers who reported that a condom was used the last time they had anal sex with another man		
33.3%	50.0%	46.7%

Transactional Sex (TS) Partners

Transactional sex partners were defined as sexual partners with whom sex had been exchanged for money, beer, food, services, favors or other gifts. A variety of terms were used for women and girls that exchanged sex for money and other goods in the Moro area.

> There are other names that are used to call women who sell themselves to get money…*Raun meri*. These I see that they are *pokopi meri*. In Goroka or Simbu, we refer to them as *pokofi*. They are *raun meri*… *Tok Pisin* they say

[5] Differences in calculation of condom use at last anal sex with a man for UNGASS Indicator 19, Table 69 and Table 68 is based on the need for age disaggregation. Twenty-one male workers reported having anal sex with a male partner in the last 12 months, and 15 were in the age <25 and >=25; three did not know their age and another three did not answer a question.

pasindia meri or in the local dialect it's different, like *Arikawale* (Man who arranges sex).

What we understood of TS from formative research data

Sex on and off site

The exchange of sex that happens outside the camp area was accepted by workers as normal. During time off, men spent time with people in the community, including in clubs where there is contact with women exchanging sex for money and other goods. There was also *dinau koap*, an arrangement where men would have sex with sex workers on credit and the women could come to the gates on pay days to collect their debts. Transactional sex takes place in the bushes, by the river, and in arranged rooms. Some reported that oil heads were hotspots for sex after hours, even though having sex on site was forbidden and posed a risk to one's job.

Many were of the view that migrant women were involved in sex work with Oil Search male workers to a greater extent than were local women. The level of payment to women exchanging sex depended upon the man's urgency for sex, and the type of sex he desired.

Among workers and women exchanging sex, there was a high degree of awareness about using condoms when having transactional sex. The workers would get condoms from the clinics, accessible from dispensers placed in the toilets on site, and at the airport for workers departing on their breaks. The supply system, mostly managed by OSL Community Health workers, was regarded as good.

Transactional partners in the last 12 months

When considering transactional sex partners, it is important to recognise that both men and women are involved in both the receiving and the giving of something for sex, and that both other female and male partners may be involved.

Men giving women or women being given by men something for sex in last year

Nearly a quarter of the male workers reported that they had given women cash, or other goods, in exchange for sex in the last twelve months. No female workers reported having been given anything for sex by men in the past year.[6]

Table 70: In the last 12 months, men gave women something for sex or women were given something by men for sex by sex

Gave or were given something to have sex in the last 12 months	Male			Female			Total	
	Gave a woman something for sex in last year			Given something to have sex with a man last year				
	n	% within sex	%	n	% within sex	%	n	%
Yes	97	24.5%	23.7%	0	0.0%	0.0%	97	23.7%
No	292	73.7%	71.4%	13	100.0%	3.2%	305	74.6%
Did not specify	7	1.8%	1.7%	0	0.0%	0.0%	7	1.7%
Total	**396**	**100.0%**	**96.8%**	**13**	**100.0%**	**3.2%**	**409**	**100.0%**

[6] One woman who did not answer that she had had a transactional partner (missing data), but she later reported having one sex partner who gave her something in exchange for sex in the past year.

There is a statistically significant association between a person's sex (male and female) and having a transactional (paid or paying) partner in the last 12 months. There were only male workers (24.1%) and no (0.0%) female workers who reported having had a transactional sex partner in the past year [***Chi-Square analysis produced a significant result at $p<0.044$]. However one woman who did not answer that she had had a transactional partner in the previous question (missing data); later reported in a different question having one sex partner who gave her something in exchange for sex in the past year.

The most common form of payment mentioned during qualitative interviews was money. The amount of money exchanged ranged from as low as K5 to K500 and the differences in price related to the types of sex (e.g. vaginal, anal or oral sex) and styles of sex performed (e.g. doggie style or vaginal sex while standing up). Other forms of payment mentioned included clothes, food from the OSL mess, soft drinks, perfume and other gifts, exchange of betel nuts and smokes, giving lifts in vehicles, and alcohol.

Some reported that the types and styles of sex could determine the amount negotiated between the women exchanging sex and their clients. There were also examples of sex on credit, where men have sex, in most cases with women they knew, and then pay the money owed when their fortnight pay comes. Some participants spoke from hear-say, and others spoke directly from their own experience of negotiating price and sexual practice:

> …they (other workers) mentioned that they get, let's say blow jobs (oral sex) ten kina. That's what they were talking from casually laughing and joking and I said, and if they blow trumpet, that would be how much? And they said, oh that would be ten kina or twenty kina and dog style would be forty kina or fifty kina, they charge it like that. And I said alright and sleeping on the top would be fifty kina or? I can't remember the price but that was what they were saying (Male worker).
>
> Sometimes they buy me beer. He buys me beer and when I get drunk we have sex. One time they gave me perfume and I finished it yesterday, then I asked that man, I said I want to put perfume on my vagina; I want to rub around my vagina, so give me one. Then he said, "I have one but hard for me to take it out. Later if I see no one is around I'll throw it through the fence". So I waited for him (Woman exchanging sex).
>
> Sex on credit yes they have. There was one occasion when somebody (a lady) came up and said, you know, that thing is that you already had sex and you did it on credit, I am here now to get my credit money. She wanted twenty kina (Male worker).
>
> The first time I came here one man was craving and shaking to have sex… He decided to explore my body so he just closed his eyes and gave me K100. Also for the first time I went out with a workman man and he gave me K250 — four or five K50. He works here. He gave me K250, the four K50 and we had sex. He showed his money and I was moved by his money. E*m soim mani blong em olsem long mi na mi guria long mani.* It was hard for me to go back to my husband and was not worried about getting sick (meaning infected). *Hat long mi go bek long man blong mi tu na olsem mi no wari long sik tu.* I was even not

> worried about contracting the bad sickness (HIV or AIDS). I just went ahead and had sex with him— *Sik nogut mi bai kisim long em tu mi no bisi tu. Mi go kuap tasol wantaim man ya* (Woman exchanging sex).

> You have to collect the money first otherwise he will just have sex with you and leave without paying you. He won't even bother and they are just the same; conman and all they want is to just relieve themselves sexually. They will even say that they don't have any money. That's the reason why we demand that they give us the money before we have sex with them and we also arrange with our pimps to keep an eye on us just in case the man leave without paying….(Woman exchanging sex).

In the following short and matter-of-fact account, a woman blends a description of her awareness of her own personal, marital and financial circumstances, and her familiarity with the local situation and individual workers, to explain sexual negotiation and the attraction, despite the risk, of the flow of income. The worker in the account also demonstrates how, with money, and an understanding of the woman's circumstances, he can have access to sex, on-the-spot. The immediate physical circumstances (the bushes) meant that, in this case, there is no gap between negotiation and practice. This passage demonstrates a feature common to a number of accounts from the interviews — that of the well-informed and pragmatic agency of the parties to transactional sex.

> There are so many employees… most of them I know them. I have sex with them, walk around with them and I thought of going back home as when I stay back here it's hard to find food. The little money I had ran out and I went walking around. And when the work men see me, they keep their eyes on me. When they drive they beep the horn to signal me. I thought they really meant to ask me for a smoke and betel-nut but they were not. They actually had other motives to lure me… sister I like you. One of them directly asked me and I said "I'm married and I won't go out with you". Then he said, "No. What will your husband do, he is far away. I am just like your husband. How much does your husband gives you in a day? Do you think he gives you like this in a day? I don't think so, now I'll give you K100. Let us have sex." As soon as he said that my mind was already tempted (thinking about the money), so I was not worried about diseases. I just listened to him and followed him into the bushes and we had sex (Woman exchanging sex).

Male workers indicated the numbers of sexual partners that they had given something to for sex in the past year, and of these, 55.9% of male workers reported that they had one or two transactional partners, some (19.5%) had between three and five, and the rest (24.6%) had from six to 27 sex partners to whom they had paid something to in the past year.

Table 71: Number of transactional partners by sex

Number of transactional sexual partners in last 12 months	Male			Female			Total	
	# of sexual partners whom you gave money, beer, food, services, favor or other gifts in last 12 months to have sex			# of sexual partners whom you gave money, beer, food, services, favor or other gifts in last 12 months to have sex				
	n	% within sex	%	n	% within sex	%	n	%
1	23	29.9%	29.9%	0	0.0%	0.0%	23	29.9%
2	20	26.0%	26.0%	0	0.0%	0.0%	20	26.0%
3	5	6.5%	6.5%	0	0.0%	0.0%	5	6.5%
4	4	5.2%	5.2%	0	0.0%	0.0%	4	5.2%
5	6	7.8%	7.8%	0	0.0%	0.0%	6	7.8%
6	2	2.6%	2.6%	0	0.0%	0.0%	2	2.6%
7	3	3.9%	3.9%	0	0.0%	0.0%	3	3.9%
8	1	1.3%	1.3%	0	0.0%	0.0%	1	1.3%
9	2	2.6%	2.6%	0	0.0%	0.0%	2	2.6%
10	2	2.6%	2.6%	0	0.0%	0.0%	2	2.6%
12	3	3.9%	3.9%	0	0.0%	0.0%	3	3.9%
13	1	1.3%	1.3%	0	0.0%	0.0%	1	1.3%
16	1	1.3%	1.3%	0	0.0%	0.0%	1	1.3%
18	1	1.3%	1.3%	0	0.0%	0.0%	1	1.3%
19	1	1.3%	1.3%	0	0.0%	0.0%	1	1.3%
20	1	1.3%	1.3%	0	0.0%	0.0%	1	1.3%
27	1	1.3%	1.3%	0	0.0%	0.0%	1	1.3%
Subtotal	**77**	**100.0%**	**100.0%**	**0**	**0.0%**	**0.0%**	**77**	**100.0%**
Did not specify	27						27	
Subtotal	**104**						**104**	
Men no paid partners	292						292	
Women no paid partners				13			13	
Total	**396**						**409**	

Men given money or other gifts for sex

Of the men who had ever had sex, nearly 10 percent reported that they had been given something to have sex. Of these, most (31/33; 93.9%) were married at the time of the survey and five men did not answer.

Table 72: Number of men who had ever been given money or other goods for sex

Ever been given money or other gifts for sex (M)	Male		
	n	% within sex	% of Total
Yes	38	9.5%	9.5%
No	363	90.5%	90.5%
Total	**401**	**100.0%**	**100.0%**

*Missing=35

Transactional partnerships in the last three months

Nearly a quarter of workers (23.7%; 104) had had paid sex in the last twelve months. Of the 88 male workers who said that they had paid for sex, 53.5% had had sex between one and four times with transactional partners during the last three months; 13.6% had transactional sex five and 10 times in the same period; and 5.6% had had transactional sex from 13 to 68 times) in the last three months. Over a quarter (27.3%) reported that they did not know how many times they had sex with their transactional partner in the past three months.

Table 73: Number of times male workers had transactional sex over the last three months

Number of times had transactional sex over the last three months	Male			Total	
	n	% within sex	%	n	%
1	19	21.6%	21.6%	19	21.6%
2	13	14.8%	14.8%	13	14.8%
3	8	9.1%	9.1%	8	9.1%
4	7	8.0%	8.0%	7	8.0%
5	2	2.3%	2.3%	2	2.3%
6	6	6.8%	6.8%	6	6.8%
7	3	3.4%	3.4%	3	3.4%
10	1	1.1%	1.1%	1	1.1%
13	1	1.1%	1.1%	1	1.1%
15	2	2.3%	2.3%	2	2.3%
28	1	1.1%	1.1%	1	1.1%
68	1	1.1%	1.1%	1	1.1%
Don't know	24	27.3%	27.3%	24	27.3%
Sub total	**88**	**100.0%**	**100.0%**	**88**	**100.0%**
Had no paid sex in the last 3 months	**8**			**8**	
Total	**96**			**96**	

*Missing = 8

Women who exchanged sex reported having transactional sex whenever there was a client or a man looking for sex. For example, a woman reported that in a day, she could have paid sex with two to three men. Local men also arranged sex for workers and were paid as middle men. And sometimes women exchanging sex would agree to have group sex.

> In a day I have sex with one man and then get money and leave him. I walk around, another one asks me, okay if their money price is high, I would say alright and would go into the bushes. First round I just do it (have sex). After that I don't care. I continue doing it. So two times, three times and the fourth time when they ask me, my body would be weak. And I would say no….About three men I use (have sex with them in a day). *Em tripla man nambaut mi save usim.* Sometimes two men, sometimes three men… (Woman exchanging sex).

> Sometimes I see that ok same day. Okay the other two (man and woman) are together in the morning, okay lunch and then other one you know (another man with the same woman exchanging sex)…okay then another one in the afternoon. The women exchanging sex, they have sex with about three men in one day. Like tomorrow another three, you understand….Ha, like in one day, they use (have sex with) around 5, 6 men. Village men too, landowners too and company boys (Man who arranged sex for workers).

Men reported the number of women that they gave money or other gifts to for sex in the last three months, and most (42.1%) reported giving something to one woman, and 30.3% reported either two (15.8%) or three (14.5%). Some (27.5%) reported greater numbers of women they gave something to for sex in the last three months, with between four and six women (14.4%), seven or eight women (6.6%), and or between nine and 32 (6.5%) women being given something for sex.

Table 74: Number of women you gave money or gifts for sex in the last three months by sex

Number of women given money or other gifts for sex in last three months	Male			Total	
	n	% within sex	%	n	%
1	32	42.1%	42.1%	32	42.1%
2	12	15.8%	15.8%	12	15.8%
3	11	14.5%	14.5%	11	14.5%
4	6	7.9%	7.9%	6	7.9%
5	2	2.6%	2.6%	2	2.6%
6	3	3.9%	3.9%	3	3.9%
7	1	1.3%	1.3%	1	1.3%
8	4	5.3%	5.3%	4	5.3%
9	1	1.3%	1.3%	1	1.3%
10	1	1.3%	1.3%	1	1.3%
13	1	1.3%	1.3%	1	1.3%
23	1	1.3%	1.3%	1	1.3%
32	1	1.3%	1.3%	1	1.3%
Sub total	**76**	**100.0%**	**100.0%**	**76**	**100.0%**
Did not specify	9			9	
Total	85			85	

*Missing=3** Percentages rounded to first decimal

Of the 88 men who reported that they had same sex partners; two male workers reported that they had also given men money or other gifts for sex in the last three months. One worker had given something to one man for sex and the other had given to four or five men. This data is limited with considerable missing; while numbers are low the data indicates paid sex between men (also see Table 67).

Table 75: Number of men that male workers gave money or other gifts to for sex in last three months

Number of men that male workers gave money or other gifts to for sex in last three months	Male		
	n	% within sex	% of Total
1	1	50.0%	50.0%
4	1	50.0%	50.0%
Sub total	**2**	**100.0%**	**100.0%**
0 male paid partners	6		
Total	**8**		

*Missing=13

Condom use during transactional sex

Only male workers reported transactional sex in the last three months, and a half (51.2%) said that they always used a condom. However, a third of workers were reported inconsistent use of condoms and 15.5% had not used a condom with their transactional sex partners in the past three months.

Table 76: Frequency of condom use with paid partner during the last three months by sex

Condom use with paid partners over the last three months	Male			Total	
	n	% within sex	%	n	%
Always	43	51.2%	51.2%	43	51.2%
Sometimes	28	33.3%	33.3%	28	33.3%
Never	13	15.5%	15.5%	13	15.5%
Total	**84**	**100.0%**	**100.0%**	**84**	**100.0%**

*Missing=4

Condom use at last transactional sex

Most (75.0%) reported that they had used a condom the last time they had transactional sex, and of those who had used a condom, over half (56.9%) of workers suggested that a condom be used, and many more (38.9%) had agreed with their transactional partner. The data indicates extremely high condom use by male workers at last sex with transactional clients and that men had initiated condom use or shared in that negotiation. However, those always consistently using a condom are considerably less (51.2%).

Table 77: Condom use at last sex with paid partner by male

Condom use at last transactional sex	Male			Total	
	n	% within sex	%	n	%
Yes	72	75.00%	75.00%	72	75.00%
No	24	25.00%	25.00%	24	25.00%
Total	**96**	**100.00%**	**100.00%**	**96**	**100.00%**

*Missing=8

Table 78: Who suggested condom use at last paid sex by sex

Who suggested condom use	Male			Total	
	n	% within sex	%	n	%
Myself	41	56.9%	56.9%	41	56.9%
Paid partner	3	4.2%	4.2%	3	4.2%
Both of us	28	38.9%	38.9%	28	38.9%
Total	**72**	**100.0%**	**100.0%**	**72**	**100.0%**

> I see some women [women exchanging sex] they have lots of condoms….I see many women, I see many carrying condoms…Some of them say here I carry (have) condoms, if no condom, forget it [sex is not going to happen] - *nogat kondom maski*. Some men will say, I don't have any condoms and some others will say (to the woman) oh I have some. Lady I have condoms. Ok you will use condoms, two of them or one is enough, just use it (Male worker).

> Ok I see some, I see that, I see that the women, when they are drinking, I see them too. When the men are drinking I see some of them when they have sex, I see how they use condom or I see that they do it without. I asked some of the men, he said I am circumcised I will do without (have sex without condom) (*mi kela mi wokim nating*). That's like, when the foreskin is cut (Male worker)

Of those who had not used a condom with a paid sexual partner, the main reasons included: I trust my partner (33.3%); not comfortable (18.5%); and reduction of pleasure (14.8%).

Table 79: Reasons for not using condom at last sex with a paid partner by male

Reasons for not using condoms with transactional partner(s)	Male			Total	
	n	% within sex	%	N	%
I trust my partner	9	33.3%	33.3%	9	33.3%
Not comfortable	5	18.5%	18.5%	5	18.5%
Condoms reduce pleasure	4	14.8%	14.8%	4	14.8%
Not available	2	7.4%	7.4%	2	7.4%
Didn't think of it	2	7.4%	7.4%	2	7.4%
Don't like condoms	2	7.4%	7.4%	2	7.4%
I was drunk	2	7.4%	7.4%	2	7.4%
Didn't think it was needed	1	3.7%	3.7%	1	3.7%
Total	**27**	**100.0%**	**100.0%**	**27**	**100.0%**

*Missing=10

Most of the female workers interviewed did not like using condoms. Male workers talked about using condoms when they were giving something for sex, and women outside of the gates of the OSL site gave accounts of using condoms and demonstrated great agency, knowledge and skills in fitting condoms on their clients, and in making strategies of protection in situations that they did not like.

> I took condoms with me. And whenever a man asks, for us to go and have sex that's the time I pretend to ask them like, do you have a condom? They will say they have nothing and tell me that they will stop at the moment of ejaculation and will persist to have sex. I used to say no, I have it so I give it to them. So I put two condoms on the man's penis. When the man's penis is still not erect – only he can unzip his zipper. I play around with his penis foreskin up and down until it gets tight and I can make the condom fit – *samting blong man silip--olsem em yet save rausim zipa stap, mi mekim go sikinim go tait na mi save fitim kondom* (Woman exchanging sex).

> When we drink it takes a while for a man to ejaculate. They don't release easily, so he continues on [having sex] for some time and eventually releases. So with that type of man, I don't drink with them the next time (Woman exchanging sex).

No transactional partners but other concurrent partners

As previously discussed, of those (409) who had sex in the last year, 104 had had transactional sex partners and 305 workers identified that they did not have a transactional sex partner. Of these 305 who had no transactional partners, 158 had only one regular partner and seven had only one non-regular sex partner. Of the rest (100) that specified their numbers of partners, 99 male workers and one female worker reported having either concurrent regular, concurrent non-regular sex partners or concurrent regular and non-regular sex partners.

Table 80: Number of workers who do not have transactional partners but have other regular and non-regular partners by sex

Sex			Non-Regular Partner										Total
			0	**1**	**2**	**3**	**4**	**6**	**7**	**10**	**12**	**Did not specify**	
Male	**Regular partner**	**0**	0	7	5	2	0	0	1	0	1	0	16
		1	148	27	15	7	0	0	0	1	0	0	198
		2	12	8	7	1	0	0	0	0	0	0	28
		3	1	1	2	2	0	0	0	0	0	0	6
		4	1	0	1	0	0	1	0	0	0	0	3
		5	1	0	0	1	0	0	0	0	0	0	2
		18	0	0	0	0	1	0	0	0	0	0	1
		Not specified	0	0	0	0	0	0	0	0	0	38	38
	Total		**163**	**43**	**30**	**13**	**1**	**1**	**1**	**1**	**1**	**36**	**292**
Female	**Regular partner**	**0**	0	1	0	0	0	0	0	0	0	0	1
		1	10	0	0	0	0	0	0	0	0	0	10
		Not specified	0	0	0	0	0	0	0	0	0	2	2
	Total		**10**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**13**

CONDOM USE AND PREFERENCES

In recounting their sexual partners and practices, the workforce reported using condoms less within their regular and marital sexual relationships, more with non-regular sex partners and most in contexts of transactional sex.

Almost all participants qualitatively interviewed were aware of condoms. The majority also demonstrated having some knowledge about why condoms are important to use, how to use them and where condoms are supplied and accessed However, there were still some exceptions as one woman feared that a condom might get stuck inside her body and another thought that they may have holes and not safe. This indicates a lack of effective condom awareness and knowledge for women. Little reference was made to female condoms indicating that workers are more aware of male condoms than female condoms. The level of details of the reasons men and women gave for using condoms would indicate workers are generally well informed and know about condoms and issues related to HIV infection.

OSL workers and the women outside the gate gave considerable accounts of their experience of using condoms, and their knowledge and opinions about them. The quotes that follow, in this section, illustrate how their experience, their way of thinking and knowledge have impacted on their decisions to use a condom or not to use a condom.

Condom use and negotiation

Of those who had had sex, most (64.9%) had had sex when a male condom was used; however still just over a third of both men and women said they had never had sex when a male condom was used.

Table 81: Ever used a male condom with sexual partner by sex

Have you ever used a male condom with a sexual partner	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	274	64.8%	62.4%	11	68.8%	2.5%	285	64.9%
No	149	35.2%	33.9%	5	31.3%	1.1%	154	35.1%
Total	**423**	**100.0%**	**96.4%**	**16**	**100.0%**	**3.6%**	**439**	**100.0%**

*Missing = 13

Few men (11.4%) had had sex with a woman who had used a female condom, but fewer women (6.3%) had ever used a female condom.

Table 82: Had sex with a woman who used a female condom by male and had sex with a man while using a female condom by female

Ever used a female condom	Male			Female			Total	
	Had sex with women who used female condom			Had sex with man while using female condom				
	n	% within sex	%	n	% within sex	%	n	%
Yes	48	11.4%	11.0%	1	6.3%	0.2%	49	11.2%
No	344	81.7%	78.7%	15	93.8%	3.4%	359	82.2%
Unsure	29	6.9%	6.6%	0	0.0%	0.0%	29	6.6%
Total	**421**	**100.0%**	**96.3%**	**16**	**100.0%**	**3.7%**	**437**	**100.0%**

*Missing = 15

The behavioural survey data around condom use throughout the previous sections identified important highlights in relation to condom use and negotiation. There was higher condom use at last sex between workers and their transactional and non-regular sex partners, and least condom use with regular partners. Consistent condom use was similar, with least consistent condom use with regular partners, while most men, more often always used a condom with their non-regular and transactional sex partners in the past three months.

Condom negotiation and use varied between partner types: with most workers (over half 55.9%) mutually agreeing with their regular partners when a condom was used, or was initiated by the worker (two-fifths 40.9%); however only a quarter used condoms at their last sex with their regular partners. More workers (over half 54.7%) themselves initiated condom use with their non-regular partners, or there was considerable mutual agreement (over two-fifths 43.2%); and around two-thirds (67.6%) used condoms with their non-regular partners at last sex. But most (three quarters 75.0%) male workers used condoms at last sex with their transactional sex partners and most (over half 56.9%) were first to suggest condom use, or mutually agreed (less two-fifths 38.9%) with their transactional sex partners to use condoms.

However when workers were asked if they had used a condom at their last sex, irrespective of partner type, considerably less (35.8%) said that they had than what was reported by partner type. The greatest majority (64.2%) reported that they had not used a condom at last sex, while more men than women had used a condom at last sex.

Table 83: Used a condom at last sex by sex

Condom use at last sex	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	149	36.5%	35.1%	3	18.8%	0.7%	152	35.8%
No	259	63.5%	61.1%	13	81.3%	3.0%	272	64.2%
Total	**408**	**100.0%**	**96.2%**	**16**	**100.0%**	**3.8%**	**424**	**100.0%**

*Missing = 28

Condom use patterns across partner types indicated that many workers, particularly male workers, weighed or assessed their risk of infection in the context of having sex with their non-regular and transactional partners, and used their agency to initiate higher condom use to protect them from being infected with HIV and other infections when having 'higher risk' sex. Men used condoms more at last sex when having sex with non-regular and transactional sex partners than when having sex with their regular partners. But as consistency of condom use across all partner types was less than at last sex; increasing consistency of condom use with the majority of men with concurrent partners outside of their marriages is important, and for female workers generally.

Few female workers used condoms with their regular partners, and did not use condoms with their non-regular sex partners, and most reported not using condoms in the context of anal sex. Over half of male workers used condoms at last anal sex with their same sex partners; but 81.8% of women reported that a condom was not used the last time that they had had anal sex with their male sex partners. As illustrated below, and throughout the previous sexual history section, there were a variety of reasons why workers said that they did not use condoms with their different partner types.

Reasons for not using condoms across partner types

When asked why they had not used a condom at last sex with a range of partner types, reasons ranged from trust or feeling it was not needed, dislike for a variety of reasons, lack of access or being drunk at the time. Most workers identified that they had not used a condom because of 'trust' of their regular (54.9%), non-regular (34.6%) or transactional sex partners (33.3%). A variety of other reasons were also given by partner type.

For regular partners, condoms were also not used because of dislike and reduction of pleasure and comfort (11.9%) or they either didn't think a condom was needed or think of using (9.5%). Less reporting having access problems as condoms were not available or too expensive (5.5%), or the worker was too drunk (1.8%).

For condom use with a non-regular partner — after trust, condoms not being available (15.4%), the reduction of pleasure (13.5%), being drunk (11.5%), discomfort (7.7%) and dislike (3.8%) outweighed condom use with a non-regular partner.

When workers did not use condoms with their transactional partners, after trust, not comfortable (18.5%) and the reduction of pleasure (14.8%) followed. Lack of availability (7.4%), not thinking of it (7.4%), dislike (7.4%) and being drunk (7.4%) were then identified equally as why workers did not use a condom at their last transactional sex. Workers also preferred different types of condoms

One male worker said that men do not use condoms with their female partners because their women say they only get sexually satisfied if they have sex without a condom (skin to skin) and the men want to ejaculate inside the woman.

> Some say why condom? Skin to skin, otherwise I will not be satisfied…I wanted to use a condom and I had already had sex [with a woman with a condom], then the women told me, 'you did not have sex with me, the condom fucked me'. You think about it, so the men, some men don't like condoms, I think because they want to ejaculate their sperm right inside (Male worker)

Condom Preferences

Male or Female

All workers who had sex were asked if they preferred using a male or female condom, and most (59.3%) preferred the male condom; however over a third of female workers and over a fifth of male workers were unsure of their preference and overall the rest (15.8%) preferred neither.

Table 84: Male or female condom preference by sex

Condom preference	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Male condom	246	59.9%	57.9%	6	42.9%	1.4%	252	59.3%
Female condom	16	3.9%	3.8%	2	14.3%	0.5%	18	4.2%
Neither	66	16.1%	15.5%	1	7.1%	0.2%	67	15.8%
Unsure	83	20.2%	19.5%	5	35.7%	1.2%	88	20.7%
Total	**411**	**100.0%**	**96.7%**	**14**	**100.0%**	**3.3%**	**425**	**100.0%**

*Missing=27

Brand

When workers were asked what condom brands they preferred, most (33.3%) preferred Karamap. Other male condoms such as: Midnight Cowboy (12.7%), Rough Rider (6.4%), Lifestyle (3.7%), Ancell (3.6%) or Seif Rider (3.4%) were next preferred. Very few (0.2%) mentioned female condoms as a preference and the NACS free condom was the least preferred male condom (1.5%). A quarter had no preference and close to a tenth didn't like or didn't know about condoms.

Figure 6: Condom preference by brand

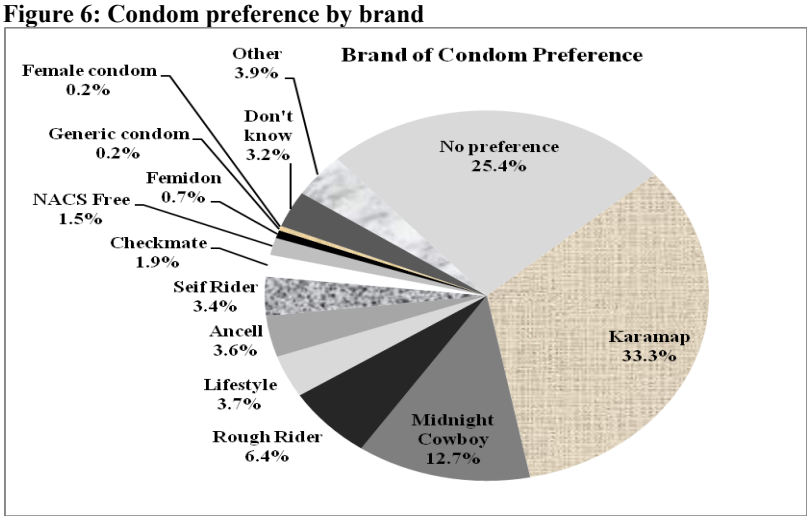


Table 85: Condom brand preference by sex

Brand of condom preference	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Karamap	176	34.3%	32.9%	2	9.1%	0.4%	178	33.3%
Midnight Cowboy	68	13.3%	12.7%	0	0.0%	0.0%	68	12.7%
Rough Rider	33	6.4%	6.2%	1	4.5%	0.2%	34	6.4%
Lifestyle	19	3.7%	3.6%	1	4.5%	0.2%	20	3.7%
Ancell	17	3.3%	3.2%	2	9.1%	0.4%	19	3.6%
Seif Rider	18	3.5%	3.4%	0	0.0%	0.0%	18	3.4%
Checkmate	9	1.8%	1.7%	1	4.5%	0.2%	10	1.9%
NACS free	8	1.6%	1.5%	0	0.0%	0.0%	8	1.5%
Femidon	4	0.8%	0.7%	0	0.0%	0.0%	4	0.7%
Generic condom	1	0.2%	0.2%	0	0.0%	0.0%	1	0.2%
Female condom	1	0.2%	0.2%	0	0.0%	0.0%	1	0.2%
Don't know	15	2.9%	2.8%	2	9.1%	0.4%	17	3.2%
Other (Don't like condoms, never use condom and did not specify)	18	3.5%	3.4%	3	13.6%	0.6%	21	3.9%
No preference	126	24.6%	23.6%	10	45.5%	1.9%	136	25.4%
Total	**513**	**100.0%**	**95.9%**	**22**	**100.0%**	**4.1%**	**535**	**100.0%**

*Missing= 40 Percentages and totals are based on responses and rounded off to first decimal point.

Supply and Accessibility

Both the quantitative and the qualitative data indicate that most workers can access condoms from a variety of sources which are accessible to them within OSL and outside the camp, including access from a variety of places inside OSL from: first aid kits at all sites; from clinic health workers and doctors; dispensers from toilets and shower rooms, and from the airport, and during world AIDS day and other awareness sessions. From outside the site gates

condoms were said to be available at the CDI at Moro, and guesthouses and hotels in surrounding communities and from workers and women exchanging sex. Some condoms are given free, then sold or traded, while used condoms were also found on and around site.

> From my experience working, when I started with Oil Search, men just come in and get condoms. So they just walk in, and say Hi, I need this, you got anything? When I say no stock, they are quite disappointed, so I need to stock up…Be prepared! They walk in anytime. They feel free to get it (Male health worker).

> Well since I came here I've just seen that we have a plastic of condoms outside the clinic. I'll be doing my safety tour in the middle of this week, where I go around to all the, like living squatters and toilets, showers and just to check whether they have condom dispensers. It is a good idea to put a couple of them in the toilets, male toilets, female toilets too, not only males. And so they can be used when they go for their breaks (Male health worker).

> Ah the men yeah, they also put condoms in their rooms so they can have sex with some other women. Here there are a lot of women, is not only me. Me I go home and sleep, and in the morning at 5 o, clock I come…but those condoms I don't know, they use them with women in the camp or women from outside when they go to work outside, they take the condoms and use them. I think the condoms I see [when I clean the room] that they put in their rooms, they do have sex with them (Female worker).

Condoms given, taken or bought

Women from qualitative interviews reported that condoms were taken by men to be used when they went on break at home with their wives or in transit with paid or other sex partners, and that they were used by men mostly with local women outside the gate, as well as women in the workforce when at work.

Most (67.4%) of the workforce had ever received (were given or taken) a condom provided by Oil Search at some time, while 61.1% had been given condoms in the last twelve months. Fewer women reported being given or taking condoms provided by OSL and less had been given any condoms in the past 12 months.

While most (67.4%) of the workforce had ever received (were given or taken) a condom provided by Oil Search at some time; significantly more male than female had obtained condoms this way. There were more male workers (68.8 %) than female workers (36.8%) who took condoms provided by OSL among those who were ever given or taken condoms provided by OSL [***Chi-Square analysis produced significant result at $p<0.004$].

Table 86: Ever been given or taken condoms provided by OSL by sex

Ever given or taken condoms provided by Oil Search Limited	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	291	68.8%	65.8%	7	36.8%	1.6%	298	67.4%
No	132	31.2%	29.9%	12	63.2%	2.7%	144	32.6%
Total	**423**	**100.0%**	**95.7%**	**19**	**100.0%**	**4.3%**	**442**	**100.0%**

*Missing= 21

While most (61.1%) of the workforce had been given a condom provided by Oil Search in the last year; significantly more male than female had obtained condoms this way. There were more male workers (62.2%) than female workers (35.3%) who had been given any condoms in the past 12 months [***Chi-Square analysis produced significant result at p<0.026].

Table 87: Have been given condoms by Oil Search Limited in the last 12 months by sex

Last 12 months have been given condoms	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	260	62.2%	59.8%	6	35.3%	1.4%	266	61.1%
No	158	37.8%	36.3%	11	64.7%	2.5%	169	38.9%
Total	**418**	**100.0%**	**96.1%**	**17**	**100.0%**	**3.9%**	**435**	**100.0%**

*Missing= 28

> … we have about two, three condom dispensing boxes within the camp. And on my rotation I am normally putting out about 250 to 300 condoms in a four-week. And that is not only the employees who are picking up the condoms but, it's the communities that come in also (Male Health Worker).
>
> I carry around a bilum, specifically for condoms. I get them from CDI. I buy betel nut, smoke and coke and bring it to them. So they give me a box of condoms….it's here (opens wallets and shows condoms to interviewer) and it's (referred to the wallet) not to keep money but for condoms (Woman exchanging sex).

The majority (75.4%; 310) of workers had not bought any condoms in the last month.

Table 88: Number of condoms bought in the last month by sex

Number of condoms bought in last month	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
1	9	9.1%	8.9%	0	0.0%	0.0%	9	8.9%
2	10	10.1%	9.9%	0	0.0%	0.0%	10	9.9%
4	6	6.1%	5.9%	0	0.0%	0.0%	6	5.9%
5	4	4.0%	4.0%	1	50.0%	1.0%	5	5.0%
6	4	4.0%	4.0%	0	0.0%	0.0%	4	4.0%
7	1	1.0%	1.0%	0	0.0%	0.0%	1	1.0%
8	1	1.0%	1.0%	0	0.0%	0.0%	1	1.0%
10	11	11.1%	10.9%	0	0.0%	0.0%	11	10.9%
12	30	30.3%	29.7%	0	0.0%	0.0%	30	29.7%
15	2	2.0%	2.0%	0	0.0%	0.0%	2	2.0%
16	1	1.0%	1.0%	0	0.0%	0.0%	1	1.0%
18	1	1.0%	1.0%	0	0.0%	0.0%	1	1.0%
19	1	1.0%	1.0%	0	0.0%	0.0%	1	1.0%
20	3	3.0%	3.0%	0	0.0%	0.0%	3	3.0%
24	5	5.1%	5.0%	0	0.0%	0.0%	5	5.0%
36	1	1.0%	1.0%	0	0.0%	0.0%	1	1.0%
48	2	2.0%	2.0%	0	0.0%	0.0%	2	2.0%
50	2	2.0%	2.0%	0	0.0%	0.0%	2	2.0%
56	1	1.0%	1.0%	0	0.0%	0.0%	1	1.0%
80	1	1.0%	1.0%	0	0.0%	0.0%	1	1.0%
100	1	1.0%	1.0%	1	50.0%	1.0%	2	2.0%
120	1	1.0%	1.0%	0	0.0%	0.0%	1	1.0%
122	1	1.0%	1.0%	0	0.0%	0.0%	1	1.0%
Subtotal	**99**	**100.0%**	**98.0%**	**2**	**100.0%**	**2.0%**	**101**	100.0%
0	**296**			**14**			**310**	
Total	**395**			**16**			**411**	

*Missing=52

Of the quarter who had bought condoms, most bought between 1–10 condoms (46.6%), most were buying 12 (29.7%) or in multiples of 12 (9.0%), with the rest (15.0%) buying between 15 and 122 condoms in the past month. Only 25.1% of male workers and 12.5% of female workers reported buying any condoms in the past month.

Half (52.2; 216) of workers reported taking or receiving free condoms in the last month; 47.8% had not. All female workers reported that they had not taken or been given any free condoms in the last month; but 54.3% of male workers had taken or received free condoms in the past month.

Table 89: Number of condoms taken or received free in the last month by sex

Number of condoms taken or receive free in the last month	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	% within sex
1	7	3.2%	3.2%	0	0.0%	0.0%	7	3.2%
2	11	5.1%	5.1%	0	0.0%	0.0%	11	5.1%
3	8	3.7%	3.7%	0	0.0%	0.0%	8	3.7%
4	11	5.1%	5.1%	0	0.0%	0.0%	11	5.1%
5	8	3.7%	3.7%	0	0.0%	0.0%	8	3.7%
6	15	6.9%	6.9%	0	0.0%	0.0%	15	6.9%
7	2	0.9%	0.9%	0	0.0%	0.0%	2	0.9%
8	3	1.4%	1.4%	0	0.0%	0.0%	3	1.4%
9	1	0.5%	0.5%	0	0.0%	0.0%	1	0.5%
10	21	9.7%	9.7%	0	0.0%	0.0%	21	9.7%
12	73	33.8%	33.8%	0	0.0%	0.0%	73	33.8%
15	2	0.9%	0.9%	0	0.0%	0.0%	2	0.9%
18	2	0.9%	0.9%	0	0.0%	0.0%	2	0.9%
20	11	5.1%	5.1%	0	0.0%	0.0%	11	5.1%
22	1	0.5%	0.5%	0	0.0%	0.0%	1	0.5%
24	13	6.0%	6.0%	0	0.0%	0.0%	13	6.0%
25	1	0.5%	0.5%	0	0.0%	0.0%	1	0.5%
30	3	1.4%	1.4%	0	0.0%	0.0%	3	1.4%
36	3	1.4%	1.4%	0	0.0%	0.0%	3	1.4%
40	1	0.5%	0.5%	0	0.0%	0.0%	1	0.5%
48	6	2.8%	2.8%	0	0.0%	0.0%	6	2.8%
50	4	1.9%	1.9%	0	0.0%	0.0%	4	1.9%
60	3	1.4%	1.4%	0	0.0%	0.0%	3	1.4%
72	2	0.9%	0.9%	0	0.0%	0.0%	2	0.9%
89	1	0.5%	0.5%	0	0.0%	0.0%	1	0.5%
100	1	0.5%	0.5%	0	0.0%	0.0%	1	0.5%
108	1	0.5%	0.5%	0	0.0%	0.0%	1	0.5%
120	1	0.5%	0.5%	0	0.0%	0.0%	1	0.5%
Sub-total	**216**	**100.0%**	**100.0%**	**0**	**0.0%**	**0.0%**	**216**	**100.0%**
0	182			16			198	
Total	**398**			**16**			**414**	

*Missing=49

Where to find male and female condoms

The greatest majority (84.1%) of both male and female workers knew where to obtain male condoms.

Table 90: Know of any place or person where male condoms can be obtained by sex

Know place or person where male condoms can be obtained	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	358	83.8%	80.3%	17	89.5%	3.8%	375	84.1%
No	69	16.2%	15.5%	2	10.5%	0.4%	71	15.9%
Total	**427**	**100.0%**	**95.7%**	**19**	**100.0%**	**4.3%**	**446**	**100.0%**

*Missing= 17

When asked where male condoms could be obtained, many gave multiple responses of places and people where they could find male condoms. Most (55.4%) workers identified: OSL dispensers (19.0%), the OSL clinic (18.8%) or other health facilities (17.6%). A quarter identified places where they could be bought, such as from pharmacies (11.7%), shops (7.6%) or from street vendors or markets (5.0%). A tenth said that they could be obtained from people such as peer educators, friends or fellow workers, and another tenth said places such as VCT Centers (4.1%), NGOs (2.7%) or at hotels, guest houses or bars (3.2%) were places where condoms could also be obtained. Toilets were least identified as places where condoms could be accessed; but certainly this is a place that could provide the easiest form of distribution through cleaning services and the most private access to condoms on site.

Table 91: Place or person(s) where male condoms can be obtained by sex

Place and persons where male condoms can be obtained	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Dispenser at Oil Search	185	19.1%	18.1%	9	17.0%	0.9%	194	19.0%
Oil Search Clinic (Oil Search public health)	179	18.5%	17.5%	13	24.5%	1.3%	192	18.8%
Health Facility (Clinic, Hospital, Aid Post, Health Centre)	172	17.8%	16.8%	8	15.1%	0.8%	180	17.6%
Pharmacy	113	11.7%	11.1%	7	13.2%	0.7%	120	11.7%
Shop	73	7.5%	7.1%	5	9.4%	0.5%	78	7.6%
Market/Street vendors	50	5.2%	4.9%	1	1.9%	0.1%	51	5.0%
VCT Centre	38	3.9%	3.7%	4	7.5%	0.4%	42	4.1%
Fellow workers	39	4.0%	3.8%	1	1.9%	0.1%	40	3.9%
Bar/guest house/hotel/club	33	3.4%	3.2%	0	0.0%	0.0%	33	3.2%
Friend	30	3.1%	2.9%	1	1.9%	0.1%	31	3.0%
Peer Educator	27	2.8%	2.6%	1	1.9%	0.1%	28	2.7%
NGO	25	2.6%	2.4%	3	5.7%	0.3%	28	2.7%
Toilets	1	0.1%	0.1%	0	0.0%	0.0%	1	0.1%
Other (Did not specify)	4	0.4%	0.4%	0	0.0%	0.0%	4	0.4%
Total	**969**	**100.0%**	**94.8%**	**53**	**100.0%**	**5.2%**	**1022**	**100.0%**

*Missing= 11 Percentages and totals are based on responses and rounded to the first decimal point.

Fewer workers knew where to obtain female condoms (56.0%) than male condoms (84.1%).

Table 92: Know where to access female condoms by sex

Know where to obtain female condoms	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	240	55.0%	52.7%	15	78.9%	3.3%	255	56.0%
No	196	45.0%	43.1%	4	21.1%	0.9%	200	44.0%
Total	**436**	**100.0%**	**95.8%**	**19**	**100.0%**	**4.2%**	**455**	**100.0%**

*Missing= 8

Most workers (60.0%) identified OSL clinics (24.6%), health facilities (18.7%), and OSL dispensers (16.7%) as places to obtain female condoms. Around a fifth (20.9%) identified

where female condoms could be bought at pharmacies, shops, markets or street vendors, and another fifth (19.1%) identified particular people (6.0%), or places (12.3%) where they could get a female condom from.

Table 93: Know any place or person from whom female condoms can be obtained by sex

Places or person from whom female condoms can be obtained	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Oil Search Clinic	131	24.8%	23.1%	9	22.5%	1.6%	140	24.6%
Health Facility	100	18.9%	17.6%	6	15.0%	1.1%	106	18.7%
Dispenser at Oil Search	88	16.7%	15.5%	7	17.5%	1.2%	95	16.7%
Pharmacy	66	12.5%	11.6%	7	17.5%	1.2%	73	12.9%
VCT Centre	34	6.4%	6.0%	3	7.5%	0.5%	37	6.5%
Shop	25	4.7%	4.4%	2	5.0%	0.4%	27	4.8%
Market/Street vendors	18	3.4%	3.2%	0	0.0%	0.0%	18	3.2%
Peer Educator	15	2.8%	2.6%	2	5.0%	0.4%	17	3.0%
Bar/guest house/hotel/club	16	3.0%	2.8%	0	0.0%	0.0%	16	2.8%
NGO	15	2.8%	2.6%	1	2.5%	0.2%	16	2.8%
Friend	8	1.5%	1.4%	2	5.0%	0.4%	10	1.8%
Fellow workers	7	1.3%	1.2%	0	0.0%	0.0%	7	1.2%
CDI	1	0.2%	0.2%	0	0.0%	0.0%	1	0.2%
Other (Did not specify)	5	0.9%	0.9%	1	2.5%	0.2%	6	1.1%
Total	**528**	**100.0%**	**93.0%**	**40**	**100.0%**	**7.0%**	**568**	**100.0%**

*Missing= 14 Percentages and totals are based on responses and rounded to the first decimal point.

Close to three quarters (72.3%) thought that having condoms and dispensers around the workplace was a good idea, with more unsure (17.0%) than who were against it (10.7%).

Table 94: Thoughts about having condom and condom dispensers around your workplace by sex

Thoughts about having condoms and condom dispensers around work place	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
It's a good idea	306	72.5%	69.4%	13	68.4%	2.9%	319	72.3%
I am against it	44	10.4%	10.0%	3	15.8%	0.7%	47	10.7%
Unsure	72	17.1%	16.3%	3	15.8%	0.7%	75	17.0%
Total	**422**	**100.0%**	**95.7%**	**19**	**100.0%**	**4.3%**	**441**	**100.0%**

*Missing= 22

Most male and female workers (76.6%) could obtain a condom when they needed one.

Table 95: Obtain condoms every time when needed by sex

Obtain condom every time needed	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	312	76.7%	73.8%	12	75.0%	2.8%	324	76.6%
No	95	23.3%	22.5%	4	25.0%	0.9%	99	23.4%
Total	**407**	**100.0%**	**96.2%**	**16**	**100.0%**	**3.8%**	**423**	**100.0%**

*Missing= 40

This degree of access when needed is extremely positive; however as the data also indicates, the complexity of reasons given for why condoms were not used across a range of partners focused in areas more difficult to exert change, such as partner relations and concepts of trust and lack of risk, pleasure, dislike, being drunk or fertility.

Most male (81.0%) and all female workers believed that a person could reduce the risk of getting HIV by using a condom correctly every time they have sex, indicating knowledge of a condom's ability to reduce the risk of HIV infection if used correctly.

Table 96: Reduce risk of HIV by using a condom correctly and consistently by sex

Reduce risk of HIV by using a condom correctly and consistently	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	342	81.0%	77.7%	18	100.0%	4.1%	360	81.8%
No	79	18.7%	18.0%	0	0.0%	0.0%	79	18.0%
Unsure	1	0.2%	0.2%	0	0.0%	0.0%	1	0.2%
Total	**422**	**100.0%**	**95.9%**	**18**	**100.0%**	**4.1%**	**440**	**100.0%**

*Missing = 23

SEXUAL VIOLENCE

There is considerable sexual and physical violence towards women in Papua New Guinea (Lewis, 2008). Below we discuss sexual violence that male or female workers experienced or that they had perpetrated on others. It is important to note that while men reported forcing women to have sex, women also reported forcing men, and men also reported forcing men. No woman reported forcing a woman to have sex.

Sexual violence towards women

Male workers were asked if they had ever had sex with a woman when she did not want to, and women were asked if they had sex with a man when they did not want to. Sixty-nine male workers (15.8%) said that they had forced a woman to have sex; but no female worker said that they had ever been forced to have sex. An interesting highlight in this data is that while most sexual violence reported had been done to women by male workers; male workers also reported being forced to have sex and female workers also reported forcing a man to have sex.

Table 97: Ever had forced sex with a woman (vaginal, anal or oral sex) by male and was forced by a man to have sex by female

Ever had forced sex	Male			Female			Total	
	Ever had sex with a woman when *she* did not want to?			Ever had sex with a man when *you* did not want to?				
	n	% within sex	%	n	% within sex	%	n	%
Yes	69	16.4%	15.8%	0	0.0%	0.00%	69	15.8%
No	353	83.6%	80.8%	15	100.0%	3.40%	368	84 .2%
Total	**422**	**100.0%**	**96.6%**	**15**	**100.0%**	**3.40%**	**437**	**100.0%**

*Missing= 15

Individual and group forced sex

The greatest majority (93.4%; 57) of the 69 male workers that had forced women to have sex did this individually, and this could also be done in the context of marriage.

Table 98: Forced sex individually by male

Forced sex by individual	Male			Total	
	n	% within sex	%	n	%
Yes	57	93.4%	93.4%	57	93.4%
No	4	6.6%	6.6%	4	6.6%
Total	**61**	**100.0%**	**100.0%**	**61**	**100.0%**

*Missing= 8

> I do force my wife to have sex with her when she refuses. When she refuses I also refuse to accept her reasons. You know we stay here [onsite] for a long period of time away from our wives or partners and we also watch blue movies so when we go back home on our field breaks we are in the mood for having sex. We ask our wives or partners and when they refuse we still force them to have sex (Male worker).

However, a fifth (19.6%) of the male workers who had forced a woman to have sex, reported that they had forced a woman to have sex in the context of a group. Group sex is also referred to as pack rape, train, single file or line up*;* whereas forced sex by an individual is referred to as rape.

Table 99: Male workers who had forced sex in a group

Was this in or by a group	Male			Total	
	n	% within sex	%	n	%
Yes	11	19.6%	19.6%	11	19.6%
No	45	80.4%	80.4%	45	80.4%
Total	**56**	**100.0%**	**100.0%**	**56**	**100.0%**

*Missing = 13

> ….if you arrange with a man to go into the bush to have sex and you let the man go in before you, you will be shocked to see some other men already there. So, when we want to have sex in the bush we make sure we hold hands and walk in with our partners… (Woman exchanging sex).

Frequency of forced sex

The number of times male workers said that they had forced sex with women ranged mostly from one to three times (70.0%), with a fifth (21.7%) ranging from four to seven times, and nearly a tenth (8.5%) had forced a woman to have sex from eight to 33 times.

Table 100: Number of times forced sex to a woman by sex

Number of times forced	Male		
	n	% within sex	% of total
1	17	28.3%	28.3%
2	16	26.7%	26.7%
3	9	15.0%	15.0%
4	4	6.7%	6.7%
5	4	6.7%	6.7%
6	2	3.3%	3.3%
7	3	5.0%	5.0%
8	1	1.7%	1.7%
9	1	1.7%	1.7%
12	1	1.7%	1.7%
18	1	1.7%	1.7%
33	1	1.7%	1.7%
Subtotal	**60**	**100.0%**	**100.0%**
0	3		
Total	**63**		

*Missing=6

Half of the men reported they had used a condom the last time they had forced a woman to have sex.

Table 101: Condom use last time had this type of sex by male

Condom use last time had this type of sex	Male			Total	
	n	% within sex	%	n	%
Yes	31	50.0%	50.0%	31	50.0%
No	31	50.0%	50.0%	31	50.0%
Total	**62**	**100.0%**	**100.0%**	**62**	**100.0%**

Missing=7

> There are some good women that I can go and force them, they resist but I coerce them, go and con them, con them, and brain wash them, and I have sex with them. But I use a condom with them. But it is not every time that I do it like this, just once in a while, in the lucky times [opportunity]. This is like every break I go I do this (Male worker).

Female workers spoke of the sexual advances by male workers toward them. Some of these incidents were not reported by the women for fear of losing their jobs.

> It happened twice. One of the women recently came in and the big male worker dragged her by hand but she managed to get away from him and she ran away. The other woman was dragged into the room by a man, but the woman refused to have sex with him and came out of the room crying (Female worker).

> There was an attempt I guess. ..I was on break then but that's the whole reason why they have installed combination locks on the toilets…. I'm not really sure about what actually happened but there was this man who followed a female employee into the female toilet. Whether he attempted to or he just followed her in and she got scared and she screamed. That's the only incident that I heard of… (Female worker).

Qualitative data on sexual violence indicated that sexual violence happens, both onsite and offsite. Much discussion in the qualitative data asserts men as the perpetrators, and the women as victims of sexual violence, and there was no discussion of sexual violence towards men in qualitative interviews. However, quantitative data indicates that men are also forced to have sex, by both male and female workers.

Sexual violence towards men

Men and women were asked whether they had sex with a man when he did not want to. Five men and one woman reported that they had forced a man to have sex. Of those men who had anal sex with a male partner, 26.3% (5) reported that they had had anal sex with a man when he did not want to, indicating at least some forced anal sex between men.

Table 102: Forced anal sex with a man when he did not want to by male, and forced a man to have sex when he didn't want to by female

Ever had forced sex with a man	Male			Female			Total	
	Ever had anal sex with a man when he did not want to?			Ever had sex with a man when he did not want to?				
	n	% within sex	%	n	% within sex	%	n	%
Yes	5	26.3%	14.7%	1	6.7%	2.9%	6	17.6%
No	14	73.7%	41.2%	14	93.3%	41.2%	28	82.4%
Total	**19**	**100.0%**	**55.9%**	**15**	**100.0%**	**44.1%**	**34**	**100.0%**

Missing = 3 (2M, 1F)

In relation to the forced sex between men, three men reported that they had forced a man to have sex in the context of a group, and three men said that they forced a man individually to have anal sex. Two male workers reported that they had forced men to have sex, both individually and in a group. One woman reported she had forced a man individually to have sex.

Table 103: Group sex with a man without his consent by male

In a group	Male			Total	
	n	% within sex	%	n	%
Yes	3	60.0%	60.0%	3	60.0%
No	2	40.0%	40.0%	2	40.0%
Total	**5**	**100.0%**	**100.0%**	**5**	**100.0%**

Table 104: Individual sex with a man without his consent by male

Individual	Male			Total	
	n	% within sex	%	n	%
Yes	3	75.0%	75.0%	3	75.0%
No	1	25.0%	25.0%	1	25.0%
Total	**4**	**100.0%**	**100.0%**	**4**	**100.0%**

*Missing=1

Frequency of forced sex and condom use

Men were asked the number of times they had had forced sex with a man. Three male workers had forced one man to have sex once, one had male to male forced sex on two occasions, and one male worker had forced male to male sex on three occasions.

Table 105: Number of times had forced a man to have sex by male

Number of times had forced a man to have sex	Male			Total	
	n	% within sex	%	n	%
1	3	60.0%	60.0%	3	60.0%
2	1	20.0%	20.0%	1	20.0%
3	1	20.0%	20.0%	1	20.0%
Total	**5**	**100.0%**	**100.0%**	**5**	**100.0%**

The male workers involved reported that the last time they had had forced a man to have sex, four had used a condom and one man did not answer. One female worker forced a man to have sex and a condom was not used the last time she had forced a man to have sex.

Table 106: Condom use at last forced sex of a man by sex

Condom use at last forced sex of a man	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	4	100.0%	80.0%	0	0.0%	0.0%	4	80.0%
No	0	0.0%	0.0%	1	100.0%	20.0%	1	20.0%
Total	**4**	**100.0%**	**80.0%**	**1**	**100.0%**	**20.0%**	**5**	**100.0%**

*Missing = 1

PENILE CUTTING — CIRCUMCISION, DORSAL SLITS, AND INSERTS

Earlier ethnographies discussed sexual cultures with male to male sexual practices that would enhance risk for HIV transmission in the context of male initiations (Herdt, 1984a, 1984b; Jenkins 1996). Little is presently known of cultures with initiation practices that may be enhancing risk of HIV infection, or how male to male sexual cultures have transformed with socio-cultural change in these areas and groups over time, which have influenced present practices and patterns of male to male sex (Wilde, 2007). In the 1994 national study by the Institute of Medical Research, penile skin cutting as part of male initiations, blood-letting for medicinal purposes and sharing of instruments were identified as widely practiced (NSRRT and Jenkins, 1994). Other more recent research indicate the continuing practices of a range of penile skin cutting in the context of initiation, clinic and other informal setting (Aruwafu et al. 2009, Aruwafu et al. 2010).

Questions about penile cutting (including circumcision, dorsal slits, and inserts) were asked of both men and women in this BSS survey. These questions were developed to generate data, from male and female perspectives, on their experience of penile cutting: male workers reported their penile cutting, inserts and injections; and female workers reported on their sexual partners who had penile modifications. The questions for men were designed to increase understanding about penile cutting related practices, for inserts, circumcision and slitting, and how and where the cutting was done.

Circumcision

Circumcision is the full removal of the penis foreskin tissue. Under a third (29.2%) of male workers reported that they had been circumcised and only two female workers had had partners who were circumcised.

Table 107: Ever had/seen partner been circumcised by sex

Ever had/ seen partner been circumcised	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	127	29.8%	28.7%	2	12.5%	0.5%	129	29.2%
No	299	70.2%	67.6%	14	87.5%	3.2%	313	70.8%
Total	**426**	**100.0%**	**96.4%**	**16**	**100.0%**	**3.6%**	**442**	**100.0%**

*Missing = 21

When asked if they had been circumcised at a clinic, hospital or initiation, most (44.3%; 129) workers said that circumcision had been done in a hospital (28.2%) or clinic (16.1%), while close to a third (30.6%) had been done in the context of initiation. The remaining had been circumcised in a wide range of settings, including: in the home village (13.7%), by the river side, in a dormitory or in a work area (0.8%), or said that their circumcision had been done by a friend or themselves (3.2%).

Some of the male workers interviewed gave accounts of reasons for having circumcision. One health worker talked about why some workers had come to him and wanted to be circumcised.

> One person [worker] told me that he wanted to be circumcised because he just wanted to feel clean, for just a feeling of cleanliness. He said, ‘can you just cut it and remove it. Where I am in the bush and I don’t wash all the time, and when I want to sleep with my wife I don’t want my penis to

> smell'… So I said, okay fair enough, he was thinking of hygiene... The other three [workers who asked me for circumcision], they didn't tell me their reasons; they just said 'oh we just want you to cut it' (Male health worker).

For others, the reason had to do with imitation of older males, an association with practices of masculinity and initiation, what males do, or for a feeling of protection when having sex without a condom.

> I also cut my penis foreskin. And that time I did not know because I did that when I saw the older boys who did it. And so I just cut it. And did not know what would happen. That I saw them doing it and so I just did it... (Male worker).

> I asked some of the men [why they did not use a condom when having sex], one man said 'I am circumcised so I have sex without condom' (*mi kela mi wokim nating*) (Male worker).

Table 108: Places where skin was cut by sex

Places where skin was cut	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Initiation	37	30.3%	29.8%	1	50.0%	0.8%	38	30.6%
Hospital	35	28.7%	28.2%	0	0.0%	0.0%	35	28.2%
Clinic	20	16.4%	16.1%	0	0.0%	0.0%	20	16.1%
At home village	17	13.9%	13.7%	0	0.0%	0.0%	17	13.7%
By river side	1	0.8%	0.8%	0	0.0%	0.0%	1	0.8%
Dormitory	1	0.8%	0.8%	0	0.0%	0.0%	1	0.8%
Work area	1	0.8%	0.8%	0	0.0%	0.0%	1	0.8%
By a friend	3	2.5%	2.4%	0	0.0%	0.0%	3	2.4%
Self	1	0.8%	0.8%	0	0.0%	0.0%	1	0.8%
Don't know	0	0.0%	0.0%	1	50.0%	0.8%	1	0.8%
Outside	1	0.8%	0.8%	0	0.0%	0.0%	1	0.8%
Other (Did not specify)	5	4.1%	4.0%	0	0.0%	0.0%	5	4.0%
Total	**122**	100.0%	98.4%	**2**	100.0%	1.6%	**124**	100.0%

*Missing=5

Slits (Dorsal)

A superincision, or dorsal slit, involves the cutting of, but not the removal of, the penile foreskin. The penis dorsal foreskin that is slit, hangs from either side of the penis on the underside of the shaft and the glans penis is exposed and appears circumcised from the dorsal view.

More than a third of the men (34.3%) reported that they had had their penis foreskin slit, but only one female worker had had a male partner whose penis foreskin has been slit.

Table 109: Ever had penile foreskin slit (M) and ever had a partner who had their penis slit (F)

Ever had or partner had penile foreskin slit	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	147	34.3%	33.1%	1	6.2%	0.2%	148	33.3%
No	281	65.7%	63.3%	15	93.8%	3.4%	296	66.7%
Total	**428**	**100.0%**	**96.4%**	**16**	**100.0%**	**3.6%**	**444**	**100.0%**

*Missing = 19

There is interest among men who see others having cut their foreskin.

> … But for skin cutting I saw they cut the penis foreskin. Because some of my workmates at first they have foreskin and later I saw that they cut it. It's not a rumor, everybody here knows who does penile cutting….it's not a secret. The practice is here (Male worker).

Workers were asked if the skin was cut at a clinic, in an initiation, by a friend or relative or by themselves. Most dorsal slits had been done by a friend (55.2%), a fifth done at a clinic (19.3%), a tenth (10.3%) in initiation, and 9.7% did the slit themselves or it was done by a relative (5.5%).

Table 110: Places where skin was cut or who cut their foreskin by sex

Places where skin was cut or who cut their foreskin	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Friend	80	55.6%	55.2%	0	0.0%	0.0%	80	55.2%
At Clinic	28	19.4%	19.3%	0	0.0%	0.0%	28	19.3%
In initiation	14	9.7%	9.7%	1	100.0%	0.7%	15	10.3%
Self	14	9.7%	9.7%	0	0.0%	0.0%	14	9.7%
Relative	8	5.6%	5.5%	0	0.0%	0.0%	8	5.5%
Total	**144**	**100.0%**	**99.3%**	**1**	**100.0%**	**0.7%**	**145**	**100.0%**

*Missing= 3

The most common instruments reported to be used to cut the foreskin were a razor blade (64.3%) and a scalpel (24.5%). Some others used sharpened bamboo (2.8%), other blades, knives or scissors (2.1%), or used a rubber band (2.1%), needle (.7%) or pulling on the foreskin (.7%).

Table 111: Instruments used to cut the skin by sex

Instruments used	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Razor blade	90	64.3%	63.8%	0	0.0%	0.0%	90	64.3%
Scalpel	35	25.0%	24.8%	0	0.0%	0.0%	35	24.5%
Bamboo (sharpened bamboo)	3	2.1%	2.1%	1	100.0%	0.7%	4	2.8%
Rubber (rubber band and rubber slit)	3	2.1%	2.1%	0	0.0%	0.0%	3	2.1%
Knife	1	0.7%	0.7%	0	0.0%	0.0%	1	0.7%
Sharp tooth brush	1	0.7%	0.7%	0	0.0%	0.0%	1	0.7%
Pulling downwards as a practice	1	0.7%	0.7%	0	0.0%	0.0%	1	0.7%
Scissors	1	0.7%	0.7%	0	0.0%	0.0%	1	0.7%
Sewing needle	1	0.7%	0.7%	0	0.0%	0.0%	1	0.7%
Sharp blade	1	0.7%	0.7%	0	0.0%	0.0%	1	0.7%
Others (Did not specify and none)	3	2.1%	2.1%	0	0.0%	0.0%	3	2.1%
Total	**140**	**100.0%**	**99.3%**	**1**	**100.0%**	**0.7%**	**141**	**100.0%**

*Missing = 7

Inserts

A variety of types of penile inserts were found to be occurring in PNG male sexual cultures in the 1990s (Decock et al, 1997; Hull 2000, 2001); and more recent studies indicate the variations in prevalence of these between samples and population groups (Valley et al, 2009; Aruwafu et al, 2009; Aruwafu et al, 2010).

Male workers were asked if they had ever inserted small objects under their penis foreskin; while the female workers were asked if they had sexual partner(s) who had inserted objects under their penis foreskin. As can be seen in the tables below, of the men in the sample, 6.7% reported that they had inserted small objects under their penis foreskin. Of these, 36.4% reported that the object inserted was a piece of toothbrush, 27.3% reported inserting ball bearings or other small objects, 9.1% reported wires, 12.1% reported strings, and 11.7% other objects (condom, plastic rubber and rubber).

Table 112: Ever inserted small objects under penis foreskin (M) and ever seen any partner who inserted small objects under penis foreskin (F) by sex

Ever inserted small objects under penis foreskin (M) and ever seen any partner who inserted small objects under penis foreskin (F)	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	30	7.0%	6.7%	0	0.0%	0.0%	30	6.7%
No	401	93.0%	89.7%	16	100.0%	3.6%	417	93.3%
Total	**431**	**100.0%**	**96.4%**	**16**	**100.0%**	**3.6%**	**447**	**100.0%**

*Missing= 16

Table 113: Types of inserts by sex

Types of inserts	Male		
	n	% within sex	Total %
Piece of toothbrush	12	36.4%	36.4%
Ball bearing	9	27.3%	27.3%
String	4	12.1%	12.1%
Wire	3	9.1%	9.1%
Plastic	2	6.1%	6.1%
Rubber (plastic rubber)	2	6.1%	6.1%
Condom	1	3.0%	3.0%
Total	**33**	**100.0%**	**100.0%**

*Missing = 2 **All responses are rounded to the first decimal point

Table 114: Instruments used to cut the skin by sex

Instruments used	Male		
	n	% within sex	Total %
Razor blade	18	64.3%	64.3%
Scalpel	4	14.3%	14.3%
Sharp tooth brush	3	10.7%	10.7%
Knife	2	7.1%	7.1%
Others	1	3.6%	3.6%
Total	**29**	**100.0%**	**100.0%**

*Missing = 2 Percentages are based on responses and are rounded to the first decimal point

In terms of the instruments that had been used to cut the skin, 64.3% reported using a razor blade, 14.3% a scalpel, 10.7% a sharpened toothbrush, and 7.1 % used a knife. Some 3.6% reported other instrument but did not specify.

Table 115: Length of time had inserts by sex

Length of time	Male		
	n	% within sex	Total %
Still have	14	50.0%	50.0%
Less than a month	6	21.4%	21.4%
Over a year	6	21.4%	21.4%
Less than a year	2	7.1%	7.1%
Total	**28**	**100.0%**	**100.0%**

*Missing =2

At the time of the survey, half (50%) of the men still had inserts in place, 21.4% had the inserts for less than a month and over a year respectively, while only 7.1% had inserts for less than a year.

Interview accounts commonly refer to the pleasuring of women as the reason men give for the practice of inserting.

> I saw one…who had bearing. I asked him what that was. It was so big [em no isi isi] and I was surprised… Inside the skin it's very strong. I asked what that is and he said, he put rubber inside or iron or I am confused… And I told him why he put it because it is going to tear my vagina…. He said, it will not tear you, but you will get more pleasure (Woman exchanging sex).

These accounts associate 'size' as a key element in men's attempts, through inserts, to give women more pleasure.

> The practice [of penile inserts] is here and everywhere... When they are not satisfying the opposite sex, they must come back to find some ways or means to increase the size of their penis... (Male worker).

As may be expected, some women were not convinced about the connection between penile inserts and their pleasure, and penile inserts are not always anticipated, and can also be on the exterior:

> When I held his penis with my right hand it poked it. Here is the scar…When the man turned and gave his back to me, when he was putting on the condom. I saw that he had his penis foreskin cut. He had cut his foreskin down this way and he tied a wire around that side of his cock. He had tied wire on the other side. Okay the other piece of skin he had also tied wire, and he also had two bearings. He wanted to have sex and when he would insert it into the vagina, these three or four wires will poke me… We did not have sex yet… I held his penis and I pushed him away and I stood up. ….I held his penis and then as I pushed him the condom was still in my hand. The wire cut me and my hand was bleeding. He wanted to have sex with me and he had four wires or something on his penis. I held strongly onto him and I wanted to pin him down, but he pulled away and he was already gone (Woman exchanging sex).

Women, also make observations of the consequences of inserts, and expressed wariness about the assurances of increased pleasure, although for an increased payment, they may agree to proceed with sex.

> Yes….There was some men who did that. I saw their penises, huge. I saw one who had a bearing. I asked him what that was. It was so big and I was surprised… Inside the skin it was very strong. I asked 'what is that and he said, he put rubber inside or iron …. He said that it's a bearing. And I asked him 'why did you put it because it is going to tear my vagina'. I told him that, it is going to tear my vagina. He said, 'it will not tear you, but you will get more pleasure'. And I said to him, 'it's hard for me to put it inside. The bearing you put inside has filled your cock and it's hard to go inside my vagina'. I told him that and he said, 'we'll put condom grease on and rub it

> with saliva to make it slippery, and I will put it in slowly and it will go in' he said that. And we did that, I followed what he said and put it in slowly….The moment he put it in, I felt pain and I moved back. And he said, 'relax I will give you money'. I thought about the money and I let him did it. He rubbed a lot of condom grease again, and told me to put it in. It went in and we had sex (Woman exchanging sex).

Penile injections

More men reported that they had injected thier penises then had inserts; while some men also used penile injection to create more localized lumps that created inserts. As demonstrated in the tables below, 7.8% of men reported that they had injected their penises with a substance, although no woman had had a sex partner who had had a penile injection.

Table 116: Ever injected or seen partner inject substance to penis by sex

Ever injected/seen partner inject penis with substance	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	34	8.1%	7.8%	0	0.0%	0.0%	34	7.8%
No	387	91.9%	88.6%	16	100.0%	3.7%	403	92.2%
Total	**421**	**100.0%**	**96.3%**	**16**	**100.0%**	**3.7%**	**437**	**100.0%**

*Missing = 26

Table 117: Reasons men injected substance into penis by sex

Reasons for injecting substance	Male		
	n	% within sex	Total %
Wider	14	34.1%	34.1%
Stronger	13	31.7%	31.7%
Longer	10	24.4%	24.4%
For inserts	3	7.3%	7.3%
Other	1	2.4%	2.4%
Total	**41**	**100.0%**	**100.0%**

*Missing = 3 **Based on multiple responses

The reasons men gave for penile injections with a substance were to make the penis wider (34.1%), stronger (31.7%), longer (24.4%) and to create an insert (7.3%).

These reasons were elaborated in the interviews. Some linked penile injections with pornography. One man explained that men injected their penises to make them bigger, like the men they see in blue movies, or because they wanted to be in the fashion of having 'big dicks'. One explanation for injections had to do with age and erections:

> … if you are old, still your penis will be erected [with an injection]. You will stay like when you are still young, it will stay like that (Male worker).

There is gossip, or informal communication, among men, about the availability of injecting substances:

> I have heard stories about injections…. Actually I've heard a lot of stories about this, I actually work closely with the clinic… there are several cases that my colleagues have seen and they've informed us, that this is happening. Basically I think that, I think it's typical of all men, they inject their penises to

> get big dicks that's all. They want a bigger penis, that's, that's what they want…I think it's in relation to the pornography that they see, with men with big penises. Or maybe they just want to do it, to have that style (Male worker).

For example, a workman spoke of how he and his workmate got a penile infection after being injected with a substance. Again, a feature of these accounts is the transmission of information between workers, and in some joint experiences with results with an effect on the workplace.

> Before I lived here many men had gotten some injection…. and, they talked about it and I heard it and then I went straight to that man and I told him that they are saying this and that and is it true? And he said that it was true…. He asked maybe you want it too. You want to take it ah? You explain it to me first [I said]. And he told me…you are already old and if you get an injection, you will still have an erection. So okay, I gave some money too... They pay for the injections. I gave about K120 and I got an injection. I got the injection but I think he gave me more or I think that it was a bad one, an expired one that he gave me. That's why when he gave me the injection it did not work out. My penis became black all over so I had a big problem. And I went to the Goroka hospital, and they operated on it. They operated on it and they cleaned out that injected liquid and they removed all of it. Then I was okay. The guy that went with me to get the injection, he also [had a problem], he left work and went back home. Okay I came and they operated on me and he rang me and told me that he had a bit of problem but his was still small. It was just tight and he went to the hospital. He went and saw one of his relatives and he took medicine to his house, and he operated on it himself. And he removed it and then I rang him and he said he was ok. Because his was still at the beginning and he went quickly to the hospital (Male worker).

Circumcision, dorsal-slitting, penile inserts and penis injecting by men and the use of sex products, are not without health risks. Some modifications create penile infections, urethral blockages or penile dysfunction in men; while genital irritations or injury for both men and women during sex and condom breakages increase risk of HIV transmission.

Other sex products

A variety of sex products were mentioned in qualitative interviews, including both purchased and natural products. Workmen who shared their experiences of using sex products also shared their experiences on the side effects of using them. One workman shared his and his workmate's experience of applying a tree sap to their penises and the side effects they had experienced.

> In our place there's a tree from the bush. *Interviewer*: Is it grown here too? *Respondent*: It's grown around here, and you will use this then…you will cut it, and get it and the sap, you will smash it and the sap you get from it, you put it on your penis, you will enlarge it longer and very big. But the pain from it, it will not be easy on you. *Interviewer*: What does it pain like, how many days does it pain? *Respondent:* Ah it will be painful like for only a day, its pain, it's very painful. You will find it hard to sleep and you will scream also. You will find it hard to wear trousers too. You will not eat too… *Interviewer:* So this

> will stay ah, the change in your penis will be permanent? *Respondent*: It will be permanent. *Interviewer*: It grows bigger? *Respondent*: It will grow bigger and a little bit longer and will be there, you will die with it. *Interviewer*: Some of the guys here already practiced this tree sap from the bush? *Respondent*: Some they already practiced it but….some they did it and they were ok. And some they did that and they did not do it properly and, their penises got sore and all that and I can say seven of them or five of them resigned and went home. *Interviewer*: So they were scared and they resigned? *Respondent*: They were scared and their penises grew bigger and they went over the limit and put this homemade medicine (tree sap) and the sore got bigger, they were scared to take medicine here and they were scared not to walk properly in the eyes of the workforce because these are men and women. That's why they were scared so they themselves resigned. They themselves did it and they themselves resigned (Male worker).

Other products

Other products which were ingested, such as the tablets and Spanish fly, were also mentioned. In the interviews there were also reports (one at least, first hand) of the use of the penile power pump by workmen on site. The penile power pump was said to have no side effects, as it is easier and less painful to use than other methods such as penile cuttings and insertions to modify the penis. It was also mentioned that other penile modification practices such as insertions and cuttings were painful and may result in injury and blood loss, and that it was shameful to seek medical assistance when such occur and the use of penile pump eliminates all these issues.

> When they go to the hospital and cut the penis foreskin… it's painful. Also there is a lot of blood loss, or they cut some muscles…. That was [what they did], when they did not know about this penile pump... Now they see these pumps and all these things, a lot of them in the mining sites they are using the pump now. Because the pump is a bit better and, you will use it for three months and after three months, the thing (penis) will stay like that (permanently) and you will no longer need to use it. You are done.

> *Interviewer*: So, what is the reason that you use this thing (penile pump)? *Respondent*: Ok, they say to cut the penis, cut the penis and put bearings, Colgate all that, that forget it, its painful. It's a waste of blood and if I am not lucky my blood will run out and if I go to the hospital and the doctors, the nurses they ask me, which is a shame to tell them that I want to do this so I come. It's something to feel ashamed about. So we, the easy way for this is just buy the pump and pump it on the power and it will pull the penis longer and extends it a bit longer and a bit bigger (Male worker).

PORNOGRAPHY

Pornography is illegal in PNG and it is prohibited to bring pornography onto OSL sites, and some workers recounted how a worker could be suspended if found to have pornography. The qualitative data indicates that the workforce look at pornography, it is available and workers had access to a range of pornographic materials from blue movies, to magazines, posters, mobile phone cameras and playing cards.

In the last 12 months, near half of male and female workers (48.5%) reported that they had watched X-rated blue movies or videos.

Table 118: Have watched x-rated movies/videos in the last 12 months by sex

Have watched x-rated movies/videos in last 12 months	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	213	49.2%	47.1%	6	31.6%	1.3%	219	48.5%
No	220	50.8%	48.7%	13	68.4%	2.9%	233	51.5%
Total	**433**	**100.0%**	**95.8%**	**19**	**100.0%**	**4.2%**	**452**	**100.0%**

*Missing = 11

> Pornography, I would say there's a lot of it…floating around. It's true. Of course they do. I would say because everyone's involved in it… So you know, this is PNG. You have the *wantok* system there and you can be so tough on all your rules and your regulations, but people will always get it through because it's whom you know… (Male worker).

> Like the blue movie that I saw in some places, in the company office. I saw a blue movie and those workforce men who took us in and looked at blue movies in the office. I already saw it. And we did this and he bought me beer (Woman exchanging sex).

A third (33.6%) had looked at pornographic magazines during the last year.

Table 119: Have looked at pornographic magazines in the last 12 months by sex

Have looked at pornographic magazines in last 12 months	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	146	34.4%	33.0%	3	15.8%	0.7%	149	33.6%
No	278	65.6%	62.8%	16	84.2%	3.6%	294	66.4%
Total	**424**	**100.0%**	**95.7%**	**19**	**100.0%**	**4.3%**	**443**	**100.0%**

*Missing = 20

Under half (45.9%) of workers reported that pornography had an effect on their sexual behaviour.

> Some have porn magazines that have pictures of women who are inserting dildos into their vaginas. I see those types of magazines (in men's rooms)… …I saw a workman. He was reading and looking at that magazine and removed all his clothes and put them on the side…He wore trouser but it was too short and his penis stick out. He was lying on his bed looking at the porn pictures (Female worker).

Table 120: Watching x-rated movies or looking at pornographic magazines have any effect on your sexual behavior by sex

Watching x-rated movies or looking at pornographic magazines have any effect on your sexual behavior	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	202	46.0%	44.4%	7	43.8%	1.5%	209	45.9%
No	237	54.0%	52.1%	9	56.3%	2.0%	246	54.1%
Total	**439**	**100.0%**	**96.5%**	**16**	**100.0%**	**3.5%**	**455**	**100.0%**

*Missing = 8

Of those who reported that pornography had some effect on their sexual practices, most (66.2%) identified an increased feeling and desire to have sex, some 12.3% said that they masturbated, went looking for sex inside or outside the gate (9.6 %) or became frustrated (8.8%).

Table 121: Effects of looking at pornography by sex

Effects of looking at pornography materials	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Increased feeling and desire to have sex	166	65.6%	63.8%	6	85.7%	2.3%	172	66.2%
Masturbate	32	12.6%	12.3%	0	0.0%	0.0%	32	12.3%
Look for sex inside or outside the gate	25	9.9%	9.6%	0	0.0%	0.0%	25	9.6%
Frustration	23	9.1%	8.8%	0	0.0%	0.0%	23	8.8%
Other	7	2.8%	2.7%	1	14.3%	0.4%	8	3.1%
Total	**253**	**100.0%**	**97.3%**	**7**	**100.0%**	**2.7%**	**260**	**100.0%**

*Missing = 4

In qualitative interviews, pornography was said to have had an influence on new styles of sex, transactional sex practices and penile modification practices. According to the women interviewed who exchanged sex outside of the gate, male workers look at pornography and then they look for sex outside of the camp site gates. Watching pornography was said to increase the desire of the male workers to have their penis's bigger, wider and longer like the men in blue movies.

> Basically I think that, I think it's typical of all men. They inject it to get a big dick, that's all. They want a bigger penis, that's what they want. Yes I think it's in relation to the pornography that they see men with big penises. Or maybe they just want to do it, to be in that fashion as well **(**Male worker**).**

> So sometimes they ask us... "Can we three go and imitate what they do in the blue movies or something like that". And they ask the women to suck their cocks. The men ask women to suck their cocks. And this is one of the stories, and the other is to fuck in the anus. The other kind of sex is in the mouth, they suck the penis…. So all these styles… (Women exchanging sex).

While the reasons for viewing pornographic materials were not asked quantitatively in the survey, reasons given from the qualitative interviews included: men wanted to watch pornography and then try all of the different types of sex and styles with women, because these men work and stay away a long time from their wives or other sex partners, and they watched pornography because of their growing sexual desires. However, viewing of

pornographic materials on the other hand then increased men's sexual desires that resulted in practices such as masturbation or having sex.

> Yeah, I see plenty. Some of the men I see during weekends, or breaks or dinner time, they play around with their penises (masturbate)… Sometimes they masturbate. Yeah they play with their penises. Sometimes they sit in the toilet and masturbate; sometimes I see them in the shower. They wash and they masturbate…I work in the rooms and sometimes I knock on the doors, they don't open the door. When I get the master key and I open the door, they are there masturbating when I open the door (Female worker).

Workers mentioned that workers and people in the surrounding communities acted in, and produced, pornographic photos and movies. This was also identified by women who exchanged sex outside the gates who were interviewed.

KNOWLEDGE AND EXPERIENCE OF SEXUALLY TRANSMITTED INFECTIONS

In the qualitative interviews, workers talked about their general treatment seeking behavior and some referred specifically to treatment seeking for STI and HIV. It was mentioned that people accessed treatment from the OSL health facilities, while others mentioned clinics outside of the OSL sites, including Pimaga Health Center, Mendi Hospital and Goroka General Hospital. The OSL site clinics provided awareness, health services and treatment to the workforce population, as well as for the villages in the areas of OSL sites.

> Ah, and here, we also deal with community people and when they come… you know, generally we are doing everything that we can. Like treating patients with different kinds of medical problems, all STI cases, or any other psychological problems, mental problems, all these kinds of things. So …we cover everything (Male health worker).

> Here we are basically dealing with employees. So basically it was just cold and flu. We had several people with STIs and we had several people with HIV… Otherwise, it's just colds and flu… We had some ladies come and deliver. Doing deliveries from the villages (Male health worker).

There were also factors that influenced people's seeking treatment at OSL sites and most factors were highlighted by the OSL workers based on their observations and experiences. For example, the reasons why people were not coming to get STI and HIV treatment at OSL clinics, included fear of being stigmatized in the community with STI and HIV related diseases, and the long distances, high costs of transport for those remote from the OSL sites or challenges from geographical limitations.

> …in terms of transportation, weather and all that, it is frustrating because when there is flooding I can't go and see those patients and you tend to get worried because you know anything can happen (Male health worker).

Awareness and knowledge of sexually transmitted infections

Sexual health services are provided by OSL and government clinics, including church run clinics. OSL employees and the general local population access STI and HIV information, counseling including STI and HIV diagnoses and treatment from OSL clinics and other government and church run facilities. Workers mentioned some of OSL health clinics in different locations, including Moro, Ridge, Gobe and Kopi.

Table 122: Ever heard of infections that can be transmitted through sex, by sex

Ever heard of infections that can be transmitted through sex	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	373	86.1%	82.5%	16	84.2%	3.5%	389	86.1%
No	60	13.9%	13.3%	3	15.8%	0.7%	63	13.9%
Total	**433**	**100.0%**	**95.8%**	**19**	**100.0%**	**4.2%**	**452**	**100.0%**

*Missing=11

When asked to describe any STI symptoms in a woman, 22.5% (104) of those that were surveyed did not answer. Of those that answered, 21.5% said that they did not know any symptoms. More (43.1%) gave a variety of STI symptoms for women including vaginal

discharge, sores, painful urination, itching, painful sex, vaginal swelling and abdominal and back pain. Some (14.4%) just mentioned some names of STI but did not give any symptoms, and a fifth (22.1%) mentioned a variety of symptoms not associated with STI in women.

Table 123: STI symptoms in woman by sex

Description of STI symptoms in woman	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Vaginal discharge (bad odour, smelly vaginal discharge, smelly vagina, painful vaginal discharge)	74	17.5%	16.4%	10	35.7%	2.2%	84	18.6%
Vaginal sores (painful vaginal sores, vaginal ulcers/sores)	47	11.1%	10.4%	5	17.9%	1.1%	52	11.5%
Painful on urination (frequent and painful on urination)	18	4.3%	4.0%	1	3.6%	0.2%	19	4.2%
Abdominal pain	14	3.3%	3.1%	4	14.3%	0.9%	18	4.0%
Vaginal itching (painful vaginal itching)	10	2.4%	2.2%	3	10.7%	0.7%	13	2.9%
Painful during sex	5	1.2%	1.1%	0	0.0%	0.0%	5	1.1%
Swollen vagina	2	0.5%	0.4%	0	0.0%	0.0%	2	0.4%
Back pain	0	0.0%	0.0%	1	3.6%	0.2%	1	0.2%
Sexual Transmitted Infections (Gonorrhea, herpes, syphilis, Chlamydia, HIV/AIDS, venereal disease)	64	15.1%	14.2%	0	0.0%	0.0%	64	14.2%
Painful vaginal infections	1	0.2%	0.2%	0	0.0%	0.0%	1	0.2%
Weight loss (loss of appetite, malnourish, weak)	50	11.8%	11.1%	0	0.0%	0.0%	50	11.1%
Hair loss	10	2.4%	2.2%	0	0.0%	0.0%	10	2.2%
Blood loss/menstruation	6	1.4%	1.3%	1	3.6%	0.2%	7	1.6%
Red eyes/yellow eyes/sore eyes/eye contact/pale looking eyes/swollen eyes	7	1.7%	1.6%	0	0.0%	0.0%	7	1.6%
Diarrhea	5	1.2%	1.1%	0	0.0%	0.0%	5	1.1%
Dry skin/dusty skin/sore lips	4	0.9%	0.9%	0	0.0%	0.0%	4	0.9%
Pale skin	4	0.9%	0.9%	0	0.0%	0.0%	4	0.9%
Difficulty in walking	3	0.7%	0.7%	0	0.0%	0.0%	3	0.7%
Have flu/have fever	2	0.5%	0.4%	0	0.0%	0.0%	2	0.4%
Cough	1	0.2%	0.2%	0	0.0%	0.0%	1	0.2%
Scabies	1	0.2%	0.2%	0	0.0%	0.0%	1	0.2%
Body ache	1	0.2%	0.2%	0	0.0%	0.0%	1	0.2%
Don't know	94	22.2%	20.8%	3	10.7%	0.7%	97	21.5%
Total	**423**	**100.0%**	**93.8%**	**28**	**100.0%**	**6.2%**	**451**	**100.0%**

*Missing = 104 **Multiple Responses and rounded percentages

When asked to describe any STI symptoms in a man, 22.6% (103) of those that were surveyed did not answer. Of those that answered, 15.4% said that they did not know any

symptoms. More (51.4%) gave a variety of STI symptoms for men including penile discharge, sores, painful urination, itching, painful sex, and swelling in the scrotum. Some (12.3%) just mentioned some names of STI but did not give any symptoms, and a fifth (21.0%) mentioned a variety of symptoms not associated with STI in men.

Table 124: Symptoms of STI in men by sex

Descriptions of STI symptoms in men	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Penile discharge (bad odor, smelly penile discharge, smelly penis)	91	21.2%	20.0%	6	23.1%	1.3%	97	21.3%
Penile sores (penile ulcers/sores, painful penile sores, smelly penile sores, swollen penile sores)	52	12.1%	11.4%	8	30.8%	1.8%	60	13.2%
Pain on urination	47	10.9%	10.3%	8	30.8%	1.8%	55	12.1%
Swollen scrotum (painful swollen scrotum, swollen testicles, swollen penis)	10	2.3%	2.2%	1	3.8%	0.2%	11	2.4%
Penile itching	9	2.1%	2.0%	0	0.0%	0.0%	9	2.0%
Painful during sex	1	0.2%	0.2%	0	0.0%	0.0%	1	0.2%
Penile infections	1	0.2%	0.2%	0	0.0%	0.0%	1	0.2%
Sexual Transmitted Infections (Gonorrhea, syphilis, herpes, venereal disease, HIV/AIDS)	55	12.8%	12.1%	0	0.0%	0.0%	55	12.1%
Can't breathe properly	1	0.2%	0.2%	0	0.0%	0.0%	1	0.2%
Weight loss (weak)	53	12.3%	11.6%	0	0.0%	0.0%	53	11.6%
Diarrhea (dehydrated body)	10	2.3%	2.2%	0	0.0%	0.0%	10	2.2%
Dry face/dry skin/dusty skin/dry face/sore lips	8	1.9%	1.8%	0	0.0%	0.0%	8	1.8%
Hair loss	8	1.9%	1.8%	0	0.0%	0.0%	8	1.8%
Change of skin color (skin turns black, pale skin)	4	0.9%	0.9%	0	0.0%	0.0%	4	0.9%
Back ache	3	0.7%	0.7%	0	0.0%	0.0%	3	0.7%
Difficulty in walking	2	0.5%	0.4%	0	0.0%	0.0%	2	0.4%
Itchy skin/have scabies	2	0.5%	0.4%	0	0.0%	0.0%	2	0.4%
Continuous illness	1	0.2%	0.2%	0	0.0%	0.0%	1	0.2%
Malaria	1	0.2%	0.2%	0	0.0%	0.0%	1	0.2%
Pale looking eyes	1	0.2%	0.2%	0	0.0%	0.0%	1	0.2%
Typhoid	1	0.2%	0.2%	0	0.0%	0.0%	1	0.2%
Have fever	1	0.2%	0.2%	0	0.0%	0.0%	1	0.2%
Abdominal pain	1	0.2%	0.2%	0	0.0%	0.0%	1	0.2%
Don't know	67	15.6%	14.7%	3	11.5%	0.7%	70	15.4%
Total	**430**	**100.0%**	**94.3%**	**26**	**100.0%**	**5.7%**	**456**	**100.0%**

*Missing = 103 **Multiple Responses and rounded percentages

Very few of the OSL employees interviewed, mostly health workers, mentioned knowing the signs of sexually transmitted infections such as Chlamydia, Gonorrhea and Syphilis.

> We do get one or two cases of patients who have when they go urinate they feel burning... And once the urine is tested and we find Chlamydia …We also have had one case of gonorrhea or something like, that but hardly ever any. Fortunately married people are playing it safe or they are not presenting to us or not talking to it to us. So those are the only two things we can conclude from

> that. They are either adhering and listening and being safe and or, they have it and they are scared and they don't want to talk to us about it. Those are the two things I can conclude from there but the numbers are basically negligible, nothing, almost nothing (Male health worker).

Knowledge of the symptoms of STI was low with near half (51.5%) knowing the symptoms of STI for men and less (43.1%) knowing the symptoms of STI for women. There was considerable missing data for both questions concerning knowledge of STI and considerable workers indicating that they did not know the symptoms of STI or put forth symptoms not related to STI.

Experience of STI symptoms

Workers were asked if they had experienced a range of symptoms over the past year and were prompted for a variety of STI symptoms. There was considerable missing data for this question, and only 78 workers (16.8%) answered. Considerable avoidance of STI related questions indicate that this was a more sensitive area for workers and may be an area where there is stigma and shame because of lack of knowledge and understanding, and qualitative data indicates this at a community level. There is a need to strengthen knowledge of STI symptoms and their longer term impact if not treated, for workers and the relationship between STI and increased risk of HIV.

Of those that answered, some 19 men said that they had not experienced any of the symptoms of STI and 385 workers did not say yes to having any STI symptoms in the past year. Near a fifth (78; 19.1%) of those who had sex in the past year (409) said that they had had an STI symptom, and many gave multiple responses, meaning that they had experienced more than one symptom and potentially more than one STI in the past year.

Of those that answered, 29.1% reported having had a burning pain on urination and a fifth (20.2%) reported a penile or vaginal discharge. Genital itching (18.2%) was reported by both men and women, but this was the only STI symptom that women reported that they had experienced in the past year, but most women did not answer this question. Some men also reported that they had experienced pain during sex (10.0%), swelling in scrotum (10.0%) or genital ulcers or sores (9.1%). Of the 78 people that reported symptoms of STI, only near half (51.3%) or 40 of the 78 sought treatment from a clinic, pharmacy or traditional healer.

Table 125: Experiences of STI symptoms in the last 12 months by sex

Over the past year (12 months) have you had any of these symptoms	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Burning pain on urination	32	29.6%	29.1%	0	0.0%	0.0%	32	29.1%
Penile discharge/ vaginal discharge	26	24.1%	23.6%	0	0.0%	0.0%	26	23.6%
Genital itching	18	16.7%	16.4%	2	100.0%	1.8%	20	18.2%
Painful during sex	11	10.2%	10.0%	0	0.0%	0.0%	11	10.0%
Swelling in scrotum	11	10.2%	10.0%	0	0.0%	0.0%	11	10.0%
Genital ulcer/sores	10	9.3%	9.1%	0	0.0%	0.0%	10	9.1%
Sub Total	**108**	**100.0%**	**98.2%**	**2**	**100.0%**	**1.8%**	**110**	**100.0%**
None of the above	19			0			19	
Total	**127**			**2**			**129**	

* 385 workers did not say yes to having any of these symptoms **Percentages and totals based on responses.

A few of the women who exchanged sex reported that they used techniques for penile examination to see if a man had a sexually transmitted infection or other penile modifications, and when they were fitting condoms on their clients' penises, they checked for sores, pus or inserts. They would also feel for sores and inserts with their hands whilst masturbating the man's penis.

> ….they themselves wanted to put on the condom and have sex with me, but I would say no. I will put the condom. I will make your penis erect first – I say that and I would think of looking at their penis. Otherwise they might have sores or something like that. Some may have inserts. I want to check and see, so I tell them that I will put the condom on. If they put on the condom I would say no to them. Or I would say forget it, you can go… I check the penis and I make sure there is no sore or pus (Woman exchanging sex).

Treatment Seeking

Of those 78 workers who reported having STI symptoms in the past year, only 67 workers responded to these questions and with multiple responses, indicating that people choose a variety of treatment seeking when they have STI symptoms. Of those 67 that responded, 60.0% sought advice and/or medicine from either a clinic or hospital (42.0%); from a pharmacy (13.0%); or from a traditional doctor (5.0%). Some took prevention measures and abstained from sex (15.0%) or used a condom until symptoms cleared (5.0%), and informed their sexual partner of discharge or ulcer (8.0%) While some 5.0% did not seek advice or medicine, some others (7.0%) self medicated and took medicine that they had at home or that friends or relatives gave them.

Table 126: STI treatment seeking behaviors in the past year by sex

STI treatment seeking in the past year	Male			Total	
	n	% within sex	%	n	%
Sought advice and/or medicine from a clinic or hospital	42	42.00%	42.00%	42	42.00%
Sought advice and/or medicine from a pharmacy	13	13.00%	13.00%	13	13.00%
Sought advice and/or medicine from a traditional doctor	5	5.00%	5.00%	5	5.00%
Took medicine given by friends/relatives	5	5.00%	5.00%	5	5.00%
Took medicine that was at home	2	2.00%	2.00%	2	2.00%
Did not seek advice or medicine	5	5.00%	5.00%	5	5.00%
Stopped having sex until symptoms cleared	15	15.00%	15.00%	15	15.00%
Informed sexual partner about the discharge/ulcer	8	8.00%	8.00%	8	8.00%
Used a condom until symptoms cleared	5	5.00%	5.00%	5	5.00%
Total	**100**	**100.00%**	**100.00%**	**100**	**100.00%**

* Missing = 11

One of the women exchanging sex illustrates that some women exchanging sex are sometimes self medicating as a STI treatment option.

> I used to see some of the women they had gotten medication for gonorrhea and syphilis. I use to see long ones, different kinds of black, white, yellow, women exchanging sex, get them. I asked, what are these? I haven't been to the clinic and they tell me it's for, gonorrhea, AIDS, syphilis. They speak in language

> and they talk to me about it. …. As for getting medication, I haven't been treated for anything yet… (Woman exchanging sex).

STI treatment

All workers were asked whether they had ever been treated for a sexually transmitted infection, and a fifth (21.6%) reported that they had been previously treated. Near a fifth (21.4%) of male workers and a quarter (26.3%) of female workers had ever been treated for an STI. Of those who said that they had been treated for an STI in the past year, only 47.1% said that they used a condom at last sex.

Table 127: Ever been treated for STI by sex

Ever been treated for STI	Male			Female			Total	
	n	% within sex	% within total	n	% within sex	% within total	n	%
Yes	92	21.4%	20.5%	5	26.3%	1.1%	97	21.6%
No	338	78.6%	75.3%	14	73.7%	3.1%	352	78.4%
Total	**430**	**100.0%**	**95.8%**	**19**	**100.0%**	**4.2%**	**449**	**100.0%**

*Missing=14

Gender issues were also identified with cultural taboos and continuing sensitivity for women to present and be treated by only male health officers for sexually transmitted infections. Lack of gender specific services hinders some women from accessing and seeking sexual health services and treatment.

> Basically man would come straight at us and tell us that they've got a STI but not very many women come to us. Mostly, all are men. Women are not coming to us. Maybe it's because we don't have a female worker in our clinic… I mean these are situations where you know people need to be open minded. We are here to help, we've dealt with these kinds of situations before, and we are prepared to handle these kinds of situations again. Now, if a woman can come in and deliver in front of me, I don't see the reason why a female would want to see another female woman for a STI case (Male health worker).

> ….in terms of addressing sexual health issues… because it's a sensitive issue especially when a lady tries to explain that look I've been sleeping and inside me here in the vagina and right inside is itchy then can you check? She'll find it hard to tell a male person, especially employees we see each other walking up and down every day. We cross each other's paths every day and they will feel really uncomfortable for you to check them. I mean if it was in an emergency case that's another situation at all. But in a situation where they want to disclose this and where you really have to check, I feel that we need a lady presence around. For example, if I have to do a vaginal examination because of some overwhelming infection, by ethics are that I must have a female worker around, a nurse or somebody a female presence around just to avoid any issues that might arise. She may feel uncomfortable or feeling that I am sexually harassing her. So you need a female there as well as part of the team. In that sense yes, we would like to have a female worker at least listen to the needs of the women….So in terms of helping with sexual health, yes it will be held great if we have a extra worker to help us with that especially a female worker to meet the needs to listen to the needs of women particularly (Male worker).

Three quarters (76.3%) of male and female workers said that they would go to the OSL clinic to get advice or treatment when they thought they had a sexually transmitted infection. Less female than male workers said that they would seek STI treatment or feel comfortable

Table 128: Would go OSL clinic to get advice or treatment by sex

Would go OSL clinic to get advice or treatment for STI	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	319	76.9%	73.5%	12	63.2%	2.8%	331	76.3%
No	96	23.1%	22.1%	7	36.8%	1.6%	103	23.7%
Total	**415**	**100.0%**	**95.6%**	**19**	**100.0%**	**4.4%**	**434**	**100.0%**

*Missing= 29

Most (86.9 %) said that they generally felt comfortable going to the OSL clinic. Around ten percent more male workers than female felt at ease to go to an OSL clinic.

Table 129: Comfortable going to OSL clinic by sex

Comfortable going to OSL clinic	Male			Female			Total	
	n	% within sex	% within total	n	% within sex	% within total	n	%
Yes	363	87.3%	83.6%	14	77.8%	3.2%	377	86.9%
No	53	12.7%	12.2%	4	22.2%	0.9%	57	13.1%
Total	**416**	**100.0%**	**95.8%**	**18**	**100.0%**	**4.1%**	**434**	**100.0%**

*Missing=29

The missing data in this section and the lack of knowledge of symptoms and treatment seeking to cure a STI would indicate that this is an important area of focus. As sexually transmitted infections are a co-factor in HIV transmission, increasing STI treatment seeking can help to further reduce the transmission of HIV.

KNOWLEDGE, OPINIONS AND ATTITUDES ABOUT HIV AND AIDS

More workers had known people who had died from AIDS than were living with HIV. Of those interviewed in the workforce, just under half (45.9%) knew of someone living with HIV and more (83.6%) had known someone who had died of AIDS.

Table 130: Know someone who is living with HIV by sex

Know of someone who is living with HIV	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	196	45.8%	43.8%	9	47.4%	2.0%	205	45.9%
No	232	54.2%	51.9%	10	52.6%	2.2%	242	54.1%
Total	**428**	**100.0%**	**95.7%**	**19**	**100.0%**	**4.3%**	**447**	**100.0%**

*Missing = 16

Table 131: Know anyone who has died of AIDS by sex

Know anyone who has died of AIDS	Male			Female			Total	
	N	% within sex	%	n	% within sex	%	n	%
Yes	355	83.5%	80.0%	16	84.2%	3.6%	371	83.6%
No	70	16.5%	15.8%	3	15.8%	0.7%	73	16.4%
Total	**425**	**100.0%**	**95.7%**	**19**	**100.0%**	**4.3%**	**444**	**100.0%**

*Missing = 19

When asked if they had a close friend or relative that had become sick or died of AIDS; a third (29.2%) reported a close relative and near a third (30.1%) reported a close friend that had died of AIDS. Some knew both — a close relative and a close friend — who had died of AIDS.

Table 132: Had a close relative or friend who became sick and died of AIDS by sex

Had a close relative or close friend who became sick and died of AIDS	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Close relative	133	29.2%	28.0%	9	47.4%	1.9%	142	29.9%
Close friend	139	30.5%	29.3%	4	21.1%	0.8%	143	30.1%
No	184	40.4%	38.7%	6	31.6%	1.3%	190	40.0%
Total	**456**	**100.0%**	**96.0%**	**19**	**100.0%**	**4.0%**	**475**	**100.0%**

*Missing= 13 **Percentage and totals based on responses

The qualitative data on knowledge of PLHIV is based on the participants experience in living, knowing and working with PLHIV. These include stories of PLHIV whom the participants have seen and heard during awareness programs, and giving their testimonies. The following, from an interview with a female worker, demonstrates that HIV is seen as a local experience, and not external to the workplace, and its organization.

> A group came up with some people that were HIV positive and they shared their story with us and one man used to work with Oil Search yeah, he was HIV positive and he was telling the guys that he knows what men do. They go out and they drink with women and they have sex, before they go home, that's what they do and he did that and he passed HIV to his wife…(Female worker).

In a similar fashion, two workers spoke about two of the company management who had died of HIV (AIDS), and about what she sees as a lack of openness.

> So probably here it's a case that they're shy. I mean it's not a thing you'd want to talk about. I mean, I've lost two Directors to HIV that I know of, but they said it wasn't. I know a couple of people in the village....And I think its awareness, awareness, awareness and how do you get through. You know it worries me that people are not getting the message through. You know things are on the surface (Male worker).
>
> There is evidence. The local people around here, they also know what's going on. And to confirm that, we have been having a number of deaths related to having HIV/AIDS. There is confirmation. I think the latest was last week, a body was flown out of here …So … they're a couple of them maybe some came with this virus but it was confirmed that they had the virus and they died (Male worker).

One woman from the community experienced living with a relative who was HIV positive, and advised her to practice safe sex:

> A female relative of mine whom I haven't met was taken to Lae where she passed away. Just yesterday they brought her back and I also went to her burial. Another cousin sister whom I showed to you earlier is also infected with HIV and I always advise her to practice safe sex (Woman exchanging sex).

Knowledge of HIV Prevention

Some survey questions addressed knowledge of HIV prevention and transmission and knowledge of how to protect oneself through condom use, abstinence and having one uninfected partner that has no other partners, were less understood than how HIV was transmitted.

While 81.8% agreed that condoms could reduce the risk of HIV infection if used correctly every time they have sex; only 65.0% said people could protect themselves from HIV, the virus that causes AIDS, by using a condom correctly every time they have sex. There was considerable uncertainty and more people reported that they could reduce their risk of HIV infection with condom use than fully protecting themselves from HIV. Slightly more women than men thought that condoms provided protection. Condom efficacy is an important area to address because of this lack of certainty about the ability of condoms to protect from HIV when correctly used every time.

Table 132: Knowledge of using condom correctly every time for protection from HIV by sex

People can protect themselves from HIV by correctly using a condom every time they have sex	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	277	64.6%	61.8%	14	73.7%	3.1%	291	65.0%
No	35	8.2%	7.8%	1	5.3%	0.2%	36	8.0%
Unsure	117	27.3%	26.1%	4	21.1%	0.9%	121	27.0%
Total	**429**	**100.0%**	**95.8%**	**19**	**100.0%**	**4.2%**	**448**	**100.0%**

*Missing = 15

Most (77.7%) believed that people could protect themselves from HIV infection by having sex with only one uninfected sex partner who had no other sex partners, and over a fifth did not believe this (10.4%), or were unsure (11.9%).

Table 133: Knowledge about people protecting themselves by having sex with only one uninfected sex partner who has no other sex partners by sex

People protecting themselves by having sex with only one uninfected sex partner who has no other sex partners	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	328	77.2%	73.9%	17	89.5%	3.8%	345	77.7%
No	45	10.6%	10.1%	1	5.3%	0.2%	46	10.4%
Unsure	52	12.2%	11.7%	1	5.3%	0.2%	53	11.9%
Total	**425**	**100.0%**	**95.7%**	**19**	**100.0%**	**4.3%**	**444**	**100.0%**

*Missing = 19

Near three quarters (72.8%) believed that abstinence from sex could protect people from HIV infection while over a quarter disagreed (12.5%), or were unsure (14.7%).

Table 134: Knowledge of HIV protection through not having sex by sex

People can protect themselves from HIV by not having sex	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	308	73.0%	69.8%	13	68.4%	2.9%	321	72.8%
No	49	11.6%	11.1%	6	31.6%	1.4%	55	12.5%
Unsure	65	15.4%	14.7%	0	0.0%	0.0%	65	14.7%
Total	**422**	**100.0%**	**95.7%**	**19**	**100.0%**	**4.3%**	**441**	**100.0%**

*Missing = 22

Knowledge of Transmission

Most, 90.2% agreed that a person can get HIV from injections with a needle that was already used by someone else, while ten percent disagreed (3.8%), or were unsure (6.0%).

Table 135: Knowledge about if a person can get HIV from sharing needles during injection by sex

Can a person get HIV from injections that has already been used by someone else	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	391	90.5%	86.7%	16	84.2%	3.5%	407	90.2%
No	14	3.2%	3.1%	3	15.8%	0.7%	17	3.8%
Unsure	27	6.3%	6.0%	0	0.0%	0.0%	27	6.0%
Total	**432**	**100.0%**	**95.8%**	**19**	**100.0%**	**4.2%**	**451**	**100.0%**

*Missing =12

Most (70.4%) did not believe that HIV was transmitted through mosquito bites; however 29.6% said that mosquitoes could transmit HIV (8.8%) or were unsure (20.8%). More women than men understood that HIV was not transmitted through mosquito bites.

Table 136: Knowledge of HIV transmission through mosquito bites by sex

Can a person get HIV from mosquito bites	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	39	9.2%	8.8%	0	0.0%	0.0%	39	8.8%
No	296	69.8%	66.8%	16	84.2%	3.6%	312	70.4%
Unsure	89	21.0%	20.1%	3	15.8%	0.7%	92	20.8%
Total	**424**	**100.0%**	**95.7%**	**19**	**100.0%**	**4.3%**	**443**	**100.0%**

*Missing = 20

Most (81.3%) knew that HIV could not be transmitted through sharing a meal with a person living with HIV, while near a fifth thought that transmission could occur (8.2%), or were unsure (10.4%).

Table 137: Knowledge of HIV transmission by sharing meal with a PLHIV by sex

Can a person get HIV by sharing a meal with someone who is infected with HIV	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	35	8.1%	7.8%	2	10.5%	0.4%	37	8.2%
No	349	81.0%	77.6%	17	89.5%	3.8%	366	81.3%
Unsure	47	10.9%	10.4%	0	0.0%	0.0%	47	10.4%
Total	**431**	**100.0%**	**95.8%**	**19**	**100.0%**	**4.2%**	**450**	**100.0%**

*Missing = 13

Knowledge of mother to child transmission was quite high and 88.5% knew that HIV could be transmitted to an unborn child. While knowledge of infection from mother to child through breast milk and during delivery was also well understood, these were less understanding than infection transmitted during pregnancy.

Table 138: Knowledge about HIV transmission from pregnant woman to unborn child by sex

Pregnant woman infected with HIV give the virus to her unborn child	Male			Female			Total	
	n	% within sex	%	n	% within sex	%		
Yes	360	88.5%	84.5%	17	89.5%	4.0%	377	88.5%
No	47	11.5%	11.0%	2	10.5%	0.5%	49	11.5%
Total	**407**	**100.0%**	**95.5%**	**19**	**100.0%**	**4.5%**	**426**	**100.0%**

*Missing = 37

Most (82.7%) knew that a woman could give HIV to her newborn during breastfeeding while some 16.5% did not agree.

Table 139: Knowledge of HIV transmission through breastfeeding by sex

Pregnant woman infected with HIV give the virus to her new born during breastfeeding	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	325	82.5%	78.7%	15	88.2%	4.1%	340	82.7%
No	66	16.8%	16.0%	2	11.8%	0.5%	68	16.5%
Don't know	3	0.8%	0.7%	0	0.0%	0.0%	3	0.8%
Total	**394**	**100.0%**	**95.4%**	**17**	**100.0%**	**4.10%**	**411**	**100.0%**

*Missing = 52

Again most (83.1%) knew that a woman could give HIV to her newborn during delivery, and the rest (16.1%) did not agree.

Table 140: Knowledge of HIV transmission from a pregnant woman to her child during delivery by sex

Can a pregnant woman infected with HIV give HIV to her newborn during delivery	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	315	83.1%	79.3%	15	83.3%	3.8%	330	83.1%
No	61	16.1%	15.4%	3	16.7%	0.8%	64	16.1%
Don't know	3	0.8%	0.8%	0	0.0%	0.0%	3	0.8%
Total	**379**	**100.0%**	**95.5%**	**18**	**100.0%**	**4.5%**	**397**	**100.0%**

*Missing = 66

Most (83.1%) knew that a healthy looking person could have HIV, 16.1% believed that a person with HIV infection would not look healthy, or were unsure (0.8%).

Table 141: Knowledge if a healthy looking person can have HIV by sex

Do you think that a healthy looking person can have HIV	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	365	85.1%	81.5%	17	89.5%	3.8%	382	85.3%
No	14	3.3%	3.1%	1	5.3%	0.2%	15	3.3%
Unsure	50	11.7%	11.2%	1	5.3%	0.2%	51	11.4%
Total	**429**	**100.0%**	**95.8%**	**19**	**100.0%**	**4.2%**	**448**	**100.0%**

*Missing = 15

There are in the interview data, examples of people speaking about misconceptions, and contested explanations about transmission:

> They told us that even a healthy looking person can be infected, if he has multiple sex partners, does not practice safe sex, and does not know his status because he hasn't had a VCT test for HIV. So I said, so it's not only the person who is looking very sick and about to die is HIV positive or has got AIDS, it can be a person who is looking really well and fit he may be carrying that virus around and that means it could be everybody (Female worker).

> So we used to be very scared, thinking that drop of sperm might touch us. As this is about our safety so we bring that issue for discussion in our safety meeting. But the bosses never remind us about our safety so you have to take care of yourselves so we get scared so we don't attempt to prepare that bed. We just prepare a part of the bed and continue with others. If there's sperm on the bed, we don't tidy the beds. This was what we thought if we happened to touch the sperm it might transfer to us or? That makes us very scared, so when work we are very cautious and careful…And also we see that we don't really know and understand this sickness, we all are village women and we have never been to towns or cities. We stay out in the village and we come to work for the company here (Female worker).

The UNGASS Indicator 14 is the percentage of most-at-risk populations who both correctly identify ways of preventing the sexual transmission of HIV and who reject major misconceptions about HIV transmission. With this calculation, only 43.7% both correctly identified ways of preventing the sexual transmission of HIV and rejected the major misconceptions about HIV transmission which were transmission through mosquito bites and sharing a meal with someone living with HIV.[7]

Table 142: Knowledge of HIV transmission and prevention by sex

Sex disaggregation		Age disaggregation		Total
Female	Male	<25	>=25	
Number of petroleum development workers gave the correct answers to all five questions				
8	147	5	150	155
Number of petroleum development workers interviewed				
17	338	26	329	355
Percentage of petroleum development workers having comprehensive correct knowledge				
47.1%	43.5%	19.2%	45.6%	43.7%

[7] Differences in calculation of percentage of women and men aged <25 and >+25 who correctly identify ways of preventing the sexual transmission of HIV and who reject major misconceptions about HIV for UNGASS Indicator 14 and Table 142, is based on the need for age disaggregation for this indicator and the answering of all of the five related questions used to calculate this indicator. 355 answered all five questions, 64 were missing cases and 44 did not know their ages.

Opinions and attitudes related to HIV

Workers were also asked about HIV related opinions and attitudes. When asked if a woman should refuse her husband sex or use a condom if he has other sex partners and does not use a condom; most (89.5%) said that the woman should refuse to have sex and ten percent (10.3%), and only men, said that a woman should not refuse to have sex or use a condom if their husband has other sex partners.

Table 143: Women should refuse to have sex with husband or use a condom if husband has other sex partners by sex

Woman should refuse to have sex with her husband or use a condom if husband has other partners	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	380	89.0%	85.2%	19	100.0%	4.3%	399	89.5%
No	46	10.8%	10.3%	0	0.0%	0.0%	46	10.3%
Unsure	1	0.2%	0.2%	0	0.0%	0.0%	1	0.2%
Total	**427**	**100.0%**	**95.7%**	**19**	**100.0%**	**4.3%**	**446**	**100.0%**

*Missing = 17

Other questions can indicate a potential for HIV related stigma and discrimination and there was an indication that this is an area that requires some focus. While 81.3% reported that you could not get HIV by sharing a meal with a person infected with HIV; less (70.7%) said that they would share a meal cooked by a person living with HIV or AIDS.

Table 144: Willing to eat a meal that has been cooked by a person living with HIV or AIDS by sex

Willing to eat a meal that has been cooked by a person living with HIV or AIDS	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	303	70.6%	67.8%	13	72.2%	2.9%	316	70.7%
No	124	28.9%	27.7%	5	27.8%	1.1%	129	28.9%
Unsure	2	0.5%	0.4%	0	0.0%	0.0%	2	0.4%
Total	**429**	**100.0%**	**96.0%**	**18**	**100.0%**	**4.0%**	**447**	**100.0%**

*Missing = 16

While most (72.8%) believed that a HIV positive student should be allowed to continue attending school, well over a quarter (27.2%) said 'no'.

Table 145: A HIV positive student should be allowed to continue attending school by sex

A HIV positive student be allowed to continue attending school	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	311	72.3%	69.3%	16	84.2%	3.6%	327	72.8%
No	119	27.7%	26.5%	3	15.8%	0.7%	122	27.2%
Total	**430**	**100.0%**	**95.8%**	**19**	**100.0%**	**4.2%**	**449**	**100.0%**

*Missing = 14

When workers were asked if a member of their family became ill with HIV or AIDS, would they want it to remain a secret; most (60.1%) would not want it to be a secret and would disclose the HIV status of a family member. However, two-fifths (39.9%) would want to keep it a secret. Proportionately more women (68.4%) than men (38.6%) significantly would not disclose the status of a family member living with HIV or AIDS.

Table 146: Keep status of family member who has HIV or AIDS a secret by sex

Keep HIV status of a family member secret	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	164	38.6%	36.9%	13	68.4%	2.9%	177	39.9%
No	261	61.4%	58.8%	6	31.6%	1.4%	267	60.1%
Total	**425**	**100.0%**	**95.7%**	**19**	**100.0%**	**4.3%**	**444**	**100.0%**

*Missing = 19

There is a statistically significant association between a person's sex and if they would keep the status of a family member with HIV or AIDS a secret. More female workers (68.4 %) than male workers (38.6%) would keep the HIV or AIDS status of their family member a secret and not disclose this to others [***Chi-Square analysis produced significant result at $p<0.009$].

Variation in attitudes to disclosure of a person's HIV status can be seen in the following:

> We basically are dealing with employees. So basically it was just cold and flu. We had, several people you know [have] STIs. ..like we had several people with HIV and all that, but most people that we had , we knew and they openly came to us, we discussed, talked, managed. But there are only one or two guys who withheld the information, didn't want to discuss, didn't want to talk about it, and then eventually went home and died. So but otherwise, it's just colds and flu (Male worker).

> In order to stop the spread of HIV/AIDS it is better to publish the photographs of the HIV/AIDS carrier (Male worker).

Workers reported that they would care for both male (81.2%) and female (79.7%) members of their family living with AIDS in their household.

Table 147: Willing to care for male relative that has AIDS in household by sex

Willing to care for male relative infected with AIDS in your household	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	353	81.3%	77.9%	15	78.9%	3.3%	368	81.2%
No	81	18.7%	17.9%	4	21.1%	0.9%	85	18.8%
Total	**434**	**100.0%**	**95.8%**	**19**	**100.0%**	**4.2%**	**453**	**100.0%**

*Missing = 10

Table 148: Willing to care for female relative that has AIDS in household by sex

Willing to care for male relative infected with AIDS in your household	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	343	79.8%	76.4%	15	78.9%	3.3%	358	79.7%
No	87	20.2%	19.4%	4	21.1%	0.9%	91	20.3%
Total	**430**	**100.0%**	**95.8%**	**19**	**100.0%**	**4.2%**	**449**	**100.0%**

*Missing = 14

There are some indications that attitudes towards the care of people living with HIV is changing as a consequence of public awareness campaigns:

> As mothers, we advise our children that if you are infected with HIV/AIDS, we will never allow you to live with us in our home. We will forcefully evict you and you will have to go and live somewhere else. It's your problem and you

look after yourself until you die. That's what we tell our children. It was until when some health officers came to our community and did some awareness on HIV/AIDS that we came to understand about caring for PLHIVs. The health officers said: don't neglect your children if you know that they are HIV positive. Don't chase him out of the house to go and live somewhere. You must love him, care for him, comfort him, give him good advice, feed him properly, and if you don't do those things then he will lose hope, will worry a lot, and it's those negative things that will kill him. It's from that awareness program that we came to understand and learn to accept PLHIVs and how to take care of them…. (Female worker).

...yeah, there was a lot of people, and questions were thrown, and one question one of these guys said oh those people who are HIV positive put them on the line on an island everybody just turned around and looked at him and said and what if it was your brother or your sister and you are saying that [laugh] would you tell him to go and stay on the island, yeah there was one that was held here and a lot of people attended it (Female worker).

SOURCES OF INFORMATION ON HIV

Exposure to HIV Intervention Programs/Projects

Most (85.5%) workers reported they had someone come to their community to talk about STI or HIV/AIDS.

Table 149: Anyone come to your community to talk about STI or HIV and AIDS by sex

Anyone come to your community to talk about STI or HIV and AIDS	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	366	85.1%	81.5%	18	94.7%	4.0%	384	85.5%
No	48	11.2%	10.7%	1	5.3%	0.2%	49	10.9%
Unsure	9	2.1%	2.0%	0	0.0%	0.0%	9	2.0%
Don't know	7	1.6%	1.6%	0	0.0%	0.0%	7	1.6%
Total	**430**	**100.0%**	**95.8%**	**19**	**100.0%**	**4.2%**	**449**	**100.0%**

*Missing = 14

Many different sources provided information on STI, HIV or AIDS and most (61.8%) reported they had accessed information from health workers, the television, radio, newspaper or from books or pamphlets. People accessed information from reading materials such as books, pamphlets, magazines and newspapers and research reading (30.3%), from health workers and VCT (13.6%), from audiovisual materials such as radio and television (25.3%), from a range of different people (19.6%), or organizations (9.4%).

Table 150: Where information about HIV or AIDS came from by sex

Dissemination of information about HIV or AIDS	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
TV	247	13.2%	12.7%	9	11.8%	0.5%	256	13.1%
Radio	229	12.2%	11.8%	9	11.8%	0.5%	238	12.2%
Newspaper	221	11.8%	11.4%	8	10.5%	0.4%	229	11.8%
Books/pamphlets at OSL	211	11.3%	10.8%	8	10.5%	0.4%	219	11.2%
Magazines	135	7.2%	6.9%	5	6.6%	0.3%	140	7.2%
Research reading	1	0.1%	0.1%	0	0.0%	0.0%	1	0.1%
Relative	159	8.5%	8.2%	4	5.3%	0.2%	163	8.4%
Friends	112	6.0%	5.8%	4	5.3%	0.2%	116	6.0%
Peer Educator	93	5.0%	4.8%	5	6.6%	0.3%	98	5.0%
Workmate	2	0.1%	0.1%	0	0.0%	0.0%	2	0.1%
Pastor	1	0.1%	0.1%	0	0.0%	0.0%	1	0.1%
NGO	102	5.5%	5.2%	6	7.9%	0.3%	108	5.5%
Faithbased Organization	71	3.8%	3.6%	2	2.6%	0.1%	73	3.7%
Awareness sessions	2	0.1%	0.1%	0	0.0%	0.0%	2	0.1%
School	0	0.0%	0.0%	1	1.3%	0.1%	1	0.1%
Health workers	248	13.3%	12.7%	15	19.7%	0.8%	263	13.5%
Voluntary counseling	1	0.1%	0.1%	0	0.0%	0.0%	1	0.1%
Other - Did not specify	36	1.9%	1.8%	0	0.0%	0.0%	36	1.8%
Total	**1871**	**100.0%**	**96.1%**	**76**	**100.0%**	**3.9%**	**1947**	**100.0%**

* Missing = 12 ** Percentages and totals are based on responses.

Workers who worked closely with the OSL surrounding communities also talked about people's increased negative feelings around HIV and AIDS in some communities, while in others there is support and caring towards those infected. These differences could depend on the personality of the health workers working in the areas, level of sensitization messages delivered to the villages and sizes of the villages. For example, a Health officer expressed:

> Outreach programs within the camp, we basically cover everything….we have tool box meetings which we attend in one week. we basically pick out one topic and we spread that around with all the companies, contractors to Oil Search, and we basically talk about HIV and all that kind of thing and HIV status in Papua New Guinea, how it's going and ah we sometimes give them figures . So, so there is a, there is a lot of campaigns going on about HIV and all that within the camps….. We do it once a month, that's in our tool box meeting, that's ah, like what we did this morning and yesterday. When everybody gets together we do it, but as health personnel it is our responsibility to randomly talk about the effects of HIV and AIDS and what it does, what is HIV and all those kinds of things. Two friends, usually around dinner tables or in the rooms or evening gatherings with friends and all that, it is something that we openly discuss (Male health worker).

Here is an account from an HIV-positive person:

> It is very sensitive… Here at Hides our sensitization messages must have gone down well so they are very supportive. ….the patients down there, there is no stigmatization. I guess because it's a small village and everybody knows who I am and when I go and visit the village, they bring the patient to me (Male worker).

A community relations officer however, based on his experiences and observations mentioned that there are some ways that HIV awareness can be more effective and understood in communitites which he highlighted including: drama, video shows, communtity involvement and involvement of PLHIV during awareness.

> I think the best way is to get all the village elders and the councilors and we can discuss HIVAIDS issues. Ok, when you're doing your presentations don't just talk, but present the information or the data in pictorial forms or in a manner where the community can understand the message at their level. If you present charts, pie graph or line graphs then how can they understand all of that so it's for their benefit that we present the data at their level of understanding. By doing so they can understand it and can relate to the information and we can also give some practical examples. We can have PLHIVs' giving their life testimonies, showing of videos about HIVAIDS issues. Video shows are one of the best tools because it shows the people and also make them understand the significance of HIVAIDS awareness in the community. It also corrects the negative impact it has on PLHIVs' and HIVAIDS related issues. I think video show is one of the best methods because the village people just don't want to listen to people talking. Their mentality is that they get bored easily by just listening to people talking so it is better if it comes in drama form where people can watch and understand (Male worker).

The majority of the workers thought that the best means of disseminating information on sexual health and HIV to the OSL workforce was through books, pamphlets and posters (35.6%), through video and the internet (27.6%), through talking (22.7%) and through drama (9.9%).

Table 151: Best ways to give information on sexual health and HIV to Oil Search workforce by sex

Best ways to give information on sexual health and HIV	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Talking	257	22.8%	21.8%	10	20.0%	0.8%	267	22.7%
Books and pamphlets	244	21.6%	20.7%	13	26.0%	1.1%	257	21.8%
Posters	157	13.9%	13.3%	5	10.0%	0.4%	162	13.8%
Video	207	18.4%	17.6%	9	18.0%	0.8%	216	18.3%
Internet site	103	9.1%	8.7%	6	12.0%	0.5%	109	9.3%
Drama	112	9.9%	9.5%	5	10.0%	0.4%	117	9.9%
Other	48	4.3%	4.1%	2	4.0%	0.2%	50	4.2%
Total	**1128**	**100.0%**	**95.8%**	**50**	**100.0%**	**4.2%**	**1178**	**100.0%**

*Missing = 18. Percentages and responses are based on responses.

As calculated, the UNGASS Indicator 9 indicates that near half (49.5%) of petroleum workers were reached with HIV prevention programs and knew where to go for an HIV test and had been given condoms in the past year.[8]

Table 152: Workers reached by prevention programs by sex

Sex disaggregation		Age disaggregation		Total
Female	Male	<25	>=25	
Number of petroleum development workers who know where to go for an HIV test and have been given condoms in the last 12 months				
5	175	10	170	180
Number of petroleum development workers interviewed				
17	347	27	337	364
Percentage of petroleum development workers reached with HIV prevention programs				
29.4%	50.4%	37.0%	50.4%	49.5%

[8] Out of 463 workers; 364 knew their age and can be disaggregated by age; 46 collectively don't know their age and 53coded as missing (364 +46+53=463). Differences in calculation of percentage of women and men aged <25 and >=25 who were reached with HIV prevention programs for UNGASS Indicator 9, is based on the need for age disaggregation for this indicator and 24 male and 1female did not know their age and 19 did not answer for these both questions.

HIV VOLUNTARY COUNSELING AND TESTING

Most (84.9%) OSL workers had heard about voluntary counseling and testing (VCT) from a variety of sources.

Table 153: Ever heard about VCT by sex

Have heard about VCT	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	365	84.7%	81.1%	17	89.5%	3.8%	382	84.9%
No	66	15.3%	14.7%	2	10.5%	0.4%	68	15.1%
Total	**431**	**100.0%**	**95.8%**	**19**	**100.0%**	**4.2%**	**450**	**100.0%**

*Missing= 13

Most workers had received information about VCT from HIV awareness sessions (14.9%) and other sources were identified such as reading materials such as books, pamphlets, billboards, posters and newspapers (33.2%); from health workers and clinics (12.6%); from audiovisual materials such as radio and television (27.2%); and from a range of different people (10.9%). While considerably more had received information on HIV and AIDS from a range of organizations, this was not similar for VCT, indicating a lack of involvement of organizations such as NGO and faith based organizations to inform and promote voluntary counseling and testing.

Table 154: Where heard about VCT by sex

Where heard about VCT	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
HIV awareness	223	14.7%	14.4%	8	24.2%	0.5%	231	14.9%
Health workers	186	12.3%	12.0%	5	15.2%	0.3%	191	12.3%
OSL Clinic	4	0.3%	0.3%	0	0.0%	0.0%	4	0.3%
TV	220	14.5%	14.2%	8	24.2%	0.5%	228	14.7%
Radio	189	12.5%	12.2%	5	15.2%	0.3%	194	12.5%
Books/pamphlets	133	8.8%	8.6%	2	6.1%	0.1%	135	8.7%
Newspaper	181	11.9%	11.7%	3	9.1%	0.2%	184	11.9%
Posters	118	7.8%	7.6%	0	0.0%	0.0%	118	7.6%
Billboards	78	5.1%	5.0%	0	0.0%	0.0%	78	5.0%
Friend/relative	88	5.8%	5.7%	1	3.0%	0.1%	89	5.7%
Peer educator	78	5.2%	5.1%	0	0.0%	0.0%	78	5.1%
Female workers	0	0.0%	0.0%	1	3.0%	0.1%	1	0.1%
Other (did not specify)	17	1.1%	1.1%	0	0.0%	0.0%	17	1.1%
Total	**1515**	**100.0%**	**97.9%**	**33**	**100.0%**	**2.1%**	**1548**	**100.0%**

*Missing=84**Percentages and totals based on responses

Most workers (85.9%) knew where to go if they wanted to have an HIV test.

Table 155: Know where to go if wanted to have a HIV test by sex

Know where to go for HIV test	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	362	85.6%	82.1%	17	94.4%	3.9%	379	85.9%
No	61	14.4%	13.8%	1	5.6%	0.2%	62	14.1%
Total	**423**	**100.0%**	**95.9%**	**18**	**100.0%**	**4.1%**	**441**	**100.0%**

*Missing = 22

The majority (82.2%) of workers also reported that they felt that they could get a confidential HIV test and no one would know the results.

Table 156: Possibility of someone getting a HIV test and no one knowing the results by sex

Is it possible for person to get HIV test and no one know the results	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	348	81.9%	78.4%	17	89.5%	3.8%	365	82.2%
No	77	18.1%	17.3%	2	10.5%	0.5%	79	17.8%
Total	**425**	**100.0%**	**95.7%**	**19**	**100.0%**	**4.3%**	**444**	**100.0%**

*Missing 19

In addition, 84.8% reported they would be interested to have a HIV test if OSL offered them voluntary counseling and testing services.

Table 157: Willing to have HIV test if OSL offered VCT services by sex

Table: Willing to have HIV testing if OSL offer VCT services	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	359	84.9%	81.2%	16	84.2%	3.6%	375	84.8%
No	64	15.1%	14.5%	3	15.8%	0.7%	67	15.2%
Total	**423**	**100.0%**	**95.7%**	**19**	**100.0%**	**4.3%**	**442**	**100.0%**

*Missing = 21

In the last 12 months, considerable (29.8%) workers had had a HIV test and of these 93.4% reported receiving their test results back.

Table 158: Ever had HIV test done in the last 12 months by sex

Ever had HIV testing done in the last 12 months, don't want to know the results	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	125	29.2%	28.0%	8	42.1%	1.8%	133	29.8%
No	303	70.8%	67.8%	11	57.9%	2.5%	314	70.2%
Total	**428**	**100.0%**	**95.7%**	**19**	**100.0%**	**4.3%**	**447**	**100.0%**

*Missing = 16

Table 159: Ever received HIV test results by sex

Ever received HIV test results	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	108	93.9%	88.5%	6	85.7%	4.9%	114	93.4%
No	7	6.1%	5.7%	1	14.3%	0.8%	8	6.6%
Total	**115**	**100.0%**	**94.3%**	**7**	**100.0%**	**5.7%**	**122**	**100.0%**

*Missing = 11

As calculated, the UNGASS Indicator 8 indicated that 26.6% of petroleum development workers who received an HIV test in the last 12 months knew their results.[9]

[9] Differences in calculation of percentage of women and men aged <25 and >=25 who were reached with HIV prevention programs for UNGASS Indicator 9 and Table 160, is based on the need for age disaggregation for those who responded to been tested and know their results, eight male workers did not know their age and nine were coded as missing. Out of 463 workers; 364 know their age and can be disaggregated by age; 46 collectively don't know their age and 53 were coded as missing.

Table 160: Number of workers tested and who received their results

Sex disaggregation		Age disaggregation		Total
Female	Male	<25	>=25	
Number of petroleum development workers who have been tested and received their results				
6	91	5	92	97
Number of petroleum development workers interviewed				
17	347	27	337	364
Percentage of petroleum development workers who have been tested and received their results				
35.30%	26.20%	18.50%	27.30%	26.60%

When asked if workers discovered they had HIV, most (43.0%) said they would tell their family.

Table 161: Would disclose their HIV positive status to whom by sex

To whom would HIV status be disclosed	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Family	295	42.9%	40.8%	16	45.7%	2.2%	311	43.0%
OSL management	142	20.6%	19.6%	6	17.1%	0.8%	148	20.5%
Friends	135	19.6%	18.7%	9	25.7%	1.2%	144	19.9%
Fellow workers	116	16.9%	16.0%	4	11.4%	0.6%	120	16.6%
Total	**688**	**100.0%**	**95.2%**	**35**	**100.0%**	**4.8%**	**723**	**100.0%**

*Missing = 137. Percentages based on multiple responses

A fifth (20.5%) said they would tell OSL management, a fifth (19.9%) would tell their friends and the rest (16.6%) said they would tell their co-workers. Of those that answered, most said that they would tell more than just one of these categories of people and some 96 workers said that they would tell their friends, family, other workers and OSL management.

OSL HIV Workplace Policy

Workers were asked if Oil Search had a HIV policy for its workforce; near two-thirds (63.4%) reported that they knew that OSL had an HIV policy, while a third reported that they did not know (26.4%) or said no (10.2%).

Table 162: HIV policy for OSL workforce by sex

HIV policy for OSL workforce	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	271	64.1%	61.6%	8	47.1%	1.8%	279	63.4%
No	44	10.4%	10.0%	1	5.9%	0.2%	45	10.2%
Don't know	108	25.6%	24.6%	8	47.1%	1.8%	116	26.4%
Total	**423**	**100.0%**	**96.1%**	**17**	**100.0%**	**3.9%**	**440**	**100.0%**

*Missing = 23

There were a number of views about OSL's HIV policy:

> OSL is actively carrying out awareness both within and in the communities of the work project areas. There is no policy for employees affected with HIV in plan. If an employee is HIV and AIDS infected, what does OSL do? (Male worker).

> I am a contractor employed under OSL and am not sure that OSL has any HIV policy that applies to contractors as well, otherwise at the moment we have no idea if OSL has HIV policy for its workforce (Male worker).

> I suggest OSL must clearly address employees on the HIV policy. What is the policy for employees working with HIV? (Female worker).

When asked if employees living with HIV should have access to the same benefits as those not infected, three quarters believed that workers living with HIV should have these same rights of access to benefits; however a quarter did not think equal access to benefits should be given to those living with HIV (12.5%), or were unsure and did not know (11.8%).

Table 163: Employees living with HIV should have access to the same benefits as employees who are not infected by HIV by sex

Employees with HIV have the same benefits as those not infected	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	316	74.9%	71.7%	18	94.7%	4.1%	334	75.7%
No	55	13.0%	12.5%	0	0.0%	0.0%	55	12.5%
Don't know	51	12.1%	11.6%	1	5.3%	0.2%	52	11.8%
Total	**422**	**100.0%**	**95.7%**	**19**	**100.0%**	**4.3%**	**441**	**100.0%**

*Missing = 22

Potential for Stigma and Discrimination

Most (83.5%) workers said that they would be willing to work with a person who had HIV infection; while less (16.5%) said they would not be willing to do so, indicating room for stigma and discrimination within the workplace.

Table 164: Willing to work with someone if you knew the person is infected with HIV by sex

Willing to work with someone if you knew the person is infected with HIV	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	358	83.3%	79.9%	16	88.9%	3.6%	374	83.5%
No	72	16.7%	16.1%	2	11.1%	0.4%	74	16.5%
Total	**430**	**100.0%**	**96.0%**	**18**	**100.0%**	**4.0%**	**448**	**100.0%**

*Missing = 15

Less (64.4%) would not be worried to share an office with a PLHIV and over a third said that they would be worried if sharing the same office or workplace. This also indicates a greater degree of potential stigma and discrimination within the workplace for PLHIV if people knew their status.

Table 165: Be worried to share the same office or workplace with PLHIV by sex

Workforce worried by sharing same office or workplace with PLHIV	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	154	36.2%	34.7%	4	21.1%	0.9%	158	35.6%
No	271	63.8%	61.0%	15	78.9%	3.4%	286	64.4%
Total	**425**	**100.0%**	**95.7%**	**19**	**100.0%**	**4.3%**	**444**	**100.0%**

*Missing = 19

Similarly, only 69.3% said that a HIV positive worker should be allowed to continue working, with near a third (30.7%) who thought that a worker should not continue to work at OSL.

Table 166: A HIV positive Oil Search worker should be allowed to continue working by sex

A HIV positive Oil Search worker be allowed to continue working	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	296	68.7%	65.8%	16	84.2%	3.6%	312	69.3%
No	135	31.3%	30.0%	3	15.8%	0.7%	138	30.7%
Total	**431**	**100.0%**	**95.8%**	**19**	**100.0%**	**4.2%**	**450**	**100.0%**

*Missing =13

The table below brings some variables together that highlight a degree of potential for HIV related stigma and discrimination in the community and within the workplace. It is still clear that a large proportion of the workforce would not want people to know if someone in their household had HIV, and around a fifth would not care for their female or male members with AIDS within their households.

A considerable number of workers thought that a HIV positive employee should not continue to work and while most said that they would work with someone HIV positive, a considerable number also said that they would be worried to work within the same office or workplace.

Table 167: Opinions and Attitudes about HIV

Opinions and Attitudes about Transmission	Yes	No
Would you be willing to eat a meal that has been cooked by a person living with HIV or AIDS?	70.7%	28.9%
If a female relative has AIDS would you be willing to care for her in your household?	79.7%	20.3%
If a male relative has AIDS would you be willing to care for him in your household?	81.2%	18.8%
If a member of your family became ill with HIV or AIDS, would you want it to remain a secret?	39.9%	60.1%
If OSL worker has HIV, should he or she be allowed to continue working?	69.3%	30.7%
If you knew that someone you worked with is infected with HIV, would you be willing to work with them?	83.5%	16.5%
If someone you worked with is living with HIV, would you be worried to work in the same office or workplace as them?	35.6%	64.4%

Impact on OSL from HIV

When workers were asked if they thought that HIV and AIDS was likely to have a serious effect on the productivity of the company, most thought that it would have some (28.1%), or a serious effect (41.1%); while near a third thought that HIV and AIDS would have little effect (14.4%), or no effect (16.4%), on the productivity of the company. More female workers than male workers thought that HIV would have some effect or a serious effect on the company's productivity.

Table 168: HIV and AIDS likely to have a serious effect on OSL company productivity by sex

HIV and AIDS likely to have serious effect on company productivity	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Little	63	15.0%	14.4%	0	0.0%	0.0%	63	14.4%
Some	114	27.2%	26.0%	9	47.4%	2.1%	123	28.1%
Serious	172	41.1%	39.3%	8	42.1%	1.8%	180	41.1%
None	70	16.7%	16.0%	2	10.5%	0.5%	72	16.4%
Total	**419**	**100.0%**	**95.7%**	**19**	**100.0%**	**4.3%**	**438**	**100.0%**

*Missing = 25

Most (88.0%) believed that employees should be more concerned about HIV and AIDS.

Table 169: OSL employees should be more concerned about HIV and AIDS by sex

OSL employees should be more concerned about HIV and AIDS	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	378	87.7%	84.0%	18	94.7%	4.0%	396	88.0%
No	40	9.3%	8,9%	1	5.3%	0.2%	41	9.1%
Don't know	13	3.0%	2.9%	0	0.0%	0.0%	13	2.9%
Total	**431**	**100.0%**	**95.8%**	**19**	**100.0%**	**4.2%**	**450**	**100.0%**

*Missing = 13

Policy, HIV and Sexuality

And while most workers (86.8%) thought that the management of OSL was addressing HIV, only a half (51.9%) believed that the company's management would deal fairly and sympathetically with any employees living with HIV and there was much uncertainty (39.5%) not knowing, and less than ten percent (8.6%) reporting that OSL would not deal fairly with employees living with HIV.

Table 170: OSL management addressing HIV by sex

OSL management addressing HIV	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	374	87.4%	83.7%	14	73.7%	3.1%	388	86.8%
No	27	6.3%	6.0%	1	5.3%	0.2%	28	6.3%
Don't know	27	6.3%	6.0%	4	21.1%	0.9%	31	6.9%
Total	**428**	**100.0%**	**95.7%**	**19**	**100.0%**	**4.3%**	**447**	**100.0%**

*Missing = 16

Table 171: Believe OSL management deal fairly and sympathetically with any employees living with HIV by sex

Believe OSL management deal fairly and sympathetically with any employees living with HIV	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
Yes	223	51.6%	49.4%	11	57.9%	2.4%	234	51.9%
No	38	8.8%	8.4%	1	5.3%	0.2%	39	8.6%
Don't know	171	39.6%	37.9%	7	36.8%	1.6%	178	39.5%
Total	**432**	**100.0%**	**95.8%**	**19**	**100.0%**	**4.2%**	**451**	**100.0%**

While not always linked to HIV directly, from a policy perspective, the workforce at OSL expressed in a variety of ways that they would like the OSL management to address sexuality and related policy issues and offered suggestions for consideration:

> I believe staying long period of time is one of the factors that contribute to the increase of sexual desire. I suggest our days on and off must be balanced (Male worker).

> Rotations should be less to allow for time with partners instead of employees looking for sex workers. There should be more awareness of the risks [involved having transactional sex] at the workplace.VCT should be promoted more within the workplace (Female worker).

> The company could provide married accommodation so the employees will settle with their families rather than going around looking for sex. Six weeks

on site is too much to live without sex and the company should look at this situation (Male worker).

Rotational shifts here is too long for someone up here especially married people. They become unfaithful to their partners and this is a concern for me (Female worker).

DISCUSSION WITH RECOMMENDATIONS

In approaching a discussion of such rich and extensive BSS data and to highlight what is most important in response to HIV at OSL, there is a need to focus on some areas that help to understand the potential for HIV transmission and where focus could be made to reduce vulnerability and risk. In this case, such issues include: the concurrency of sex partners from a range of sexual networks and lack of consistency of condom use; drugs and alcohol; sexual practices such as penile foreskin cutting and other modifications; sexual violence; HIV and STI knowledge and STI treatment seeking; and potential for stigma and discrimination within the OSL workforce and surrounding communities. The structure of the workers schedules, their work environments and mobility, impact on workers sexual desires and practices, and their risk of HIV infection. These are areas for focus for more targeted prevention strategies and policy considerations for the workforce of Oil Search Limited.

Concurrency of sexual partners

There were complex patterns of concurrency of sexual partners and marital partner change reported, illustrating the changing nature of marriage and living arrangements over time in the OSL workforce and of the practices of multiple sexual partners that can develop in the context of a mobile workforce that stays on shift for extended periods of time.

Nearly a third, and more men than women, reported that they had married more than once and a third of these had married three or more times; while women tended to remarry less than men. The practice of polygamous marriages, with men marrying more than one wife, is a common cultural practice in the Highlands Region, and within the sample, 14.2% were in polygamous marriages, involving between two to four concurrent wives. Most of those reporting polygamous marriages were in the younger demographic, with younger women and older men reporting being in polygamous marriages. Polygamy is an important consideration in assessing the potential effectiveness of HIV prevention messages, as 'being faithful to one partner' does not fit with the experience of that proportion of the workforce population surveyed who are in polygamous marriages, and also for more that have other concurrent sex partners.

A quarter of workers reported that they had experienced a change in their marital partners, mostly through separation and divorce. The reasons given for divorce and separation included: infertility of a woman; extramarital sex and men taking other wives; and violence. The duration and patterns of working time was identified as a factor in separation and divorce in the survey data. Working away from their marital partners had increased workers sexual desires, and as a consequence they took additional partners, which had led to a breakdown of marriage.

Monogamous, polygamous and multiple marriages are most salient in light of the low condom use across all partner types, but particularly with regular and marital partners where trust was the reason most mentioned for not using a condom. And while trust of their regular and marital partners was given by workers as the most reason they did not use condoms; some workers well aware of the patterns of extramarital sex within the workforce, particularly when being away for long periods of time, and how this effects sexual desires, queried during qualitative interviews the potential for extramarital sex that their partners may be having when they were away for long periods of time. The data also would indicate that there may be a false sense of trust of marital partners for not using a condom with their

spouses, particularly their husbands who were workers, as most had more than one partner in the previous year with inconsistent condom use. A sense of trust may be heightening the risk of transmission between OSL workers and their marital partners, and between them and their other sexual partners.

Detailed accounts of multiple sexual partners, and networks of partners, were present in the qualitative interviews, often linked with the demands of their work schedule. These accounts indicate extramarital sex, and paid or transactional sex. In some cases, this extramarital sex resulted in pregnancies and other obligations. Sometimes extramarital sex partners resulted in polygamous marriages, and sometimes separation and divorce.

The patterns of sexual partners reported are complex, with the relatively high concurrency of sexual partners across partner types, with most workers having additional regular partners, non-regular and transactional partners. Over half of those surveyed said that they had more than one sexual partner in the past year and male workers tended to have greater numbers of multiple sexual partners than female workers.

Three quarters of workers reported that they had had one regular partner and a quarter reported they had had two or more regular partners. All 25 workers who had no regular partners reported multiple non-regular and transactional sex partners, but many of those with one regular partner, also had other non-regular and transactional partners.

More than 40 percent had one or more non-regular partners in the last year. More men than women had non-regular sexual partners in the past year, and men had more non-regular sexual partners and a higher frequency of sex with their non-regular partners in the past year. Of those who had no non-regular partners a few had only one transactional partner while 53 reported having either concurrent regular, concurrent transactional sex partners or concurrent regular and transactional sex partners.

Close to a quarter of the OSL male workforce surveyed who had had sex in the last year, reported having paid for sex either in cash or other goods over the last year. Most of those who paid for sex in the last 12 months also paid for sex in the last three months with one or more transactional sex partners. Six of these 88 men also reported that they had given men money or other gifts for sex in the last three months

While only five percent of male workers who had ever had sex reported that they had had same sex partners at some point in their lives, nearly two fifths of these had same sex partners in the past year. Of these, most were also presently married to a woman. Condom use was half and higher between men during anal sex, but extremely low condom use was reported by women during anal sex between women and men. This is a much needed area of focus about the higher risk of HIV transmission through unprotected anal sex.

The data indicates that workers have concurrent sexual partners from networks of marital, same sex, non-regular and other regular partners, thus a focus in prevention on consistency of condom use with a variety of partners and for different kinds of sex is important.

Condom use

In the survey, there was a higher level of condom use reported with non-regular and particularly transactional sex partners, than with regular partners, and consistency of condom

use across partner types was considerably lower than when asked for condom use at last sex. Condom use at last sex with regular partners in the last year was very low with only a quarter of workers using a condom with their regular partner at last sex, compared to other partner types. The most common reason for not using a condom at last sex with a regular partner was trust, not thinking it was needed, reduction of pleasure, lack of comfort, or not available.

Condom use among the workforce with non-regular partners was higher than condom use with regular partner, with 67.6% reporting having used a condom the last time they had had sex with a non-regular partner. For those who reported not using a condom, trust, lack of availability, reduction of pleasure, being drunk and discomfort were some of the main reasons. When asked how often they had used a condom with a non-regular partner during the last three months, nearly a half reported that they always use a condom. Workers also indicated some degree of agency, with the suggestion to use a condom coming mainly from the workers themselves, and then also from their partners when they mutually agreed. This is very positive and important to build on, as well with transactional sex partners where condoms were used the most.

Three quarters reported that they had used a condom the last time they had transactional sex, and over half of the men who reported that they had transactional sex in the last three months also reported that they always used a condom and this is quite positively high. But a third of workers were inconsistent in using condoms and the rest had not used a condom with their transactional sex partners in the past three months.

Again, men demonstrated their agency, with over half suggesting condom use and most of the rest agreeing with the person they exchanged sex with. There was still considerable trust by the workers with their transactional partner, with a third saying trust was why they had not used a condom at last sex with a transactional partner, while comfort and pleasure were other main reasons for not using a condom.

When workers were asked if they had used a condom at their last sex, irrespective of partner type, only near a third said that they had, but the majority reported that they had not, further highlighting inconsistency of condom use.

The view was expressed that the amount of money could contribute to a lack of thinking about personal risk, or worrying about it for some women who exchanged sex outside the gates of the sites. However many women exchanging sex reported their strategies to ensure condom use and reduce personal risk through examination of their clients for visual signs of STI. Work with this population group is crucial to further support what efforts have been made with these women, for their protection and for that of OSL workers. Through qualitative and social marketing of female and male condoms, opportunities with this population group at different sites may be beneficial for women to earn some additional income from condom sales and to further increase access for workers and other women exchanging sex.

Most OSL workers indicated through their practice and their stories that they understand the importance of using condoms during higher risk sex with non-regular and transactional partners and try to do so as this is part of their life style as mobile workers. Many expressed that they weigh their risks well when considering condom use with different types of partners, in a manner similar to how they consider safety issues in their daily work environment; however, it appears that there could be a considerable false sense of trust when

having numbers of multiple partners across a range of sexual networks and this could be made clearer in a non-judgmental way in prevention responses.

Most OSL workers have been to school and are, in the main, relatively well educated. Perhaps a response with workers that incorporates more scientific information and knowledge about increased risk by % of HIV transmission for different types of sex, and taking into account weighing these risks of HIV transmission when having a range of types of partners across sexual networks and not using condoms consistency. There is also a need to increase workers understanding that condoms not only reduce their risk of HIV but that condoms can actually protect them from HIV, as this was less believed.

Clearly, messages about having only one partner are not the most realistic approach as this does not fit for most of this workforce and may decrease impact of information and prevention strategies around consistent condom use with concurrent partners. It could be important to consider a focus on why workers said that they had not used a condom with different types of partners when considering access, and how condom usage through a variety of socially marketed condoms which have ribs, flavours or other features, such as thin and being like 'skin to skin', could be incorporated to increase concepts of pleasure and satisfaction of desire in safer sex and options available. The comments written at the end of the survey indicate some resistance to condom promotion for religious reasons and the moral linking of condom promotion and use to promiscuity, over against protection from HIV and other sexually transmitted infections for a large proportion of the workforce.

Sexual Violence

Almost 16 percent of male workers said that they had forced a woman to have sex; mostly in the form of individually forcing someone to have sex, and a fifth had forced a woman to have sex in the context of a group. Male to male forced sex was reported to a much lesser degree. Half of the men reported they had not used a condom the last time they had forced a woman to have sex and only a fifth of male workers had not used a condom at last anal sex with a man. No female worker reported that they had ever been forced to have sex in this sample. Sexual violence for both men and women is an important dimension in HIV prevention in the context of PNG, and to increase understanding of the high risk of HIV transmission involved, while reinforcing the law on rape, and the need to improve women's status and their human rights. Gender disparities are embedded in complex socio-cultural worlds but important to discuss and address.

Alcohol and drugs

Nearly three quarters of the workers interviewed reported that they drank alcohol. Among those workers who drank alcohol, there was a high number of drinks taken on a typical day when drinking. OSL workers drank greater quantities of alcohol, and more frequently, during breaks, including during the time transiting. Associations made with transit time are with a place of in-between and with no surveillance after an extended time at work and as a time of release.

While alcohol and drugs are substances that influence people's practices of safe sex, the link between alcohol and drugs and unprotected sex for this workforce was not strongly associated. Only a fifth of the sample had not used a condom when they had been too drunk or stoned, and the assertion that alcohol and drugs significantly reduce condom use, when

compared to condom use with other sex partners, is not well supported by the data. However, links were made in qualitative interviews between drinking alcohol and decreased inhibitions and increased sexual desires and having sex; alcohol and rape; drunkness with violence, threats and phycial abuse, disturbance and destruction of property.

Workers reported that there is a range of different types of drugs being taken, for a number of reasons. Almost a fifth of workers reported having ever taken drugs and a quarter of these reported the use of a range of drugs predominately marijuana, but also ice, cocaine or ecstasy. Three male workers reported that they had injected a drug in the last year that had not been prescribed to them by a doctor. Of those three who reported injecting, one male worker reported using a needle and a syringe that was used by someone else and was not cleaned the last time when he injected drugs, and other men reported penile injections. Certainly information on injecting and use of clean needle and HIV transmission is an important feature of the HIV harm reduction prevention response.

STI treatment and HIV testing

While most workers had heard about sexually transmitted infection, the majority was not well aware of the symptoms of sexually transmitted infections and two fifths did not present for treatment anywhere. While some others abstained from sex and used a condom until the symptoms cleared, allowing for the transmission of the other STI during unprotected sex and increasing risk of HIV infection. STI are a co-factor that increases potential for HIV transmission when both become present during unprotected sex. Self medication can lead to resistance of medications when not prescribed properly. Increasing understanding of the symptoms and that sometimes there are no symptoms for men or women is important for the OSL workforce, as well as the impact of untreated STI on health morbidity, fertility and HIV transmission and impact from self treatment.

Most workers had not had an HIV test in the last 12 months and while most knew where to go, and said they would go if OSL had a VCT, most had not tested in the past year. A majority of the workforce also said that they agreed that it was possible for someone in the community to have an HIV test, and for no one to know the results unless the person wanted them to know, and most felt comfortable to go to an OSL clinic. This is an important opportunity to increase testing for HIV at OSL clinics and for promotion of confidential HIV VCT as a prevention response in knowing one's status, particularly in light of the degree of multiple partners and inconsistent condom use within the workforce.

Penile modification

There is variability of penile modification practices reported in the sample depending on the type of cutting, including circumcision and dorsal slits insertion or injection. Under a third of male workers reported that they had been circumcised with two fifths done in a clinical setting, near a third in the context of initiation and some even more informally and by oneself. A third of the men reported that they had had their penis foreskin slit, and only a fifth done in a clinical setting, and most by friends or relatives.

Inserts and injecting were not very commonly reported with more penile injecting reported than insertions. Only 6.5% reported that they or their partners had penile inserts and half of these men still had inserts at the time of the survey. Penile inserts ranged from pieces of toothbrush, ball bearings, and string, wire, plastic, rubber (plastic rubber) and condom. The

razor blade was the tool most commonly used to cut the skin and for insertions, but cleanliness of the razor in the range of initiation and informal settings is not clear and there is risk of injury and loss of blood when done informally. Among male workers, 34 male workers (7.8%) said that they had injected their penises with a substance to enlarge the penis. Cutting and injections are linked by men to concepts of masculinity and creating pleasure for women. Inserts and injections have health risks and information for men on the health implications of penile cutting in informal contexts and of insertions and injections are important in prevention strategies. Certainly there is an indication of the need to begin HIV prevention within the institution of initiation to ensure that instruments being used are clean and not shared, and to create targeted information for men on safer cutting practices with men in more informal or less ritualized contexts for harm reduction and to promote clinical circumcision at OSL clinics.

Understandings of HIV prevention and transmission

The level of knowledge about HIV transmission was relatively high among the workforce, and most rejected misconceptions on HIV transmission and knew that it was transmitted through unprotected sex. Most agreed that a person can get HIV from injections with a needle that was already used by someone else, and that a person was unable to get HIV from mosquito bites or by sharing a meal with PLHIV. It was also well understood that a pregnant woman who is HIV positive can transmit HIV to her unborn child but less understood that she could transmit the HIV virus during delivery or breast feeding. Four fifths of the sample understood that a person could not contract HIV from sharing a meal with someone living with HIV. Most thought that the best way to give information to the workforce was through talking; providing books and pamphlets; video, posters, drama and internet site, and these may be areas for information dissemination to pursue. The involvement of PLHIV in awareness as an effective approach was more discussed in qualitative interviews.

Stigma and Discrimination

While most workers had considerable knowledge about HIV transmission and prevention, there were still areas where the potential for stigma and discrimination were present. Nearly a third reported not being willing to eat a meal that has been cooked by a person living with HIV or AIDS, indicating an area where the generation of stigma could be associated with refusing to buy or eating food cooked by someone living with AIDS.

A majority understood that a healthy-looking person could have HIV. Many were worried about sharing the same office space, indicating that there are still some belief that HIV can be spread through social contact in community and work contexts and this can create the contexts for stigma and discrimination. Near a third of workers did not think that a HIV positive worker should continue working while more thought that they should receive the same benefits. Engagement of PLHIV in prevention responses and information must be clear not only about how one can get HIV, but also address the ways that one cannot get HIV, to further reduce the potential for stigma and discrimination in the workforce and communities.

Policy and Structure of work environment

Around a third did not know, or were unsure, if OSL had an HIV policy. This indicates a need to promote the existing HIV policy. While a majority of the workforce thought that the management of OSL was addressing HIV, only about a half had the view that the company's

management would deal fairly and sympathetically with any employees living with HIV and most thought that the employees of OSL should be more concerned about HIV.

Working extended periods of time away from 'home' had an impact on marital, family and sex life, and having more than one sex partner was becoming a norm. The duration of time at work was identified as a contributing factor in the number of sexual partners and the need to satisfy sexual desires after extended periods of time. The workforce was vocal in proposing that a reduction of time at work during rotations would have a positive impact on their sexual health and reduce their desires to have extramarital sex. Because of the rule of not having sex on site, and long shifts, many went outside of the gates for transactional sex or had developed sexual networks of a variety of partners when at work, when in transit and on break. A review of OSL policy in relation to sex on site and the pragmatics of a reduction of time when at work would be an important consideration to reduce OSL workers vulnerability and risk of HIV infection.

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APPENDIX 1: COLLABORATION AND ENDORSEMENT BY OSL

OIL SEARCH (PNG) LIMITED

13 June 2008

Dr Holly Aruafu
The National Research Institute
P.O. Box 5854, Boroko, NCD
Papua New Guinea

Re: Sexual Health

Oil Search (PNG) Limited, gives permission to the National Research Institute (NRI) to conduct HIV related socio-behavioral research with its workforce across all of its sites, including employees and contracted workers. Our Health and Medical Service staff have spoken with Oil Search and contractor company management regarding the nature of the survey and all have agreed for their staff to participate. We understand that a random selection of the workforce will be asked to voluntarily complete an anonymous survey form with additional volunteers being asked to be interviewed by NRI surveyors.

The companies Health and Medical Service will support with the logistics during formative research and data collection, and has been involved with NRI in the development of the survey and sampling data collection and compilation. Oil Search understands that this research is being collected by the National Research Institute as part of the 2nd round of national HIV behavioural surveillance in 2008 for the National Department of Health HIV surveillance system.

At the same time the results will be used as a baseline by Oil Search and the ADB Rural Enclaves HIV Prevention Project, in order for the design and development of their ongoing mitigation strategies to HIV and for monitoring and evaluating their responses.

We look forward to working with you on this project.

Phil Caldwell
Oil Search PNG Asset Manager.

Head Office: Level 7, Credit Haus, Cuthbertson Street. Port Moresby.
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The National Research Institute

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OFFICE OF THE DIRECTOR

Our Ref:

Monday, September 15, 2008

National AIDS Council Secretariat
P.O. Box 1345
BOROKO
National Capital District
PNG.

Re: Support Letter for Behavioural Surveillance Research with More at Risk Populations in Rural Economic Enclaves in Papua New Guinea

The National Research Institute supports the HIV Behavioural Surveillance Team to conduct Behavioural Research in collaboration with the National Department of Health Surveillance Division in ADB Rural Economic Enclaves in Papua New Guinea.

I acknowledge and endorse the submission by the NRI HIV Behavioural Surveillance Team to conduct behavioural surveillance in PNG and seek NACS approval.

Sincerely,

Dr Thomas Webster
Director
National Research Institute

DEPARTMENT OF HEALTH
National Health Service Standards Division

P. O. Box 807
WAIGANI
National Capital District, Papua New Guinea

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24/09/2008

National AIDS Council Secretariat
Research Advisory Committee (RAC)
P.O. Box 1345
Boroko
National Capital District
PNG

Re: Support Letter for Behavioural Surveillance Research with more at risk populations in rural economic enclaves in PNG

Attention: Professor Francis W. Hombhanje

The National Research Institute, in collaboration with the National Department of Health, will be conducting behavioural surveillance survey (BSS) research at the two economic enclaves of WR Carpenters and Oil Search Ltd. These enclaves are part of the NDoH/ADB HIV Prevention in Rural Enclaves Project and will serve as both data for the national surveillance system and as baselines for this project.

The National Research Institute signed a memorandum of understanding (MOU) with the National Department of Health in April 2008, and these two enclaves are two of the NHoH priority surveillance sites for the round 2 of Behavioural Surveillance in 2008.

This letter serves as support for the application by the National Research Institute to the RAC for ethical clearance for this surveillance research. The NRI has developed this protocol in collaboration with the NDoH surveillance and has integrated all of the ethical components required in the context of BSS research. As BSS research in the economic enclaves is a pressing priority for this year's round of behavioural surveillance; we greatly appreciate your endorsement and expedient response so that arrangements with these private industries can be maintained.

Sincerely,

for

Dr. Paul Aia
Acting Director Disease Control

cc. Dr. E. Daoni, NDoH; Dr. I. Kitur, NDoH; Dr. Holly Aruwafu, NRI

APPENDIX 2: STANDARD OPERATING PROCEDURES (SOP) FOR INTERVIEWING

The Standard Operating Procedure (SOP) allowed for standardization of approach and interviewing, highlights informed consent and the rights of those being interviewed, while monitoring data management and supervision.

Selecting an interviewing space

The interviewer introduces themselves and leads the respondent to sit in a private corner or table. The respondent is asked to sit in a position where he or she would not be facing other respondents but either facing the interviewer or a wall. The space in which the respondent sits will be private and comfortable.

Ethics Statement, and Introduction to the National Research Institute (NRI) and interviewer (team):

The interviewer introduces themselves once again and reads the introductory ethics statement to the individual participant who has been randomly sampled, before getting his or her consent.

The ethics statement explains the purpose of the NRI interview, the reasons and the benefits of the behavioral surveillance survey being conducted by NRI at the rural enclave, and outlines research ethics including:

- Confidentiality is maintained,
- Voluntary participation of the interviewee and they have the right to refuse to participate or answer any questions,
- The survey is anonymous and names are not written, and
- The benefit of the survey is explained.

Introduction of the Audio Assisted Self-Interviewing (AASI) methodology

Consent:

The consent of the worker at OSL is obtained before interviewing him or her. If she or he consents, the interviewee puts a tick to indicate this on the space allocated for yes. The interviewer then signs in the data management box in front of the survey to validate that the person has given informed consent. The worker knows that they can refuse any questions and leave at any time and end the interview.

Recording the name and signature of the interviewee:

When the interviewee gives consent, the interviewer signs their signature to ensure and validate that informed consent has been given. The interviewee also signs his or her signature or gives a tick or write an ‘x’ on the space provided, the signature validates that the person has given informed consent. The name of the person is not asked or recorded.

Today’s date:
Interviewer to write the date (the day, the month and the year) the questionnaire was filled in.

Illustrating how to use the MP3 player

After getting consent and filling out the date and time, the interviewer explains to the respondent that the survey is a self administered survey using MP3 player. The interviewer demonstrates to the respondent in how to use the MP3 player which includes;

- Starting the MP3 player to begin the interview;
- Pausing or stopping the MP3 player; and
- To forward or rewind the MP3 player to skip to a question or to listen to the question again.

Once this demonstration is complete and the interviewer is confident to begin the interview, the interviewer gives the respondent the MP3 player and an ear piece.

Explaining the different interview methods

The interviewer then explains to the respondent the different types of interview methods available which are:

- Listening to the questions through the MP3 player and filling out the survey. The interviewer explains to the interviewee to play the MP3 player and listen to the recorded questions using headphones and fill in the survey questionnaire as they go along. From the MP3 player, the questions were read, section by section, in numerical order The questions were in Pidgin and English and were selected by the workers preference in terms of their understanding. Each question was read slow enough for the workers to understand, follow through and write their answer. The workers followed through with the numbered questions, while listening to the MP3 player and then mark their response on the questionnaire. Where the respondent is instructed to skip a question(s), they are required to listen patiently to all the other questions as they are read in sequence till the question they are required to answer is read. Then the question is answered and the respondent proceeds as instructed. If workers had busy schedule they were individually given survey questionnaires with MP3 players and were filled in by themselves within their own comfortable time and space that is done within their room or office.
- Reading the survey without the assistance of the MP3 player and filling out the survey.
- Conducting a face to face interview with an interviewee. Workers that have literacy issues are encouraged to sit for a face to face interview with interviewers.

Time of Interview:

The interviewer writes down the time the interview begins and the time that it ends on the space allocated for time.

Participant and Data Management Codes:

For the questionnaire number, write the first three letters of the name of the enclave site followed by a three digit number beginning with 001. As the name of the enclave is Oil Search Ltd then write OSL followed by the three digit numbers 001. The Participant Code and the questionnaire number will then be OSL-001.

Supervising staff will sign the completed questionnaires when they receive them from the interviewers at OSL when the questionnaires are gathered and reviewed daily, with spot checks to ensure consent is being obtained, as well as incentives being given correctly. There is a box for a data check to be done by the supervisor, data manager or other research staff which indicates who reviewed the data after each day of collection to monitor missing data, and monitor how the surveys are being completed. Information communicated to the team about the analysis of the questionnaires during daily data check will help to improve data collection. The Data Manager and Data entry staff will complete the codes for data management section during data verification and entry.

Introductions, to be used by interviewers, at each section of the Questionnaires

For OSL, the statement before each section is read every time for each participant inside the audio recording. These sections include: Section1: Background characteristics; Section 2: Marriage and Common-law living in partners; Section 3: Alcohol and Drugs; Section 4: Sexual History; Section 5: Sexual Partners: Regular partners; Section 6: Non-Regular Partners; Section 7: Paid Sexual Partners; Section 8: Sexual Practices; Section 9: Male and Female Condoms; Section 10: STIs; Section 11: Knowledge, opinions and attitudes; Section 12: Exposure to project interventions; and Section 13: Work place.

Information about skip patterns is noted throughout the interview where necessary for the interviewer who has been trained to follow these to minimize missing data and error.

Conclusion

After the interview is complete, thank the participant for his or her time, participation and cooperation. Surveys are kept in a covered clipboard or stored and given to those supervising data management.

APPENDIX 3: DATA MANAGEMENT, MONITORING AND SECURITY

There were several layers of monitoring to ensure that the survey was being conducted and informed consent was obtained according to the approved protocol and ethics statement. Co-Principal investigators were on-site daily throughout data collection and responsible for close monitoring of survey data collection and signed as Research Supervisors. They ensured adherence to survey protocols and sampling procedures, the maintenance of ethical standards, ensured completion of consent and questionnaires and other data management matters. The Co-Principal Investigators debriefed as a team with casual staff, and provided daily feedback to the Principal Investigator, who was in the field with the teams for much of the data collection period.

When the questionnaire is completed, a few areas are filled in by the fulltime team for data management and ethical quality assurance, including a supervisor's signature ensures that the front page is complete and that a field check has been done on the survey questionnaire.

How to store, manage, and secure the OSL data and forms

- At both sites, the NRI Research Officers were responsible for the forms during the daily interviews and transferred the completed forms to the data manager or other senior research officer at the end of the day for reasons of security and confidentiality.
- All completed forms and questionnaires were then locked in a patrol box and put safely away in the room of the field supervisor or senior research officer in OSL.
- The Data Manager (SRO) came to the field during the first week of data collection to review questions with staff.
- After leaving OSL, the principal and co-investigators were responsible for checking completed surveys and locking them in the patrol box before transferring them to NRI.

The surveys when received at NRI from the survey sites were counted to ensure that the same number from the field has been received. The senior research officer (Data Manager) signed as the recipient per the date received on the front of each survey when they arrived at NRI and for those last surveys that were self administered and sent to NRI from OSL.

- The surveys were locked in a cabinet to avoid losses and to ensure confidentiality and ethics. The surveys are kept in a secured office at all times that has an alarm system. Access to the database files is limited and files password coded. Open files were the ones the data entry staff were working on. Security passwords were created to limit access to files where data entry has been completed and verified.

- Data was backed up on a separate hard or flash drives by data entry staff to avoid any data losses and this was supervised by the Data Manager. Daily backed up electronic data is secured in a fireproof safe at the alarmed BSS office at NRI. Computers used for data entry are not connected to any existing network and are not to be used for any purposes other than data entry and verification.

Data Entry for the OSL data into a computer database

The SPSS software was installed in three computers for the data entry operation. The creation of OSL databases was done using the SPSS database software

The completed survey forms were entered directly into the SPSS data entry application. This was entered by three casual data entry staff with assistance from the data manager and a code book. The SPSS software allowed the casual data entry staff to enter the data that will be ticked or coded during the data verification stage.

Most variables were entered in numbers. For example, for the variable of "Sex", the males will be coded as "1", and females as "2".

A different data entry staff did a double check of the survey data entered by other data entry staff once it was entered for typing errors, missing values, or out of range values by verifying frequency counts for each variable among all samples, and a systematic check of data quality after the first 100 to assess if double entry is required.

For qualitative data, the digital interviews were downloaded on a daily basis and backed onto a flash drive that was locked during transcription. Transcribed interviews were then coded and then entered and managed in a qualitative software package called QSR NVivo, and folders were password coded.

How to analyze and use the data

The SPSS data outputs were analyzed by the NRI BSS team. A data analysis plan including blank tables was designed and the SRO and team assisted in conducting the print out of data outputs for analyses – frequencies, univariate and multivariate analyses. Specific indicators for UNGASS are analyzed. Further analyzes such as Chi-Square and correlation statistics to be done for variables of interest and significance, with multivariate analyses conducted across selected variables.

The transcribed interviews were analyzed using output from the QSR NVivo software package and by going b to the original transcripts to substantiate around the selected quotes.

APPENDIX 4: SAMPLE SIZE CALCULATIONS

Sample Size Calculations

A probability sample size of 460 was calculated for the OSL workforce across seven sites clustered in the Southern Highlands and Gulf provinces. Those surveyed were randomly selected by types of work and by male and female gender, proportional to the overall workforce and gender distribution at each site outside of the Port Moresby office sites.

Overall sample sizes for each BSS site included in this survey were calculated on the basis of factors typically used in surveys with probability samples. The expected baseline value of key indicator used in the sample size computations was condom use at last sex across all partner types, with a magnitude of 15% change desired; and to be able to detect a 95% Confidence level with an 80% statistical power; and design effect of 2. A multiplier of 1.25 was used, as the core indicator was not applicable to all workers as a proportion may not have had sex. From previous BSS, this is usually much less than 20% in workforce samples at private industries.

The following formula was used to determine the sample size for target groups for the BSS:
Formula for calculating the required sample size for a given sub-population (n):

$$n = D \frac{\left[Z_{1-\alpha}\sqrt{2P(1-P)} + Z_{1-\beta}\sqrt{P_1(1-P_1) + P_2(1-P_2)} \right]^2}{(P_2 - P_1)^2}$$

Where:

D = 2		design effect;
P_1 = .50		50% consistent condom use at last sex across all partner types
P_2= .65		65% consistent condom use at last sex across all partner types
P =		$(P_1 + P_2) / 2$;
$Z_{1-\alpha}$= 1.645		the z-score corresponding to desired level of significance
$Z_{1-\beta}$=1.282		The z-score corresponding to the desired level of power

The size is calculated with having 95% significance, with 90% confidence of detecting a 15 percentage point increases from P_1 to P_2. The following values of the indices apply:
D = 2 Design effect is conservative and gives more robustness to the sample.
P_1 = .50 outcome of key behaviours and this is the estimated proportion at the time of the first survey. In this instance is condom use at last sex across types of partners. The actual proportion being used in calculations is conservative at 50% and most available data indicates that this indicator would be significantly less. After data collection, this calculation can be adjusted with the proportion determined by the survey for trend collection.
P_2 = .65 (the proportion at some future date, such that the quantity (P2 - P1) is the size of the magnitude of change you want to be able to detect in the target proportion at some future date, so that **$(P_2 - P_1)$** is the magnitude of change you want to be able to detect in the indicator being tracked the future. P_2 is a change of 15% in condom use at last sex across types of partners
$P = (P_1 + P_2) / 2$

Alpha Z1-α = the z-score corresponding to the probability with which it is desired to be able to conclude that an observed change of size (P2 - P1) would not have occurred by chance; $Z_{1-\alpha} = 1.645$ the z-score corresponding to desired level of significance

Beta Z1-β = the z-score corresponding to the degree of confidence with which it is desired to be certain of detecting a change of size (P2 - P1) if one actually occurred; $Z_{1-\beta} = 1.282$ the z-score corresponding to the desired level of power

$$n = D\frac{\left[Z_{1-\alpha}\sqrt{2P(1-P)} + Z_{1-\beta}\sqrt{P_1(1-P_1) + P_2(1-P_2)} \right]^2}{(P_2-P_1)^2}$$

$$n = 2\frac{\left[1.645\sqrt{2(0.575)(0.425)} + 1.282\sqrt{50(1-0.5) + 0.65(1-0.65)} \right]^2}{(0.0225)}$$

$$n = 2\frac{\left[1.645\sqrt{0.48875} + 1.282\sqrt{0.477} \right]^2}{(0.0225)}$$

$$n = 2\frac{\left[1.1500301 + 0.887879625 \right]^2}{(0.0225)}$$

$$n = 2\frac{\left[2.037909725 \right]^2}{(0.0225)}$$

$$n = 2\frac{\left[4.151076047 \right]}{(0.0225)}$$

$$n = 2\,[184.58] \quad n = 369$$

There was a need to apply a multiplier to correct for the fact that the core indicator will not be applicable to all workers as a proportion may not have had sex. While data from previous BSS indicates that this is much less than 20% in workforce samples, conservatively the multiplier was based on an arbitrary .80 for a multiplier of 1.25 (1.) / 0.8. Based on multiplier calculations, the required representative sample size of the OSL workforce was **n = (369*1.25) = 460 workers**.

APPENDIX 5: ADDITIONAL TABLES

Table 172: Age at last birthday by sex

Age at last birthday	Male			Female			Total	
	n	% within sex	%	n	% within sex	%	n	%
16	1	0.3%	0.2%	0	0.0%	0.0%	1	0.2%
17	1	0.3%	0.2%	1	5.6%	0.2%	2	0.5%
19	1	0.3%	0.2%	0	0.0%	0.0%	1	0.2%
20	2	0.5%	0.5%	0	0.0%	0.0%	2	0.5%
21	5	1.3%	1.2%	1	5.6%	0.2%	6	1.5%
22	4	1.0%	1.0%	0	0.0%	0.0%	4	1.0%
23	2	0.5%	0.5%	0	0.0%	0.0%	2	0.5%
24	9	2.3%	2.2%	0	0.0%	0.0%	9	2.2%
25	17	4.3%	4.1%	3	16.7%	0.7%	20	4.9%
26	14	3.6%	3.4%	1	5.6%	0.2%	15	3.7%
27	16	4.1%	3.9%	1	5.6%	0.2%	17	4.1%
28	17	4.3%	4.1%	0	0.0%	0.0%	17	4.1%
29	17	4.3%	4.1%	0	0.0%	0.0%	17	4.1%
30	16	4.1%	3.9%	1	5.6%	0.2%	17	4.1%
31	5	1.3%	1.2%	2	11.1%	0.5%	7	1.7%
32	24	6.1%	5.9%	1	5.6%	0.2%	25	6.1%
33	7	1.8%	1.7%	2	11.1%	0.5%	9	2.2%
34	17	4.3%	4.1%	0	0.0%	0.0%	17	4.1%
35	13	3.3%	3.2%	1	5.6%	0.2%	14	3.4%
36	13	3.3%	3.2%	0	0.0%	0.0%	13	3.2%
37	9	2.3%	2.2%	1	5.6%	0.2%	10	2.4%
38	16	4.1%	3.9%	0	0.0%	0.0%	16	3.9%
39	16	4.1%	3.9%	0	0.0%	0.0%	16	3.9%
40	13	3.3%	3.2%	0	0.0%	0.0%	13	3.2%
41	3	0.8%	0.7%	1	5.6%	0.2%	4	1.0%
42	18	4.6%	4.4%	0	0.0%	0.0%	18	4.4%
43	11	2.8%	2.7%	0	0.0%	0.0%	11	2.7%
44	5	1.3%	1.2%	0	0.0%	0.0%	5	1.2%
45	10	2.6%	2.4%	0	0.0%	0.0%	10	2.4%
46	6	1.5%	1.5%	0	0.0%	0.0%	6	1.5%
47	5	1.3%	1.2%	1	5.6%	0.2%	6	1.5%
48	4	1.0%	1.0%	0	0.0%	0.0%	4	1.0%
49	2	0.5%	0.5%	0	0.0%	0.0%	2	0.5%
50	9	2.3%	2.2%	0	0.0%	0.0%	9	2.2%
52	1	0.3%	0.2%	0	0.0%	0.0%	1	0.2%
54	6	1.5%	1.5%	0	0.0%	0.0%	6	1.5%
55	2	0.5%	0.5%	0	0.0%	0.0%	2	0.5%
56	3	0.8%	0.7%	0	0.0%	0.0%	3	0.7%
57	2	0.5%	0.5%	0	0.0%	0.0%	2	0.5%
60	1	0.3%	0.2%	0	0.0%	0.0%	1	0.2%
66	2	0.5%	0.5%	0	0.0%	0.0%	2	0.5%
79	1	0.3%	0.2%	0	0.0%	0.0%	1	0.2%
82	1	0.3%	0.2%	0	0.0%	0.0%	1	0.2%
Don't know	45	11.5%	11.0%	1	5.6%	0.2%	46	11.2%
Total	**392**	**100.0%**	**95.6%**	**18**	**100.0%**	**4.4%**	**410**	**100.0%**

* Missing = 53

Table 173: Age at first sexual intercourse by sex

Age at first sexual intercourse	Sex				Total		
	Male		Female				
	n	%	n	%	n	%	Cum. %
10	2	0.5%	0	0.0%	2	0.5%	0.5%
11	1	0.2%	0	0.0%	1	0.2%	0.7%
12	5	1.1%	0	0.0%	5	1.1%	1.8%
13	3	0.7%	0	0.0%	3	0.7%	2.5%
14	4	0.9%	0	0.0%	4	0.9%	3.4%
15	20	4.5%	1	0.2%	21	4.8%	8.2%
16	45	10.2%	1	0.2%	46	10.4%	18.6%
17	38	8.6%	1	0.2%	39	8.8%	27.4%
18	61	13.8%	2	0.5%	63	14.3%	41.7%
19	40	9.1%	1	0.2%	41	9.3%	51.0%
20	46	10.4%	3	0.7%	49	11.1%	62.1%
21	32	7.3%	1	0.2%	33	7.5%	69.4%
22	15	3.4%	3	0.7%	18	4.1%	73.5%
23	7	1.6%	0	0.0%	7	1.6%	75.1%
24	9	2.0%	1	0.2%	10	2.3%	77.3%
25	8	1.8%	0	0.0%	8	1.8%	79.1%
26	7	1.6%	0	0.0%	7	1.6%	80.7%
27	3	0.7%	0	0.0%	3	0.7%	81.4%
28	4	0.9%	0	0.0%	4	0.9%	82.3%
30	1	0.2%	0	0.0%	1	0.2%	82.5%
32	3	0.7%	0	0.0%	3	0.7%	83.2%
34	2	0.5%	0	0.0%	2	0.5%	83.7%
35	2	0.5%	0	0.0%	2	0.5%	84.1%
43	1	0.2%	0	0.0%	1	0.2%	84.4%
Don't know	67	15.2%	1	0.2%	68	15.4%	100.0%
Total	**426**	**96.6%**	**15**	**3.4%**	**441**	**100.0%**	

* Missing = 11 **11 did not have sex