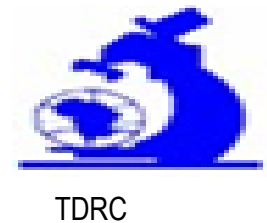


# INTEGRATED BIOLOGICAL AND BEHAVIOURAL SURVEILLANCE SURVEY AMONG FEMALE SEX WORKERS IN ZAMBIA, 2015

**BEHAVIOURAL SURVEILLANCE SURVEY AMONG MALE LONG  
DISTANCE TRUCK DRIVERS, 2015  
AND COMPARISON WITH 2009 BSS**

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**INTEGRATED BIOLOGICAL AND BEHAVIOURAL SURVEILLANCE SURVEY  
ZAMBIA, 2015**

**FEMALE SEX WORKERS AND MALE LONG DISTANCE TRUCK  
DRIVERS IN FIVE CORRIDORS OF HOPE III PROJECT DISTRICT  
SITES, 2015**

**Integrated Biological and Behavioural Surveillance Survey (IBBSS) among Female Sex Workers and Behavioural Surveillance Survey (BSS) among Male Long Distance Truck Drivers in Five Corridors of Hope Project District Sites in Zambia, 2015.**

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The 2015 Bio-BSS used a framework of second generation HIV surveillance, surveyed subgroups in which HIV infection is most likely to be concentrated. Female sex workers (FSWs) and long distance truck drivers (LDTDs) were the target for IBSS and BSS respectively. These populations are easily missed or overshadowed in household surveys. They are unlikely to be sampled in sufficient numbers to yield statistically significant information about HIV .

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## LIST OF ABBREVIATIONS AND ACRONYMS

AIDS	Acquired Immunodeficiency Syndrome
ART	Anti-Retroviral Therapy
BSS	Behavioural Surveillance Survey
BBS	Biologic and Behavioural Survey
IBBS	Integrated Biologic and Behavioural Surveillance
cART	Combined Antiretroviral Therapy
COH	Corridors of Hope
FSW	Female Sex Worker
FHI	Family Health International
GRZ	Government of the Republic of Zambia
HIV	Human immunodeficiency virus
IRB	Institutional Review Board
LDTD	Long Distance Truck Driver (male)
MOH	Ministry of Health
MCDMCH	Ministry of Community Development Mother and Child Health
NAC	National HIV/AIDS/STI/TB Council
PHSC	Protection of Human Subjects Committee
PI	Principal Investigator
PCR	Polymerase Chain Reaction
RPR	Rapid Plasma Reagin Test
STI	Sexually Transmitted Infections
TDRC	Tropical Diseases Research Centre
USAID	United States Agency for International Development
ZDHS	Zambia Demographic Health Survey
EDTA	Ethylene Diamine Tetracetic Acid

## EXECUTIVE SUMMARY BBSS 2015

### 1. 0 INTRODUCTION

Zambia has one of the highest HIV burdens in Sub-Saharan Africa with HIV prevalence in adult population (women and men aged 15-49 years) estimated at 13 percent. However, HIV prevalence is higher among females at 15 percent than males at 11 percent. Heterosexual contact is the predominant mode of HIV transmission in Zambia and Female Sex Workers (FSWs) play a significant role in the HIV/AIDS epidemic.

To monitor and assess the progress of the prevention interventions provided to female sex workers and their male clients mainly the long distance truck drivers, repeated rounds of cross-sectional behavioural and STI prevalence surveys (Behavioural and Biologic Surveillance Survey - BBSS) have been conducted: The following have been previous rounds of surveys:

2000: FSW (both behavioural and biologic) and LDTD (only behavioural)

2003: FSW (both behavioural and biologic) and LDTD, uniformed personnel and minibus drivers (only behavioural)

2005: FSW (both behavioural and biologic), LDTD, bus drivers and uniformed personnel (only behavioural) in Ndola only.

2006: FSW and LDTDs behavioural only

2009 FSW and LDTDs behavioural only

The Corridors of Hope III/FHI360 with funding from USAID/PEPFAR implemented (September 2009-October 2015) a comprehensive HIV prevention strategy in 10 border and transit selected districts in Zambia to reduce sexual transmission of HIV among most at risk populations including FSWs and their clients residing in or passing through border towns. The strategies included HIV testing and counselling, behaviour change through outreach and peer education, improved management of STIs, social marketing of condoms and family planning. The 2015 integrated Bio-Behavioural Surveillance Survey (IBBSS) among FSWs and Behavioural Surveillance Survey (BSS) among LDTDs were carried out to measure the outcomes of these prevention interventions efforts among FSWs and LDTDs.

### OBJECTIVES

The primary objective of the study was to measure and examine the outcomes of existing HIV prevention interventions through a cross-sectional assessment change in risk sexual health behaviours among FSWs and LDTDs and assess HIV and syphilis prevalence among FSWs.

### STUDY DESIGN

Using a cross-sectional survey design, the BBSS among FSWs and BSS among LDTDs —now referred to as Integrated Bio-Behavioural Surveillance Survey (IBBSS)—was conducted in five districts of Zambia namely Ndola, Solwezi, Chirundu, Kapiri Mposhi and Livingstone/Kazungula. All except Ndola were COHIII project implementation sites. The population covered were FSWs and LDTDs aged 18 years and above. However, FSWs aged below 18 years were recruited if they self-confessed to be sex workers. Behavioural data was obtained through face-to-face interview with consenting participant FSWs and LDTDs using a structured questionnaire. Blood and self-collected vaginal swabs were collected and tested at site and at TDRC for HIV, syphilis and *Trichomonas vaginalis*. Specimens for *Neisseria gonorrhoea* and *Chlamydia trachomatis* infections were collected and stored at TDRC for testing later. Data collection was conducted for a period of four weeks between 18<sup>th</sup> August and 19<sup>th</sup>

September 2015. The TDRC Ethics committee and the FHI 360 Protection of Human Subjects Committee (PHSC) approved the survey protocol and data collection instruments.

## SURVEY END POINTS

Primary endpoints/outcomes for FSWs were change in risk sexual behaviors such as proportion of FSWs using condoms at last sex encounter and consistent condom use with different types of clients; proportion ever tested and know their HIV status; and, prevalence of HIV, Syphilis and *T. vaginalis* infection. Among LDTDs the survey endpoints were proportion with more than one sexual partner and condom use with different sexual partners; proportion ever tested and know their HIV status.

Secondary Endpoints/Outcomes: Proportion of FSWs and male LDTDs reached through COH III services; HIV incidence estimates; proportion of confirmed HIV-positives among FSWs whose infection is recent by subjecting HIV test results to an Incidence test to identify recent infection.

## 2.0 METHOD

### A. TARGET GROUPS AND SITES

The targets for the BBSS were FSWs and BSS was LDTDs. The study was conducted in Ndola, Solwezi, Kapiri Mposhi, Chirundu, and Livingstone/Kazungula, A mapping exercise was conducted prior to data collection to determine the exact location where the FSWs and LDTDs could be found and estimate size of their population.

### B. SAMPLE SIZES

The sample size was calculated with primary objective of measuring changes in selected behavioural indicators over time. These indicators were measured as proportions. For each target group, there were assumptions on the key indicator, an initial or baseline value of the key indicator, magnitude of change required to be detected, level of significance/precision, power to observe change if it occurred and the assumed design effect. The percentage of the population of interest that was eligible for consideration for indicator was estimated

Overview of Survey Sites and Target Sample Sizes for FSWs and LDTDs

#	Site	Province	Target Sample Size for FSWs	Actual FSWs sampled	Target Sample Size for LDTDs	Actual LDTDs sampled
1	Chirundu	Southern	94	193	504	151
2	Kapiri Mposhi	Central	220	123	252	503
3	Livingstone	Southern	264	325	336	155
4	Ndola	Copperbelt	262	268	140	289
5	Solwezi	North-Western	210	280	168	175
6	Chililabombwe	Copperbelt	-	-	-	133
	<b>Total</b>		<b>1050</b>	<b>1,189</b>	<b>1400</b>	<b>1406</b>

### C. SAMPLE DESIGN

A cluster-based design was used to sample each target group. Mapping was done to identify cluster units, such as nightclubs, bars and truck stops, for each of these target groups. The

survey used time-location approach<sup>1</sup> to recruit the FSWs and the LDTDs into the survey. All time-location clusters were listed, and the number of individuals was noted for each cluster, where available. Clusters were then randomly selected from the list, and members of each selected cluster were interviewed until the target sample size was reached for that group (FSW were recruited between 20.00hrs and 23.00hrs, those refusing or preferring interview in the morning were followed). All target group 'take- all' members were asked to participate in the survey due to the limited number of persons in the target groups in the sites.

#### D. DATA COLLECTION

The B/BSS questionnaire averaged 35-45 minutes and included questions on demographic information, perceptions of peer behaviour, STI treatment-seeking behaviour, number and types of sex partners, condom use, and exposure to COH interventions. All questionnaires were pre-tested. The 2015 behavioural component and biologic BSS was based on the same semi-structured behavioural questionnaires of previous years with additions of a few new questions such as those addressing stigma and male circumcision.

Trained staff in data collection administered the questionnaire to consenting participants at their place of work at nightclubs, bars and truck stops. Following completion of the behavioural questionnaire, FSWs were referred to and consented separately for the STI biologic component, which included collection of blood specimens for HIV and syphilis (rapid and confirmatory tests), self-administered swabs for gonorrhoea, chlamydia (using PCR technique) and Trichomoniasis (using *In-Pouch* cultures and wet-mount). They were then given appointment to report in the morning for post-test counselling and results at a designated government ART facility (in Livingstone included NGO ART facility-CRESO). Those who tested HIV positive were referred to ART clinic and those with syphilis or other STIs were referred for treatment. The completed questionnaires for FSWs and LDTDs and biologic results were transported from the field to Tropical Diseases Research Centre (TDRC) in Ndola for data entry. At TDRC, laboratory HIV incidence test was done using Lag Avidity assay to assess newly acquired HIV infection. HIV test using rapid screening and confirmatory test, qualitative syphilis test and *In-Pouch* cultures were examined at the sites. All specimens were taken to TDRC for re-testing and confirmation.

#### E. DATA PROCESSING AND ANALYSIS

Epi Info 6, R statistical and computing software and SPSS software were used for data entry and analysis, respectively. The biological data was later merged and linked with the behavioural data at TDRC. Descriptive statistics for key behavioural and socio-demographic characteristics were calculated using frequencies, means and medians for each site and for the total sample. Chi-square tests were used to compare proportions between sites and variables. In addition, multivariate and logistic regression analysis was used to determine the magnitude of associations (odds ratio, 95% confidence interval) between variables of interest, controlling for sexual behaviours and socio-demographic characteristics. A result yielding a p-value less than 5 per cent was considered statistically significant.

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<sup>1</sup> Behavioral Surveillance Surveys, Guidelines for Repeated Behavioral Surveys in Population at Risk of HIV, published by FHI 2000.



### 3.0 RESULTS

#### SOCIO-DEMOGRAPHIC CHARACTERISTICS

##### 3.0 FEMALE SEX WORKERS

Data was collected from 1,189 FSW and 1,113 (94%) were tested for HIV and syphilis.

**Age:** The overall median age for FSWs was 26 years, 41% fell in age group 14-24 while 42% were in age group 25-34 years. The age distribution differed by HIV status. The FSWs who tested HIV-positive were older than those with HIV-negative test results: median 28 years vs 23 years ( $p < 0.001$ ).

**Education:** The median number of years completed in school was 9 years, 62% attained secondary education while 0.5% reported higher than secondary education.

**Alcohol:** About 43% of FSWs reported daily alcohol consumption.

**Sexual partners:** About 47% of FSWs reported having had five or more different sex partners with nearly 9% reporting 10-14 sex partners in last 7 days.

**Condom use at last sexual intercourse:** About 44% FSWs used a condom with a non-paying partner, 78% used a condom with a paying client. About 82% said that they suggested condom use to their partners during last sex. About 94% had heard about female condom and 22% have ever used it.

**STDs:** About 19% and 18% of FSWs reported history of genital discharge and genital sores respectively in the last 12 months. About 94% said they cannot have sex with a partner who indicates had a STD.

**HIV test:** about 95% of FSWs reported having ever taken a HIV test, 68% tested within the past year and 98% received test results. About 97% have ever heard of antiretroviral therapy (ART).

**Perceptions, Knowledge and Stigmatizing attitudes:** About 35% did not think the chances of acquiring HIV were great. About 23% thought that a person can get HIV from mosquito bite, 16% thought a person cannot be protected by abstaining from sexual intercourse, 18% said a person cannot be protected by having one uninfected sex partner while 83% felt if a family member of the family became ill with HIV, they would want it to remain a secret.

**COH III project:** About 75% of FSWs had heard of the COHIII project and 45% had received STDs services several times from the project.

##### HIV and Syphilis Prevalence and HIV incidence

**HIV Prevalence:** 1,113 representing 94% who completed behavioural questionnaire were tested and counselled for HIV using standard national algorithms and had a syphilis test conducted. The samples that tested HIV positive were subjected to incidence test using the LAG Avidity assay to established infections acquired within 118-142 days.

The overall HIV prevalence was 56.4% among FSWs ranging from 46% among FSWs tested in Livingstone to 73% tested in Chirundu. HIV positives were older than HIV negative FSWs, 28 years' vs 23 years ( $p<0.001$ ). There were more HIV positive FSWs who reported taking alcohol on daily basis than HIV negative FSWs, 45% vs 40% ( $p<0.001$ ). FSWs with history of genital discharge had a high HIV prevalence than HIV negative, 23% vs 12% ( $p<0.001$ ). Similarly, the prevalence of HIV was higher in FSWs with previous history of genital ulcer than those without history: 24% vs 13% ( $P<0.001$ ).

Recent HIV infection based on Lag Avidity assay: 51.4% had long-term HIV infection, 3.2% had infection suggestive of elite controller or being on ART, 1.6% were found to have recent infection (118-142 days period).

**Syphilis Prevalence:** The overall syphilis prevalence was 21%, ranging from 18% in Chirundu and Livingstone to 29.9% in Ndola. Syphilis infection was higher among FSWs with primary education than with secondary, 25% vs 20% ( $p<0.001$ ). Syphilis positive FSWs were older than syphilis negative FSWs, 30% vs 10%, ( $p<0.001$ ),

**Trichomonas vaginalis Prevalence:** The prevalence of *Trichomonas vaginalis* among FSWs was 9% with a range from 7% to 10%. The prevalence was highest among FSW in Chirundu (15%) and lowest in Solwezi (4%).

### 3.2 LONG DISTANCE TRUCK DRIVERS

**Social Demographic Characteristics:** The mean age of LDTDs was 38 years, 59% were below 40 years. The mean years in school was 10.7 years, 85% had secondary or higher education level.

**Country and Time:** Almost a third (31%) of truckers interviewed had Zimbabwe as country of origin. Nearly a third (30%) were at the border for three or more days, 76% had been away for a month continuously in the past 12 months. Over a third (35%) had made over six trips crossing borders in the past 3 months while 48% said last time were at the border they had stayed for two or more days.

**Behaviour:** About 15% consumed alcohol daily in last 4 weeks. About 33% had three or more female sexual partners in the last 12 months including wives. About 30% had sex with at least one girl friend while 9% had sex with two or more girlfriends in the last 12 months. About 23% had sex with two or more FSWs in the last 12 months while 8% had at least one sex partner. About 6% said they had sex with one or more casual sex partner who were not a girlfriend nor a FSW.

**Condom use at last sex:** About 7% used condom with the wife, 63% with a living in partner, 63% with girlfriend/Regular sex partner, 86% used condom at last sex with FSW, 77% used condom with a non-regular (casual) partner. Seventy per cent of drivers had at least one condom, 44% had more than four condoms at time of interview.

**Reasons for not using condom:** the top 6 reasons were; 37% said they did not find it necessary, 29% did not think partner would have a disease, 22% said a condom was not available, 19% felt condom would reduce pleasure and 19% said they did not think of it at time of sex while 13% said partner objected.

**Female condom:** about 86% have ever heard about a female condom, 11% had ever used it, 55% knew where to get a female condom with 62% preferring pharmacies as most comfortable place where to buy a female condom while 18% felt bars, guest houses as most comfortable places to get or buy a female condom.

**STDs:** About 97% have heard of diseases passed through sexual intercourse, 67% know genital discharge, 33% know burning pain, 58% know genital sores and 30% know swelling in the groin as symptoms and signs of STDs in men. About 25% know abdominal pain, 43% genital discharge, 23% foul smelling, 19% burning pain, 38% genital ulcers, 16% groin swelling and 22% genital itching as symptoms and signs of STDs in women.

About 13% of drivers had history of genital discharge, 8% of genital ulcer and 16% of either genital discharge and or genital ulcer in the last 12 months.

**HIV:** Almost all (99%) have head of HIV and 75% know someone with HIV or AIDS. Incomplete knowledge still exists; about 11% think you can get HIV from mosquito bites, 14% from sharing meals. Only 61% thought infection could be transmitted from mother to baby, 75% said through breast-feeding and 95% that you could be infected through sharing of an infected needle.

There was also incomplete knowledge on other prevention variables and stigmatizing attitude: 12% did not think being faithful to one uninfected partner and 11% by abstaining protects you. About 39% felt that if a family member is infected it should remain a secret.

About 84% of truck drivers have ever tested for HIV and 87% of them within last 2 years and almost all (99%) received their HIV results and counselling.

**Circumcision and COH project:** About 39% of the male drivers were circumcised and 26% have ever talked to staff of the Corridors of Hope III project.

#### **4.0 CONCLUSION AND RECOMMENDATION**

Women are entering sex trade and get out of school system early. This appear to be true given that 40% of FSWs are aged below 25 and the median for education is the 9<sup>th</sup> grade. They are infected early with HIV and other STIs and this become apparent, as they grow older in the sex work profession. Syphilis prevalence was higher among those with primary education compared to those with secondary level of education while HIV prevalence was higher among older FSWs. More years spent in school would help reduce risk behaviour. Deliberate policy is needed to retain the young girls in school and provide them with lifesaving skills.

Daily alcohol consumption at 43% is high among FSWs. Alcohol use has a high correlation with increased risky sexual behaviour. The policy makers and Program managers must begin to take into consideration strategies of reducing substance including alcohol use among the target groups.

Condom use among FSWs is low with non-paying partners. These are usually seen as permanent or trusted sex partners. Just about 56% who had sex with non-paying partner said used condom at last sex. Even with paying partner over 20% of them did not use condom at last sex. Similarly, condom use among truck drivers with girlfriends considered as regular sex partners is low. Only 63% used condom at last sex with regular partners. Programs involved with prevention of sexually transmitted infection in these target groups need to explore innovative

ways and address reasons for non-use of condom such as availability, desired pleasure, risk perceptions and negotiation skills.

A large proportion of LDTDs are married but continue to have multiple sexual partners that include FSWs and regular and non-regular sex partners and have sex without protection or using a condom. Only 63% used a condom at last sex with a girlfriend, only 81% used a condom with known FSWs and only 7% used a condom with a wife. In this situation, the wives of these men are being exposed to high-risk sexual behaviours even when they themselves are not directly engaged. It is therefore imperative that HIV prevention programs stress the promotion of faithfulness and fidelity with their spouses or regular partners.

Nearly all of the FSWs and LDTDs surveyed had heard of a condom, but complete and comprehensive knowledge of prevention is lacking especially among FSWs. Interventions must therefore go beyond “raising awareness” and use innovative and interactive behaviour change communication that is effective in developing the knowledge and skill sets necessary for vulnerable people to analyse situations, HIV risk and to remove myths.

Despite encouraging findings from recent ZDHS 2013/14 of a drop in HIV prevalence in general population by one per cent from 14.3% to 13.3%, the prevalence among FSWs remain very high. One in two FSWs is infected (56%) and new infections are occurring. Given that most of FSWs have tested and know their HIV status, it is possible that most of them are already on lifelong triple combination antiretroviral therapy (cART), which is saving, and improving their lives and sustaining the prevalence levels. It is therefore important to accelerate test and treat strategy given that ARV are prevention.

The overall reported prevalence of STIs is very high among FSWs and LDTDs. The syphilis prevalence just like HIV is more than 3 times the national figures. Given that STIs facilitate transmission and acquisition of HIV efforts aimed at controlling transmission of traditional STIs and creation of enabling environment to reduce stigma and improve access are needed.

# 1 INTRODUCTION

Zambia has one of the highest HIV burdens in Sub-Saharan Africa. According to the Zambia Demographic Health Survey (ZDHS, 2014) the HIV prevalence in adult population (women and men aged 15-49 years) is estimated at 13 per cent with the prevalence being higher among females than males; about 15 per cent of women and 11 per cent of men are living with HIV[1],

Just as in most Sub-Saharan African countries, the HIV infection and other STI in Zambia are predominantly transmitted through heterosexual contact. There are, however, identifiable predisposing conditions and risk sexual practices that facilitate the transmission of the infection. These factors include a high prevalence of STI, multiple and concurrent sexual partnership and low condom use [2].

HIV and other STI are several times higher in key populations such as FSWs than in general population [3]. Though sex work is illegal in many countries including Zambia, the community of sex workers is recognized as one of most-at-risk of acquiring and transmitting HIV and other STI. Factors such as having multiple sex partners, working in unsafe conditions and encountering barriers in negotiating condom use, predisposes sex workers at a greater risk of contracting HIV and other STI.

Female sex workers often have little control over these factors because of social marginalization and the criminalization of sex work [4]. Some settings and occurrences that include alcohol, drugs and violence may further exacerbate their vulnerability. FSWs clients, such as men who may be both paying and non-paying sex partners are instrumental in bringing HIV infection into the community of sex workers and in general population [4]. Preventing infection among FSWs has the potential to improve both the health of individual sex workers and may contribute to slowing down the spread of infection in the community [5]. However, to effectively address the HIV infection and AIDS amongst FSWs, their potential clients need to be targeted with interventions [5].

The National AIDS Council (NAC) in Zambia recognizes FSWs and their male clients as a key population and as one of the subgroups that are at most risk of acquiring and transmitting HIV. However, these subpopulations experience barriers that limit their access to health and social services. Targeting HIV prevention strategies on FSWs is critical because both married and unmarried individuals may have sexual intercourse with this subgroup, which is a high-risk subgroup to HIV and other STIs. Therefore, preventive efforts aimed at reducing HIV infections in FSWs may contribute to the overall strategy of reducing the spread of HIV infections in the general population [2].

## 1.1 *Setting for the 2015 IBBSS*

Since 2000, FHI360 has implemented the Corridors of Hope (COH) Project targeting FSWs and their male clients including long distance truck drivers (LDTDs) with HIV prevention intervention services. COH has targeted FSWs with behaviour change information and biomedical interventions, which include HIV testing, and counselling (HTC) and treatment of STI aimed at preventing sexual transmission and acquisition of HIV and other STIs.

Four rounds of BSS were conducted between 2000 and 2009 in the COH project to monitor outcomes of the interventions implemented by COH project. The BSS have been carried out in

five of the 10 COH III project district sites namely: Livingstone/Kazungula, Solwezi, Kapiri Mposhi, Chipata and Chirundu. In addition, a separate round of Biologic & Behavioural Surveillance Survey (IBBSS) was carried out in 2005 in Ndola, which included testing for HIV, Syphilis, *Trichomonas vaginalis*, *Chlamydia Trachomatis* and *Neisseria Gonorrhoea*.

To assess changes in preventing transmission of HIV and other STIs as result of interventions by COH III project and other partners towards an AIDS free society, a fifth round of BSS among LDTDs and FSWs and a third round of Biologic Survey (IBBSS) among FSWs was carried out between 18th August and 19th September 2015.

## **1.2 Objectives and Study Outcome**

### **1.2.1 Primary objective**

The primary objective of study was to measure the outcomes of existing HIV prevention interventions through a cross-sectional assessment change in sexual health risk behaviours among FSWs and LDTDs.

### **1.2.2 Secondary objectives**

- To contribute to the strengthening of the national monitoring system that will track the trends in HIV prevalence and HIV- sexual health risk behaviours among FSWs and LDTDs, which influence the spread of the HIV epidemic in Zambia.
- To provide information on the trends in HIV- sexual health risk behaviours among FSWs and LDTDs in five of COH III project district sites where routine and voluntary testing and counselling for HIV and treatment of STI is being offered.
- To provide information to help guide HIV prevention policies and program planning.
- To provide evidence of success of combination of HIV prevention efforts provided to FSWs and LDTDs by different implementers and partners taking place in selected sites.
- To obtain data in a standardized format that will enable comparison with previous BSS/BBS and similar surveys carried out in other countries.

### **1.2.3 Study outcomes**

#### **1.2.3.1 Primary outcomes**

- Changes in HIV- sexual health risk behaviours by measuring the proportion of FSWs who used condom at last sex and consistent condom use with different type of clients.
- Measuring proportion of LDTDs with more than one sex partner and use of condom with different type of female sex partners.
- Proportion of FSWs and LDTDs ever tested and knew their HIV status.
- The prevalence of HIV and other STI (*Treponema pallidum* (syphilis) *Neisseria gonorrhoea* infection (gonorrhoea) *Chlamydia trachomatis* (chlamydia) and *Trichomonas vaginalis* among FSWs in COH III project sites.

### 1.2.3.2 Secondary outcomes

- Proportion of FSWs and LDTDs reached through COH III services.
- HIV incidence estimates; the proportion of confirmed HIV positives among FSWs whose infection is recent by subjecting HIV test results to a test that identify recent infection.

## 2 SURVEY DESIGN AND METHODOLOGY

The overall study design was a cross-sectional survey of FSWs and LDTDs subpopulation. Prior to the survey, a desk review and analysis of routine monitoring data that COH III project collects monthly was conducted to understand current dynamics and key profiles of the study population groups including how they operate, their visibility at physical locations, accessibility, age groups, residential areas, HIV testing pattern and prevalence of other STI. A geographic mapping and size estimation followed the desk review. The PHSC and local ERES Converge ethics committee approved the protocol for mapping and size estimation. Mapping and size estimation study was done prior to implementation of Bio-BSS.

### 2.1 Setting for the 2015 IBSS

#### 2.1.1 Sites, Sample Sizes, Sampling and Survey Procedures

##### 2.1.1.1 Study Sites

The study was conducted in five selected districts of Zambia namely: Chirundu, Livingstone/Kazungula, Kapiri Mposhi, Solwezi and Ndola. Except for Ndola, the rest were all COHIII project district sites. Livingstone and Chirundu sites have participated in previous four rounds of BSS/BBS (2000, 2003, 2006 and 2009). Kapiri Mposhi was included in the study sites in the last three BSS studies in 2003, 2006 and 2009, thus have data at three points in time. Solwezi has baseline information, participated in the last BSS of 2009. Ndola had first round of BSS in 2005, which included HIV testing.

### COH III Sites



**Table 1, Overview of Survey Sites and Target Sample Sizes for FSWs and LDTDs, IIBSS and BSS 2015**

#	Site	Province	Target Sample Size for FSWs	Target Sample Size for LDTDs
1	Chirundu	Southern	94	504
2	Kapiri Mposhi	Central	220	252
3	Livingstone	Southern	264	336
4	Ndola	Copperbelt	262	140
5	Solwezi	North-Western	210	168
	<b>Total</b>		<b>1050</b>	<b>1400</b>

### **2.1.1.2 Sample Size Calculation**

The sample size was calculated with primary objective of measuring changes in selected behavioural indicators over time. These indicators were measured as proportions. For each target group, there were assumptions on the key indicator, an initial or baseline value of the key indicator, magnitude of change required to be detected, level of significance/precision, power to observe change if it occurred and the assumed design effect of 2.0. The percentage of the population of interest that was eligible for consideration for indicator was estimated.

### **2.1.1.3 Sample Sizes for Female Sex Workers**

The sample size was based on key behavioural indicator of interest 'consistency condom use with all paying male clients among FSWs'. The sample size was calculated to detect a difference of 10 percentage points increase in the proportion of FSWs who always (consistently) used condom with all the paying clients in the last 30 days prior to the survey. The baseline prevalence (P1) of consistent condom use in the last 30 days was estimated at 50 per cent among FSWs, based on results of the 2009 BSS. The desired change to detect ( $P2 - P1$ ) was 10 percentage points.

The level of significance was set at 0.05 for two-sided test and using the statistical power of 90 % to allow detection of at least 10% difference in the indicator of 2009 BSS was desired because of Bio-BSS with this group. The design effect was assumed at 2.0. Application of the above sample size calculation yielded a minimum sample size of 1036, rounded up to 1050. Table 1 shows the targeted sample size for the five sites interviewed and submitted biologic specimens by site.

### **2.1.1.4 Sample Size calculation for male Long Distance Truck Drivers**

To determine the sample size for truck drivers necessary to detect consistent condom use with all FSW partners in the last 12 months. The initial value of P1 is estimated at 91 per cent (based on results from 2009). The level of significance was set at 0.05 and the power at 0.80. Taking into account that the proportion that is eligible is 0.28 (28 per cent had sex with at least one FSW last BSS) and the design effect is estimated at 2.0 because of the cluster design used to sample the target groups, the required sample size is 1380 rounded up to 1400. Table 1 also shows the targeted sample size for LDTDs recruited for the five sites.



## **2.1.1.5 Survey Procedures**

### **2.1.1.5.1 Data Collection Instruments**

Family Health International's (FHI360) standard behavioural surveillance questionnaires, which have been adopted by WHO and UNAIDS, were adapted for the Zambian context and used to collect the behavioural data from participants. The questionnaire, consisting primarily of close-ended questions, contained nine sections and a total of 140 questions for FSWs and 124 for LDTDs. The questionnaire addressed socio-demographic characteristics, sexual history, knowledge and use of male and female condoms, knowledge and history of STI, knowledge surrounding HIV, and health service utilization and exposure to COH interventions.

The questionnaires were the same as those used during the IBBSS 2009, with minor additions of a few new questions to address exposure and access to COH interventions, and stigma and discrimination against people living with HIV/AIDS and on male circumcision services. The questionnaire was translated into two local languages; Bemba and Nyanja as an alternative for people who were not comfortable with English or did not prefer to be interviewed in English. The questionnaire was pre-tested prior to the start of the survey.

### **2.1.1.5.2 Pre-survey Training of Behavioural and Biologic Teams**

Six female research assistants and six male research assistants, who were recruited to conduct interviews for FSWs and LDTDs respectively, received pre-survey training on the survey protocol and human subject research ethics. The training manuals for Behavioural and Biologic components were prepared using the approved survey protocol. The topics covered during the training included survey purpose, interviewing skills, informed consent, ethical principles and confidentiality principles and procedures, unique number assignment and labelling approach, roles and responsibilities of logistics coordinators, supervisors, facilitators and interviewers and other survey team members.

The nurse counsellors were trained on the biologic informed consent procedure and instructions on self-collection of Dacron and cotton tipped vaginal swabs. The teams received the training together on common topics but separated when biologic team needed to focus on standard operating procedures and good clinical laboratory practice for field safe specimen collection and examination, packaging, transport and storage. The trainees were taken through the questionnaire to ensure they read the questions, as they were phrased and applying probing techniques. During practical session and role-playing, questions and challenges likely to be encountered in the fieldwork were addressed.

### **2.1.1.5.3 Survey Instruments Pre-Testing**

To ensure similar populations and interviewers understood the questionnaires, both the FSWs and the LDTDs questionnaire were pre-tested before main survey implementation. The FSWs questionnaire was pre-tested by FSWs interviewers on 50 women in Chipulukusu Township in Ndola. The research assistants earmarked for LDTDs interviews piloted the LDTDs questionnaires on 50 male truck drivers in Luanshya. The sites of questionnaire pre-testing were not part of the survey sites. The survey teams reviewed and adjusted the questionnaire respectively of pre-testing experiences without changing the essence of the questions.

The biologic team conducted a practical session on preparation and packaging of requisites for specimen collection and field operation of two laboratory teams. They role-played blood specimen collection. They also performed HIV and R.P.R testing according to the algorithms and recording of results in site-specific bound data forms.

#### **2.1.1.5.4 Sampling Procedures**

Since both survey population groups (FSWs and LDTDs) are mobile groups, a two-stage time-location cluster sampling approach was used in selecting the required number of eligible respondents for the survey. The first stage involved selection of time-location clusters (TLC) from the sampling frame using probability proportionate to size (PPS) sampling method. The second stage involved selection of eligible respondents from each selected TLC. The survey teams spent between three and five days in each site to obtain target site-specific sample sizes for FSWs and LDTDs in each site.

#### **2.1.1.5.5 Recruitment of FSWs**

The potential FSWs were identified by the peer promoters/educators who were study facilitators and from FSW community themselves. Peer-educators/promoters were volunteers on COH III project who worked with the targeted populations. Time-location approach of sampling was used to recruit participants for the survey. Prior to the survey, mapping of the site was conducted to identify locations where FSWs met clients and truck stops for truck drivers.

FSWs were recruited during the times they were at work, usually at night and in brothels. Using the time-location approach, interviewers attempted to recruit all the FSWs found in the popular nightspots such as bars, restaurants and nightclubs after 21:00 hrs. This “take-all” recruitment approach was identical with the one used during the BSS in 2009. In addition, some FSWs who refused to be interviewed during the night and others referred by peers were recruited during the day from brothels, guesthouses and own homes. These went through the same process as those recruited in the night.

During recruitment at night, facilitators identified the FSWs, approached them and informed them about the study. If the FSW was interested, the facilitator introduced them to the behavioural interviewers. The interviewers invited potential participants to a private setting, assessed their eligibility, obtained consent and administered the questionnaire. The eligibility criteria included being a female sex worker-either self-identified or identified through a peer. The team did not explicitly recruit FSWs under the age of 18 years, but they were not necessarily excluded because of age if they identified themselves as a sex worker.

#### **2.1.1.6 Recruitment of Truck Drivers**

The study facilitators and research assistants walked around truck parking points in truck corridors and revenue collection points to meet truck drivers or co-drivers as potential participants. The facilitators first obtained consent from truck driver to be talked to by a research assistant/data collector. Those who refused were recorded including reason for refusal and was replaced by another truck driver. Only male interviewers administered questionnaires on LDTDs. Completed questionnaires were edited by reviewing supervisor to ensure accuracy of recorded responses. In an event that the driver stopped the interview before completing questionnaire, partially completed questions and answers up to the point ended were analysed

#### **2.1.1.6.1 Behavioural Survey Team**

In the field, there were six male interviewers for LDTDs and six for FSWs. There were two supervisors as first reviewers of completed FSWs and LDTDs questionnaires. Two field coordinators worked as editors of questionnaires at field level before finally handing over to the data manager. The supervisors and reviewers helped the team leader with logistic planning, supervision of supervisors and final reviewing of questionnaires. The team involved in supervision and reviewing and in data collection received training specifically for this study at TDRC. The team leader (PI and Co-PI) supported by co-investigators and supervisors were responsible for overall supervision of the study, of all material requirements and in ensuring quality of data being collected.

#### **2.1.1.6.2 Biological Survey Team**

The biological team split into two groups comprised field logistics coordinator and laboratory supervisor, four research nurse counsellors, six laboratory technologists and scientists who had specific roles in the survey. The specific roles included obtaining informed consent for HIV and STI testing, specimen collection, field laboratory testing for HIV, Syphilis and *Trichomonas vaginalis*. The nurse counsellors provided post-test counsel and gave out HIV and syphilis test results and referral to continuum of care for those found positive for HIV infection and/or syphilis. The coordinators were responsible for the specimen tracking and flow of results, storage of specimens and reporting of results. Trained biomedical technologists/scientists were involved in blood drawing while nurses assisted participants how to collect self-administered vaginal swabs.

#### **2.1.1.6.3 Behavioural Data Collection**

Each research team for FSWs and LDTDs consisted of six research assistants and a supervisor. FSWs were recruited from entertainment venues, guesthouses, in brothels or FSWs homes. A room was identified and hired for specimens' collection within the site. Research assistants obtained oral informed consent, assigned a unique survey identification number to participant, and carried out face-to-face interviews with FSWs or LDTDs in privacy using structured questionnaire.

Following every interview, field editors reviewed all the completed questionnaires to ensure accuracy in recorded responses. The editors were also responsible for coordinating the interviewers' daily activities, ensuring that the survey requirements and procedures were strictly followed, and supporting the interviewers whenever there were concerns or questions. The principal and co-principal investigators (PIs) and other researchers directly supervised the data collection by accompanying the research team into the field and participating in editing the completed questionnaires in the field. For FSWs, after completing the administration of the behavioural questionnaire, the research assistant introduced the nurse counsellor for the biologic component.

#### **2.1.1.6.4 Biological and Laboratory Component**

Biomarkers that were examined include HIV, *Treponema pallidum* for Syphilis and *Trichomonas vaginalis*. Vaginal samples for Chlamydia trachomatis and *Neisseria gonorrhoea* were collected for examination later when appropriate PCR tests are procured.) To estimate proportion of HIV and other STI among FSWs, trained female nurse counsellor obtained a separate witnessed verbal consent for collection of vaginal swabs for STI investigations and collection of blood

specimen for HIV and syphilis testing. Trained TDR biomedical laboratory personnel performed specimen collection and testing following protocol specific operating procedures (SOPs).

A unique survey identification number assigned to each FSW was affixed on the questionnaire administered to the FSW; the same number was affixed on the specimen container. The Participant unique ID number was used to link biologic data and questionnaire data from the same FSW. Participants' names were not collected or labelled on any data collection forms and specimens. HIV testing followed the national testing algorithm and nurse counsellors provided referral for continuum of care at ART treatment centre for those whose test was HIV positive.

#### **2.1.1.6.5 Exclusion of LDTDs from Biologic component**

The male long distance truck drivers did not participate in the biologic component. Truck drivers could not be offered HIV testing because they were on the road and crossed the border/s during their work. They would not have time for post-test counselling, to wait or to come back for results and treatment. The FSW were more likely to come back and receive treatment, since they were local and do not cross the border. In addition, there was a possible risk of rising emotions of the truck driver in the first place for not accepting HIV positive results posing a danger as they still had miles to cover in their work travel.

#### **2.1.1.6.6 Specimen Collection and Processing**

##### **2.1.1.6.6.1 Biologic Specimens**

Specimens were collected in a secluded place. The survey team every night or during the day identified and rented a room at the sampling site for specimen collection.

**Table 2, Laboratory Specimens Collected and Tests Performed, IIBSS 2015**

<b>Biologic Sample</b>	<b>Micro organism</b>	<b>Diagnostic Test</b>
Self –administered vaginal swabs	<i>Trichomonas vaginalis</i>	In-Pouch culture or Wet Mount
Self –administered vaginal swabs	<i>Neisseria gonorrhoea</i>	PCR
Self –administered vaginal swabs	<i>Chlamydia trachomatis</i>	PCR
Blood	<i>Treponema pallidum</i>	Serology (Immuntrep RPR, SD Bio line syphilis 3.0 )
Blood	HIV	Serology (Determine™, Uni-gold™)

##### **2.1.1.6.6.2 Specimen Collection for *N. gonorrhoea*, *C. trachomatis* and *T.vaginalis* Detection**

Following identification of eligible FSWs and after consenting to participate in the survey, FSWs received verbal instructions by the female nurse counsellor on how to collect one cotton swab for *T. vaginalis* culture detection, and two Dacron swabs for *N. gonorrhoea* and *C. trachomatis* detection. Each FSW inserted first Dacron swabs one at a time and then a cotton swab into the vagina to collect vaginal specimen. After collection, the swabs were placed in their respective

containers and handed to the laboratory technologist who labelled appropriately with unique subject ID number for the participant and date of collection. The cotton tipped swab was immediately inoculated in the commercially available culture media for *Trichomonas vaginalis*, specifically the In-Pouch Tv culture system and/or in Amie's transport media for immediate direct examination within 4 hours of specimen collection. The two Dacron tipped vaginal swabs were placed in two cryovials and placed in a cooler box with ice packs.

#### **2.1.1.6.6.3 Blood Collection for HIV and Syphilis Testing**

To standardize survey operations, the survey laboratory team and the nurses received training on the use of a vacutainer system and use of 10ml syringe and needle for collection of venous blood specimens prior to survey commencement. The biologic survey team had four female nurses who administered informed witnessed consent. Eligible consenting FSWs had venous blood collected from the arm through venipuncture using a new unused syringe and needle. A trained Biomedical Laboratory Technologist/Scientist collected Blood specimens from TDRC. The survey laboratory team and the nurses ensured adherence to standard biosafety procedures and good clinical laboratory practice (GCLP).

First, cleaning the skin using cotton wool with 70% alcohol disinfected the upper arm of the elbow of the FSWs. Second, 10mL of blood was collected through venepuncture using a new disposable needle into a 10 mL EDTA tube labelled with subject survey ID number and date of collection. The blood was placed in a transport box and kept at room temperature (15 to 28° C) before transportation to the laboratory for analysis. All specimens were transported from field to the site laboratory within 5 hours of collection.

To ensure biosafety of the survey laboratory team, personal protective equipment (PPE) supplies such as gloves, laboratory coats, biologic disinfectants and portable sharp containers for disposal of the needles were used. Biological waste was disposed of in recommended Biohazard bags.

Specimen Processing, Field Laboratory Procedures, Specimen Storage and Transportation  
At the end of field recruitment of FSWs, the laboratory team packaged the specimens collected and proceeded to the designated field laboratory for processing of blood specimens and syphilis, HIV and *Trichomonas vaginalis* testing. Survey-specific standard operating procedures (SOPs) for all laboratory procedures guided HIV, Syphilis and *Trichomonas* testing to assure standardized performance of laboratory procedures and specimen testing. Briefly, plasma was separated from whole blood by centrifugation according to the SOP and the separated plasma was aliquoted into two new cryovials. One aliquot was immediately stored at -20°C and the second aliquot was used for qualitative syphilis screening and confirmatory testing and for HIV testing. All the specimens were subsequently transported to TDRC under cold chain.

#### **2.1.1.6.6.4 HIV Testing Algorithm**

HIV testing was performed according to the national HIV testing algorithm. First, all plasma specimens collected from FSWs were screened with a rapid HIV test, Determine TM HIV-1/2 (Alere Healthcare) and all specimens testing negative were classified as non-reactive for HIV-1/2 specific antibodies. Second, all specimens testing positive on DetermineTM HIV1/2 were retested using a different rapid HIV test kit, Uni-Gold™ HIV-1/2 (Trinity Biotechnology) as confirmatory test. Specimens were classified as positive if both the screening test using DetermineTM HIV-1/2 (Alere Healthcare) and the confirmatory test using Uni-Gold™ HIV-1/2 (Trinity Biotechnology) were reactive for HIV-1/2 specific antibodies. Plasma specimens with

discrepant test results from Determine™ HIV-1/2 and Uni-Gold™ HIV-1/2 (Trinity Biotechnology) were still referred to ART clinic for counsel and repeat testing later.

#### **2.1.1.6.6.5 Syphilis Testing Algorithm**

Syphilis testing was performed according to the syphilis-testing algorithm followed by the national antenatal attendees sentinel surveillance for syphilis. All plasma specimens collected from FSWs were screened using qualitative non-treponemal rapid screening test, Rapid Plasma Reagin (RPR) card test (Omega diagnostics, UK) according to manufacturer's instructions. Syphilis screening using rapid qualitative RPR tests was performed at the data collection site. The rapid test, SD Bioline Syphilis 3.0 (SD standard Diagnostics, INC, Korea), was used as anti-Treponemal confirmatory test for syphilis in RPR reactive FSWs. Plasma specimens testing negative on RPR test card were classified as negative. Plasma specimens with a positive result on RPR test card and on SD Bioline Syphilis 3.0 (SD standard Diagnostics, INC, Korea) were classified as syphilis positive. Plasma specimens testing positive on the RPR test card but negative on SD Bioline Syphilis 3.0 (SD standard Diagnostics, INC, Korea) were considered syphilis negative. FSW with positive results were treated for syphilis using standard management guidelines.

#### **2.1.1.6.6.6 Specimen Collection and Processing for *Trichomonas Vaginalis***

The survey nurses explained to the FSWs how to collect self-administered intra-vaginal swab specimens using one cotton and two Dacron tipped swabs. The instructions, for the self-administered collection of specimens with the use of a cotton swab, were provided according to the standard medical practice. Cotton tipped swab specimen was inoculated into a selective culture system for the diagnosis of Human *Trichomonas vaginalis* in In-Pouch Tv test.

The In-Pouch inoculated with cotton vaginal swab was kept at room temperature in a transportation box before being transported to the field laboratory for incubation at 37°C. In Pouch culture of *T. vaginalis* were examined at 24hrs, 48hrs and 72hrs post-incubation. After 4 days, the In-Pouch Tv sachets were stored frozen at -20°C for quality control testing later. A positive test result was confirmed by presence of motile *Trichomonas* after wet-mount and results communicated for clinical care. FSWs positive for *T. vaginalis* were treated using standard treatment guidelines at Health facility.

#### **2.1.1.6.6.7 Specimen collection and processing for *Neisseria gonorrhoea* and *Chlamydia Trachomatis* Detection**

The Dacron tipped swabs with plastic shafts were chosen and used to avoid introducing inhibitory substances, which may affect sensitivity and specificity polymerase chain reaction (PCR) based method of detection. The use of the correct specimen; collection method; and handling and manipulation of specimen prior to and during testing were important processes in the identification of *T. vaginalis*, *N. gonorrhoea* and *C. trachomatis*. The Dacron swabs were placed in appropriately labelled 5 mL sterile screw cap cryovials and were immediately placed in cryovial box for use in subsequent PCR-based tests for *N. gonorrhoea* and *C. trachomatis*. The cryovial box was placed in a transport cool box with ice packs, transported to the field laboratory every day, and subsequently stored at -20°C before transportation to TDRC laboratories. Cold chain transportation of Dacron swabs to TDRC was maintained by making sure the survey team had a -20°C freezer with an external thermometer for monitoring the temperature daily.

#### **2.1.1.6.7 Laboratory Testing at TDRC**

The following laboratory tests were conducted at TDRC; quantitative RPR for titter determination among all RPR reactive plasma specimens from recruited FSWs; HIV tie-breaking testing using Western Blot 2.2 (Abbott Laboratories) for all specimens that had discrepant HIV results on Determine HIV-1/2 and Unigold HIV-1/2 and HIV incidence testing using SediaLAg Avidity EIA.

#### **2.1.1.6.8 Syphilis RPR Quantitative Testing**

Quantitative RPR tests were performed on RPR reactive specimens from all five sites through serial dilution of plasma specimens and the results were reported in terms of the highest serial dilution that had given a reactive result.

#### **2.1.1.6.9 HIV Tie-breaker Testing**

For the survey purpose, plasma specimens with discrepant test results from Determine® HIV-1/2 and Uni-Gold HIV-1/2 (Trinity Biotechnology) were retested at TDRC using a different test, Western Blot 2.2 (Abbott Labs) as tiebreaker criteria for classifying a specimen as positive or negative for HIV-1 or HIV-2 specific antibodies.

#### **2.1.1.6.10 HIV Incidence Testing Using Sedia LAg Avidity EIA**

HIV incidence is an important measure in understanding the dynamics of the HIV epidemic. For that reason, all plasma specimens confirmed serologically as containing HIV-1 specific antibodies were subjected to LAg Avidity testing to identify recent HIV infections among the FSWs. The Sedia™ HIV-1 Limiting Antigen (LAg) Avidity Enzyme Immuno Assay (EIA) (Sedia Biosciences Corporation SediaTMLAg-Avidity EIA) has the ability to distinguish recent from long-term HIV infections. HIV plasma Viral Load testing of selected HIV-1 positive specimens identified as potentially recent infections was performed at Ndola Central Hospital as part of the HIV recent infection identification algorithm, been between 118 days and 142 days' duration.

#### **2.1.1.6.11 PCR-based Neisseria gonorrhoea and Chlamydia trachomatis**

TDRC had proposed to use the commercially available Roche Amplicor®multiplex PCR-based kit (Roche Diagnostics Corporation) to detect Neisseria gonorrhoea and Chlamydia, for the co-amplification of Neisseria gonorrhoea and Chlamydia trachomatis. However, TDRC learnt during procurement that the Manufacturer stopped producing the Roche Kit. Alternative method was being pursued at the time of this report and NG/CT results would be reported as an addendum to the 2015 BioBSS Report.

#### **2.1.1.6.12 Safety and Biologic Waste Management**

To ensure laboratory staff worked in a safe environment, personal protective equipment (PPE) supplies such as gloves and biologic disinfectants were used. Biohazard bags were used for disposal of clinical waste. The biological waste materials were managed according to the SOPs in quality Management System (QMS) and incinerated at Ndola Central Hospital.

#### **2.1.1.6.13 Quality Control Testing**

Further, 10% of all the plasma samples were randomly selected and retested by Laboratory Scientist at Ndola Central Hospital Pathology Laboratory for inter-laboratory quality control testing for HIV and Syphilis.

### **2.2 Ethical Review**

The study protocol, consent forms, questionnaires and all study documents were approved in Zambia by the Ethical Review Committee at the Tropical Diseases Research Centre (TDRC) and in USA by the Protection of Human Subjects Committee (PHSC) of FHI360. Approval was also obtained from both the Permanent Secretary of the Ministry of Health and the then Ministry of Community Development Mother and Child Health. The Police and the Ministry of Home affairs also provided permission and protection. Approved consent forms and questionnaire were translated from English into two common Zambia local languages: Bemba and Nyanja. In addition, all the survey team members received training in human subject research ethics according to FHI360 curriculum on Ethics training.

The survey addressed sensitive issues of sex and sexuality, HIV and STI among women who usually are socially marginalized. Therefore, minimizing potential physical, psychological or social harm local facilitators and peer educators known in the community first approached the FSW in recruitment process. Research Assistants, nurse counsellors and laboratory personnel trained in ethics and confidentiality in dealing with human participants were engaged in data and specimen collection. These made sure that only study identification and no participant names were recorded anywhere. Informed consent was obtained for all recruited participants. The LDTDs gave informed consent before the interviews were conducted and unique ID numbers without any identifiable names identified questionnaires.

### **2.3 Data Processing, Management and Analysis**

#### **2.3.1 Data Processing and Management**

In the field, the Data Manager kept the completed FSWs and LDTDs questionnaires in portable boxes. Laboratory (HIV and syphilis) results data forms, which had been checked by the field laboratory supervisors for completeness, were kept in files by a designated co-investigator from the biologic survey team. After data collection at each site, the completed FSWs, LDTDs questionnaires, and FSW laboratory forms with biological results were transported to TDRC. The unique IDs on the questionnaire administered to a FSW was same as the IDs affixed on the biological specimens provided by the FSW to enable merging of biologic data with behavioural data. This unique study identification for participants was used to track participant data and facilitate data entry and data management.

The questionnaire and biologic data were double entered at the TDRC Data Processing Unit using xxx. Two password-protected desktop computers were hired for data processing. In addition, two password-protected databases were created in EPI INFO 6, R statistical package one for questionnaire and biologic data and the other for laboratory data. In addition to double data entry, the Data Manager for the project and the Co-PI performed routine random checks of data entry to ensure that it was accurately entered. Data cleaning and quality check was conducted by comparing the two databases using standard completeness, inconsistency and



range checks before data analysis. The questionnaire database and laboratory database was linked after cleaning both databases and individual records linked using the unique survey ID numbers.

### **2.3.2 Data Analysis for FSWs**

To describe the characteristics of the survey respondents, median and interquartile range were computed for continuous variables and counts and per cent were calculated for categorical variables. The distributions of characteristics were examined by HIV positive and negative categories and overall estimates were computed. Missing data were not imputed but were reported as counts and percentages.

The overall HIV prevalence was computed as sum of all HIV seropositive FSWs in Ndola, Chirundu, Kapiri Mposhi, Livingstone and Solwezi divided by the sum of HIV seropositive and HIV seronegative FSWs in the five sites. The 95% confidence interval for the prevalence estimates for the HIV, syphilis and *Trichomonas vaginalis* were computed using Wilson Confidence intervals. P-value less than 0.05 was regarded statistically significant.

HIV Knowledge Scores and Stigma Scores were computed from the responses to a series of questions on HIV knowledge and on FSW's attitude towards HIV positive persons. Graphs were generated to present the distribution of FSWs by selected characteristics as well as present the prevalence of HIV, syphilis and *T.vaginalis*. Data analysis was conducted using R statistical and computing software.

### **2.3.3 Data Analysis for LDTD**

Categorical variables were described by deriving their frequency and percentage distributions stratified by site. Deriving their means and standard deviations, for those that were normally distributed, medians, and range described continuous variables for those that were skewed. For categorical variables, statistical significance of trend and association across and with, respectively, the six sites were assessed by calculating asymptotic and Monte Carlo exact p values based on Cochran–Armitage test for trend for the 2 by 6 and Pearson's Chi square test for the greater than 2 by 6 contingency tables.

Exact P-values were reported where derived cell expected values were less than 5 %. Comparisons of proportions between two proportions, specifically for differences between the 2009 BSS and the 2015 BSS were done by calculating p values based on the Z statistic for testing statistical significance of differences between proportions from two independent samples. For continuous variables, calculating P-values based on the F-statistic from an ANOVA and the Wilcoxon test respectively assessed statistical significance of differences between means and medians across the sites. A P-value less than 0.05 were considered statistically significant.

## **3 RESULTS, DISCUSSION, CONCLUSION AND RECOMMENDATIONS FROM THE FEMALE SEX WORKERS SURVEY**

### **3.1 Response Rates of FSWs by Site**

Table 3 presents site-specific and overall survey response rates for FSWs. The overall response rate for IBBSS 2015 was 95.9%. Of the 1,240 FSWs invited for the interview, 1,189 were interviewed while 28 FSWs refused and 23 respectively were excluded mainly because they did

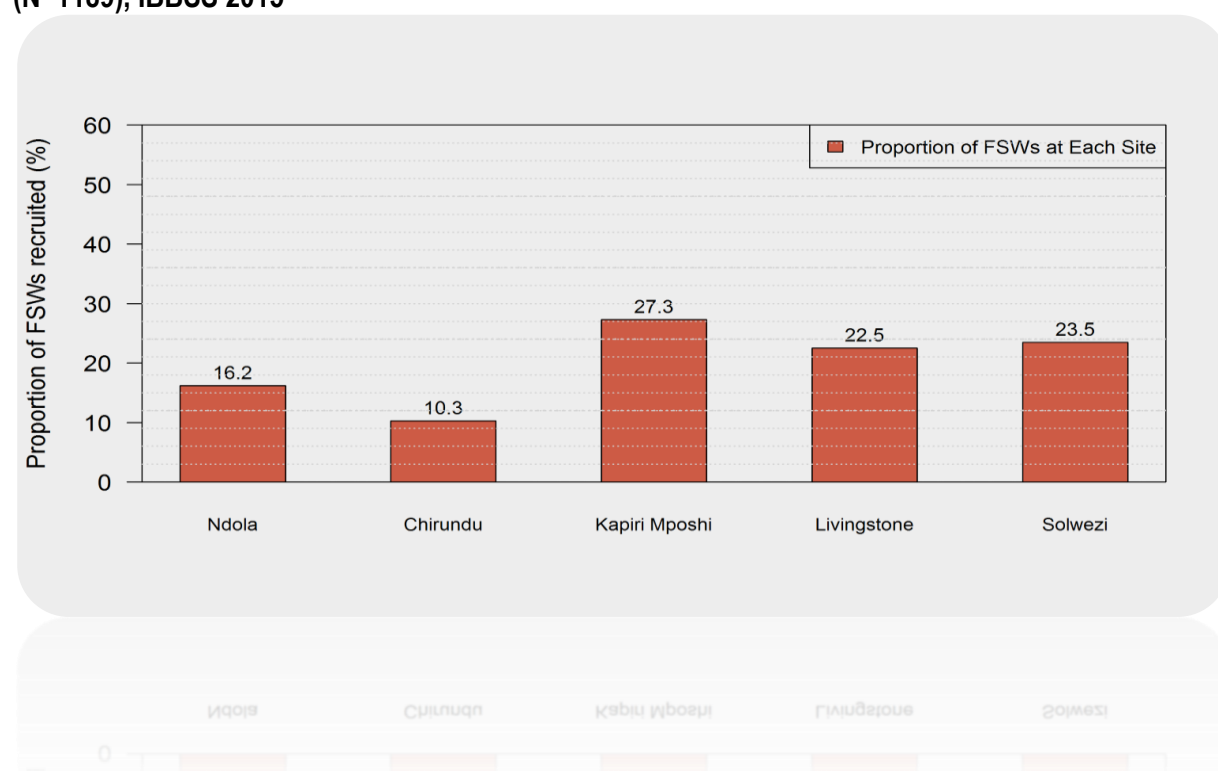
not meet eligibility criteria. Almost 94% of the 1189 FSWs interviewed provided a blood specimen for HIV and syphilis screening and confirmatory testing.

**Table 3, Breakdown of FSWs interviewed and excluded by site, IBBSS 2015**

Site	Invited for Interview	Refused	Excluded	Interviewed	Response Rate (%)
Ndola	200	4	3	193	96.5%
Chirundu	130	7	0	123	94.6%
Kapiri Mposhi	340	8	7	325	95.6%
Livingstone	280	7	5	268	95.7%
Solwezi	290	2	8	280	96.6%
<b>Total</b>	<b>1240</b>	<b>28</b>	<b>23</b>	<b>1,189</b>	<b>95.9%</b>

Figure 1 shows the distribution of 1,189 FSWs according to the sites of recruitment and indicates that 27.3% of the 1,189 FSWs captured in the 2015 survey were recruited in Kapiri Mposhi and 10.3% of the FSWs were recruited in Chirundu.

**Figure 1, Percentage distribution of the FSWs according to the sites of recruitment (N=1189), IBBSS 2015**



## 3.2 Characteristics of Female Sex Workers

### 3.2.1 Demographic Characteristics of FSWs

Data were collected from 1,189 FSWs from Chirundu (123), Kapiri Mposhi (325), Livingstone (268), Ndola (193) and Solwezi (280). Of the 1,189 FSWs interviewed, 1,113 FSWs were tested for HIV infection. Table 4 presents descriptive summaries for selected characteristics of FSWs.

**Table 4, Socio-Demographic Characteristics of Female Sex Workers surveyed, IBBSS 2015**

Characteristic	Number	%
<b>Age (Years)</b>		
Median	26	
Interquartile Range	22 to 32	
<b>Age Group (Years)</b>		
14 to 24	491	41.4
25 to 34	495	41.7
35 to 44	201	16.9
<b>Total</b>	<b>1,187</b>	
<b>Education</b>		
Primary	418	35.3
Secondary	728	61.2
Higher than Secondary	6	0.5
<b>Total</b>	<b>1,152</b>	
<b>Survey Site Town</b>		
Ndola	193	16.2
Chirundu	123	10.3
Kapiri Mposhi	325	27.3
Livingstone	268	22.5
Solwezi	280	23.5
<b>Total</b>	<b>1189</b>	

### 3.2.1.1 Age Distribution

The overall median age for FSWs was 26 years with an interquartile range of 22 to 32 years. However, the age distribution differed by HIV sero status with median age of 28 years (IQR of 24 to 34 years) among HIV positive and median age of 23 years (IQR of 20 to 28 years) among HIV negative women (P-value <0.001). Eight-three per cent of the FSWs were aged less than 35 years old.

### 3.2.1.2 Site-specific Age Distribution

Table 5 shows site-specific distribution of selected characteristics of FSWs. Site-specific median age was higher than the overall median age (26 years) in Chirundu (29 years) and lower than 26 years in Livingstone and Solwezi (25 years), although the interquartile range for site-specific median ages overlapped across all the sites. The majority of the FSWs were in the 14-24 years and 25-34 years' age groups and the distribution was similar across all sites.

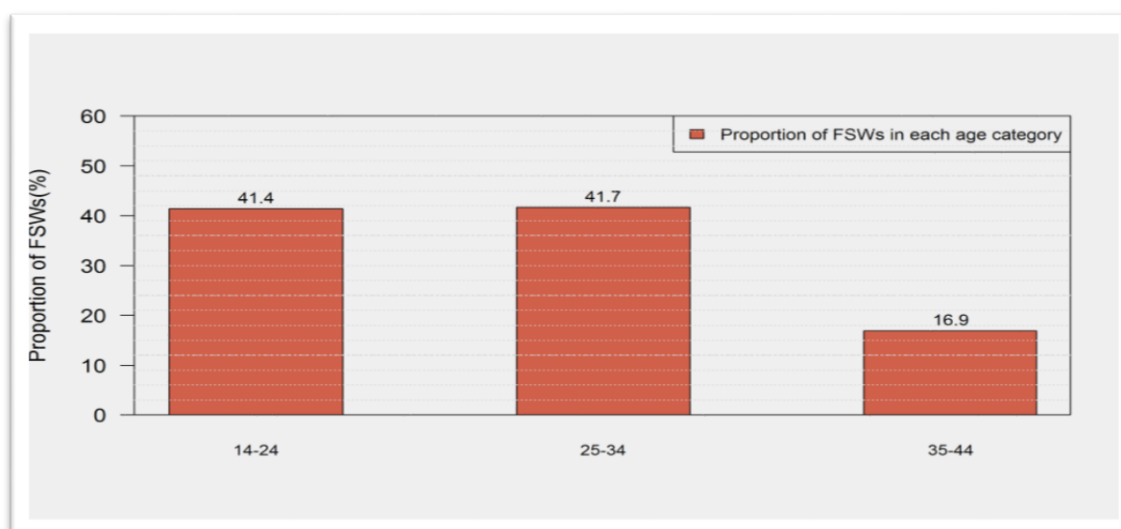
**Table 5, Socio-demographic Characteristics of Female Sex Workers aged 14-44 Years, IBBSS 2015**

	Ndola	Chirundu	Kapiri Mposhi	Livingstone	Solwezi	Total
<b>Age (years)</b>						
Median	26	29	27	25	25	26
Interquartile Range	23 to 31	25 to 33	22 to 34	21 to 31	22 to 30	22 to 32

<b>Age Group*</b>						
14-24	75 (38.9%)	30 (24.4%)	127 (39.3%)	128 (47.8%)	131 (46.8%)	491 (41.4%)
25-34	95 (49.2%)	63 (51.2%)	121 (37.5%)	101 (37.7%)	115 (41.1%)	495 (41.7%)
35-44	23 (11.9%)	30 (24.4%)	75 (23.2%)	39 (14.6%)	34 (12.1%)	201 (16.9%)
<b>Total</b>	<b>193</b>	<b>123</b>	<b>323</b>	<b>268</b>	<b>280</b>	<b>1187</b>
<b>Education attainment</b>						
Primary	61 (32.6%)	57 (48.7%)	122 (39.6%)	94 (35.5%)	84 (30.5%)	418 (36.3%)
Secondary	124 (66.3%)	60 (51.3%)	185 (60.1%)	171 (64.5%)	188 (68.4%)	728 (63.2)
Higher than Secondary School	2 (1.1%)	0 (0%)	1 (0.3%)	0 (0%)	3 (1.1%)	6 (0.5%)
<b>Total</b>	<b>187</b>	<b>117</b>	<b>308</b>	<b>265</b>	<b>275</b>	<b>1152</b>
<b>Ever Married</b>						
Yes	118 (61.1%)	88 (72.1%)	211 (65.1%)	138 (51.7%)	163 (58.2%)	718 (60.5%)
No	75 (38.9%)	34 (27.9%)	113 (34.9%)	129 (48.3%)	117 (41.8%)	468 (39.5%)
<b>Total</b>	<b>193</b>	<b>122</b>	<b>324</b>	<b>267</b>	<b>280</b>	<b>1186</b>
<b>Current Marital Status</b>						
Married	8 (4.2%)	7 (5.7%)	9 (2.9%)	8 (3%)	15 (5.4%)	47 (4.0%)
Married but living other sexual partner	1 (0.5%)	0 (0%)	1 (0.3%)	1 (0.4%)	2 (0.7%)	5 (0.4%)
Married but living alone	5 (2.6%)	1 (0.8%)	3 (1%)	0 (0%)	2 (0.7%)	11 (0.9%)
Not married but living with sexual partner	16 (8.4%)	5 (4.1%)	5 (1.6%)	9 (3.4%)	29 (10.5%)	64 (5.5%)
Not Married and living alone	160 (84%)	110 (89%)	297 (94%)	246 (93%)	228 (83%)	1041 (89.1%)
<b>Total</b>	<b>190</b>	<b>123</b>	<b>315</b>	<b>264</b>	<b>276</b>	<b>1168</b>
<b>Has occupation other than sex work</b>						
Yes	79 (41.4%)	55 (45.8%)	109 (33.7%)	71 (26.6%)	93 (33.5%)	407 (34.5%)
No	112 (58.6%)	65 (54.2%)	214 (66.3%)	196 (73.4%)	185 (66.5%)	772 (64.5%)
<b>Total</b>	<b>191</b>	<b>120</b>	<b>323</b>	<b>267</b>	<b>278</b>	<b>1179</b>
<b>*Self-identified Female Sex Workers were eligible for recruitment in the 2015 IIBSS and all the variables were self-reported.</b>						

Figure 2 shows the proportion of FSWs in each of the three age groups that were created. The majority of the FSWs were in 14-24 years and 25-34 years' age groups, 41.4% and 41.7%, respectively.

**Figure 2, Distribution of FSWs by age category (N=1187), IIBSS 2015**



### 3.2.1.3 Education

Table 5 shows sites and overall distribution of FSWs by level education attained. Thirty-six per cent of the 1152 FSWs who were interviewed reported having attained primary school education while 63.2% reported having attained secondary school education. Overall and site-specific estimates indicated that very low percentages (<1.5%) of FSW reported greater than secondary education attainment.

**Figure 3, Distribution of FSWs by education category attained (N=1152), IBBSS 2015**

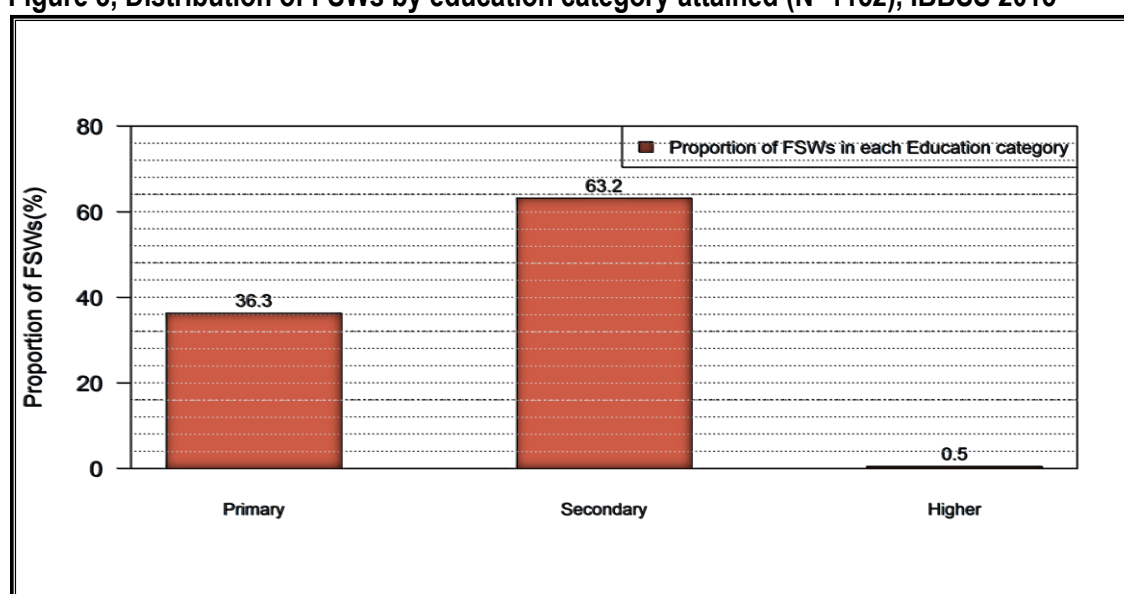


Figure 3 shows that almost two-thirds of FSWs reported having attained secondary school education. The median number of school years completed was 9 years. Data on the level of education attained were collected from 1,162 FSWs and that 0.5% of the FSWs reported having completed higher than secondary education. Less than 1% of the FSWs interviewed reported having completed higher than secondary school education.

### 3.2.1.4 Marital Status

Overall 60.5% of 1186 FSWs reported ever been married. The proportion of FSW who reported ever been married appeared highest in Chirundu (72.1%) and lowest in Solwezi (58.2%). FSW

were asked about their current marital status and 89.1% of the 1,168 FSW reported that they were not currently married. The proportion of FSWs that were not currently married appear highest in KapiriMposhi (94%).

### 3.2.1.5 Occupation

About 65% of the FSWs reported sex work as their only source of income. The proportion of FSWs who reported sex work as the only source of income seem highest in Livingstone (73.4%) and lowest in Chirundu (54.2%).

### 3.2.1.6 Religiosity, birth place and tribe of the FSWs

Table 6 shows religiosity, birth place and tribe of the FSWs.

#### 3.2.1.6.1 Religion

Most FSWs predominantly reported being Christian (>95%) and the distribution was similar across all the sites where FSW were recruited. The highest proportion of FSWs reported being Pentecostals (33.7%) while 19.7% and 15.7% of the FSWs reported being Catholic and United Church of Zambia members, respectively.

#### 3.2.1.6.2 Province of Birth

The largest proportion of FSWs reported Copperbelt Province (29.8%) as their place of birth while only 1.3% reported Muchinga Province as their place of birth. Slightly above 6% of the FSW reported Northern Province as their place of birth. Sizable proportions of FSWs reported Southern (18.3%), Lusaka (13.0%) and Central (13.1%) provinces as their place of birth.

### 3.2.2 Risk Behavior: Duration of stay in current residence, and alcohol and drug consumption

Risk behaviour patterns related to period of current residence, and alcohol and drug consumption patterns among the FSW's according to site are shown in table 7.

#### 3.2.2.1 Duration of Stay in Current Residence

FSWs were asked the duration of stay in their current residence and 24.3% of the 1,187 FSWs reported more than 19 years of stay in the current residence. Livingstone had the highest proportion (40.6%) of FSWs who reported duration of residence of 20 to 44 years. Interestingly, 17.6% of the FSWs interviewed reported less than one year of stay in the current residence.

#### 3.2.2.2 Alcohol and Drug Use

The self-reported frequency of alcohol consumption by FSW was assessed by asking questions that explored the frequency of alcohol consumption in the last four weeks preceding the survey. The majority of FSWs (42.5%) reported daily alcohol consumption while 36.1% of the 1187 FSWs reported consumption of alcohol at least once per week. Daily alcohol consumption seem highest in Kapiri Mposhi and Livingstone, 55.8% and 61.2%, respectively.

**Table 6, Religiosity, Birth place and Tribe of FSWs aged 14-44 Years, IBBSS 2015**

Description	Ndola	Chirundu	Kapiri Mposhi	Livingstone	Solwezi	Total
Religion						

No Religion	4 (2.1%)	4 (3.3%)	4 (1.2%)	12 (4.5%)	7 (2.5%)	31 (2.6%)
Christian	188 (97.9%)	117 (96.7%)	318 (98.8%)	254 (95.1%)	272 (97.1%)	1149 (97.2%)
Muslim	0 (0%)	0 (0%)	0 (0%)	1 (0.4%)	1 (0.4%)	2 (0.2%)
<b>Total</b>	<b>192</b>	<b>121</b>	<b>322</b>	<b>267</b>	<b>280</b>	<b>1182</b>
<b>Religious Denomination</b>						
Catholic	41 (21.8%)	24 (20.3%)	59 (18.5%)	64 (25.2%)	38 (14%)	226 (19.7%)
United Church of Zambia	30 (16%)	10 (8.5%)	80 (25.1%)	17 (6.7%)	44 (16.2%)	181 (15.7%)
Seventh Day Adventist	16 (8.5%)	17 (14.4%)	37 (11.6%)	20 (7.9%)	15 (5.5%)	105 (9.1%)
Reformed Church of Zambia	4 (2.1%)	0 (0%)	1 (0.3%)	4 (1.6%)	3 (1.1%)	12 (1.0%)
Pentecostals	62 (33%)	36 (30.5%)	86 (27%)	86 (33.9%)	117 (43.2%)	387 (33.7%)
Anglicans	5 (2.7%)	0 (0%)	7 (2.2%)	6 (2.4%)	3 (1.1%)	21 (1.8%)
Jehovah's Witness	15 (8%)	2 (1.7%)	19 (6%)	5 (2%)	9 (3.3%)	50 (4.3%)
Baptist	5 (2.7%)	9 (7.6%)	9 (2.8%)	6 (2.4%)	11 (4.1%)	40 (3.5%)
Other	10 (5.3%)	20 (16.9%)	21 (6.6%)	46 (18.1%)	31 (11.4%)	128 (11.1%)
<b>Total</b>	<b>188</b>	<b>118</b>	<b>319</b>	<b>254</b>	<b>271</b>	<b>1150</b>
<b>Place of Birth (Province)</b>						
Copperbelt	133 (68.9%)	13 (10.6%)	80 (24.6%)	10 (3.7%)	118 (42.1%)	354 (29.8%)
Lusaka	19 (9.8%)	59 (48%)	28 (8.6%)	25 (9.3%)	23 (8.2%)	154 (13.0%)
Central	12 (6.2%)	5 (4.1%)	130 (40%)	5 (1.9%)	4 (1.4%)	156 (13.1%)
Luapula	3 (1.6%)	1 (0.8%)	15 (4.6%)	1 (0.4%)	8 (2.9%)	28 (2.4%)
Eastern	7 (3.6%)	3 (2.4%)	4 (1.2%)	9 (3.4%)	3 (1.1%)	26 (2.2%)
Northern	12 (6.2%)	5 (4.1%)	36 (11.1%)	4 (1.5%)	15 (5.4%)	72 (6.1%)
Southern	1 (0.5%)	13 (10.6%)	11 (3.4%)	185 (69%)	7 (2.5%)	217 (18.3%)
North-Western	4 (2.1%)	0 (0%)	6 (1.8%)	6 (2.2%)	94 (33.6%)	110 (9.3%)
Western	0 (0%)	2 (1.6%)	2 (0.6%)	15 (5.6%)	7 (2.5%)	26 (2.2%)
Muchinga	1 (0.5%)	0 (0%)	13 (4%)	1 (0.4%)	0 (0%)	15 (1.3%)
Other	1 (0.5%)	22 (17.9%)	0 (0%)	7 (2.6%)	1 (0.4%)	31 (2.6%)
<b>Total</b>	<b>193</b>	<b>123</b>	<b>325</b>	<b>268</b>	<b>280</b>	<b>1189</b>
<b>Tribe</b>						
Lozi	6 (3.1%)	3 (2.4%)	11 (3.4%)	84 (31.5%)	11 (3.9%)	115 (9.7%)
Tonga	3 (1.6%)	36 (29.3%)	12 (3.7%)	41 (15.4%)	13 (4.6%)	105 (8.9%)
Nyanja	39 (20.3%)	24 (19.5%)	47 (14.6%)	58 (21.7%)	21 (7.5%)	189 (15.9%)
Bemba	62 (32.3%)	14 (11.4%)	120 (37.2%)	18 (6.7%)	72 (25.7%)	286 (24.1%)
Lala	20 (10.4%)	0 (0%)	42 (13%)	1 (0.4%)	7 (2.5%)	70 (5.9%)
Lamba	12 (6.2%)	0 (0%)	15 (4.6%)	2 (0.7%)	8 (2.9%)	37 (3.1%)
Kaonde	7 (3.6%)	0 (0%)	8 (2.5%)	7 (2.6%)	53 (18.9%)	75 (6.3%)
Other	43 (22.4%)	46 (37.4%)	68 (21.1%)	56 (21%)	95 (33.9%)	308 (26.0%)
<b>Total</b>	<b>192</b>	<b>123</b>	<b>323</b>	<b>267</b>	<b>280</b>	<b>1185</b>

Table 6 shows that 16.9% of the 1,187 FSWs reported use of dagga and only less than 1% of the FSWs reported use of heroin, Mandrax and other narcotic substances.

The proportion of FSWs who reported having taken dagga seemed highest in Livingstone (25.7%) and lowest in Ndola (17%) and Solwezi (16.9%). FSW were also asked if they had ever taken other drugs other than dagga, cocaine, mandrax and only 15.4% reported ever taking other narcotic drugs.

**Table 7, Risk behaviour: Period of current residence, and alcohol and drug consumption patterns among the FSW's according to site, IBBSS 2015**

Description	Ndola	Chirundu	Kapiri Mposhi	Livingstone	Solwezi	Total
<b>Period of Current Residence (Years)</b>						
< 1	25 (13.1%)	31 (25.4%)	26 (8.2%)	33 (12.4%)	91 (33.5%)	206(17.6%)
1 to 2	11 (5.8%)	5 (4.1%)	13 (4.1%)	12 (4.5%)	32 (11.8%)	73 (6.2%)
3 to 4	29 (15.2%)	21 (17.2%)	62 (19.4%)	26 (9.8%)	73 (26.8%)	211 (18.0%)
5 to 9	17 (8.9%)	12 (9.8%)	64 (20.1%)	27 (10.2%)	34 (12.5%)	154 (13.2%)
10 to 14	24 (12.6%)	7 (5.7%)	39 (12.2%)	13 (4.9%)	15 (5.5%)	98 (8.4%)
15 to 19	21 (11%)	13 (10.7%)	50 (15.7%)	47 (17.7%)	13 (4.8%)	144 (12.3%)
20 to 44	64 (33.5%)	33 (27%)	65 (20.4%)	108 (40.6%)	14 (5.1%)	284 (24.3)
<b>Total</b>	<b>191</b>	<b>122</b>	<b>319</b>	<b>266</b>	<b>272</b>	<b>1170</b>
<b>Alcohol Consumption</b>						
Everyday	68 (39.5%)	41 (37%)	163 (55.8%)	146 (61.2%)	85 (33.7%)	503 (42.5%)
At least Once a Week	85 (49.4%)	41 (37%)	114 (39.1%)	76 (31.8%)	111 (44%)	427 (36.1%)
Once a Week	11 (6.4%)	1 (0.9%)	11 (3.8%)	9 (3.8%)	15 (5.9%)	47 (4.0%)
Never	27 (15.7%)	40 (36.1%)	36 (12.3%)	34 (14.2%)	69 (27.4%)	206 (17.4%)
<b>Total</b>	<b>191</b>	<b>123</b>	<b>324</b>	<b>265</b>	<b>280</b>	<b>1183</b>
<b>Dagga</b>						
Yes	27 (14.1%)	22 (17.9%)	56 (17.3%)	57 (21.3%)	39 (13.9%)	201 (16.9%)
No	165 (85.9%)	101 (82.1%)	268 (82.7%)	211 (78.7%)	241 (86.1%)	986 (83.1%)
<b>Total</b>	<b>192</b>	<b>123</b>	<b>324</b>	<b>268</b>	<b>280</b>	<b>1187</b>
<b>Heroin</b>						
Yes	1 (0.5%)	0 (0%)	1 (0.3%)	0 (0%)	1 (0.4%)	3 (0.5%)
No	191 (99.5%)	123 (100%)	323 (99.7%)	268 (100%)	279 (99.6%)	1184 (99.5%)
<b>Total</b>	<b>191</b>	<b>123</b>	<b>324</b>	<b>268</b>	<b>280</b>	<b>1187</b>
<b>Mandrax</b>						
Yes	1 (0.5%)	0 (0%)	0 (0%)	2 (0.7%)	1 (0.4%)	4 (0.3%)
No	191 (99.5%)	123 (100%)	324 (100%)	266 (99.3%)	279 (99.6%)	1183 (99.7%)
<b>Total</b>	<b>192</b>	<b>123</b>	<b>324</b>	<b>268</b>	<b>280</b>	<b>1187</b>
<b>Other</b>						
Yes	17 (8.9%)	11 (8.9%)	95 (29.3%)	17 (6.3%)	43 (15.4%)	183 (15.4%)
No	175 (91.1%)	112 (91.1%)	229 (70.7%)	251 (93.7%)	237 (84.6%)	1004 (84.6%)
<b>Total</b>	<b>192</b>	<b>123</b>	<b>324</b>	<b>268</b>	<b>280</b>	<b>1187</b>

**Figure 4, Proportion of FSWs who reported alcohol consumption in the last 4 weeks (N=1183), IBBSS 2015**



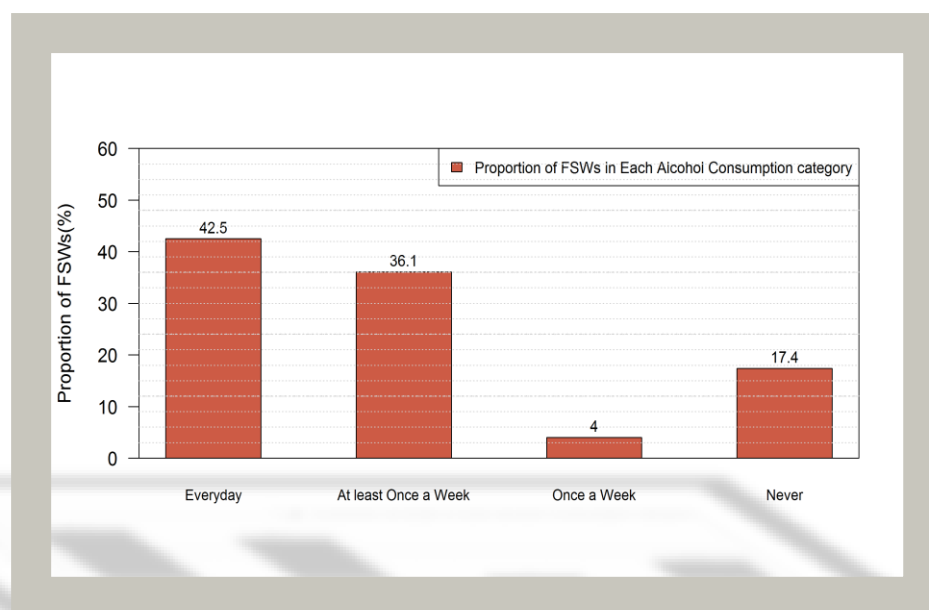


Figure 4 shows the frequency of alcohol consumption among FSWs during the 4 weeks preceding the survey. FSWs were asked to report their frequency of alcohol consumption during the four weeks preceding the survey. Almost 43% of the 1,189 FSWs interviewed reported daily consumption of alcohol.

### 3.2.3 Risk Behavior: Age at first sex

Risk behaviour patterns related to age at first sex according to site are shown in table 8.

**Table 8, Risk behaviour: Age at first sex of FSWs according to site, IBBSS 2015**

	Ndola	Chirundu	Kapiri Mposhi	Livingstone	Solwezi	Total
<b>Age at First Sex</b>						
14-19	162 (83.9%)	103 (83.7%)	294 (90.7%)	250 (93.3%)	243 (86.8%)	1052 (88.6%)
20-24	14 (7.3%)	11 (8.9%)	16 (4.9%)	7 (2.6%)	21 (7.5%)	69 (5.8%)
25-44	17 (8.8%)	9 (7.3%)	14 (4.3%)	11 (4.1%)	16 (5.7%)	67 (5.6%)
<b>Total</b>	<b>193</b>	<b>123</b>	<b>324</b>	<b>268</b>	<b>280</b>	<b>1188</b>
<b>Age at First Sex For Money</b>						
14-19	88 (46.1%)	42 (34.1%)	160 (49.7%)	151 (56.3%)	150 (53.6%)	591 (49.9%)
20-24	46 (24.1%)	33 (26.8%)	68 (21.1%)	59 (22%)	64 (22.9%)	270 (22.8%)
25-44	57 (29.8%)	48 (39%)	94 (29.2%)	58 (21.6%)	66 (23.6%)	323 (27.3%)
<b>Total</b>	<b>191</b>	<b>123</b>	<b>3222</b>	<b>268</b>	<b>280</b>	<b>1184</b>

#### 3.2.3.1 Age at First Sex

Age at first sex is an important risk factor for HIV and STI transmission and acquisition. The median age at first sex was 16 years with an interquartile range of 14 years to 18 years while the median age at which FSWs first received money for sex was 20 years with an interquartile range of 16 to 25 years.

Almost ninety percent (88.6%) of the 1,188 FSWs stated having had their first sexual encounter between age 15 and 19 years. More than 90% of the FSWs in Kapiri Mposhi and Livingstone reported having their first sexual intercourse when they were aged between 15 and 19 years. Overall, the majority of FSWs (49.9%) reported to have started receiving money for sex between the age 15 and 19 years. Livingstone (96.3%) and Solwezi (91.6%) had the highest proportion of FSWs who reported receiving money for sex between age 15 and 19 years and appear lowest in Chirundu (58.4%).

### **3.2.3.2 Risk behaviour patterns: Number of sexual partners per FSW according to site**

Risk behaviour patterns related to number of sexual partners per FSW according to site is shown in table 9

### **3.2.3.3 Number of Different Sexual Partners**

A high number of different sexual partner is associated with increased risk of HIV. Table 8 presents the number of different sexual partners in the last 7 day; last 30 days and the number of paying sexual partners on the last day of sex work. The majority of the FSWs reported one or two clients on their last day of sex work. Overall, 48.7% of the 1,179 FSWs reported having had sex with only one client. Less than 10% of the FSWs (7.1%) reported five or greater number of clients on their last day of sex work.

In figure 5 it is shown that nearly 40% of the FSWs reported 5 to 9 different sexual partners in the last seven days.

### **3.2.4 Male Condoms and Availability**

Knowledge on the availability and protective role of male condom plays is important in encouraging the use of male condoms in affected communities and populations. Knowledge and availability of male condoms related characteristics are shown in tables 10 and 11.

Knowledge of the male condom was almost universal (99.7%) overall and all across sites even among FSW who had not used a condom in their last sexual intercourse. Ninety-one percent of the FSW reported knowing the protective role of male condom with the lowest proportion in Chirundu where only 88.3% of the FSW indicated knowledge and protective role of condoms. FSW were asked to whether they had any condoms with them during the interview but only 56.6% indicated that they had male condoms at hand at the time of the interview.

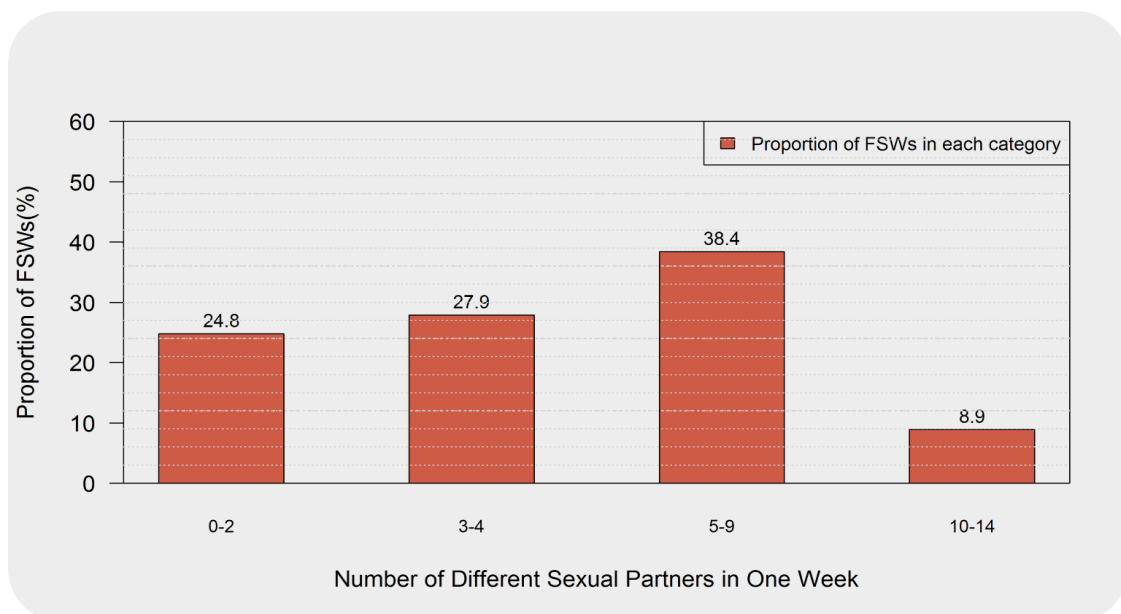
Time taken to acquire condoms may hamper consistent use of condoms. FSW were asked how long it took them to get condoms from the nearest source and overall 90.2% of the FSW interviewed reported that it takes them less than 15 minutes to get a condom for use when the need arose. The same pattern was observed across sites. Nearly 75% of the FSW reported that they had ever bought a male condom. FSW frequently sourced their condoms from the shops (66.1%), clinic (63.3%), Guest House (47.8%), Hospital (43.6%) and family planning facilities (43.6%).

**Table 9, Risk behaviour: Number of sexual partners per FSWs according to site, IBBSS 2015**

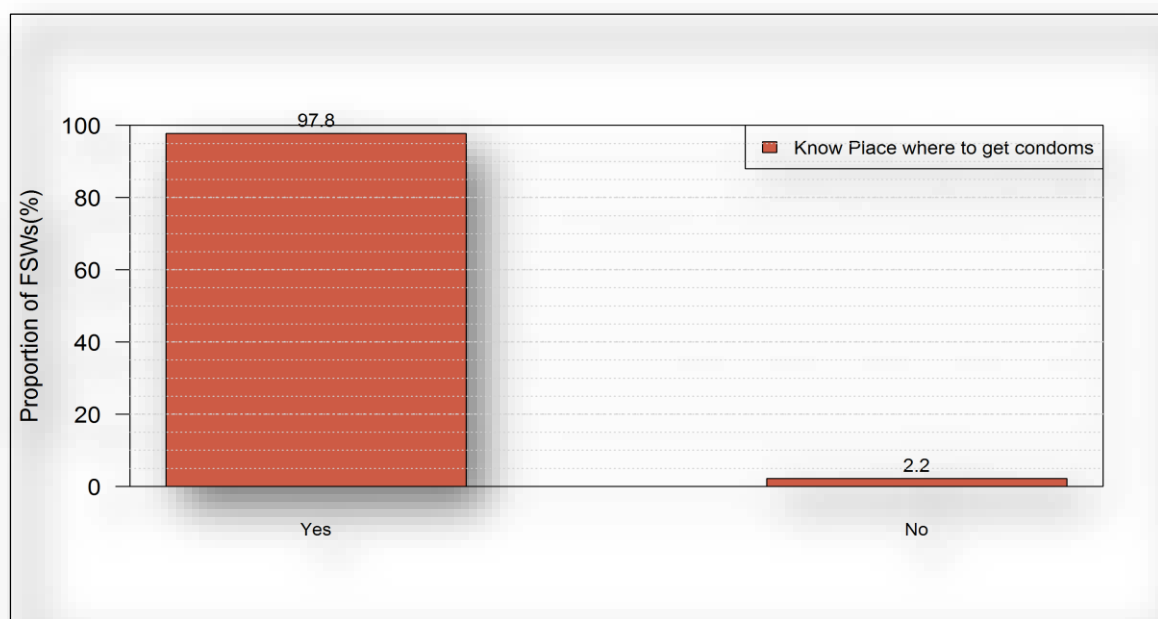
Description	Ndola	Chirundu	Kapiri Mposhi	Livingstone	Solwezi	Total
<b>Number of Sexual Partners over the last 7 days</b>						
One	29 (1.9%)	6 (0.7%)	18 (0.7%)	8 (0.4%)	23 (1.1%)	84 (8.2%)
Two	31 (2%)	10 (1.1%)	44 (1.7%)	23 (1.1%)	34 (1.6%)	149 (13.9%)
Three	30 (1.9%)	11 (1.2%)	49 (1.9%)	36 (1.7%)	30 (1.4%)	156 (15.2%)
Four	17 (1.1%)	8 (0.9%)	47 (1.8%)	30 (1.4%)	38 (1.8%)	140 (13.7%)
Five Plus	64 (4.1%)	66 (7.2%)	130 (5%)	132 (6.3%)	111 (5.2%)	503 (49.1%)
<b>Total</b>	<b>171</b>	<b>101</b>	<b>288</b>	<b>229</b>	<b>236</b>	<b>1025</b>
<b>Number of Sexual Partner in the Last 30 Days</b>						
One	3 (0.2%)	3 (0.3%)	3 (0.1%)	1 (0%)	4 (0.2%)	12 (1.2%)
Two	11 (0.7%)	3 (0.3%)	13 (0.5%)	4 (0.2%)	13 (0.5%)	44 (3.9%)
Three	13 (0.8%)	8 (0.8%)	19 (0.7%)	7 (0.3%)	17 (0.7%)	64 (5.7%)
Four	14 (0.9%)	10 (1%)	17 (0.6%)	13 (0.6%)	14 (0.6%)	68 (6.1%)
Five	9 (0.6%)	3 (0.3%)	16 (0.6%)	13 (0.6%)	12 (0.5%)	53 (4.7%)
Six	13 (0.8%)	1 (0.1%)	16 (0.6%)	15 (0.7%)	11 (0.4%)	56 (5.0%)
Seven	5 (0.3%)	3 (0.3%)	10 (0.4%)	5 (0.2%)	5 (0.2%)	28 (2.5%)
Eight	13 (0.8%)	0 (0%)	13 (0.5%)	14 (0.6%)	7 (0.3%)	47 (4.2%)
Nine Plus	99 (6.1%)	79 (7.9%)	205 (7.2%)	179 (7.8%)	186 (7.6%)	748 (66.7%)
<b>Total</b>	<b>180</b>	<b>110</b>	<b>312</b>	<b>251</b>	<b>269</b>	<b>1122</b>
<b>Number of Clients on the Last Day Worked</b>						
One	91 (48.7%)	61 (50%)	181 (56.2%)	98 (36.6%)	146 (52.1%)	577 (48.7%)
Two	44 (23.5%)	39 (32%)	82 (25.5%)	106 (39.6%)	49 (17.5%)	320 (27.1%)
Three	22 (11.8%)	5 (4.1%)	30 (9.3%)	34 (12.7%)	35 (12.5%)	126 (10.7%)
Four	13 (7%)	9 (7.4%)	12 (3.7%)	13 (4.9%)	25 (8.9%)	72 (6.1%)
Five Plus	17 (9.1%)	8 (6.6%)	17 (5.3%)	17 (6.3%)	25 (8.9%)	84 (7.1%)
<b>Total</b>	<b>187</b>	<b>122</b>	<b>322</b>	<b>268</b>	<b>280</b>	<b>1179</b>

FSWs were asked to indicate if they knew a place or person where they can get male condoms. Figure 6 shows that 97.8% of the 1,180 FSWs know of a place or person where to get male condoms. Over a half FSWs mentioned shops, clinic and guest houses as places to obtain a male condom.

**Figure 5, Distribution of FSWs by number of different sexual partners in the past seven days (N=1025), IBBSS 2015**



**Figure 6, Knowledge of place where to buy male condoms (N=1152), IBBSS 2015**



### 3.2.5 Female Condoms and Availability

To enable women take control of their protection against HIV and other STIs including unwanted and unplanned pregnancies, female condoms have been introduced as one alternative interventions.

FSWs were asked if they had ever heard of a female condom. Tables 12 and 13 and Figure 7 shows that overall 94.1% of the 1,181 FSWs reported that they had ever heard of a female condom but only 14.2% reported ever having ever used the female condom. FSWs were asked if they knew of a place where they can buy female condom and 59.2% indicated that they knew of a place where can source female condoms. The common source of female condoms indicated by FSWs are the clinic (70.9 %), hospital (51.8%) and peer educators (24.8%).

**Table 10, Knowledge and availability of Male Condom among the FSWs, IBBSS 2015 (1)**

Description	Ndola	Chirundu	Kapiri Mposhi	Livingstone	Solwezi	Total
<b>Ever Heard of Male Condom</b>						
Yes	58 (100%)	16 (100%)	95 (99%)	56 (100%)	67 (100%)	292 (99.7%)
No	0 (0%)	0 (0%)	1 (1%)	0 (0%)	0 (0%)	1 (0.3%)
<b>Total</b>	<b>58</b>	<b>16</b>	<b>96</b>	<b>56</b>	<b>67</b>	<b>293</b>
<b>Know Condom can Protect HIV</b>						
Yes	177 (94.1%)	106 (88.3%)	286 (91.4%)	237 (88.8%)	250 (91.9%)	1056 (91.0%)
No	11 (5.9%)	14 (11.7%)	27 (8.6%)	30 (11.2%)	22 (8.1%)	104 (9.0%)
<b>Total</b>	<b>188</b>	<b>120</b>	<b>313</b>	<b>267</b>	<b>272</b>	<b>1160</b>
<b>Ever Used a Male Condom</b>						
Yes	43 (91.5%)	16 (100%)	93 (97.9%)	55 (98.2%)	61 (93.8%)	268 (96.1%)
No	4 (8.5%)	0 (0%)	2 (2.1%)	1 (1.8%)	4 (6.2%)	11 (3.9%)
<b>Total</b>	<b>47</b>	<b>16</b>	<b>95</b>	<b>56</b>	<b>65</b>	<b>279</b>
<b>Had Condom at Time of Interview</b>						
No	96 (53.6%)	30 (31.6%)	140 (48.4%)	77 (38.1%)	96 (38.9%)	439 (43.4%)
Yes	83 (46.4%)	65 (68.4%)	149 (51.6%)	125 (61.9%)	151 (61.1%)	573 (56.6%)
<b>Total</b>	<b>179</b>	<b>95</b>	<b>289</b>	<b>202</b>	<b>247</b>	<b>1012</b>
<b>Ever Bought a Male Condom</b>						
Yes	135 (75%)	87 (77%)	219 (71.8%)	178 (69.3%)	215 (80.8%)	834 (74.4%)
No	45 (25%)	26 (23%)	86 (28.2%)	79 (30.7%)	51 (19.2%)	287 (25.6%)
<b>Total</b>	<b>180</b>	<b>113</b>	<b>305</b>	<b>257</b>	<b>266</b>	<b>1121</b>
<b>Time Taken to obtain Male Condom</b>						
<15 Minutes	177 (93.2%)	106 (88.3%)	286 (89.9%)	237 (88.4%)	250 (90.9%)	1056 (90.2%)
15-30 Minutes	11 (5.8%)	14 (11.7%)	27 (8.5%)	30 (11.2%)	22 (8%)	104 (8.9%)
Do Not Know	2 (1.1%)	0 (0%)	5 (1.6%)	1 (0.4%)	3 (1.1%)	11 (0.9%)
<b>Total</b>	<b>190</b>	<b>120</b>	<b>318</b>	<b>268</b>	<b>275</b>	<b>1171</b>
<b>Sources Used to Obtain Male Condom</b>						
<b>Shop</b>						
Yes	131 (70.4%)	84 (72.4%)	212 (67.3%)	159 (60.7%)	175 (64.3%)	761 (66.1%)
No	55 (29.6%)	32 (27.6%)	103 (32.7%)	103 (39.3%)	97 (35.7%)	390 (33.9%)
<b>Total</b>	<b>186</b>	<b>116</b>	<b>315</b>	<b>262</b>	<b>272</b>	<b>1151</b>
<b>Pharmacy</b>						
Yes	52 (27.8%)	35 (30.2%)	59 (18.7%)	64 (24.4%)	56 (20.6%)	266 (23.1%)
No	135 (72.2%)	81 (69.8%)	256 (81.3%)	198 (75.6%)	216 (79.4%)	886 (76.9%)
<b>Total</b>	<b>187</b>	<b>116</b>	<b>315</b>	<b>262</b>	<b>272</b>	<b>1152</b>

**Table 11, Knowledge and availability of Male Condom among the FSWs, IBBSS 2015 (2)**

Description	Ndola	Chirundu	Kapiri Mposhi	Livingstone	Solwezi	Total
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<b>Market</b>						
Yes	54 (28.9%)	10 (8.6%)	42 (13.3%)	43 (16.4%)	71 (26.1%)	220 (19.1%)
No	133 (71.1%)	106 (91.4%)	273 (86.7%)	219 (83.6%)	201 (73.9%)	932 (80.9%)
<b>Total</b>	<b>187</b>	<b>116</b>	<b>315</b>	<b>262</b>	<b>272</b>	<b>1152</b>
<b>Clinic</b>						
Yes	129 (69%)	67 (57.8%)	194 (61.6%)	193 (73.7%)	146 (53.7%)	729 (63.3%)
No	58 (31%)	49 (42.2%)	121 (38.4%)	69 (26.3%)	126 (46.3%)	423 (36.7%)
<b>Total</b>	<b>187</b>	<b>116</b>	<b>315</b>	<b>262</b>	<b>272</b>	<b>1152</b>
<b>Hospital</b>						
Yes	69 (36.9%)	66 (56.9%)	176 (55.9%)	96 (36.6%)	95 (34.9%)	502 (43.6%)
No	118 (63.1%)	50 (43.1%)	139 (44.1%)	166 (63.4%)	177 (65.1%)	550 (56.4%)
<b>Total</b>						
<b>Family Planning</b>						
Yes	69 (36.9%)	66 (56.9%)	176 (55.9%)	96 (36.6%)	95 (34.9%)	502 (43.6%)
No	118 (63.1%)	50 (43.1%)	139 (44.1%)	166 (63.4%)	177 (65.1%)	650 (56.4%)
<b>Total</b>	<b>187</b>	<b>116</b>	<b>315</b>	<b>262</b>	<b>272</b>	<b>1152</b>
<b>Guest House or Bar</b>						
Yes	129 (69%)	49 (42.2%)	192 (61%)	134 (51.1%)	130 (47.8%)	634 (55.0%)
No	58 (31%)	67 (57.8%)	123 (39%)	128 (48.9%)	142 (52.2%)	518 (45.0%)
<b>Total</b>	<b>187</b>	<b>116</b>	<b>315</b>	<b>262</b>	<b>272</b>	<b>1152</b>
<b>Peer educator</b>						
Yes	9 (4.8%)	42 (36.2%)	65 (20.6%)	94 (35.9%)	41 (15.1%)	251 (21.8%)
No	178 (95.2%)	74 (63.8%)	250 (79.4%)	168 (64.1%)	231 (84.9%)	901 (78.2%)
<b>Total</b>	<b>187</b>	<b>116</b>	<b>315</b>	<b>262</b>	<b>272</b>	<b>1152</b>
<b>Friend</b>						
Yes	19 (10.2%)	5 (4.3%)	9 (2.9%)	8 (3.1%)	8 (2.9%)	49 (4.3%)
No	168 (89.8%)	111 (95.7%)	306 (97.1%)	254 (96.9%)	264 (97.1%)	1103 (95.7%)
<b>Total</b>	<b>187</b>	<b>116</b>	<b>315</b>	<b>262</b>	<b>272</b>	<b>1152</b>

Table 12, Knowledge and Availability of Female Condoms among the FSWs, IBBSS 2015 (1)

	Ndola	Chirundu	Kapiri Mposhi	Livingstone	Solwezi	Total
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<b>Ever Heard of a Female Condom</b>						
Yes	172 (90.1%)	116 (95.1%)	309 (96%)	261 (97.4%)	253 (91%)	1111 (94.1)
No	19 (9.9%)	6 (4.9%)	13 (4%)	7 (2.6%)	25 (9%)	70 (5.9%)
<b>Total</b>	<b>191</b>	<b>122</b>	<b>322</b>	<b>268</b>	<b>278</b>	<b>1181</b>
<b>Ever Used a Female Condom</b>						
Yes	29 (17%)	24 (20.7%)	57 (18.5%)	77 (29.5%)	81 (31.9%)	268 (24.1%)
No	142 (83%)	92 (79.3%)	251 (81.5%)	184 (70.5%)	173 (68.1%)	842 (75.9%)
<b>Total</b>	<b>171</b>	<b>116</b>	<b>308</b>	<b>261</b>	<b>254</b>	<b>1110</b>
<b>Ever bought a Female Condom</b>						
Yes	21 (21%)	4 (6.5%)	18 (10.1%)	19 (11.6%)	32 (20.1%)	94 (14.2%)
No	79 (79%)	58 (93.5%)	160 (89.9%)	145 (88.4%)	127 (79.9%)	569 (85.8%)
<b>Total</b>	<b>100</b>	<b>62</b>	<b>178</b>	<b>164</b>	<b>159</b>	<b>663</b>
<b>Know Place from where to get Female Condom</b>						
Yes	96 (58.2%)	58 (52.7%)	174 (57.6%)	159 (62.1%)	153 (61.7%)	640 (59.2%)
No	69 (41.8%)	52 (47.3%)	128 (42.4%)	97 (37.9%)	95 (38.3%)	441 (40.8%)
<b>Total</b>	<b>165</b>	<b>110</b>	<b>302</b>	<b>256</b>	<b>248</b>	<b>1081</b>
<b>Sources of Female Condom</b>						
<b>Shop</b>						
Yes	12 (11.8%)	9 (14.1%)	18 (9.9%)	10 (6.1%)	17 (11%)	66 (9.9%)
No	90 (88.2%)	55 (85.9%)	163 (90.1%)	154 (93.9%)	138 (89%)	600 (90.1%)
<b>Total</b>	<b>102</b>	<b>64</b>	<b>181</b>	<b>164</b>	<b>155</b>	<b>666</b>
<b>Pharmacy</b>						
Yes	23 (22.5%)	9 (14.1%)	11 (6.1%)	4 (2.4%)	18 (11.6%)	65 (9.8%)
No	79 (77.5%)	55 (85.9%)	170 (93.9%)	160 (97.6%)	137 (88.4%)	601 (90.2%)
<b>Total</b>	<b>102</b>	<b>64</b>	<b>181</b>	<b>164</b>	<b>155</b>	<b>666</b>
<b>Market</b>						
Yes	4 (3.9%)	0 (0%)	11 (6.1%)	2 (1.2%)	8 (5.2%)	25 (3.8%)
No	98 (96.1%)	64 (100%)	170 (93.9%)	162 (98.8%)	147 (94.8%)	641 (96.2%)
<b>Total</b>	<b>102</b>	<b>64</b>	<b>181</b>	<b>164</b>	<b>155</b>	<b>666</b>
<b>Clinic</b>						
Yes	81 (79.4%)	41 (64.1%)	124 (68.5%)	128 (78%)	98 (63.2%)	472 (70.9%)
No	21 (20.6%)	23 (35.9%)	57 (31.5%)	36 (22%)	57 (36.8%)	194 (29.1%)
<b>Total</b>	<b>102</b>	<b>64</b>	<b>181</b>	<b>164</b>	<b>155</b>	<b>666</b>
<b>Hospital</b>						
Yes	42 (41.2%)	45 (70.3%)	109 (60.2%)	80 (48.8%)	69 (44.5%)	345 (51.8%)
No	60 (58.8%)	19 (29.7%)	72 (39.8%)	84 (51.2%)	86 (55.5%)	321 (48.2%)
<b>Total</b>	<b>102</b>	<b>64</b>	<b>181</b>	<b>164</b>	<b>155</b>	<b>666</b>

**Table 13, Knowledge and Availability of Female Condoms among the FSWs, IBBSS 2015 (2)**

	Ndola	Chirundu	Kapiri Mposhi	Livingstone	Solwezi	Total
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Family Planning Centre						
Yes	1 (1%)	0 (0%)	3 (1.7%)	12 (7.3%)	0 (0%)	16 (2.4%)
No	101 (99%)	64 (100%)	178 (98.3%)	152 (92.7%)	155 (100%)	650 (97.6%)
<b>Total</b>	<b>102</b>	<b>64</b>	<b>181</b>	<b>164</b>	<b>155</b>	<b>666</b>
Bar or Hotel						
Yes	5 (4.9%)	3 (4.7%)	7 (3.9%)	3 (1.8%)	11 (7.1%)	29 (4.4%)
No	97 (95.1%)	61 (95.3%)	174 (96.1%)	161 (98.2%)	144 (92.9%)	637 (95.6%)
<b>Total</b>	<b>102</b>	<b>64</b>	<b>181</b>	<b>164</b>	<b>155</b>	<b>666</b>
Peer Educator						
Yes	5 (4.9%)	22 (34.4%)	35 (19.3%)	68 (41.5%)	35 (22.6%)	165 (24.8%)
No	97 (95.1%)	42 (65.6%)	146 (80.7%)	96 (58.5%)	120 (77.4%)	501 (75.2%)
<b>Total</b>	<b>102</b>	<b>64</b>	<b>181</b>	<b>164</b>	<b>155</b>	<b>666</b>
Friend						
Yes	1 (1%)	1 (1.6%)	2 (1.1%)	1 (0.6%)	2 (1.3%)	7 (1.1%)
No	101 (99%)	63 (98.4%)	179 (98.9%)	163 (99.4%)	153 (98.7%)	659 (98.9%)
<b>Total</b>	<b>102</b>	<b>64</b>	<b>181</b>	<b>164</b>	<b>155</b>	<b>666</b>
Other						
Yes	6 (5.9%)	15 (23.4%)	27 (14.9%)	44 (26.8%)	26 (16.8%)	118 (17.7%)
No	96 (94.1%)	49 (76.6%)	154 (85.1%)	120 (73.2%)	129 (83.2%)	548 (82.3%)
<b>Total</b>	<b>102</b>	<b>64</b>	<b>181</b>	<b>164</b>	<b>155</b>	<b>666</b>

Figure 7, Proportion of FSW who ever Heard of Female Condom (N=1181), IBBSS 2015

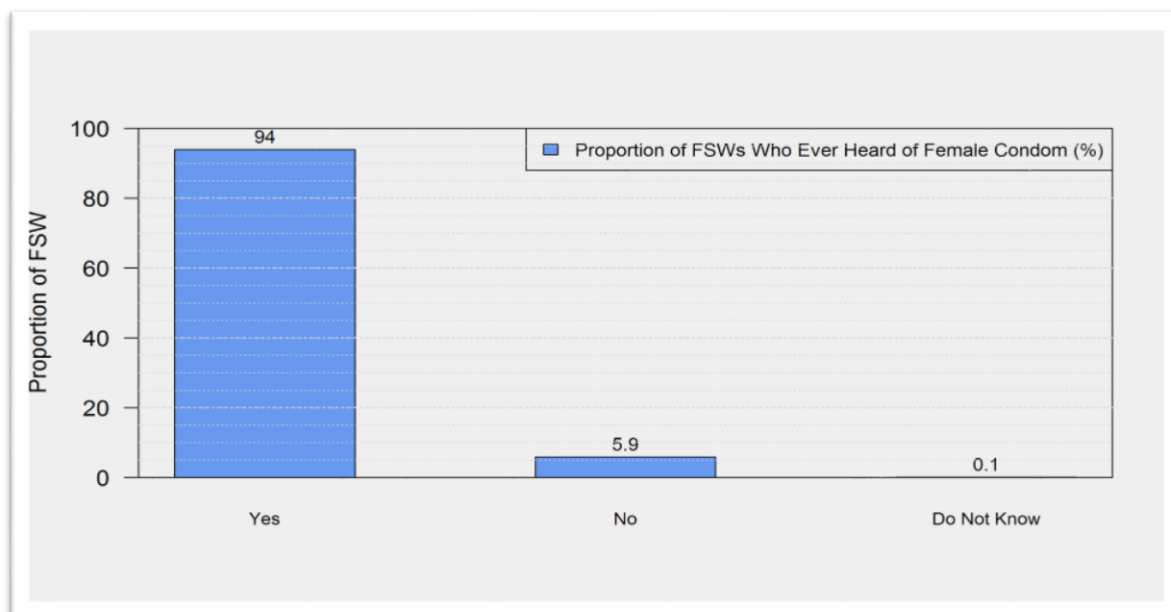


Figure 8, Distribution FSWs by use of Female Condom (N=1110), IBBSS 2015



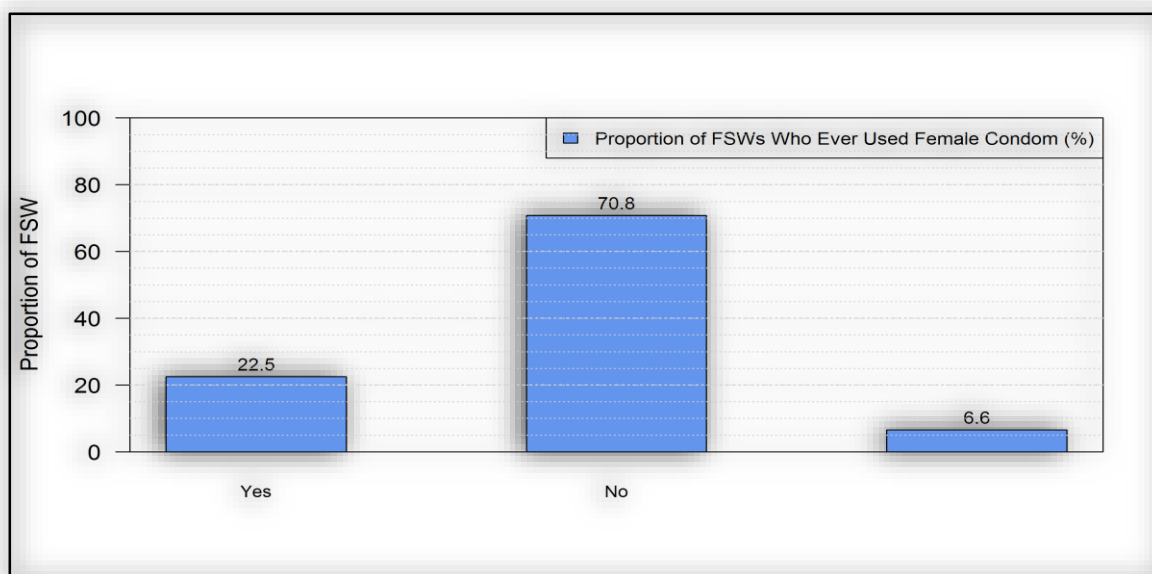


Figure 8 shows that female condom use among FSW. Less than 25% of the FSWs interviewed reported having ever used female condom. Female condom use among FSW is not as widespread as male condom use.

### 3.2.6 Condom Use with Paying Partner

Table 14 presents condom use and reasons for not using condoms with paying partners among FSWs.

Slightly more than 75% of the FSWs reported use of condom during sexual intercourse with last paying partners. The proportion did differ markedly across sites but condom use by FSW with last paying partner seemed highest in Solwezi (82.5%). Condom use during last sexual intercourse with paying partner was suggested by 81.7% of the FSWs interviewed. The overall consistent condom use across sites was 35.2% but ranged from 25.3% in Kapiri Mposhi to 45.5% in Ndola. FSWs were asked to provide a reason why they did not use a condom during sexual intercourse with a paying partner and 16.7% cited non-availability of the condom as reason for not using condom. FSWs universally indicated that the price of the condom was not the reason for not using condom during last sexual intercourse with paying partner. Approximately 55% of the FSWs who did not use a condom with paying partner indicated that their partner objected.

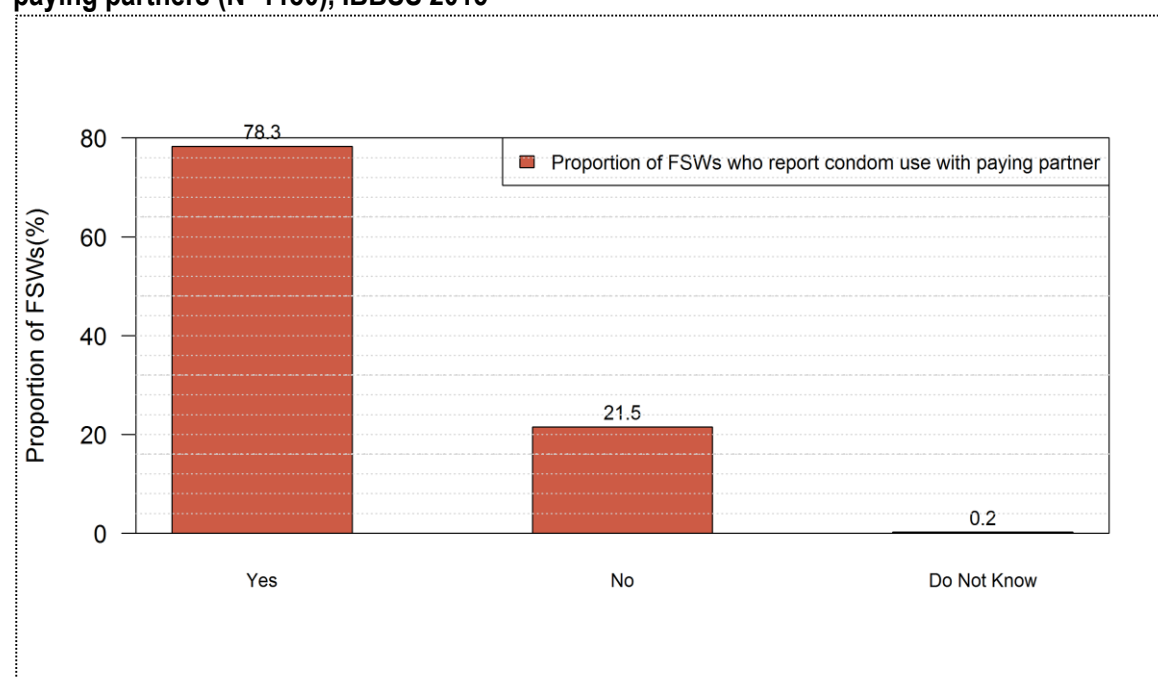
In figure 9, it is shown that almost eighty per cent (78.3%) of the 1,192 FSWs reported to have used condom during the last sexual intercourse with paying partner.

### 3.2.7 Condom Use with Non-Paying Partner

Tables 15 and 16 present FSWs' condom use and selected reasons respectively for not using condoms with non-paying sexual partner.

Overall, 44.3% of the FSWs reported to have used a condom during sex with non-paying sexual partner. Chirundu seem to have the highest proportion FSWs (62.1%) who reported use of condom during sexual intercourse with non-paying partner and the lowest proportion was observed among FSWs in Ndola (39.4%). FSWs were asked to indicate who suggested condom use and 74.1% reported that they had suggested condom use with non-paying sexual partner.

**Figure 9, Proportion of FSWs who reported condom use during sexual encounter with paying partners (N=1180), IBBSS 2015**



The overall proportion of the FSWs who reported consistent condom use—defined as using a condom every time in the last 30 days—with non-paying partner was estimated at 18.9% and 21.1% of the respondents indicated they had never used a condom with non-paying partner in the last 30 days preceding the survey.

**Figure 10, Proportion of FSWs who reported condom use during sex with non-paying partners (N=405), IBBSS 2015**

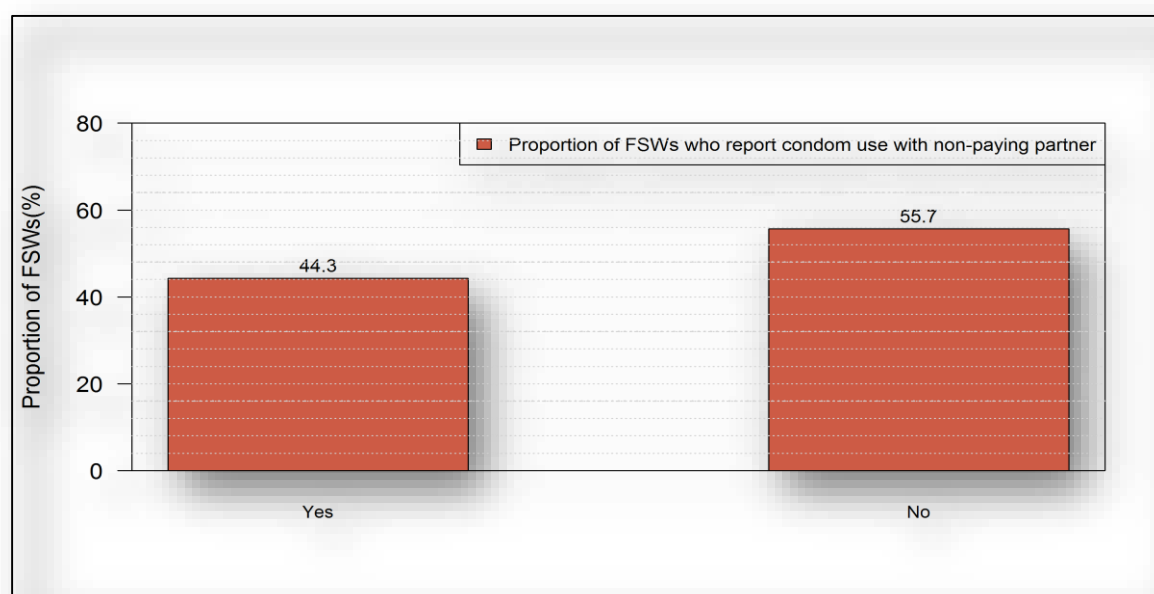


Figure 10 shows the proportions of FSWs who reported condom use with non-paying sexual partners during the last sexual intercourse. Responses to the question on the use of condoms during the last sexual intercourse with non-paying partners were missing in 797 FSWs. However,

55.7% of the 405 FSWs who provided responses reported that they did not use a condom during their last sexual intercourse with a non-paying sexual partner. Less than 50% of the 405 FSWs reported condom use during sex with non-paying sex partners and data were missing for 797 FSWs.

**Table 14, Condom Use with Paying Partners among the FSWs, IBBSS 2015**

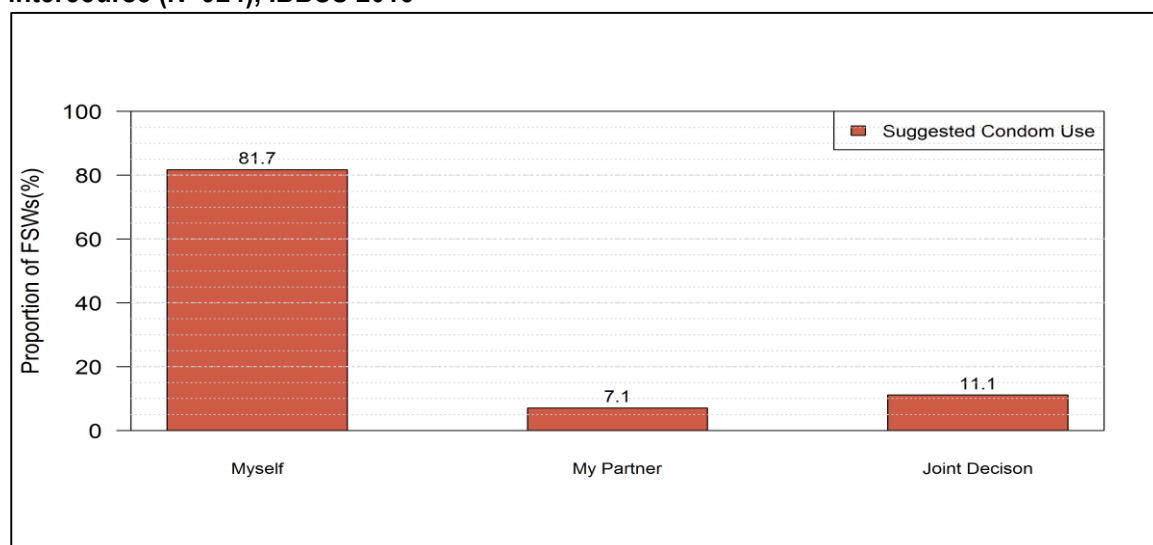
	Ndola	Chirundu	Kapiri Mposhi	Livingstone	Solwezi	Total
<b>Condom Use at Last Sexual Act</b>						
Yes	151 (79.5%)	102 (83.6%)	232 (72%)	210 (78.9%)	231 (82.5%)	926 (78.5%)
No	39 (20.5%)	20 (16.4%)	90 (28%)	56 (21.1%)	49 (17.5%)	254 (21.5%)
<b>Total</b>	<b>190</b>	<b>122</b>	<b>322</b>	<b>266</b>	<b>280</b>	<b>1180</b>
<b>Suggested Condom Use</b>						
Myself	128 (84.2%)	87 (85.3%)	201 (87.4%)	174 (83.3%)	165 (71.4%)	755 (81.7%)
Partner	12 (7.9%)	5 (4.9%)	8 (3.5%)	13 (6.2%)	28 (12.1%)	66 (7.1%)
Joint	12 (7.9%)	10 (9.8%)	21 (9.1%)	22 (10.5%)	38 (16.5%)	103 (11.1%)
<b>Total</b>	<b>152</b>	<b>102</b>	<b>230</b>	<b>209</b>	<b>231</b>	<b>924</b>
<b>Regularity of Condom Use</b>						
Every time	86 (45.5%)	48 (40.3%)	80 (25.3%)	88 (33.5%)	108 (39%)	410 (35.2%)
Almost Every time	17 (9%)	24 (20.2%)	38 (12%)	33 (12.5%)	38 (13.7%)	150 (12.9%)
Sometimes	78 (41.3%)	44 (37%)	191 (60.4%)	141 (53.6%)	126 (45.5%)	580 (49.8%)
Never	8 (4.2%)	3 (2.5%)	7 (2.2%)	1 (0.4%)	5 (1.8%)	24 (2.1%)
<b>Total</b>						
<b>Reason for not using Condom</b>						
<b>Not Available</b>						
Yes	7 (19.4%)	4 (23.5%)	13 (14.8%)	8 (16%)	7 (16.7%)	39 (16.7%)
No	29 (80.6%)	13 (76.5%)	75 (85.2%)	42 (84%)	35 (83.3%)	194 (83.3%)
<b>Total</b>	<b>36</b>	<b>17</b>	<b>88</b>	<b>50</b>	<b>42</b>	<b>233</b>
<b>Expensive</b>						
No	36 (100%)	17 (100%)	88 (100%)	50 (100%)	42 (100%)	233 (100%)
<b>Total</b>	<b>36</b>	<b>17</b>	<b>88</b>	<b>50</b>	<b>42</b>	<b>233</b>
<b>Partner Objected</b>						
Yes	19 (52.8%)	12 (70.6%)	50 (56.8%)	30 (60%)	17 (40.5%)	128 (54.9%)
No	17 (47.2%)	5 (29.4%)	38 (43.2%)	20 (40%)	25 (59.5%)	105 (45.1%)
<b>Total</b>	<b>36</b>	<b>17</b>	<b>88</b>	<b>50</b>	<b>42</b>	<b>233</b>

### 3.2.8 Condom Knowledge and Use at Individual Level

The overall proportion across sites of FSW who reported knowing that condom use during sexual intercourse can protect HIV transmission and who also used a condom during sexual intercourse with last paying partner was 79.0% and ranged from 72.0% in Kapiri Mposhi to 83.6% in Solwezi. Among FSWs who did not know consistent condom could protect against HIV, 75.7% reported condom use with the last paying sexual partner and condom use in this category ranged from 63.6% in Ndola to 85.7% in Chirundu as indicated in Table 17.

Figure 11 shows that 81.7% of the FSWs interviewed reported that they suggested condom use to their paying partners during the last sexual intercourse.

**Figure 11, Distribution of persons who suggested condom use during the last sexual intercourse (N=924), IBBSS 2015**



**Table 15, Condom Use with non-Paying Partners among the FSWs, IBBSS 2015**

	Ndola	Chirundu	Kapiri Mposhi	Livingstone	Solwezi	Total
<b>Used Condom with Non-Paying Partner</b>						
Yes	26 (39.4%)	18 (62.1%)	59 (45.7%)	37 (44%)	38 (40.4%)	178 (44.3%)
No	40 (60.6%)	11 (37.9%)	70 (54.3%)	47 (56%)	56 (59.6%)	224 (55.7%)
<b>Total</b>	<b>66</b>	<b>29</b>	<b>129</b>	<b>84</b>	<b>94</b>	<b>402</b>
<b>Suggested Condom Use</b>						
Myself	19 (70.4%)	10 (55.6%)	48 (81.4%)	29 (82.9%)	23 (65.7%)	129 (74.1%)
Partner	3 (11.1%)	3 (16.7%)	1 (1.7%)	4 (11.4%)	5 (14.3%)	16 (9.2%)
Joint	5 (18.5%)	5 (27.8%)	10 (16.9%)	2 (5.7%)	7 (20%)	29 (16.7%)
<b>Total</b>	<b>27</b>	<b>18</b>	<b>59</b>	<b>35</b>	<b>35</b>	<b>174</b>
<b>Regularity of Condom Use in last 12 months</b>						
Every time	13 (19.7%)	6 (21.4%)	22 (16.9%)	13 (15.5%)	22 (23.4%)	76 (18.9%)
Almost Every time	6 (9.1%)	5 (17.9%)	11 (8.5%)	7 (8.3%)	10 (10.6%)	39 (9.7%)
Sometimes	28 (42.4%)	12 (42.9%)	74 (56.9%)	54 (64.3%)	34 (36.2%)	202 (50.2%)
Never	19 (28.8%)	5 (17.9%)	23 (17.7%)	10 (11.9%)	28 (29.8%)	85 (21.1%)
<b>Total</b>	<b>66</b>	<b>28</b>	<b>130</b>	<b>84</b>	<b>94</b>	<b>402</b>

Table 17 presents information on condom use with last paying sexual partner during the past 30 days among FSWs with and without knowledge on the protective role of condoms in HIV transmission.

Among FSW who indicated that had knowledge of the protective role of condoms, 35.2% of the FSW reported use of condom with last paying partner in the last 30 days compared with 32.0% among FSW who indicated that they did not know the protective role of condoms. Use of condom with last paying partner in the last 30 days among FSWs who reported they did not know that

condom use during sexual intercourse can protect HIV transmission seem highest in Ndola (45.5%).

**Table 16, Reasons for non-Condom Use with non-Paying Partners among the FSWs, IBBSS 2015**

	Ndola	Chirundu	Kapiri Mposhi	Livingstone	Solwezi	Total
<b>Reason for not using condom</b>						
<b>Not Available</b>						
Yes	3 (8.1%)	1 (9.1%)	1 (1.4%)	3 (6.4%)	2 (3.6%)	10 (4.5%)
No	34 (91.9%)	10 (90.9%)	69 (98.6%)	44 (93.6%)	53 (96.4%)	210 (95.5%)
<b>Total</b>	<b>37</b>	<b>11</b>	<b>70</b>	<b>47</b>	<b>55</b>	<b>220</b>
<b>Too Expensive</b>						
Yes	5 (13.5%)	0 (0%)	1 (1.4%)	0 (0%)	0 (0%)	6 (2.7%)
No	32 (86.5%)	11 (100%)	69 (98.6%)	47 (100%)	55 (100%)	214 (97.3%)
<b>Total</b>	<b>37</b>	<b>11</b>	<b>70</b>	<b>47</b>	<b>55</b>	<b>220</b>
<b>Partner Objected</b>						
Yes	5 (13.5%)	1 (9.1%)	17 (24.3%)	9 (19.1%)	6 (10.9%)	38 (17.3%)
No	32 (86.5%)	10 (90.9%)	53 (75.7%)	38 (80.9%)	49 (89.1%)	182 (82.7%)
<b>Total</b>	<b>37</b>	<b>11</b>	<b>70</b>	<b>47</b>	<b>55</b>	<b>220</b>
<b>Partner Did Not Like Condom</b>						
Yes	11 (29.7%)	7 (63.6%)	36 (51.4%)	23 (48.9%)	25 (45.5%)	102 (46.4%)
No	26 (70.3%)	4 (36.4%)	34 (48.6%)	24 (51.1%)	30 (54.5%)	118 (53.6%)
<b>Total</b>	<b>37</b>	<b>11</b>	<b>70</b>	<b>47</b>	<b>55</b>	<b>220</b>
<b>Used Other Contraceptives</b>						
Yes	2 (5.4%)	0 (0%)	2 (2.9%)	3 (6.4%)	1 (1.8%)	8 (3.6%)
No	35 (94.6%)	11 (100%)	68 (97.1%)	44 (93.6%)	54 (98.2%)	118 (53.6%)
<b>Total</b>	<b>37</b>	<b>11</b>	<b>70</b>	<b>47</b>	<b>55</b>	<b>220</b>
<b>Not Necessary</b>						
Yes	2 (5.4%)	5 (45.5%)	24 (34.3%)	9 (19.1%)	18 (32.7%)	58 (26.4%)
No	35 (94.6%)	6 (54.5%)	46 (65.7%)	38 (80.9%)	37 (67.3%)	162 (73.6%)
<b>Total</b>	<b>37</b>	<b>11</b>	<b>70</b>	<b>47</b>	<b>55</b>	<b>220</b>
<b>Other</b>						
Yes	17 (45.9%)	2 (18.2%)	14 (20%)	15 (31.9%)	15 (27.8%)	63 (28.8%)
No	20 (54.1%)	9 (81.8%)	56 (80%)	32 (68.1%)	39 (72.2%)	156 (71.2%)
<b>Total</b>	<b>37</b>	<b>11</b>	<b>70</b>	<b>47</b>	<b>54</b>	<b>219</b>

**Figure 12, Proportion of FSWs who reported consistent condom use with non-paying sexual partners (N=405), IBBSS 2015**

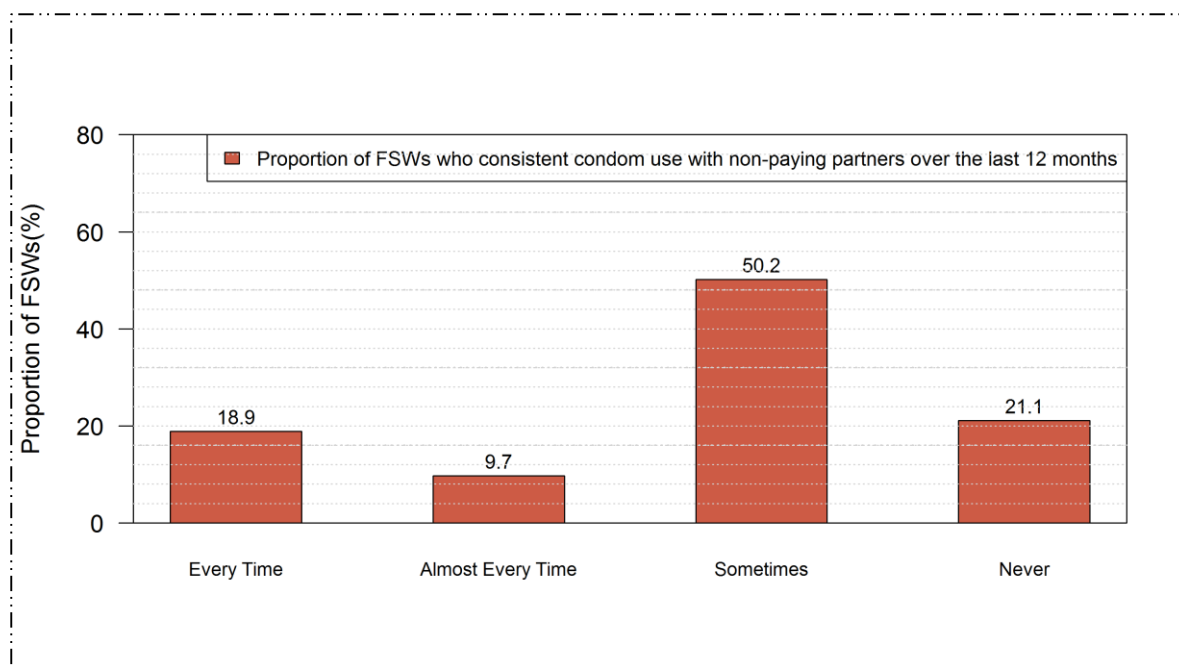


Figure 11 shows the patterns of condom use of FSWs with non-paying sexual partners during the 12 preceding the survey and indicate that less than 25% of the 405 FSWs interviewed reported consistent condom use. During the 12 months preceding the survey, 21.1% of the FSWs had never used condoms with non-paying sexual partners.

### 3.2.9 Knowledge on STIs

Table 18 presents information collected from FSWs on STI knowledge. Virtually all the FSWs interviewed had knowledge on sexually transmitted infections (STIs). Among the FSWs, 98.2% had ever heard of an STI. FSW were asked to name an STI. They named discharge (60.6%), burning pain on urination (42.1%), genital ulcers (58%) and swelling in the groin (19.4%).

### 3.2.10 Sexually Transmitted Infection Symptoms and Sexual Behaviour

FSW were asked how they behaved the last time they had a STI. Table 19 shows the FSWs behaviour when with symptoms and indicate that 82.4% continued to have sex even during the time they had symptoms and 74.5% did not use condom consistently even when they had STI symptoms. FSW were asked if they ever told their partner about STI symptoms the last time they had an STI and 78.4% indicated that they did not tell their partners about the symptoms.

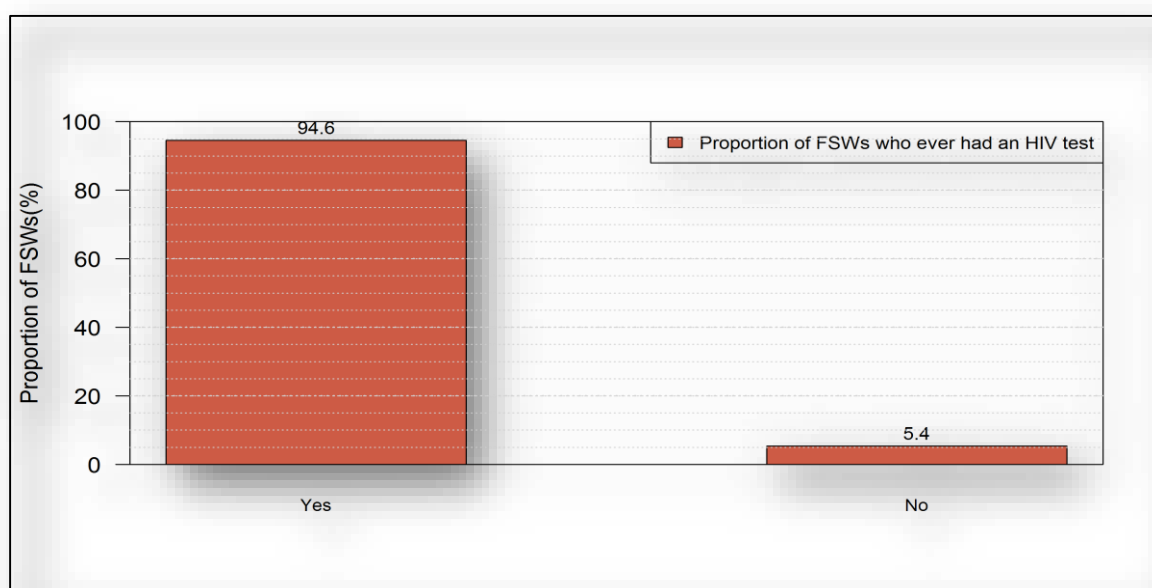
**Table 17, Consistent Condom Use in the Last 30 Days by FSW with last paying sexual partner by Knowledge of protective Role of Condoms in HIV transmission, IBBSS 2015**

Site	Number of FSWs who Used a Condom with the Last Paying Sexual Partner	Number of FSWs interviewed	Proportion of FSWs who Used a Condom with the Last Paying Sexual Partner	95% Confidence Interval	
Among FSWs who reported that they KNEW that Condoms Prevent HIV transmission					
				Lower	Upper
Ndola	142	176	80.7%	74.2%	85.8%
Chirundu	88	106	83.0%	74.7%	89.0%
Kapiri Mposhi	206	286	72.0%	66.6%	76.9%
Livingstone	188	236	79.7%	74.1%	84.3%
Solwezi	209	250	83.6%	78.5%	87.7%
Overall	833	1054	79.0%	76.5%	81.3%
Among FSWs who reported that they DID NOT KNOW that Condoms Prevent HIV transmission					
Ndola	7	11	63.6%	35.4%	84.8%
Chirundu	12	14	85.7%	60.1%	96.0%
Kapiri Mposhi	21	27	77.8%	59.2%	89.4%
Livingstone	21	29	72.4%	54.3%	85.3%
Solwezi	17	22	77.3%	56.6%	89.9%
Overall	78	103	75.7%	66.6%	83.0%

### 3.2.11 History of HIV testing, Awareness of Antiretroviral Therapy and Corridors of Hope Programme

Figure 12 shows the proportion of FSWs by history of ever tested for HIV. The data indicate that nearly 95% of the 1,181 FSWs interviewed reported having had an HIV test. Among the 1,120 FSWs who reported ever testing for HIV, 98.0% had obtained their HIV test result.

**Figure 13, Distribution of FSWs by history of HIV test (N=1181), IBBSS 2015**



**Table 18, Knowledge of STIs among FSWs, IBBSS 2015**

Site	Ndola	Chirundu	Kapiri Mposhi	Livingstone	Solwezi	Total
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Ever Heard of STI						
Yes	186 (97.9%)	112 (100%)	307 (99%)	253 (98.8%)	264 (96.4%)	1122 (98.2%)
No	4 (2.1%)	0 (0%)	3 (1%)	3 (1.2%)	10 (3.6%)	20 (1.8%)
<b>Total</b>	<b>190</b>	<b>112</b>	<b>310</b>	<b>256</b>	<b>274</b>	<b>1142</b>
Discharge						
Yes	112 (59.9%)	78 (63.9%)	197 (61.8%)	170 (64.2%)	147 (54.6%)	704 (60.6%)
No	75 (40.1%)	44 (36.1%)	122 (38.2%)	95 (35.8%)	122 (45.4%)	458 (39.4%)
<b>Total</b>	<b>187</b>	<b>122</b>	<b>319</b>	<b>265</b>	<b>269</b>	<b>1162</b>
Burning Pain on Urination						
Yes	86 (46%)	51 (41.8%)	141 (44.2%)	99 (37.4%)	112 (41.6%)	489 (42.1%)
No	101 (54%)	71 (58.2%)	178 (55.8%)	166 (62.6%)	157 (58.4%)	673 (57.9%)
<b>Total</b>	<b>187</b>	<b>122</b>	<b>319</b>	<b>265</b>	<b>269</b>	<b>1162</b>
Genital Ulcer or Sores						
Yes	101 (54%)	72 (59%)	200 (62.7%)	167 (63%)	134 (49.6%)	674 (58.0%)
No	86 (46%)	50 (41%)	119 (37.3%)	98 (37%)	136 (50.4%)	489 (42.0%)
<b>Total</b>	<b>187</b>	<b>122</b>	<b>319</b>	<b>265</b>	<b>270</b>	<b>1163</b>
Swelling in the Groin						
Yes	40 (21.4%)	24 (19.7%)	65 (20.4%)	66 (24.9%)	31 (11.5%)	226 (19.4%)
No	147 (78.6%)	98 (80.3%)	254 (79.6%)	199 (75.1%)	238 (88.5%)	936 (80.6%)
<b>Total</b>	<b>187</b>	<b>122</b>	<b>319</b>	<b>265</b>	<b>269</b>	<b>1162</b>
Other						
Yes	75 (40.1%)	49 (40.2%)	115 (36.1%)	114 (43%)	102 (37.9%)	455 (39.2%)
No	112 (59.9%)	73 (59.8%)	204 (63.9%)	151 (57%)	167 (62.1%)	707 (60.8%)
<b>Total</b>	<b>187</b>	<b>122</b>	<b>319</b>	<b>265</b>	<b>269</b>	<b>1162</b>

**Table 19, Sexual Behaviour with STI Symptoms among FSW, IBBSS 2015**

Description	Ndola	Chirundu	Kapiri Mposhi	Livingstone	Solwezi	Total
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<b>Always Used Condom During Sexual Intercourse</b>						
Yes	14 (26.4%)	9 (40.9%)	15 (21.7%)	10 (19.6%)	15 (29.4%)	63 (25.6%)
No	39 (73.6%)	13 (59.1%)	54 (78.3%)	41 (80.4%)	36 (70.6%)	183 (74.4%)
<b>Total</b>	<b>53</b>	<b>22</b>	<b>69</b>	<b>51</b>	<b>51</b>	<b>246</b>
<b>Stopped Having Sex During Time FSW had Symptoms</b>						
Yes	13 (24.5%)	7 (31.8%)	17 (24.3%)	16 (31.4%)	13 (25.5%)	66 (26.7%)
No	40 (75.5%)	15 (68.2%)	53 (75.7%)	35 (68.6%)	38 (74.5%)	181 (73.3%)
<b>Total</b>	<b>53</b>	<b>22</b>	<b>70</b>	<b>51</b>	<b>51</b>	<b>247</b>
<b>Told Partner about the STI Symptoms</b>						
Yes	10 (18.9%)	10 (45.5%)	19 (27.1%)	10 (20%)	11 (21.6%)	60 (24.4%)
No	43 (81.1%)	12 (54.5%)	51 (72.9%)	40 (80%)	40 (78.4%)	186 (75.6%)
<b>Total</b>	<b>53</b>	<b>22</b>	<b>70</b>	<b>50</b>	<b>51</b>	<b>246</b>

**Figure 14, Proportion of FSWs who reported having been tested for HIV in a prior periods of time (N=1120), IBBSS 2015**

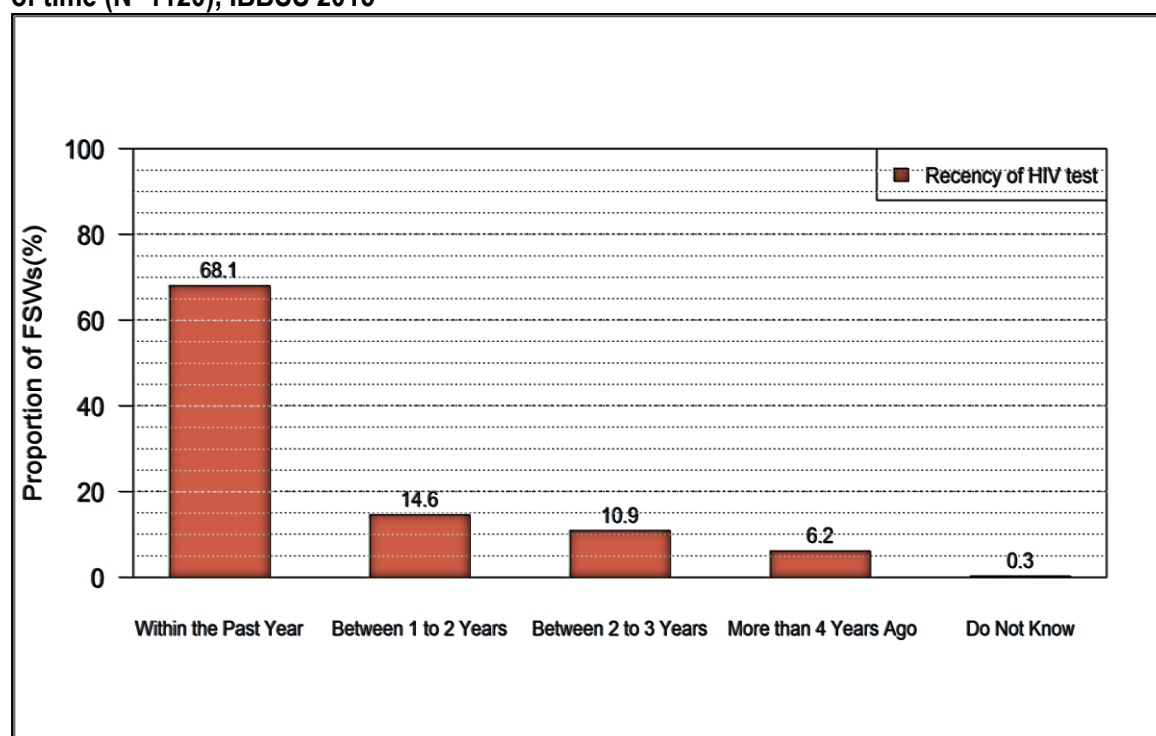


Figure 14 shows the proportion of FSW who had an HIV test in a specified period in the past according to the defined times. The FSWs were classified according to how long ago they had the last HIV test. About 68% of the FSWs reported having had an HIV test during the 12 months preceding the survey.

**Figure 15, Distribution of FSWs who had ever heard of antiretroviral therapy drugs (N=1181), IBBSS 2015**

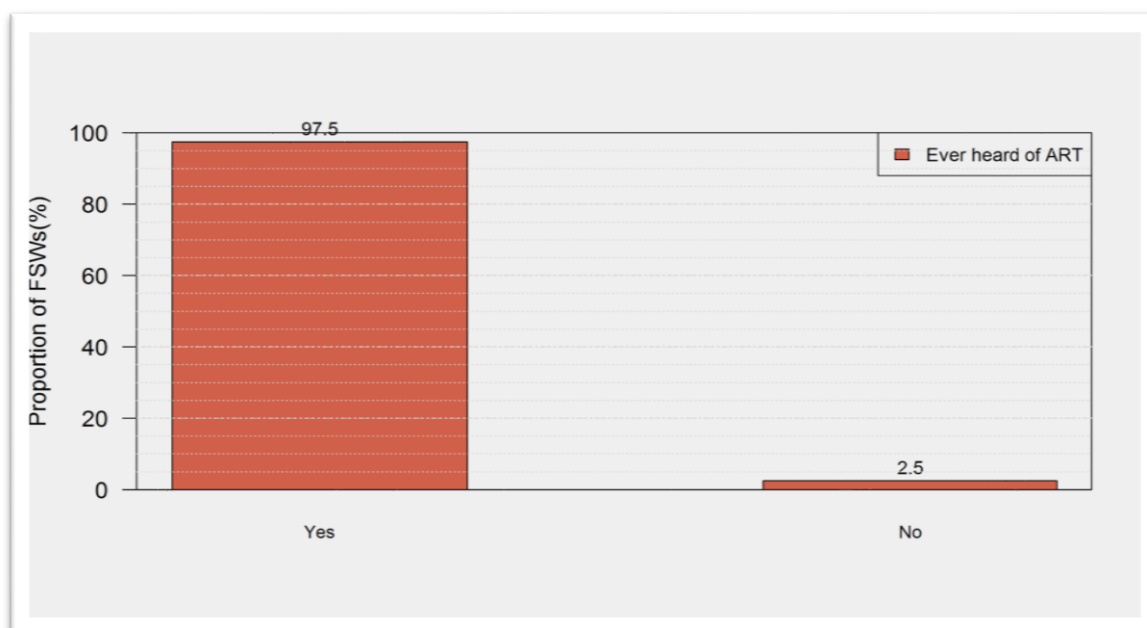
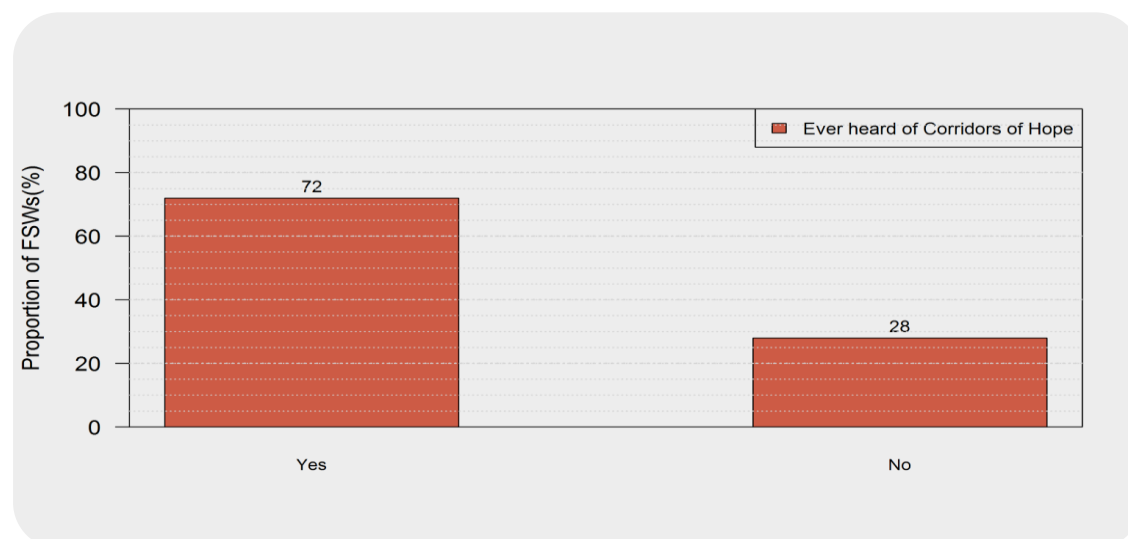


Figure 15 shows that the majority of the FSWs (97.5%) interviewed had ever heard of the antiretroviral therapy drugs.

**Figure 16, Proportion of the FSWs who have ever heard of Corridors of Hope Program (N=1181), IBBSS 2015**



FSWs were asked if they have ever heard of the outreach programs conducted by Corridors of Hope. Figure 16 shows that nearly 75% of the FSWs had ever heard of Corridors of Hope programs.

### **3.2.12 STI Symptoms, Treatment and Sexual Behaviour**

FSWs were asked if they had ever a STI in the last 12 months preceding the survey and overall 18.3% of the FSWs reported having experienced genital discharge or leakage. Approximately 20% of the FSW had also experienced sores on their private parts in the last 12 months. The

proportion of FSW who reported genital discharge and sores on the genitals was not markedly different across sites but seem slightly lower in Kapiri Mposhi and Solwezi. Asking the FSW about where they first sought first help when they had an STI also assessed health-seeking behaviour. Impressively, most FSWs (62.5%) first sought medical care from the government hospitals although a sizable proportion first sought traditional healers (15.4%) while 15.2% took medicine that was already at home. FSW also reported first seeking help from Corridors of Hope dropping centre (18.2%). Table 17 presents STI symptoms and related health seeking preferences.

**Table 20, STI Symptoms and Related Behaviours among the FSWs, IBBSS 2015 (1)**

Description	Ndola	Chirundu	Kapiri Mposhi	Livingstone	Solwezi	Total
<b>Leakage in the Last 12 Months</b>						
Yes	37 (19.4%)	25 (20.7%)	64 (19.9%)	41 (15.4%)	49 (17.6%)	216 (18.3%)
No	154 (80.6%)	96 (79.3%)	258 (80.1%)	225 (84.6%)	229 (82.4%)	962 (81.7%)
<b>Total</b>	<b>191</b>	<b>121</b>	<b>322</b>	<b>266</b>	<b>278</b>	<b>1178</b>
<b>Sore on Private Parts in the Last 12 Months</b>						
Yes	45 (23.7%)	26 (21.5%)	64 (20%)	47 (17.7%)	46 (16.6%)	228 (19.5%)
No	145 (76.3%)	95 (78.5%)	256 (80%)	219 (82.3%)	231 (83.4%)	946 (80.6%)
<b>Total</b>	<b>190</b>	<b>121</b>	<b>320</b>	<b>266</b>	<b>277</b>	<b>1174</b>
<b>First Sought advice from when had Last STI</b>						
<b>Government Hospital</b>						
Yes	34 (65.4%)	14 (58.3%)	45 (64.3%)	31 (59.6%)	31 (62%)	155 (62.5%)
No	18 (34.6%)	10 (41.7%)	25 (35.7%)	21 (40.4%)	19 (38%)	93 (37.5%)
<b>Total</b>	<b>52</b>	<b>24</b>	<b>70</b>	<b>52</b>	<b>50</b>	<b>248</b>
<b>Workplace Clinic</b>						
Yes	4 (7.7%)	2 (8.3%)	8 (11.4%)	6 (11.5%)	2 (4%)	22 (8.9%)
No	48 (92.3%)	22 (91.7%)	62 (88.6%)	46 (88.5%)	48 (96%)	226 (91.1%)
<b>Total</b>	<b>52</b>	<b>24</b>	<b>70</b>	<b>52</b>	<b>50</b>	<b>248</b>
<b>Church Run Health Facility</b>						
Yes	0 (0%)	1 (4.2%)	1 (1.4%)	0 (0%)	3 (6%)	5 (2.0%)
No	52 (100%)	23 (95.8%)	69 (98.6%)	52 (100%)	47 (94%)	243 (98.0%)
<b>Total</b>	<b>52</b>	<b>24</b>	<b>70</b>	<b>52</b>	<b>50</b>	<b>248</b>

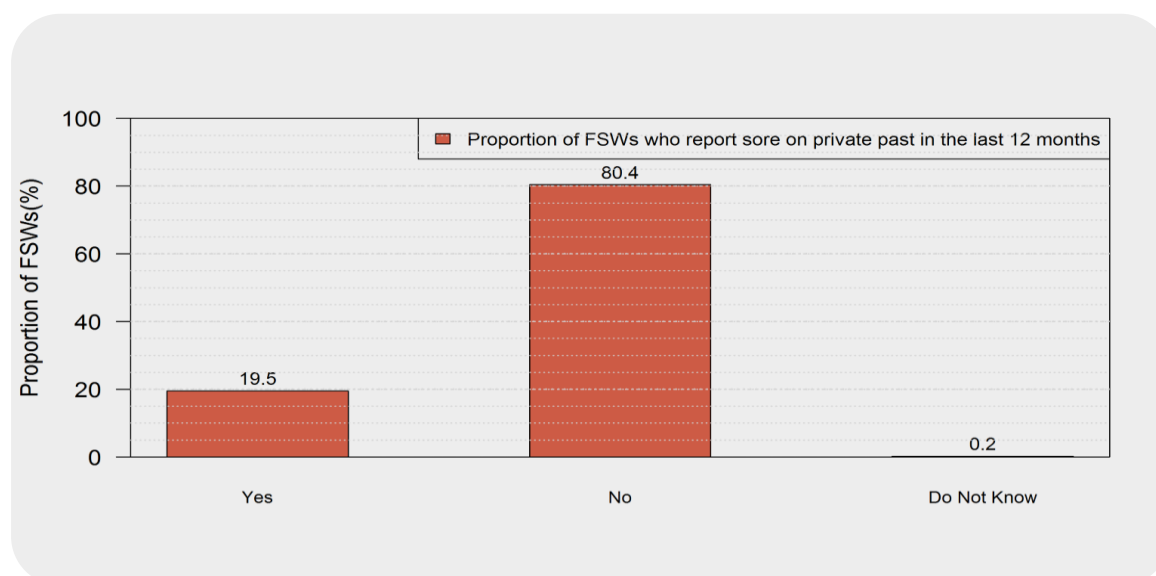
**Table 21, STI Symptoms and Related Behaviours among the FSWs, IBBSS 2015 (2)**

Description	Ndola	Chirundu	Kapiri Mposhi	Livingstone	Solwezi	Total
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<b>Private</b>						
Yes	8 (15.4%)	3 (12.5%)	4 (5.7%)	1 (1.9%)	5 (10%)	21 (8.5%)
No	44 (84.6%)	21 (87.5%)	66 (94.3%)	51 (98.1%)	45 (90%)	227 (91.5%)
<b>Total</b>	<b>52</b>	<b>24</b>	<b>70</b>	<b>52</b>	<b>50</b>	<b>248</b>
<b>Pharmacy or Chemist</b>						
Yes	5 (9.6%)	2 (8.7%)	3 (4.3%)	7 (13.5%)	3 (6%)	20 (8.1%)
No	47 (90.4%)	21 (91.3%)	67 (95.7%)	45 (86.5%)	47 (94%)	227 (91.9%)
<b>Total</b>	<b>52</b>	<b>23</b>	<b>70</b>	<b>52</b>	<b>50</b>	<b>247</b>
<b>Traditional</b>						
Yes	12 (23.1%)	4 (17.4%)	10 (14.3%)	4 (7.8%)	8 (15.7%)	38 (15.4%)
No	40 (76.9%)	19 (82.6%)	60 (85.7%)	47 (92.2%)	43 (84.3%)	209 (84.6%)
<b>Total</b>	<b>52</b>	<b>23</b>	<b>70</b>	<b>51</b>	<b>51</b>	<b>247</b>
<b>Bought Medicine From the Street</b>						
Yes	4 (7.7%)	2 (9.1%)	6 (8.6%)	3 (5.9%)	4 (7.8%)	19 (7.7%)
No	48 (92.3%)	20 (90.9%)	64 (91.4%)	48 (94.1%)	47 (92.2%)	227 (92.3%)
<b>Total</b>	<b>52</b>	<b>22</b>	<b>70</b>	<b>51</b>	<b>51</b>	<b>246</b>
<b>Took Medicine at Home</b>						
Yes	7 (13.5%)	2 (8.7%)	8 (11.4%)	11 (21.6%)	9 (17.6%)	37 (15.0%)
No	45 (86.5%)	21 (91.3%)	62 (88.6%)	40 (78.4%)	42 (82.4%)	210 (85.0%)
<b>Total</b>	<b>52</b>	<b>23</b>	<b>70</b>	<b>51</b>	<b>51</b>	<b>247</b>
<b>Corridors of Hope Blue House</b>						
Yes	2 (3.8%)	6 (26.1%)	14 (20%)	14 (27.5%)	9 (17.6%)	45 (18.2%)
No	50 (96.2%)	17 (73.9%)	56 (80%)	37 (72.5%)	42 (82.4%)	202 (81.8%)
<b>Total</b>	<b>52</b>	<b>23</b>	<b>70</b>	<b>51</b>	<b>51</b>	<b>247</b>

Figure 17 shows that 19.5% of the 1,185 FSWs interviewed did experience a sore on their private parts in the last 12 months. Less than 1% of the FSWs interviewed did not know whether they had genital discharge during the last 12 months.

**Figure 17, Proportion of FSWs who reported experiencing a genital sore during the last 12 months (N=1178), IBBSS 2015**



**Figure 18, Proportion of FSWs who reported experiencing a genital discharge during the last 12 months (N=1178), IBBSS 2015**

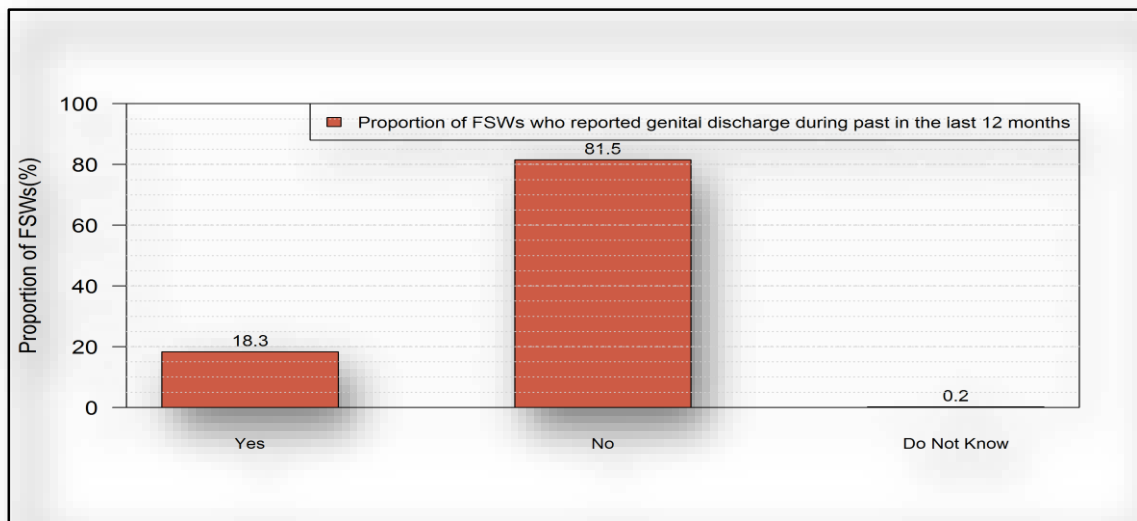
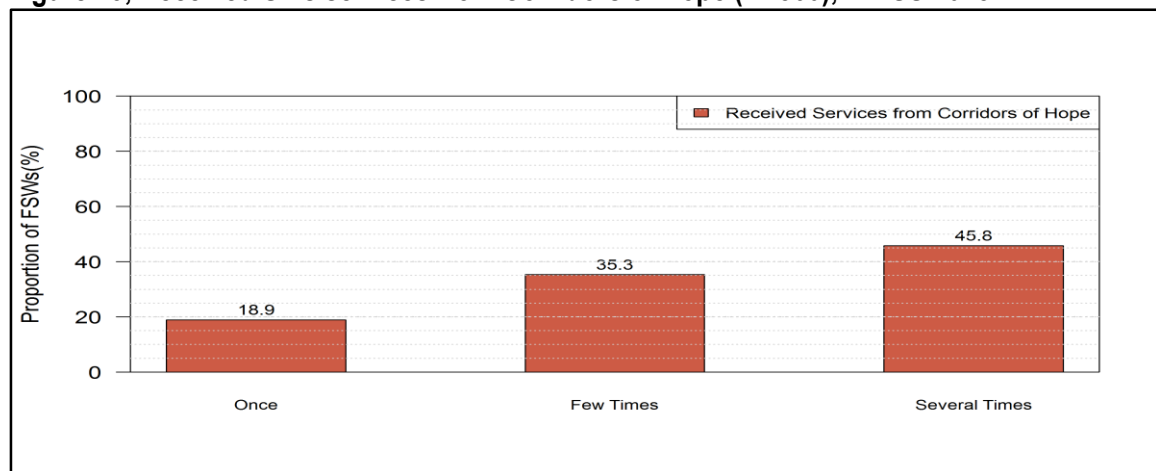


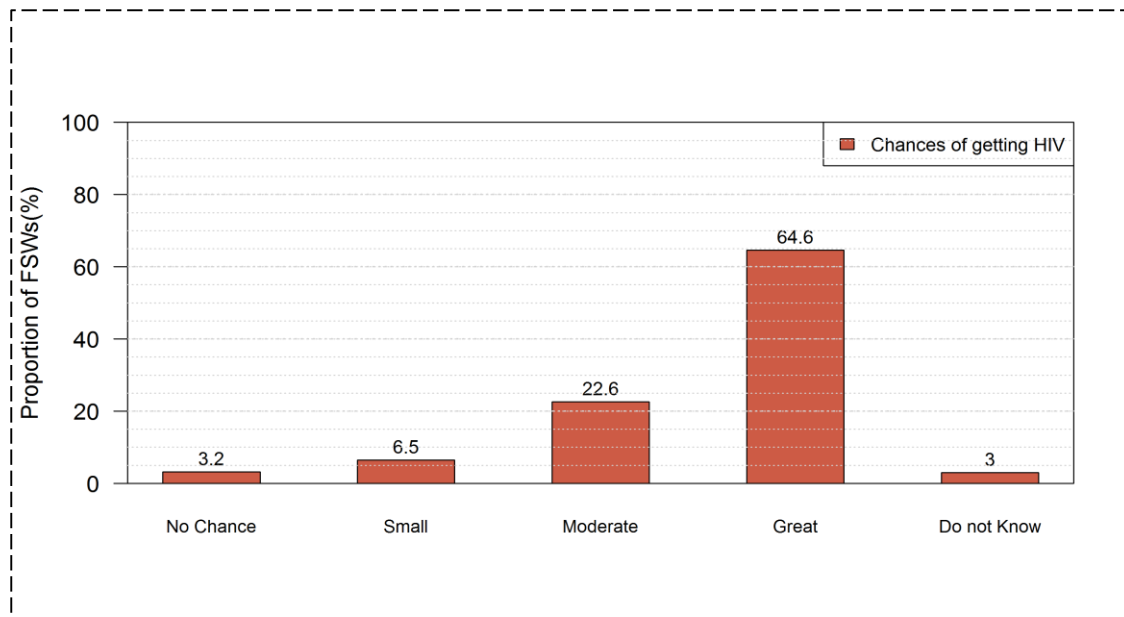
Figure 18 show that 18.3% of the 1,178 FSWs did experience a genital discharge during the 12 months preceding the survey.

**Figure 19, Received STIs services from Corridors of Hope (N=560), IBBSS 2015**



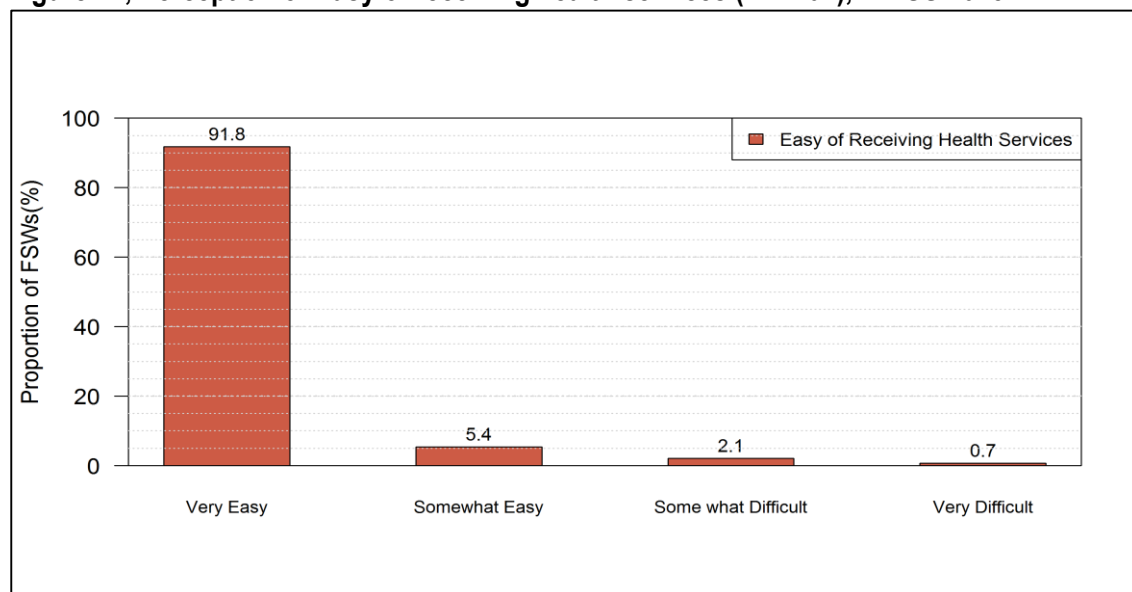
FSWs who indicated having received STIs services from Corridors of Hope were asked how many times they received services from Corridors of Hope programs. Figure 19 show that 45.5% of 560 FSWs had received STIs services from the Corridors of Hope program on several occasions.

**Figure 20, Distribution of FSW by their perception of acquiring HIV infection (N=560), IBBSS 2015**



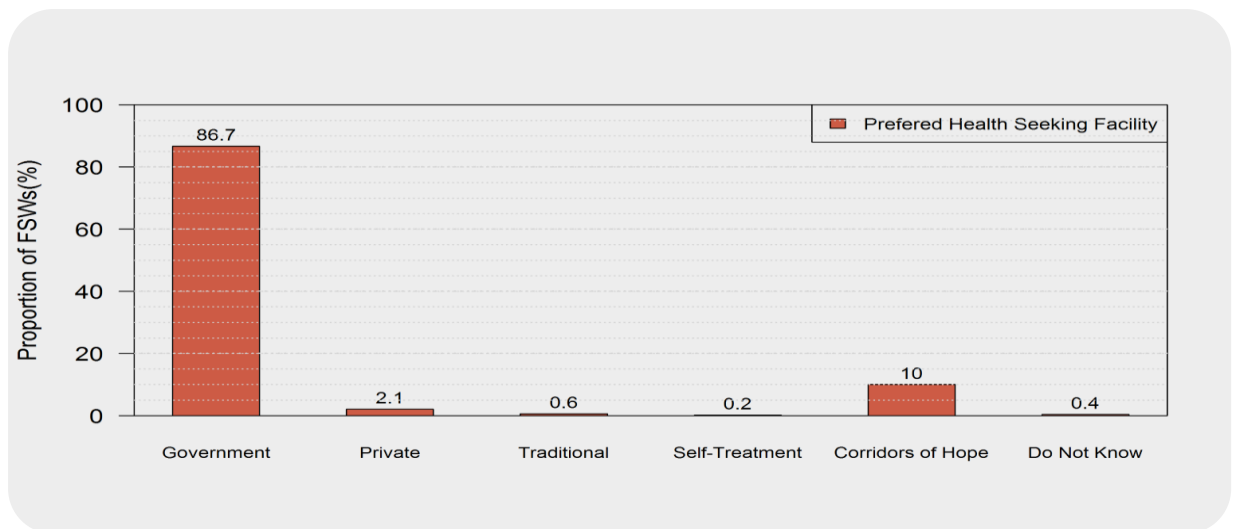
FSWs were asked to express their perception of their likelihood of acquiring HIV infection. Figure 20 show that 64.6% of the 1,188 FSWs indicated that the chances of acquiring HIV infection were great and only 3.2% indicated that they did not have any chance of acquiring HIV infection.

**Figure 21, Perception of Easy of receiving health services (N=1102), IBBSS 2015**



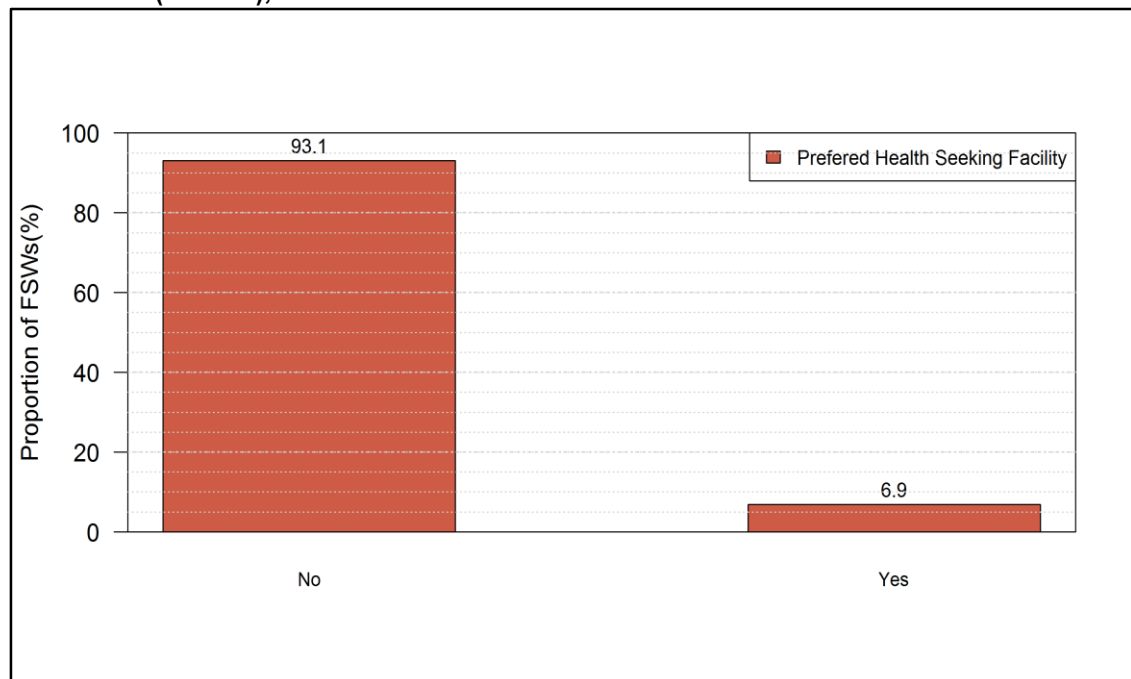
FSW were asked to indicate how easy it is for people living with HIV to receive health services in public health centres. Figure 22 indicate that 91.8% of 1,102 FSWs felt that receiving health care services from public health centres was very easy.

**Figure 22, Distribution of FSW according to the preferred places of seeking STI health care (N=1158), IBBSS 2015**



FSWs were asked to indicate their preferred places for seeking STI health services. Figure 21 shows that 86.7% of 1,158 FSWs preferred government health facilities for seeking STIs health services while 10.0% preferred the Corridors of Hope Centres.

**Figure 23, Proportion of FSWs who believed they can or cannot have sex with a partner with an STI (N=1158), IBBSS 2015**



FSWs were asked if they could have sexual intercourse with a partner who indicated they have a sexually transmitted infection (STI). Figure 24 shows that most FSWs (93.1 %) interviewed indicated that they could not have sex with a partner who has an STI.

### **3.2.13 Family Planning Method**

FSW were asked if they had ever lost a pregnancy and 35.3% of the interviewed FSW indicated that they had lost a pregnancy in the past. The proportion of FSWs who had lost a pregnancy in the past ranged from 28.3% in Livingstone to 40.6% in Ndola. Nearly two-thirds (63.7%) of the FSW reported current use of a family planning method. Although not substantively different, the proportion of FSWs who reported current use of a family planning method seem highest in Livingstone (68.9%) and lowest in Chirundu (59.7%). Most FSW were not using traditional methods (99.1%) and female condoms (94.8%) for family planning. The most widely indicated family planning method was injection (41.8%) followed by male condoms (40.8%). Only 15.6% of the FSW interviewed reported oral contraceptives as their preferred method for family planning. Tables 22 and 23 present a summary of family planning practices and history of pregnancy loss.

### **3.2.14 HIV Knowledge and Stigma**

#### **3.2.14.1 HIV Knowledge**

Because knowledge about HIV prevention and treatment strategies form the basis of a broad range of HIV preventive interventions, one of the sections of the FSWs questionnaire focused on collecting HIV-related knowledge information. FSWs were asked a range of questions to indicate their knowledge on HIV. Based on the responses to a series of questions on HIV knowledge, the HIV knowledge score was computed. The responses to each of the 16 questions were coded as “correct” or “incorrect” and each “correct response” was assigned a value of “1” and an “incorrect response” was assigned a value of “0”. The responses to some of the 16 questions were coded as “Yes” or “No” and each “Yes” response was assigned a value of “1” and a “No” response was assigned a value of “0”. The scores on all the 17 questions that reflect Knowledge on HIV were summed to compute HIV knowledge score with 17 as the maximum HIV knowledge score if all the responses were correct. Higher knowledge score indicated high HIV knowledge.

#### **3.2.14.2 HIV Knowledge Score**

Knowledge score among FSWs ranged from 0 to 17. Three out of the 1,189 FSW provided correct responses to all the 17 questions asked regarding HIV knowledge. The median HIV knowledge score was 14 with an interquartile range of 12 to 15. The mean HIV knowledge score and standard deviation were 13.3 and 2.0, respectively. The mean HIV knowledge score of 13.3 corresponded to FSWs providing responses to 78.2% of the 17 questions indicating HIV knowledge. The P-value associated with Wilcoxon test rank sum test revealed that mean of the HIV knowledge score among HIV positive FSWs did not differ from the mean of the HIV knowledge score among HIV negative FSWs, P-value =0.3523. Tables 24 and 25 present selected responses to questions asked to FSW to assess HIV-related knowledge.

**Table 22, Family Planning Practices and Loss of Pregnancy among FSWs, IBBSS 2015 (1)**



Description	Ndola	Chirundu	Kapiri Mposhi	Livingstone	Solwezi	Total
<b>Ever Lost Pregnancy</b>						
Yes	73 (40.6%)	32 (28.3%)	114 (37.6%)	73 (28.3%)	98 (39.2%)	390 (35.3%)
No	107 (59.4%)	81 (71.7%)	189 (62.4%)	185 (71.7%)	152 (60.8%)	714 (64.7%)
<b>Total</b>	<b>180</b>	<b>113</b>	<b>303</b>	<b>258</b>	<b>250</b>	<b>1104</b>
<b>Currently Using Family Planning Method</b>						
Yes	114 (61.3%)	71 (59.7%)	210 (66.2%)	177 (68.9%)	164 (59.2%)	736 (63.7%)
No	72 (38.7%)	48 (40.3%)	107 (33.8%)	80 (31.1%)	113 (40.8%)	420 (36.3%)
<b>Total</b>	<b>186</b>	<b>119</b>	<b>317</b>	<b>257</b>	<b>277</b>	<b>1156</b>
<b>Traditional Family Planning Method</b>						
Yes	3 (2.6%)	0 (0%)	0 (0%)	2 (1.1%)	2 (1.2%)	7 (0.9%)
No	113 (97.4%)	72 (100%)	213 (100%)	184 (98.9%)	163 (98.8%)	745 (99.1%)
<b>Total</b>	<b>116</b>	<b>72</b>	<b>213</b>	<b>186</b>	<b>165</b>	<b>745</b>
<b>Oral Contraceptive</b>						
Yes	22 (19%)	11 (15.3%)	35 (16.4%)	35 (18.6%)	15 (9.1%)	118 (15.6%)
No	94 (81%)	61 (84.7%)	178 (83.6%)	153 (81.4%)	150 (90.9%)	636 (84.4%)
<b>Total</b>	<b>116</b>	<b>72</b>	<b>213</b>	<b>186</b>	<b>165</b>	<b>754</b>
<b>Injection</b>						
Yes	34 (29.6%)	24 (33.3%)	112 (52.6%)	84 (44.7%)	61 (37%)	315 (41.8%)
No	81 (70.4%)	48 (66.7%)	101 (47.4%)	104 (55.3%)	104 (63%)	438 (58.2%)
<b>Total</b>	<b>115</b>	<b>72</b>	<b>213</b>	<b>188</b>	<b>165</b>	<b>753</b>
<b>Norplant</b>						
Yes	27 (23.3%)	10 (13.9%)	13 (6.1%)	28 (14.9%)	26 (15.8%)	104 (13.8%)
No	89 (76.7%)	62 (86.1%)	200 (93.9%)	160 (85.1%)	139 (84.2%)	650 (86.2%)
<b>Total</b>	<b>116</b>	<b>72</b>	<b>213</b>	<b>188</b>	<b>165</b>	<b>754</b>
<b>Intra-Uterine Device</b>						
Yes	2 (1.7%)	1 (1.4%)	2 (0.9%)	2 (1.1%)	8 (4.8%)	15 (2.0%)
No	114 (98.3%)	71 (98.6%)	211 (99.1%)	186 (98.9%)	157 (95.2%)	730 (98.0%)
<b>Total</b>	<b>116</b>	<b>72</b>	<b>213</b>	<b>188</b>	<b>165</b>	<b>754</b>
<b>Male Condoms</b>						
Yes	42 (36.2%)	39 (54.2%)	85 (39.9%)	66 (35.3%)	75 (45.5%)	307 (40.8%)
No	74 (63.8%)	33 (45.8%)	128 (60.1%)	121 (64.7%)	90 (54.5%)	446 (59.2%)
<b>Total</b>	<b>116</b>	<b>72</b>	<b>213</b>	<b>187</b>	<b>165</b>	<b>753</b>
<b>Female Condom</b>						
Yes	6 (5.2%)	4 (5.6%)	8 (3.8%)	9 (4.8%)	12 (7.3%)	39 (5.2%)
No	110 (94.8%)	68 (94.4%)	205 (96.2%)	179 (95.2%)	153 (92.7%)	715 (94.8%)
<b>Total</b>	<b>116</b>	<b>72</b>	<b>213</b>	<b>188</b>	<b>165</b>	<b>754</b>

Table 23, Family Planning Practices and Loss of Pregnancy among FSWs, IBBSS 2015 (2)

Description	Ndola	Chirundu	Kapiri Mposhi	Livingstone	Solwezi	Total
<b>Spermicide</b>						
Yes	1 (0.9%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (0.1%)
No	115 (99.1%)	72 (100%)	213 (100%)	188 (100%)	165 (100%)	753 (99.9%)
<b>Total</b>	<b>116</b>	<b>72</b>	<b>213</b>	<b>188</b>	<b>165</b>	<b>754</b>
<b>Diaphragm</b>						
Yes	1 (0.9%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (0.1%)
No	115 (99.1%)	72 (100%)	213 (100%)	188 (100%)	165 (100%)	753 (99.9%)
<b>Total</b>	<b>116</b>	<b>72</b>	<b>213</b>	<b>188</b>	<b>165</b>	<b>754</b>
<b>Natural</b>						
Yes	1 (0.9%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (0.1%)
No	115 (99.1%)	72 (100%)	213 (100%)	188 (100%)	165 (100%)	753 (99.9%)
<b>Total</b>	<b>116</b>	<b>72</b>	<b>213</b>	<b>188</b>	<b>165</b>	<b>754</b>
<b>Other</b>						
Yes	1 (0.9%)	0 (0%)	0 (0%)	0 (0%)	1 (0.6%)	2 (0.3%)
No	115 (99.1%)	72 (100%)	213 (100%)	188 (100%)	164 (99.4%)	752 (99.7%)
<b>Total</b>	<b>116</b>	<b>72</b>	<b>213</b>	<b>188</b>	<b>165</b>	<b>754</b>

**Table 24, Selected Questions Used to Compute the HIV Knowledge Score among FSWs, IBBSS 2015 (1)**

Description	N=1,189	%
<b>Can people protect themselves from HIV by using a condom correctly every time they have sex?</b>		
Yes	1056	88.8
No	104	8.7
Do Not Know	11	0.9
Missing	18	1.5
<b>Have you ever heard of HIV or disease called AIDS?</b>		
Yes	1177	99
No	0	0
Do Not Know	0	0
Missing	12	1

**Table 25, Selected Questions Used to Compute the HIV Knowledge Score among FSWs, IBBSS 2015 (2)**

Description	N=1,189	%
<b>Can a person get the HIV from Mosquito bites?</b>		
Yes	274	23
No	817	68.1
Do Not Know	84	7.1
Missing	14	1.2
<b>Can a person protect himself or herself from the HIV by abstaining from sexual intercourse?</b>		
Yes	969	81.5
No	193	16.2
Do Not Know	19	1.6
Missing	8	0.7
<b>Can a person get HIV by getting injections with a needle that was used by someone else?</b>		
Yes	1126	94.7
No	41	3.4
Do Not Know	7	0.6
Missing	15	1.3
<b>Can a pregnant woman decrease the chance of passing HIV to her unborn child by taking medication such as Antiretroviral?</b>		
Yes	1028	86.5
No	151	12.7
Do Not Know	0	0
Missing	10	0.8
<b>Can a person protect himself or herself from HIV by having one uninfected sex partner?</b>		
Yes	940	79.1
No	220	18.5
Do Not Know	15	1.3
Missing	14	1.2

**Figure 24, HIV Knowledge Score categorized at the 1st quartile and 3rd Quartile forming three categories.**

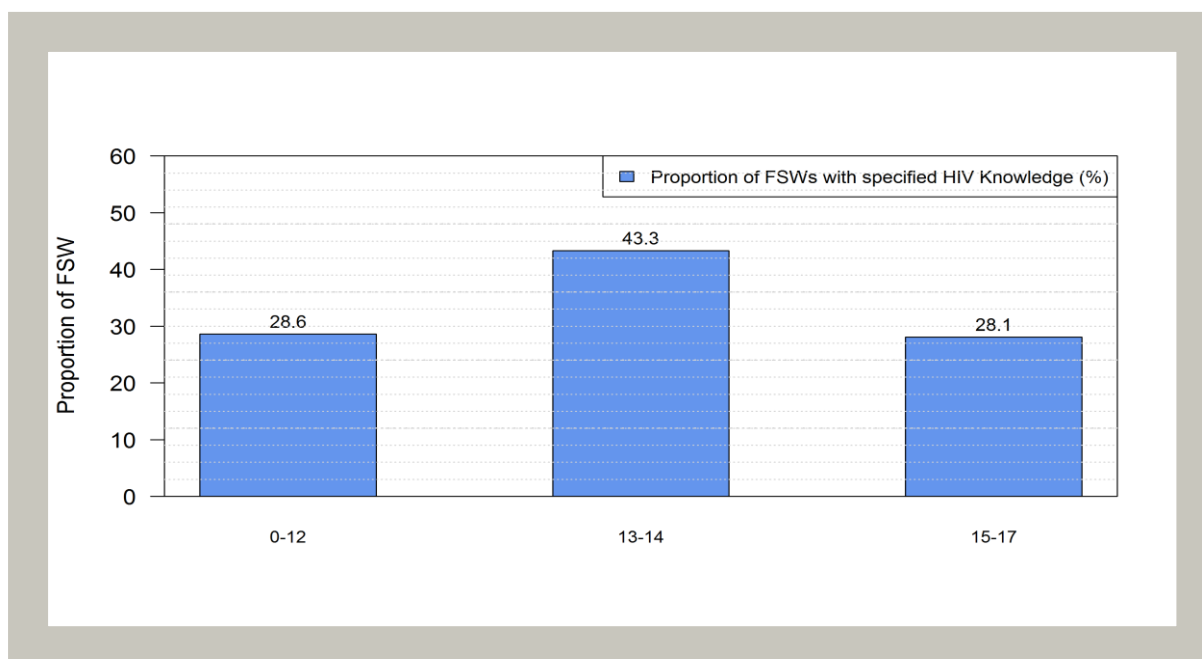


Figure 23 indicates that 43.3% of the FSWs had HIV knowledge score ranging from 13 to 14, which correspond to 76.5% to 82.3% correct responses on the 17 knowledge questions asked.

### 3.2.15 HIV Stigma or FSWs Altitude to HIV infected persons

Perception of stigma may hamper health-seeking behaviour. To measure the altitude towards HIV infected person, FSWs were asked a series of questions to assess how the attitude of the FSW towards HIV infected persons. Based on the response to a series of questions asked to FSWs on the attitude towards HIV infected person, the HIV stigma score was calculated. The responses to each of the 8 questions were coded during analysis as either “Stigmatizing” or “Non-Stigmatizing” and each “Stigmatizing response” was assigned a value of “1” and “Non-Stigmatizing” was assigned a value of “0”. The scores on all the 8 questions asked to assess stigma towards HIV infected persons were summed to compute HIV stigma score. Tables 26 and 27 present summary of the responses to questions asked to assess HIV-related stigma among FSW.

#### 3.2.15.1 HIV Stigma Score

HIV stigma score among FSWs ranged from 0 to 8. One hundred twelve out of 1,189 FSW provided non-stigmatizing responses to all the 8 questions. The median HIV stigma score was 2 and both the lower and upper interquartiles were equivalent to 2.0. The mean HIV stigma score and standard deviation were 1.9 and 1.2, respectively. The mean HIV stigma score of 1.9 corresponded to FSWs providing stigmatizing responses to 23.8% of the 8 questions that were asked to measure FSWs attitude towards HIV infected persons. The P-value associated with Wilcoxon test rank sum test indicate that the mean of HIV stigma score among HIV positive FSWs ( $1.76 \pm 1.01$ ) was not significantly different from the HIV stigma score among HIV negative FSWs ( $1.94 \pm 1.12$ ), P-value = 0.223.

**Table 26, Selected Questions Used to Compute the Stigma Score among FSWs, IBBSS 2015 (1)**

Description	N=1,189	%
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<b>Would you be willing to share a meal with a person you knew had HIV or AIDS?</b>		
Yes	1126	94.7
No	52	4.4
Do Not Know	2	0.2
Missing	9	0.8
<b>If a male relative of yours become ill with HIV, would you be willing to care for him in your household?</b>		
Yes	1160	97.7
No	19	4.4
Do Not Know	1	0.2
Missing	9	0.8
<b>If a female relative of yours become ill with HIV, would you be willing to care for him in your household?</b>		
Yes	1167	98.1
No	11	0.9
Do Not Know	1	0.1
Missing	10	0.8
<b>If a teacher has HIV but he is not sick, should he or she be allowed to continue teaching in school?</b>		
Yes	1150	96.7
No	28	2.4
Do Not Know	2	0.2
Missing	9	0.8

**Table 27, Selected Questions Used to Compute the Stigma Score among FSWs, IBBSS 2015 (2)**

Description	N=1,189	%
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<b>If you knew shop keeper or seller had HIV, would you buy food from them?</b>		
Yes	1115	93.8
No	63	5.3
Do Not Know	3	0.3
Missing	8	0.7
<b>If a member of your family become ill with HIV, the virus that cause AIDS, would you want it to remain a secret.</b>		
Yes	983	82.7
No	184	15.5
Do Not Know	7	0.6
Missing	15	1.3
<b>Is it possible in your community for someone to get a confidential test to find out if they are infected with HIV?</b>		
Yes	1028	86.5
No	118	9.9
Do Not Know	34	2.9
Missing	9	0.8

**Figure 25, Lower category of HIV Stigma Score indicate non-stigmatizing responses provided by FSWs, IBBSS 2015**

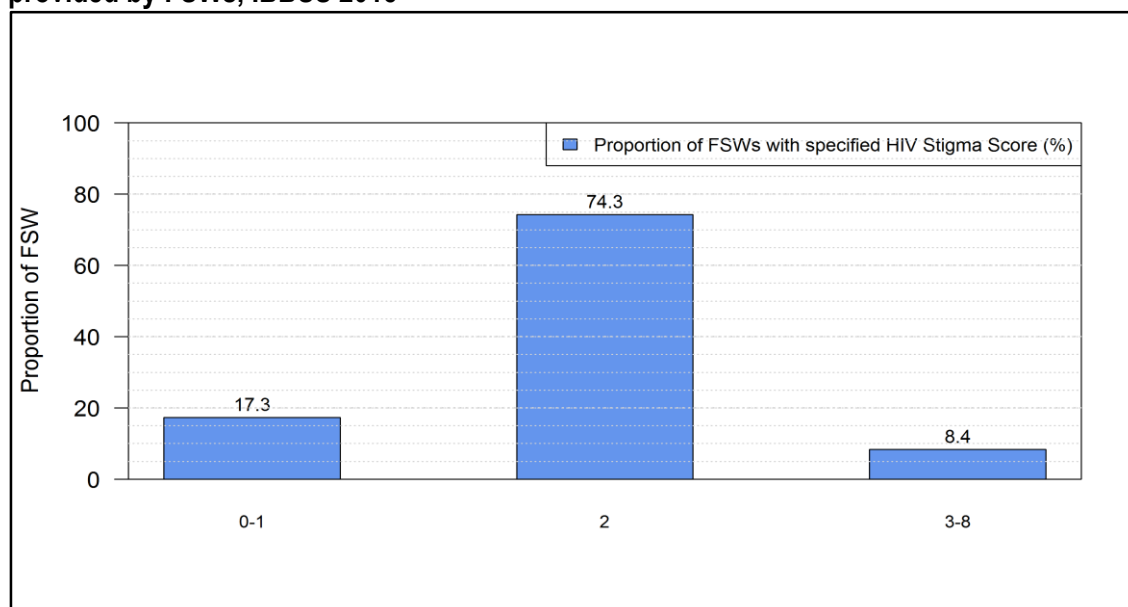


Figure 24 shows that 74.3% of the 1,189 FSWs provided stigmatizing responses to 25% of the questions on FSWs attitude towards HIV infected person. HIV stigma score of 8 indicated dominantly stigmatizing responses.

**Figure 26, Distribution of FSWs by knowledge of someone who had been denied health services in the 12 months preceding the survey, IBBSS 2015**

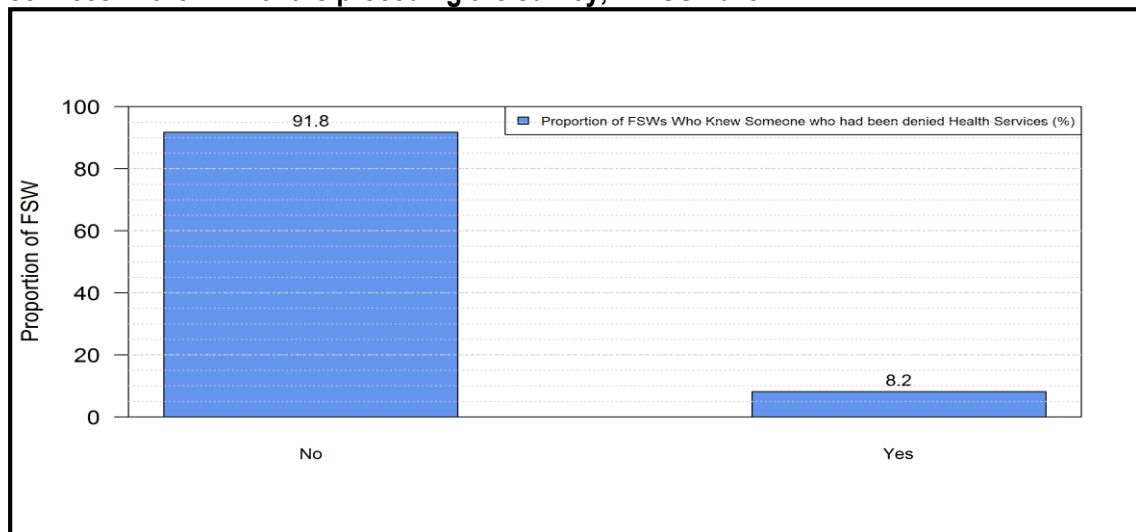
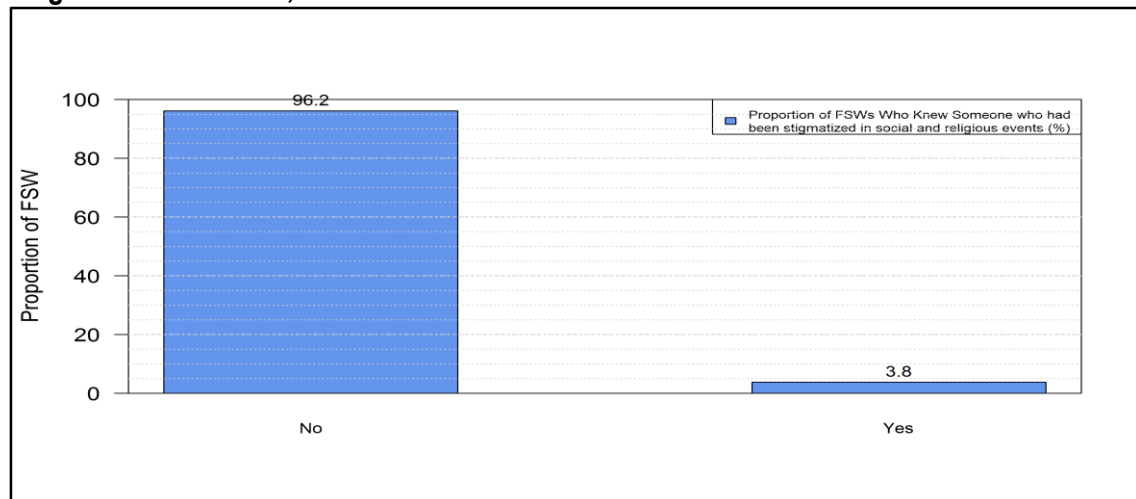


Figure 25 shows that 8.2% of the FSW did know someone who had been denied health services in the 12 months preceding the survey on account of being HIV positive. Similarly, Figure 26 indicates that 3.8% of the FSW did not know of someone who had been stigmatized in social and religious communities.

**Figure 27, Proportion of FSW who knew anyone who had been stigmatized in social and religious communities, IBBSS 2015**



### 3.2.16 HIV Prevalence

#### 3.2.16.1 Selected characteristic of FSW by HIV infection status

Tables 28 and 29 show characteristics of 1,115 FSWs aged 14 to 44 years with and without HIV infection and who responded to questions in the FSW questionnaire. The median age among HIV positive was 28 years and among HIV negative was 23 years ( $P$ -value 0.001). The proportion of FSWs with syphilis positive test result among HIV positive FSW (30.2%) was almost three times the proportion of syphilis FSW among HIV negative FSW (9.9%).

**Table 28, Descriptive Characteristics of Selected Variables for Female Sex Workers by HIV serostatus, IBBSS 2015 (1)**

Description	Negative (N=486)	Positive (N=629)	Overall Total (N=1115)	P-value
<b>Age (Years)</b>				
Median	23	28	26	P<0.001
Interquartile Range	20 to 28	24 to 34	22 to 32	
<b>Syphilis</b>				
Negative	89.9 % 437/486	69.6% 438/ 629	78.5% 875/1115	P<0.001
Positive	9.9% 48/486	30.2% 190/ 629	21.3% 238/1115	
Missing	0.2% 1/ 486	0.2% 1/ 629	0.2% 2/1115	
<b>Age Group (Years)</b>				P<0.001
14 to 24	58.4% 284/ 486	27.8% 176/ 629	41.3% 460/1115	
25 to 34	32.1% 154/ 486	49.3% 310/ 629	41.8% 465/1115	
35 to 44	9.5% 45/ 486	22.6% 142/ 629	16.9% 188/1115	
Missing	0.0% 0/ 486	0.2% 1/ 629	0.1% 1/1115	
<b>Education</b>				P=0.173
Primary	31.9% 155/ 486	38.3% 241/ 629	35.5% 396/1115	
Secondary	64.4% 313/ 486	58.3% 367/ 629	61.0% 678/1115	
Higher than Secondary	0.6% 3/ 486	0.5% 3/ 629	0.5% 6/1115	
Missing	3.1% 15/ 486	2.9% 18/ 629	3.0% 33/1115	
<b>Alcohol Consumption during the last 4 weeks</b>				P=0.003
Every Day	40.5% 197/ 486	45.0% 283/ 629	43.0% 480/1115	
At least Once a week	33.1% 161/ 486	37.7% 237/ 629	35.7% 398/1115	
Once a week	3.7% 18/ 486	3.8% 24/ 629	3.8% 42/1115	
Never	22.2% 187/ 486	13.2% 83/ 629	17.1% 191/1115	
Missing	0.4% 2/ 486	0.3% 2/ 629	0.4% 4/1115	
<b>Survey Site Town</b>				P<0.001
Ndola	13.0% 63/ 486	16.1% 101/ 629	14.7% 164/1115	
Chirundu	6.4% 31/ 486	13.5% 85/ 629	10.4% 116/1115	
Kapiri Mposhi	27.2% 132/ 486	28.5% 179/ 629	27.9% 311/1115	
Livingstone	29.0% 141/ 486	19.1% 120/ 629	23.4% 261/1115	
Solwezi	24.5% 119/ 486	22.9% 144/ 629	23.6% 263/1115	

**Table 29, Descriptive Characteristics of Selected Variables for Female Sex Workers by HIV serostatus, IBBSS 2015 (2)**

Description	Negative	Positive	Overall Total	P-value
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	(N=486)	(N=629)	(N=1115)	
Every Time	31.9% 155/ 486	35.5% 223/ 629	33.9% 378/1115	
Almost Every Time	13.4% 65/ 486	11.9% 75/ 629	12.6% 140/1115	
Sometimes	50.2% 244/ 486	49.8% 313/ 629	50.0% 557/1115	
Never	2.7% 13/ 486	1.6% 10/ 629	2.1% 23/1115	
Do Not Know	0.0% 0/ 486	0.0% 0/ 629	0.0% 0/1115	
Missing	1.9% 9/ 486	1.3% 8/ 629	1.5% 17/1115	
<b>Condom Use: Last time you had sex with paying Partner</b>				P=0.563
Yes	76.3% 371/ 486	79.0% 497/ 629	77.8% 868/1115	
No	23.5% 114/ 486	20.8% 131/ 629	22.0% 245/1115	
Do Not Know	0.2% 1/ 486	0.2% 1/ 629	0.2% 2/1115	
Missing	0.0% 0/ 486	0.0% 0/ 629	0.0% 0/1115	
<b>Ever Heard of Antiretroviral Drugs</b>				P=0.093
Yes	96.1% 467/ 486	97.8% 615/ 629	97.0% 1082/1115	
No	3.7% 18/ 486	1.7% 11/ 629	2.6% 29/1115	
Missing	0.2% 1/ 486	0.5% 3/ 629	0.4% 4/1115	

The 14 to 24-year old FSWs (58.4%) constituted the majority of FSWs among HIV negative and 24 to 35 year-olds (49.3%) constituted the majority among HIV positive FSWs. The proportions of FSW who reported consistent condom use—defined as use of a condom every time one had sex in the last 30 days—seem comparable between HIV negative (31.9%) and positive (35.5%), p-value =0.453.

### 3.2.16.2 Overall HIV Prevalence

The overall HIV prevalence among FSWs aged 14-44 years in the five sites (Ndola, Chirundu, Kapiri Mposhi, Livingstone and Solwezi) was 56.4% (95% CI: 53.5 to 59.3 %).

### 3.2.16.3 HIV Prevalence by Site of FSWs Recruitment

Table 30 shows that HIV prevalence by site ranged from 46.0% (95% CI: 40.0 to 52.0%) in Livingstone to 73.3% (95% CI: 64.6 to 80.5%) in Chirundu.

### 3.2.16.4 HIV Prevalence by Site and Age group

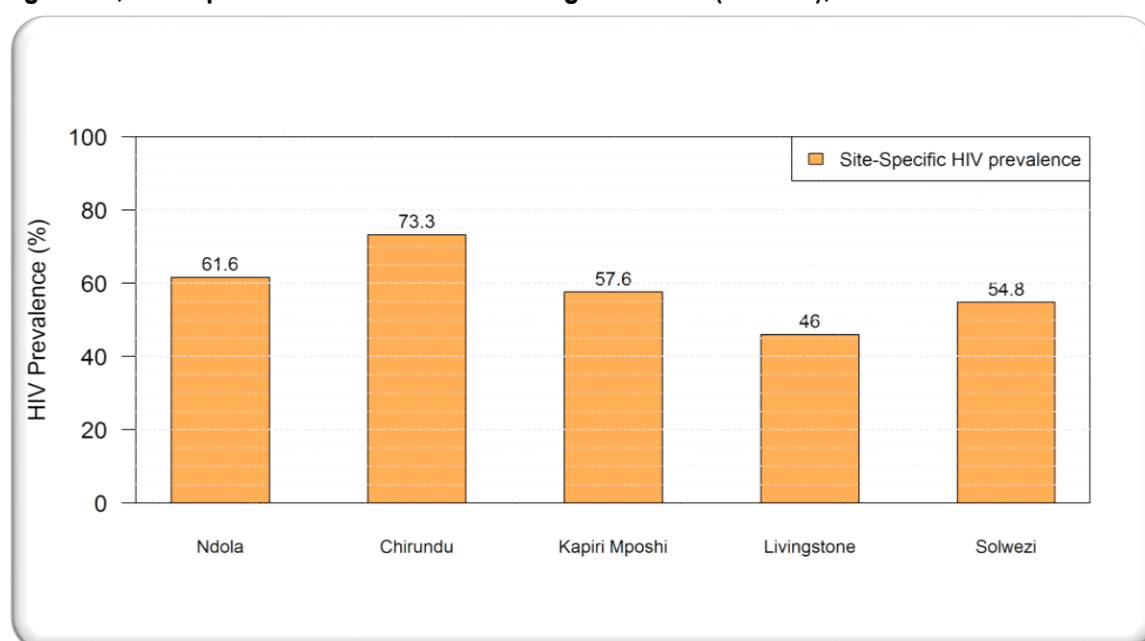
Figure 30 shows generally high HIV prevalence across all age groups but HIV prevalence in the 25-44 age groups seemed higher than HIV prevalence in the 14-24 year olds. For instance, HIV prevalence among 25-44 year-olds in Kapiri Mposhi was 72.2% (95% CI: 65.5 -78.1%), twice as high as HIV prevalence among 14-24 year-olds, 35.2% (94% CI: 27.3-44.1%).

**Table 30, Summary of HIV prevalence among FSWs aged 14-44 years by site of recruitment, IBBSS 2015**

	Ndola	Chirundu	Kapiri Mposhi	Livingstone	Solwezi
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Negative	63	31	132	141	119
Positive	101	85	179	120	144
<b>Total</b>	<b>164</b>	<b>116</b>	<b>311</b>	<b>261</b>	<b>263</b>
Prevalence	61.6% (54.0%-68.7%)	73.3% (64.6%-80.5%)	57.6% (52.0%-62.9%)	46.0% (40.0%-52.0%)	54.8 % (48.7%-60.7%)

**Figure 28, Site-Specific HIV Prevalence among the FSWs (N=1115), IBBSS 2015**



**Figure 29, HIV Prevalence by Site and Age group among the FSWs (N=1115), IBBSS 2015**

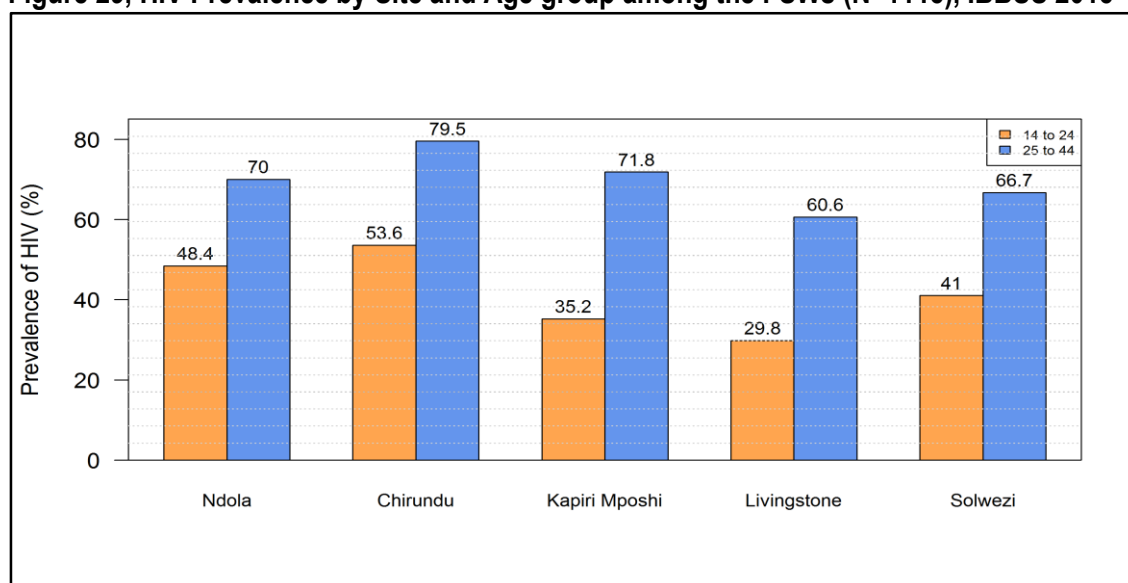


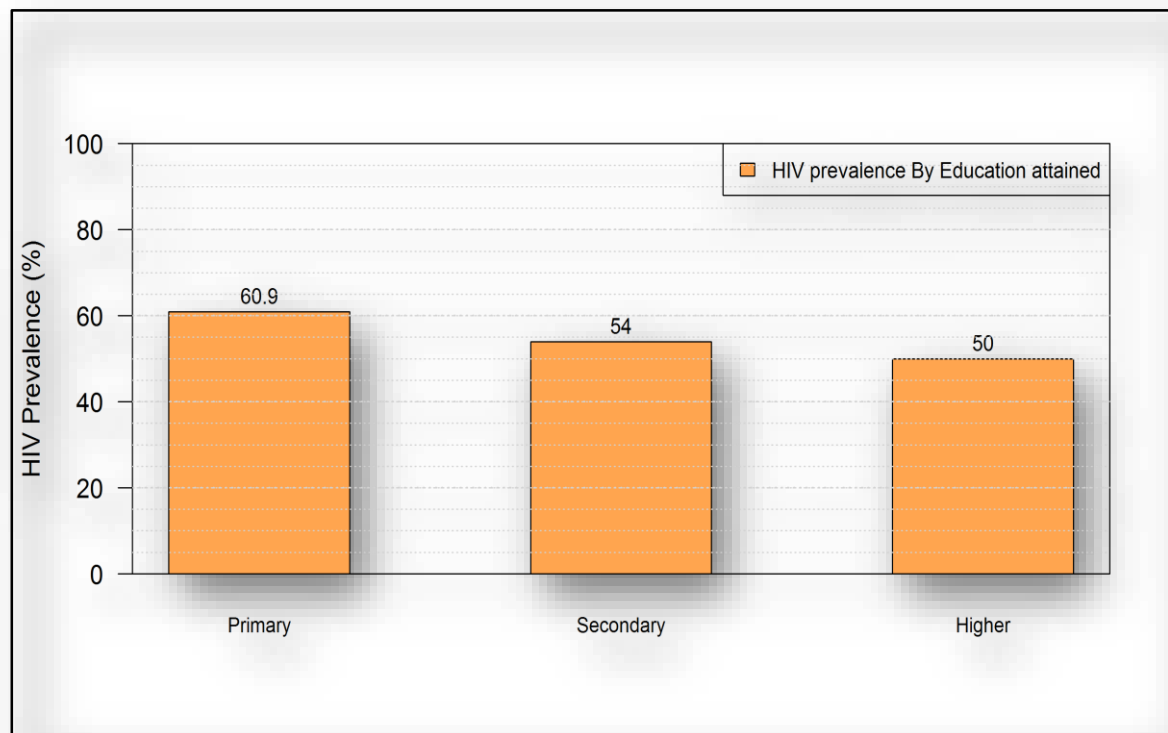
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Among 14 to 24 year-olds, HIV prevalence ranged from 29.8% in Livingstone to 53.6% in Chirundu. The lowest HIV prevalence among 25 to 44 year-olds was 60.6% in Livingstone and the highest was 79.5% in Chirundu.

### 3.2.16.5 HIV Prevalence by Education Attainment

Figure 29 displays HIV prevalence according to the level of education attained by the FSWs and reveals that although slightly higher among FSWs who reported having reached primary school education; HIV prevalence among FSWs across the three education attainment categories was largely comparable. Specifically, HIV prevalence among FSWs who reported primary school education was 60.9% (95% CI: 56.2 to 65.7%) compared to HIV prevalence of 54.2% (95% CI: 50.5 to 57.9%) and 50.0% (18.8 to 81.2%) among FSWs who reported secondary and greater than secondary school education, respectively. The median number of years of education completed by FSWs was 9 years.

**Figure 30, HIV Prevalence by Education Attainment among the FSWs (N=1115), IBBSS 2015**



### 3.2.17 Syphilis Prevalence

#### 3.2.17.1 Overall Syphilis Prevalence

Syphilis prevalence among 1,123 FSWs aged 14 to 44 years recruited in the five sites (Ndola, Chirundu, Kapiri Mposhi, Livingstone and Solwezi) that provided blood specimens for syphilis testing is 20.9%. Table 30 provides an overview of syphilis prevalence FSWs across the five sites for the 2015 IBBSS.

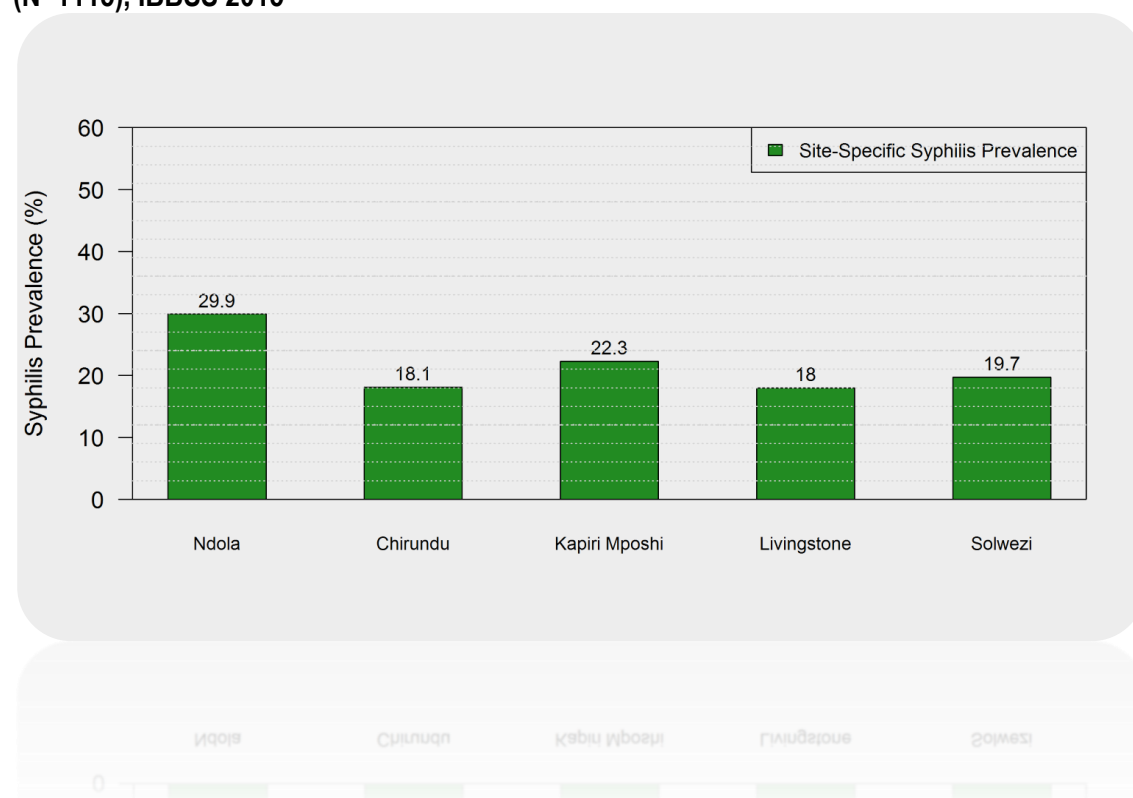
**Table 31, Summary of Syphilis prevalence among FSWs aged 14-44 years by site of recruitment, IBBSS 2015**

	Ndola	Chirundu	Kapiri Mposhi	Livingstone	Solwezi
Negative	115	95	241	214	212
Positive	49	21	69	47	52
<b>Total</b>	<b>164</b>	<b>116</b>	<b>310</b>	<b>261</b>	<b>264</b>
<b>Prevalence</b>	29.9% (23.4%-37.3%)	18.1% (12.2%-26.1%)	22.3% (18.0%-27.2%)	18.0% (13.8%-23.1%)	19.7% (15.3%-24.9%)

### 3.2.17.2 Syphilis Prevalence by Site

Figure 30 shows the syphilis prevalence by site of FSW recruitment and indicates that prevalence of syphilis among FSWs seemed higher in Ndola than the other four sites where syphilis burden appeared to nearly comparable. Specifically, syphilis prevalence in Ndola was 29.9% (95% CI: 23.2 to 37.1%) compared to 18.1 (11.9-25.7), 22.3 (17.8-27.0), 18.0 (13.8-23.0) and 19.7 (15.1-24.6) in Chirundu, Kapiri Mposhi, Livingstone and Solwezi, respectively.

**Figure 31, Syphilis prevalence among FSWs aged 14-44 years by site of recruitment (N=1115), IBBSS 2015**

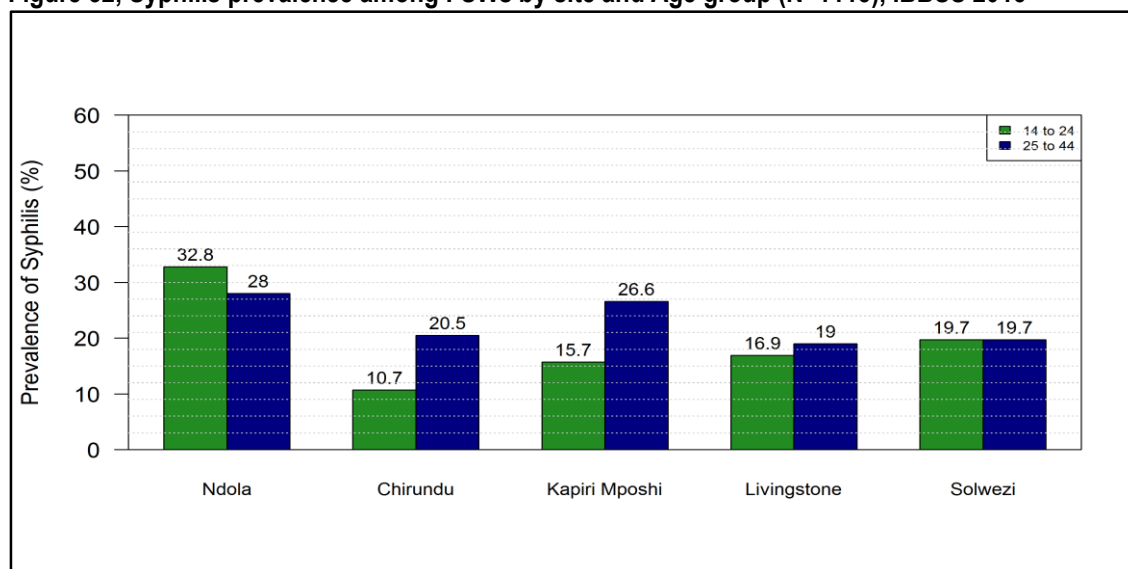


### 3.2.17.3 Syphilis Prevalence by Site and Age group

Figure 31 shows syphilis prevalence by site and age group and indicates that syphilis prevalence among 25-44 year-olds FSWs in Chirundu and Kapiri Mposhi Solwezi almost twice as high as

syphilis prevalence among the 14-24 year-olds. There was no substantive difference in syphilis prevalence between 14-24 year-olds and 25-44 year-olds.

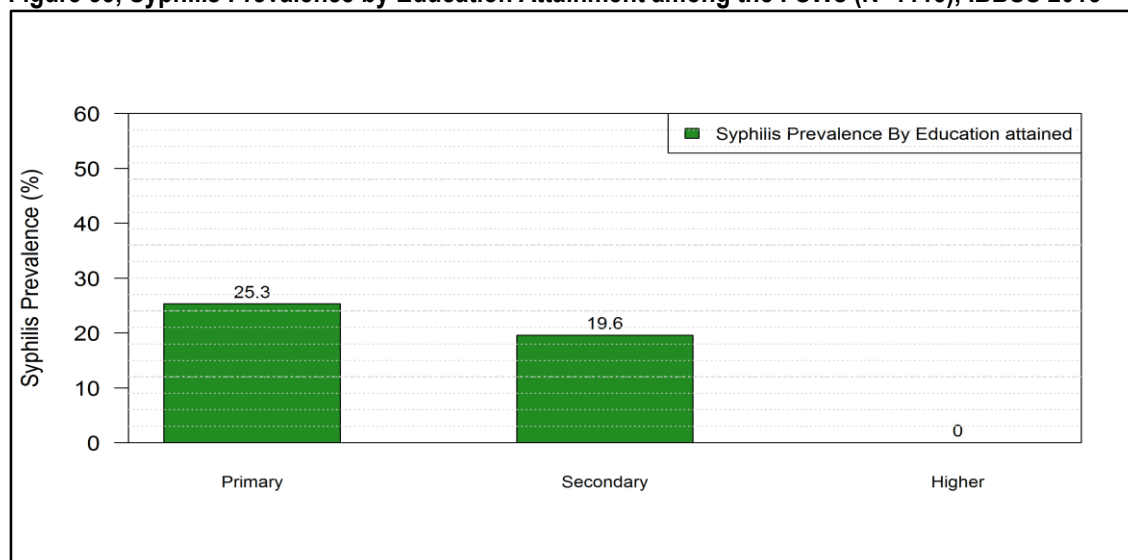
**Figure 32, Syphilis prevalence among FSWs by site and Age group (N=1115), IBBSS 2015**



### 3.2.17.4 Syphilis Prevalence by Educational Attainment

Figure 32 shows that syphilis prevalence was higher in FSWs with primary school education than in FSWs with Secondary school education.

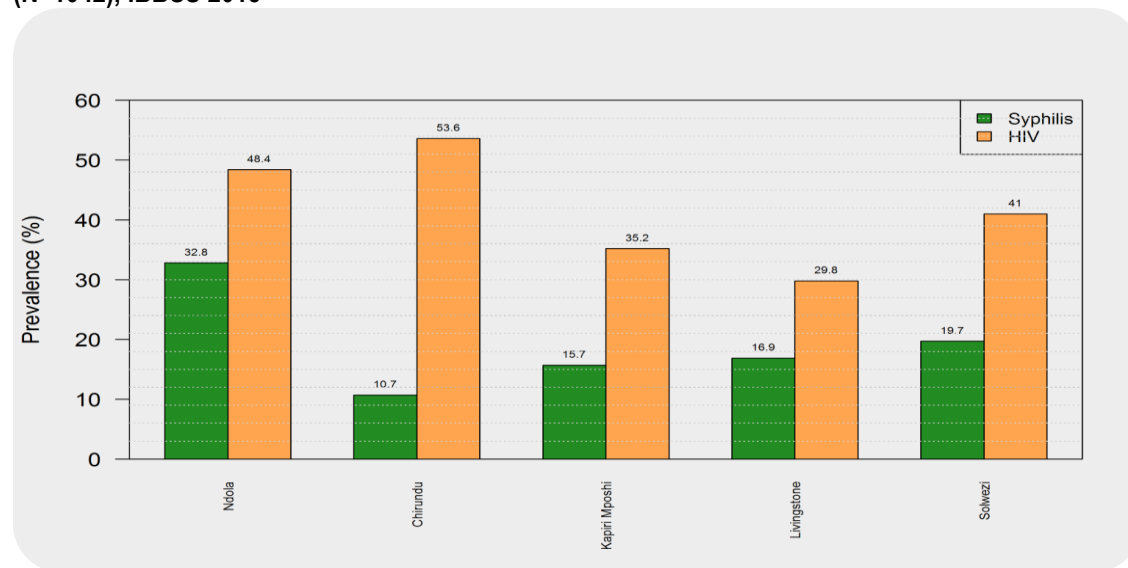
**Figure 33, Syphilis Prevalence by Education Attainment among the FSWs (N=1115), IBBSS 2015**



### 3.2.17.5 HIV and syphilis prevalence among FSWs

Figure 33 shows the HIV and syphilis prevalence in 14-24 year-olds in the five IBBSS sites used for data collection in 2015. HIV prevalence in Chirundu was almost five times as high as syphilis prevalence in the 14-24 year-olds. HIV prevalence in Kapiri Mposhi, Livingstone and Solwezi was almost twice as high as syphilis prevalence.

Figure 34, HIV and syphilis prevalence among FSWs aged 14-24 years by site of recruitment (N=1042), IBBSS 2015

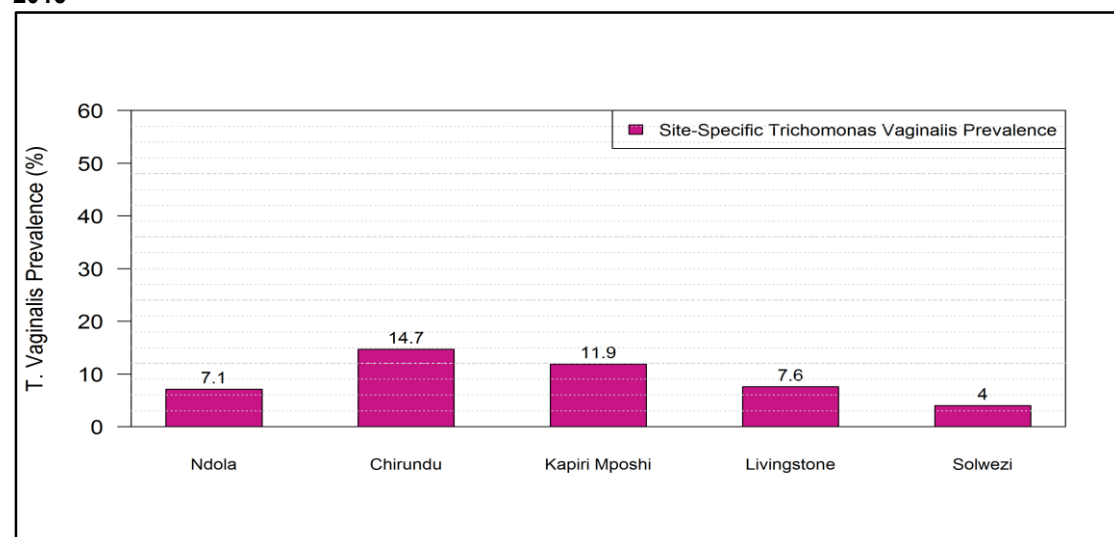


### 3.2.18 Prevalence of *Trichomonas vaginalis*

#### 3.2.18.1 *Trichomonas vaginalis* Prevalence, Overall and by Site

Of the 1,042 FSWs who provided specimens for *Trichomonas vaginalis*, an estimated 9.0% (95% CI: 7.4 to 10.9%) had *T. vaginalis*. Figure 34 shows *Trichomonas vaginalis* in FSWs. Prevalence of *Trichomonas vaginalis* seems highest in Chirundu estimated at 14.7% (95% CI: 9.8 to 23.2%) and lowest in Solwezi estimated at 4.3% (95% CI: 2.4 to 7.6%).

Figure 35, *Trichomonas vaginalis* prevalence among FSWs by site of recruitment (N=1042), IBBSS 2015

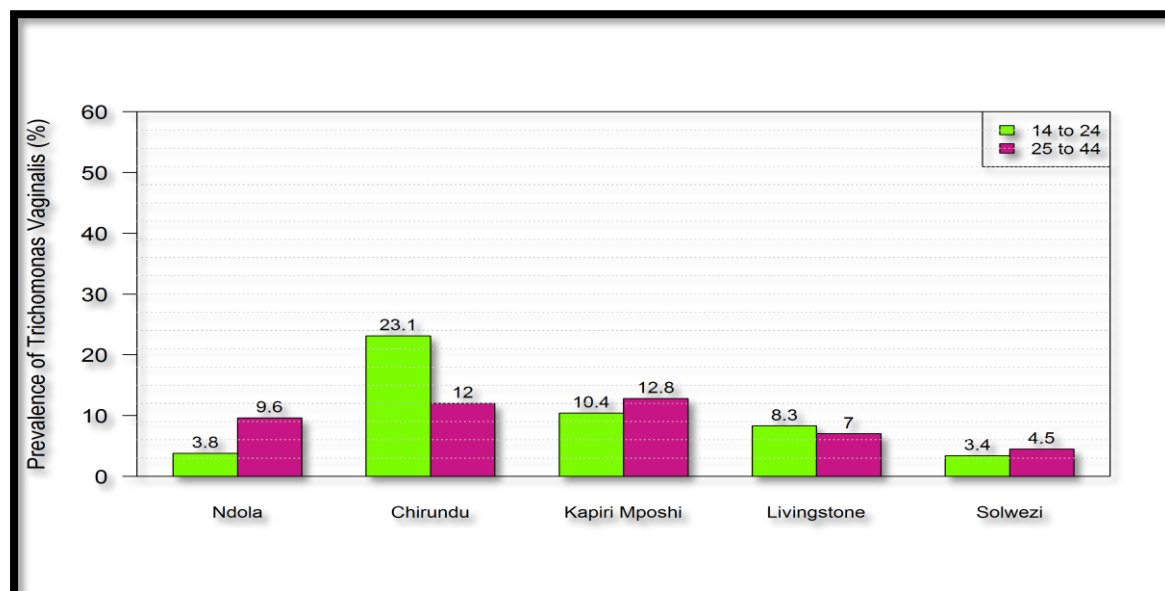


#### 3.2.18.2 Prevalence of *Trichomonas vaginalis* by Site and Age group

Figure 35 shows the *Trichomonas vaginalis* prevalence in FSW aged 14-24 years and 25-44 years. Prevalence of *Trichomonas vaginalis* in FSWs aged 14-24 years was almost twice as high as prevalence in FSWs 25-44 year-olds. Across all the sites, *Trichomonas vaginalis* prevalence

was lowest in Solwezi and slightly different *Trichomonas vaginalis* prevalence in both age groups in Kapiri Mposhi, 12.8% (95% CI: 9.5-19.5%) in 25-44 year-olds and 10.4% (95% CI: 6.1-17.4%) in 14-24 year olds.

**Figure 36, *Trichomonas vaginalis* prevalence among FSWs by site and Age group (N=1042), IBBSS 2015**



### 3.2.19 Proportion of Recent HIV Infections

Plasma specimens collected from FSWs in the 2015 cross-sectional survey that were confirmed as reactive for HIV specific antibodies were subjected to the LAg-Avidity EIA to estimate the proportion of recent HIV infections among HIV positive FSWs. Plasma specimens identified as recent infections were assumed to have a mean duration of recent HIV infection 130 days (118 to 142). The mean duration of recent HIV infection and the proportion of false recent infection influence laboratory-based estimation of HIV incidence.

#### 3.2.19.1 HIV Screening and Confirmatory Testing

Plasma specimens collected during the 2015 survey among FSWs tested for HIV infection using rapid tests based on the national HIV testing algorithm. Testing of HIV non- reactive specimens using the LAg-Avidity assay may result in misclassifying HIV negative specimens as recent HIV infections, for this reason, only plasma specimens that were confirmed as HIV positive were considered in the computing the proportion of recent HIV infections.

#### 3.2.19.2 HIV LAg Incidence Testing

To distinguish recent HIV infections from long-term HIV infections, HIV positive plasma specimens were tested using Sedia™ HIV-1 Limiting Antigen (LAg) Avidity Enzyme Immuno Assay (EIA), Sedia Biosciences Corporation (LAg-Avidity assay). The follow-up of a cohort of HIV negative persons with periodic repeated HIV testing still remain the “gold standard method” for estimating HIV incidence but newer laboratory-based assays such as the LAg-Avidity assay that utilizes specimens collected from in cross-sectional surveys can provide credible estimates of the proportion of recent HIV infection.

Briefly, plasma specimens were singularly analysed using LAg-Avidity EIA. Plasma specimens with normalized ODn greater or equal to 1.5 were classified as long-term infections. Further, all plasma specimens with ODn less than or equal to 1.5 were retested using the LAg-Avidity assay in triplicates to confirm their ODn. The plasma HIV viral load—the amount of HIV copies—for specimens with ODn less than 0.1 was quantified using a commercially available polymerase chain reaction (PCR) kit from Roche.

Classification of plasma specimens as recent or long term HIV infection was determined by the value of the LAg-Avidity assay normalized optical density (ODn) and on HIV viral load. Persons who have been recently infected are expected to have a high HIV plasma viral load, for this reason, plasma specimens with a ODn less than 0.1 and with a viral load of less than 1000 copies of HIV plasma viral load were classified as a ‘false recent’ infection and possibly taking ART or as an elite controller.

### 3.2.19.3 Overview of Results from HIV Recent Infection Testing

Table 32 presents a summary of the results from HIV recent infections testing using the LAg-Avidity assay. Plasma prepared from blood collected from 1115 FSWs were subjected to HIV incidence testing using LAg-Avidity EIA. Of the 1115 plasma specimens collected from FSWs, 486 were HIV negative, 573 were classified as long-term HIV positive, 36 were categorized as HIV long-term infection that were either possibly taking ART or Elite Controllers, and 18 were classified as recent HIV infection. Elite controllers are defined as persons who have had HIV infection over a long period but have managed to control the plasma HIV viral load in the absence of exposure to ART.

Because the plasma volume for some plasma specimens were depleted, specimens from two FSWs could not be subjected to further testing as per protocol and were therefore not classified as either recent, elite controller or long-term infection.

**Table 32, Distribution of FSWs by Results from the HIV Recent Infection Testing**

Description	Number	Proportion
HIV Negative	486	43.60%
Long-term HIV Infections	573	51.40%
Recent HIV Infection	18	1.60%
Elite Controllers or FSWs who are possible taking ART	36	3.20%
HIV Positive but Missing HIV Plasma Viral Load	2	0.10%
<b>Total</b>	<b>1,115</b>	
LAg Avidity Assay is conducted on HIV positive specimens. Plasma HIV Quantitation was not performed for plasma from 2 FSWs because the plasma finished.		

## 3.3 DISCUSSION FROM THE FEMALE SEX WORKERS SURVEY



This survey was carried out in Ndola, Solwezi, Kapiri Mposhi, Chirundu and Livingstone in that order. It targeted low to middle class FSWs found in nightclubs, bars, taverns, streets, brothels, guesthouses and homes.

### **3.3.1 Socio-demographic Factors**

The majority of FSWs are below 35 years with a median age of 26 years. This suggests the presences of both younger and matured women in sex work. The age distribution of these women clearly demonstrates early entry into sex work and continues well into middle age. More than half (60%) of FSW had been married before, this suggest early marriages and early exposure to HIV infection. The ages of FSWs who were HIV positive were older than those who had HIV negative results. The median age at first marriage in Zambia is 18 years according to ZDHS 2013-2014 (1.)

The level of educational attainment by most of the FSWs is moderately high and this has positive implications for behavioural change messages. Over half (64%) had a secondary level of education. High level of educational attainment means that these women have the potential to engage in meaningful and decent income generating activities, something they are not doing currently as majority of them (64%) subsist on sex work only. High level of education also means that they are able to understand behaviour change messages and disseminate to others as peer promoters.

Another interesting observation is that the majority (97%) of FSW reported being of Christian faith. In terms of denominations, a third reported being Pentecostals, followed by Catholics and United Church of Zambia. This shows that some women may be engaging in sex work due to factors that may be beyond control and would seize opportunity if available of alternative means of earning income other than sex work in line with Christian faith. The women support other family members from sex work and so may be under pressure to provide for the dependants and conform to Christian teachings.

Though the data show that the FSW might not be as highly mobile as reported in previous BSS, FSWs interviewed represent almost all provinces of Zambia. The high levels of mobility were particularly noted in Solwezi, a new mining town. This information on mobility is important in developing appropriate intervention messages taking into account in and out migration of target group.

### **3.3.2 Alcohol and Drug Use**

Alcohol consumption is high among FSWs while others take other drugs as well. Alcohol and drugs are used in social context and as coping strategy to stressful work. Over a third (42%) of the FSWs indicated alcohol consumption on a daily basis. Although the quantity was not explored and specified, influence of alcohol in risk sexual behaviour is known (10), therefore, interventions aimed at reducing HIV transmission need to address the role that alcohol plays in influencing risk sexual behaviours. Less than one quarter (16%) of the FSWs interviewed reported dagga use but mandrax and heroin use was less widespread. While significance of drugs such as dagga are not known in influencing risk sexual behaviours, hallucinating drugs might provide grounds for diminished perception and impaired judgement to undertake protective sexual behaviour. Given the role that alcohol and substance use play in predisposing individuals to risky sexual behaviour including unprotected sex, HIV and STIs prevention intervention for —behaviour

change message—must emphasize strategies aimed at reducing excessive use of alcohol and other narcotic substances among FSW.

### **3.3.3 Sexual Behaviour**

Age at first sex is an important risk factor for HIV and STI transmission and acquisition. Half of the women received money for sex by age of 19 years. Though this median age is a year older than 18 years found in previous BSS 2009 it is still much lower when compared with a study conducted in Ghana, which found that the average age at which FSWs began commercial sex work was 23.7 years (6).

Still an interesting observation with regard to age at first sex for money is the proportion of older women entering sex work. The proportion of women that reported receiving money in exchange for sex at age 25 and above was 27 percent. This may be due to a number of factors including the high divorce rate or widowhood. Because of economic hardships, some women are compelled to seek sex work as a means of livelihood. Therefore, economic strengthening programs targeting groups of women such as widows and divorced are needed to reduce vulnerability and entrance into sex work as means of earning income.

As expected, almost half of the women reported five or more transaction sex in the last 7 days and over three quarters (78%) had six or more sex partners who paid for sex in the last 30 days before the interview. It is not surprising that many of these women reported high numbers of sexual partners because what drives their sexual activity is the need to earn more money but at same time need to be protected against HIV and other STIs.

Nearly all FSWs have heard about condoms and the majority (91%) of sex workers know that condoms can prevent the transmission of HIV and they often bought male condoms. Despite this knowledge on condoms, condom use was not universal and many of them did not meet the expectation of ensuring that they have condoms at hand. Less than half (43%) had a male condom at hand at the time of interview and less than a quarter (24%) had ever used a female condom, with the kind of work FSWs are involved in, it is prudent and safer that they keep condoms handy at all times when they are on duty. During encounters with their male clients, they may not have the time to look for condoms especially if the client is unwilling to use a condom as shown by the data. About a half of the sex workers who reported not having used a condom at last sex with a paying partner said it was because the partner had objected, suggesting that the rate of refusal by many clients to use condoms can be real and significant. Imparting skills of condom negotiations and the availability and self-driven use of female condom would help reduce transmission of infection in an event that a client refuses to use a male condom.

The data shows that sex workers are not only having sex with paying partners but also with non-paying partners including permanent partners or boyfriends where payment may be in kind and monetary transactions may not necessarily be the driving force. The necessity and motivation for condom use with non-paying partners appears low. There is therefore a significant implication in spreading HIV and other STIs through this subgroup. This implication needs to be addressed with innovative means.

It is interesting that among FSWs who reported that they knew condoms prevent HIV transmission only 35 per cent used condoms compared to 32 per cent who did not know condom prevents HIV transmission. This perhaps shows priority between health and money the latter

being the reason for entering the sex trade. Only 79 per cent used condom with the last paying sexual partner and 44 per cent said they used a condom with a non-paying partner at last sex whilst consistent condom use with a non-paying partner over the past twelve months was extremely low, just about 19 percent.

As with paying partners, the non-use of condoms is blamed on the partner's objection to their use. This data may be highlighting the fact that sex workers including their clients may not perceive any sexual risk from a female or someone who does not demand any direct payment. It may also be because most of them already know their HIV status or perceive themselves as having HIV and, therefore, may not be motivated to use a condom especially if a partner does not insist. This perception arises from inadequate understanding of the realities and dynamics of HIV reinfection transmission and prevention. Lack of consistent condom use among FSWs put them at a greater higher risk of acquiring STIs including HIV. In this study, reported history of STIs and syphilis prevalence in particular was very high while a higher proportion of FSWs continued to have unprotected sex even when they have STI symptoms. Lack of condom use is at the centre of the HIV transmission as much as abstaining and sticking to one faithful partner is (6)

### **3.3.4 Knowledge of STIs including HIV**

Awareness about STIs including HIV is high. Almost all of the sex workers have ever heard about STIs and HIV/AIDS and they know someone or a close relative/friend who is infected or has died of AIDS.

This finding is not unique to the sex workers; conventional STIs have been around time immemorial while the impact of the HIV/AIDS epidemic has permeated every social and economic fabric of the Zambian society to the extent that every individual and community has been affected in one way or the other.

However, despite the high levels of knowledge among sex workers, some misconceptions about HIV/AIDS still exist. For example, about a quarter (23%) still believe that a mosquito bite can transmit HIV while only 86 per cent know that a pregnant woman can decrease the chances of passing HIV to her unborn child by taking medication such as ARVs.

It is also worth noting that there are gaps in knowledge about prevention of HIV. Knowledge about ABC was not universal. Only 81% thought a person could protect themselves from HIV by abstaining from sexual intercourse. Similarly, not all the sex workers knew that people can protect themselves from HIV by using a condom correctly every time they have sex. The level of knowledge about the female condom was equally high although the actual use was relatively lower, in this study, only 24 per cent ever used female condom. Consequently, complete and comprehensive knowledge of HIV transmission and prevention was not universal either.

#### **3.3.4.1 HIV Stigma**

Stigmatized persons or population may feel marginalized and may be hesitant/reluctant to access HIV testing and counselling services and seek treatment. Based on the responses to questions on stigma assessment of data reveals that stigma is generally low among FSWs. For example, three-quarters of the FSWs provided stigmatising responses to 25% of the questions asked. The stigma score distribution was similar between HIV positive and negative persons. More than 90% of the FSWs indicated that they would share a meal with a HIV-infected person, could buy food

from a HIV infected shopkeeper and felt that HIV-infected teachers could continue teaching. Contrary to findings in the earlier BSS studies—where almost one-third of the FSW were opposed to the idea of allowing HIV-infected teachers to continue with their teaching positions or students to continue with the studies—the findings in the 2015 IBBSS have revealed remarkable improvement in the attitude of FSWs towards HIV-infected teachers. It might be assumed that improved knowledge about transmission routes and treatment options for HIV revealed in the 2015 IBBSS may have contributed to the change in the FSW attitudes towards HIV-infected persons.

#### **3.3.4.2 Voluntary Testing and Counselling**

Voluntary Testing and Counselling (VCT) is an important entry point in the HIV prevention and treatment services. Almost two-thirds of the FSW reported that they had ever taken an HIV test in the last 12 months preceding the survey and nearly all FSWs that had tested for HIV had obtained their HIV test results. Given the HIV burden observed in this population, continuous efforts to provide VCT services as well as social marketing of the benefits of VCT is crucial in facilitating linkage of FSWs to the continuum of care and treatment services. The 2015 IBBSS also revealed that more than 95% of the FSWs had ever heard of antiretroviral drugs. Therefore, emphasizing the importance of VCT in the linkage to treatment is a critical step in improving referral to the government ART programs.

#### **3.3.4.3 Family Planning Methods**

About two-thirds of the FSWs indicated current use of a family planning method. The number of FSWs who reported current use of any family planning method were not substantively different across sites although it appears current use of a family planning method seem highest in Livingstone and lowest in Chirundu. The use of traditional method of family planning is less attractive in the surveyed subpopulation—nearly all FSWs interviewed (99%) were not using traditional methods. The use of female condom as a family planning option is less widespread—about 95% of the FSW reported not using female condoms as a family planning method. In the 2015 IBBSS, the most popular family planning method reported was the injectable methods (42%) and male condoms (41%). Almost two-fifth of the FSWs reported use of male condoms as a family planning method. If used correctly and consistently, male condoms serve as a family planning method as well as a protective barrier for HIV/STI transmission and acquisition. FSWs rarely use female condoms as a family planning option. The data collected in the 2015 IBBSS indicate that consistent male condom use among FSWs is not widespread. The use of oral contraceptives (16%) was not as widespread as the injectable methods (42%). It can be assumed that FSWs prefer the injectable methods because of the convenience of just getting an injection that would apply to a specified period. The details of the injectable methods or the oral contraceptives were not specified. Given that one barrier to effective use of condoms is a male client refusing to use them and injectable contraceptives, though favourite, do not protect against infection from HIV and other STIs, motivational approach for the women to depend on female condom for protection might be a solution.

#### **3.3.4.4 Project Indicators**

Consistent with findings in the 2003 BBSS, approximately one-quarter of the FSWs had heard about the COH project. Almost half of the FSWs indicated that they had received STI-related services from the COH project but less than one-fifth of the FSWs who had an STI in the past 12 months had first reported to COH wellness centre. It seems that most FSWs prefer government

facilities as their first point of contact when they have STIs. It is likely that at the government facilities, this population do not self-identify as FSWs and receive care and treatment like any other patient compared to the COH wellness centre where they self-identify as FSWs. It is therefore important that the government facilities, which are widely spread, improve facilities to provide quality care to this population and others that may be inhibited from seeking services at the public health facility now.

### **3.3.5 Syphilis and HIV prevalence**

The HIV prevalence of 56% among FSWs compared to 15% of women in the general population (1) and syphilis of 21% among FSWs compared to 4 per cent in women in the general population (4) is 4 and 5 times respectively higher among FSW compared to women in the general population in Zambia. Concurrent syphilis infection may be a significant contributor to acquisition and spread of HIV. An intervention targeting STI diagnosis and treatment is key and interventions aimed at preventing new HIV infections including test and treat strategy starting with cART as part of a comprehensive HIV prevention package is essential and can influence the broader epidemic in Zambia.

### **3.3.6 Conclusion**

Women are entering sex trade at very young age and fail to complete their education thereby facing a high burden of HIV and other STIs. Alcohol consumption is also high among FSWs as part of their trade, which may contribute to a high-risk sexual behaviour and failure to negotiate for protected sex. Condoms if used consistently and correctly protect against HIV and other STIs. Knowledge on protective effects of condoms is very high. Unfortunately, despite the high knowledge level about condoms, FSWs are not using condoms consistently or always with both paying and non-paying male clients. Condom use is much lower with non-paying partners perhaps a result of trust created in such a relationship involving repeat sexual contacts and as permanent sex partners. Despite findings of reduction of HIV in the general population found in last ZDHS 2013-14, the prevalence of HIV and other STIs specifically syphilis found in IBBSS 2015 is very high among FSWs in Zambia; it should worry policy makers, programmers and funding agencies and call for action.

### **3.3.7 Recommendations**

1. Women are entering sex trade and get out of school system early. This appears to be true given that 40% of FSWs are aged below 25 and the median age of education is 9th grade. They are infected early with HIV and other STIs and this become apparent, as they grow older in the sex work profession. Syphilis prevalence was higher among those with primary education compared to those with secondary level of education while HIV prevalence was higher among older FSWs.

Deliberate policy is needed to retain the young girls in school and provide them with lifesaving skills. Having women spend more years in school would help reduce risk sexual behaviour and empower them with skills to earn alternative ways of earning income.

2. Daily alcohol consumption among FSWs of 43% is quite high. Alcohol use has a high correlation with increased risky sexual behavior.

Programs for sex workers and other key populations who are at higher risk of transmission of STIs including HIV ought to integrate alcohol issues and how they influence risk sexual behaviour.

The policy makers and Program managers must begin to take into consideration strategies of reducing substance use among the target groups.

3. Condom use among FSWs is low with non-paying partners. These are usually seen as permanent or trusted sex partners. Just about 56% who had sex with non-paying partner reported using a condom at last sex. Even with paying partner over 20% of them did not use condom at last sex.

Programs involved with prevention of sexually transmitted infection in FSW and other key populations need to explore innovative ways and address reasons for non-use of condom such as availability, desired pleasure, risk perceptions and negotiation skills.

Interventions must go beyond “raising awareness” and use innovative and interactive behaviour change communication that is effective in developing the knowledge and skills sets necessary for vulnerable people to analyse situations, HIV risk and to remove myths.

4. It might be assumed that improved knowledge about transmission routes and treatment options for HIV revealed in the 2015 IBBSS may have contributed to the change in the FSWs attitudes towards HIV-infected persons. However, there is need to conduct studies that will target measurement of stigma using stringent and validated stigma scales.
5. Despite encouraging findings from recent ZDHS 2013/14 of a drop in HIV prevalence in general population by one per cent from 14.3% to 13.3%, the prevalence among FSWs remain very high. One in two FSWs is infected (56%) and new infections are occurring.

Given that most of FSWs have tested and know their HIV status, it is possible that some of them are on life saving drugs, cART that is improving their lives and sustaining the prevalence levels. It is therefore important to accelerate test and treat strategy given that cART are prevention.

6. The overall reported prevalence of STIs is very high among FSWs. The prevalence of syphilis just like HIV is more than 3 times the national figures.

Given that STIs facilitate transmission and acquisition of HIV efforts aimed at controlling transmission of traditional STIs and creation of enabling environment to reduce stigma and improve access are needed.

## 4 RESULTS, DISCUSSION, CONCLUSION AND RECOMMENDATIONS FROM THE LONG DISTANCE TRUCK DRIVERS SURVEY

A total of 1406 LDTDs were interviewed for the survey.

### 4.1 Background characteristics

Background characteristics of the LDTDs who participated in the survey focused on age, level of education and religion are shown in table 33.

**Table 33 Age, education and religion of the Long Distance Truck Drivers by site, BSS 2015**

Characteristics	Chililabombwe	Chirundu	Kapiri Mposhi	Livingstone and Kazungula	Ndola	Solwezi	Total	P-value
Age (in years)								
Mean	38.4	38.8	38.3	38.4	36.5	37.2	38.2	0.011
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	0.127
<25	14 (8.0)	16 (3.2)	13 (8.4)	13 (4.5)	14 (8.0)	9 (6.8)	71 (5.1)	
25-29	25 (14.3)	43 (8.6)	19 (12.3)	28 (9.7)	25 (14.3)	14 (10.5)	148 (10.5)	
30-34	37 (21.1)	95 (19.0)	21 (13.6)	56 (19.4)	37 (21.1)	29 (21.8)	267 (19.0)	
35-39	39 (22.3)	126 (25.1)	30 (19.4)	83 (28.7)	39 (22.3)	36 (27.1)	348 (24.7)	
40-44	33 (18.9)	115 (22.9)	38 (24.5)	51 (17.7)	33 (18.9)	23 (17.3)	284 (20.2)	
45-49	14 (8.0)	60 (11.9)	17 (11.0)	26 (9.0)	14 (8.0)	13 (9.8)	151 (10.7)	
50+	13 (7.4)	48 (9.5)	17 (11.0)	32 (11.1)	13 (7.4)	9 (6.8)	137 (9.7)	
Total	151	503	155	289	175	133	1406	
Level of education								
Mean total number years of education	10.3	11	9.7	10.7	10	10.2	10.5	<.001
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	<.001
Primary	30 (20.1)	47 (9.4)	32 (21.1)	34 (12.0)	39 (22.5)	29 (21.8)	211 (15.2)	
Secondary	107 (71.8)	395 (79.3)	116 (76.3)	223 (78.5)	123 (71.1)	96 (72.2)	1060 (76.3)	
Higher	12 (8.1)	56 (11.2)	4 (2.6)	27 (9.5)	11 (6.4)	8 (6.0)	118 (8.5)	
Total	149	498	152	284	173	133	1389	
Religion								
Christian	125 (82.8)	470 (93.4)	138 (89.0)	271 (93.8)	158 (90.3)	117 (88.0)	1279 (91.0)	<.001
Muslim	24 (15.9)	15 (3.0)	14 (9.0)	12 (4.2)	15 (8.6)	13 (9.8)	93 (6.6)	
Hindu	0 (0.0)	2 (0.4)	0(0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (0.1)	
No religion	2 (1.3)	15 (3.0)	2 (1.3)	6 (2.1)	1 (0.6)	2 (1.5)	28 (2.0)	
No response	0 (0.0)	1 (0.2)	1 (0.7)	0 (0.0)	1 (0.6)	1 (0.8)	4 (0.3)	
Total	151	503	155	289	175	133	1406	

#### 4.1.1 Age

Most of the drivers are of a mature age. The mean age of the drivers was 38.2 years with most (24.7%) of the drivers aged within 35 and 39. The difference in average age with the drivers interviewed in Ndola and in Chirundu was significant (p-value = 0.011). At 36.5 years, drivers interviewed in Ndola had the lowest mean age of the drivers. No significant differences in the age distribution were observed among the sites (p-value = 0.127).

### 4.1.2 Educational background

Educational attainment is quite high among the drivers. The mean total number of years spent in school for the drivers that reported having attended school was 10.5, with most (76.3%) of the drivers having attended secondary school. The differences in average number of years spent in school with the drivers interviewed in Ndola and in Chirundu, in Chirundu and in Kapiri Mposhi, and in Kapiri Mposhi and in the Livingstone and Kazungula site were significant ( $p$ -value =  $<.001$ ). At 9.7 years, drivers interviewed in Kapiri Mposhi had the lowest average number of years spent in school.

### 4.1.3 Religion

Christianity is the common religion among the drivers interviewed. The majority (91.0%) of the drivers interviewed reported being Christian, while 6.7% of the drivers reported being either Muslim (6.6%) or Hindu (0.1%). The rest (2.3%) reported either no religion (2.0%) or no response (0.3%) at all. At 93.8%, the Livingstone and Kazungula site had the highest proportion of LDTD interviewed that were Christians, while the highest proportion of Muslims was in Chirundu (15.9%).

**Table 34 Marital related characteristics of the Long Distance Truck Drivers by site, BSS 2015**

Characteristics	Chililabombwe	Chirundu	Kapiri Mposhi	Livingstone and Kazungula	Ndola	Solwezi	Total	P-value
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	
Ever married	136 (90.1)	468 (93.0)	140 (90.3)	249 (86.2)	148 (84.6)	120 (90.2)	1261 (89.7)	
<b>Total</b>	<b>151</b>	<b>503</b>	<b>155</b>	<b>289</b>	<b>175</b>	<b>133</b>	<b>1261 (89.7)</b>	0.011
<b>Age (in years) at first marriage</b>								
<b>Mean</b>	25.0	24.8	24.8	25.3	24.6	25.3	25.0	0.312
<b>Current marital status</b>								
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	
Currently married, living with spouse	120 (81.6)	429 (88.0)	130 (85.0)	220 (77.5)	131 (77.1)	105 (82.7)	1135 (83.0)	
Currently married, living with other sexual partner	10 (6.8)	22 (4.5)	7 (4.6)	20 (7.0)	10 (5.9)	9 (7.1)	78 (5.7)	
Currently married, not living with spouse or any other sexual partner	2 (1.4)	6 (1.2)	1 (0.7)	4 (1.4)	4 (2.4)	5 (3.9)	17 (1.2)	
Not married, living with sexual partner	2 (1.4)	10 (2.1)	6 (3.9)	13 (4.6)	7 (4.1)	0 (0.0)	43 (3.1)	
Not married, not living with sexual partner	13 (8.8)	20 (4.1)	9 (5.9)	27 (9.5)	18 (10.6)	8 (6.3)	95 (6.9)	
<b>Total</b>	<b>147</b>	<b>487</b>	<b>153</b>	<b>284</b>	<b>170</b>	<b>127</b>	<b>1368</b>	0.013



Marital related characteristics of the LDTDs are shown in table 34.

#### **4.1.4 Marital status**

Marriage is common among the drivers. The majority (89.7%) of the drivers reported ever been married. The highest proportion of the drivers who reported ever been married was in Chirundu (93.0%). At 84.6%, the drivers interviewed in Ndola had the lowest proportion of ever been married drivers followed by the Livingstone and Kazungula site at 86.2%.

The mean age at first marriage was 25.0 years and ranged from 24.3 years in Ndola to 25.3 years in Solwezi and in the Livingstone and Kazungula site. However, the differences in mean age at first marriage according to sites is not statistically significant ( $p$ -value = 0.312). The majority (83.0%) of the drivers reported that they were currently married and living with their spouse. Association of marital status with sites was significant ( $p$ -value = 0.013). At 88.0% most of the drivers in Chirundu reported being currently married and living with the spouse, while at 7.1%, most of the drivers in Solwezi reported being currently married and living with another sexual partner.

#### **4.1.5 Drivers' countries of origin and mobility**

Drivers' countries of origin and mobility related characteristics are shown in table 35. The majority of the drivers interviewed were from Zambia (51.8%) followed by Zimbabwe (31.1%). Association of countries of origin across sites were statistically significant ( $p$ -value = <.001). The majority of the drivers interviewed in Chirundu were from Zimbabwe (59.4%), while most of the drivers interviewed in Chililabombwe, Kapiri Mposhi, the Livingstone and Kazungula site, Ndola and Solwezi were from Zambia (44.4%, 63.2%, 62.3, 82.9% and 67.7% respectively).

Length of stay at the border site is considerably long. When asked how long they had stayed at the border town, the majority (73.9%) of the drivers said that they had already spent a day or more at the site. Association of period of stay at the border site this trip with sites was significant ( $p$ -value = <. 001). The majority (54.8%) of the drivers in Kapiri Mposhi (none border site) had not stayed more than a day at the site, while the majority (32.3%) of the drivers in Solwezi had stayed for four days or more at the site. When asked the length of stay in days the last time the drivers were at the border site, over a half (55.5%) spent 2 days or more and this varied across sites ( $p$ -value = <. 001). Kapiri Mposhi had the least number of days the drivers spent.

Been continuously away from home is common among the drivers. When asked if they had been away from home for more than one month continuously in the last 12 months, the majority (76.4%) of the drivers said 'yes'. Association of been away from home for more than one month continuously in the last 12 months with sites was not statistically significant ( $p$ -value = 0.312).

Mobility across borders is high among the drivers. When asked how many trips the drivers had made across borders within the last 3 months, over a half (67.6%) had 3 or more trips. Differences between the sites in the number of trips the drivers had made across borders were significant ( $p$ -value = 0.002). At median (Q1, Q3) 4 (2, 10) drivers interviewed in Ndola had the highest number of border crossings reported.

**Table 35 Country of origin and mobility related characteristics of the Long Distance Truck Drivers by site, BSS 2015**

Characteristics	Chililabombwe	Chirundu	Kapiri Mposhi	Livingstone and Kazungula	Ndola	Solwezi	Total	P-value
<b>Country of Origin</b>								
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	
South Africa	3 (2.0)	25 (5.0)	2 (1.3)	35 (12.1)	1 (0.6)	2 (1.5)	68 (4.9)	
Somalia	5 (3.3)	0 (0.0)	0 (0.0)	0 (0.0)	2 (1.1)	0 (0.0)	7 (0.5)	
Malawi	7 (4.6)	14 (2.8)	6 (3.9)	10 (3.5)	3 (1.7)	1 (0.8)	41 (2.9)	
Zimbabwe	35 (23.2)	298 (59.4)	24 (18.7)	54 (18.7)	5 (2.9)	20 (15.0)	436 (31.1)	
Tanzania	15 (9.9)	8 (1.6)	16 (10.3)	3 (1.0)	19 (10.9)	17 (12.8)	78 (5.6)	
Kenya	4 (2.7)	0 (0.0)	1 (0.7)	1 (0.4)	0 (0.0)	3 (2.3)	9 (0.6)	
Mozambique	0 (0.0)	5 (1.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	5 (0.4)	
Congo DR	15 (9.9)	2 (0.4)	2 (1.3)	1 (0.4)	0 (0.0)	0 (0.0)	20 (1.4)	
Botswana	0 (0.0)	2 (0.4)	0 (0.0)	1 (0.4)	0 (0.0)	0 (0.0)	3 (0.2)	
Zambia	67 (44.4)	145 (28.9)	98 (63.2)	180 (62.3)	145 (82.9)	90 (67.7)	725 (51.8)	
Other	0 (0.0)	2 (0.4)	0 (0.0)	4 (1.4)	0 (0.0)	0 (0.0)	6 (0.4)	
No response	0 (0.0)	1 (0.2)	1 (0.7)	0 (0.0)	0 (0.0)	0 (0.0)	2 (0.1)	
<b>Total</b>	<b>151</b>	<b>502</b>	<b>150</b>	<b>289</b>	<b>175</b>	<b>133</b>	<b>1400</b>	<b>&lt;.001</b>
<b>Period of stay (in days) at the border site</b>								
<1	27 (17.90)	89 (17.7)	85 (54.8)	69 (23.9)	65 (37.1)	33 (24.8)	368 (26.2)	
1	31 (20.5)	81 (16.1)	39 (25.2)	47 (16.3)	41 (23.4)	19 (14.3)	258 (18.4)	
2	51 (33.8)	153 (30.4)	21 (13.6)	74 (25.6)	37 (21.1)	26 (19.6)	362 (25.8)	
3	18 (11.9)	107 (21.3)	5 (3.2)	48 (16.6)	14 (8.0)	12 (9.0)	204 (14.5)	
4+	24 (9.3)	73 (14.5)	5 (3.2)	51 (17.7)	18 (10.4)	43 (32.3)	214 (15.2)	
<b>Total</b>	<b>151</b>	<b>502</b>	<b>156</b>	<b>289</b>	<b>175</b>	<b>133</b>	<b>1406</b>	<b>&lt;.001</b>
<b>Been away from home for more than one month continuously in the last 12 months</b>								
Yes	123 (81.5)	379 (75.4)	125 (80.7)	216 (74.7)	127 (72.6)	104 (78.2)	1074 (76.4)	
<b>Total</b>	<b>151</b>	<b>503</b>	<b>155</b>	<b>289</b>	<b>175</b>	<b>133</b>	<b>1406</b>	<b>0.387</b>
<b>Number of trips crossing the border in the past 3 months</b>								
Median (Q1, Q3)	3 (2, 6)	4 (2, 6)	3 (4, 8)	3 (2, 6)	4 (2,10)	3 (2, 7)	4 (2, 6)	0.002
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	
0	1 (0.7)	0 (0.0)	0 (0.0)	1 (0.4)	0 (0.0)	1 (0.8)	3 (0.2)	
1-2	56 (37.1)	148 (29.5)	38 (24.5)	101 (35.0)	57 (32.9)	52 (39.1)	452 (32.2)	
3-5	51 (33.8)	181 (36.1)	55 (35.5)	96 (33.2)	40 (23.1)	39 (29.3)	462 (32.9)	
6-9	24 (15.9)	101 (20.1)	24 (15.5)	52 (18.0)	24 (13.9)	17 (12.8)	242 (17.3)	
10+	19 (12.6)	72 (14.3)	38 (24.5)	39 (13.4)	52 (30.1)	24 (18.1)	244 (17.40)	
<b>Total</b>	<b>151</b>	<b>502</b>	<b>155</b>	<b>250</b>	<b>173</b>	<b>133</b>	<b>1403</b>	<b>&lt;.001</b>
<b>Length of stay (in days) the last time were at the border site</b>								
Median (Q1, Q3)	2 (1, 4)	3 (2, 5)	1 (0, 2)	3 (2, 4)	2 (1, 3)	2 (1, 4)	2 (1, 4)	<.001
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	
<1	9 (6.0)	22 (4.4)	41 (26.3)	22 (7.6)	17 (9.7)	15 (11.3)	126 (9.0)	
1	74 (49.0)	168 (33.5)	87 (55.8)	109 (37.7)	107 (61.1)	53 (39.9)	598 (42.3)	
2	56 (37.1)	206 (41.0)	23 (14.8)	116 (40.2)	29 (16.6)	48 (36.1)	478 (34.0)	
3	9 (6.0)	93 (18.5)	2 (1.3)	29 (10.0)	14 (8.0)	6 (4.5)	153 (10.9)	
4+	3 (1.9)	13 (2.6)	3 (1.9)	13 (4.5)	8 (4.6)	11 (8.3)	51 (3.6)	
<b>Total</b>	<b>151</b>	<b>502</b>	<b>155</b>	<b>289</b>	<b>175</b>	<b>133</b>	<b>1405</b>	<b>&lt;.001</b>

## 4.2 General Risk Behaviours of Study Population

Alcohol and drug use related characteristics of the LDTDs are shown in table 36.

**Table 36 Alcohol and drug use related characteristics of the Long Distance Truck Drivers by site, BSS 2015**

Characteristics	Chililabombwe	Chirundu	Kapiri Mposhi	Livingstone and Kazungula	Ndola	Solwezi	Total	P-value
<b>Alcohol consumption in last 4 weeks</b>								
	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	
Every day	19 (12.6)	81 (16.2)	21 (13.6)	58 (20.3)	29 (16.6)	9 (6.9)	217 (15.5)	
At least once a week	42 (27.8)	116 (23.2)	42 (27.3)	60 (21.0)	51 (29.1)	40 (30.5)	351 (25.1)	
Less than once a week	15 (9.9)	41 (8.2)	12 (7.8)	39 (13.6)	20 (11.4)	18 (13.7)	145 (10.4)	
Never	75 (49.7)	262 (52.4)	79 (51.3)	129 (45.1)	75 (42.9)	64 (48.9)	684 (49.0)	
<b>Total</b>	<b>151</b>	<b>500</b>	<b>154</b>	<b>286</b>	<b>175</b>	<b>126</b>	<b>1397</b>	<b>&lt;.001</b>
<b>Drug use</b>								
Everyday	11 (7.3)	16 (3.2)	8 (5.2)	20 (6.9)	9 (5.1)	8 (6.0)	72 (5.1)	
At least once a week	2 (1.3)	19 (3.8)	7 (4.5)	6 (2.1)	7 (4.0)	3 (2.3)	44 (3.1)	
Less than once a week	2 (1.3)	5 (1.0)	1 (0.7)	3 (1.0)	5 (2.9)	0 (0.0)	16 (1.1)	
Never	8 (5.3)	34 (6.8)	8 (5.2)	21 (7.3)	39 (22.3)	20 (15.0)	130 (9.3)	
No response	128 (84.8)	429 (85.3)	131 (84.5)	239 (82.7)	115 (65.7)	102 (76.7)	1144 (81.4)	
<b>Total</b>	<b>151</b>	<b>503</b>	<b>155</b>	<b>289</b>	<b>175</b>	<b>133</b>	<b>1406</b>	<b>&lt;.001</b>
<b>Drug ever used</b>								
Dagga (Ichamba)	20 (13.3)	71 (14.1)	22 (14.2)	54 (18.7)	45 (25.7)	26 (19.6)	238 (16.9)	
<b>Total</b>	<b>151</b>	<b>503</b>	<b>155</b>	<b>289</b>	<b>175</b>	<b>133</b>	<b>1406</b>	<b>&lt;.001</b>
Heroin	1 (0.7)	0 (0.0)	0 (0.0)	2 (0.7)	0 (0.0)	2 (2.0)	5 (0.4)	
<b>Total</b>	<b>150</b>	<b>503</b>	<b>155</b>	<b>289</b>	<b>175</b>	<b>133</b>	<b>1405</b>	<b>0.143</b>
Cocaine	3 (2.0)	6 (1.2)	1 (0.7)	2 (0.7)	1 (0.6)	2 (1.5)	15 (1.1)	
<b>Total</b>	<b>151</b>	<b>503</b>	<b>155</b>	<b>289</b>	<b>175</b>	<b>133</b>	<b>1406</b>	<b>0.293</b>
Mandrax	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.57)	1 (0.8)	2 (0.1)	
<b>Total</b>	<b>151</b>	<b>503</b>	<b>155</b>	<b>289</b>	<b>175</b>	<b>133</b>	<b>1406</b>	<b>0.033</b>

### 4.2.1 Alcohol consumption

Alcohol consumption is common among the truck drivers. When asked about their drinking habits in the last four weeks, almost half (49.0%) of the drivers reported never taking alcohol, less than a quarter (15.5%) reported taking an alcoholic drink every day, at least once a week (25.1%) and less than once a week (10.4%). Association of alcohol consumption with sites was statistically significant ( $p$ -value =  $<.001$ ). The lowest proportion of drivers who never take alcoholic drinks was reported among those interviewed in Ndola (42.9%), whilst the highest was reported among those interviewed in Chirundu (52.4%).

### 4.2.2 Drug use

Drug use is rampant among the drivers. When asked about using drugs in the last four weeks (dagga, heroin, cocaine, mandrax), only 9.3% reported that they never used any drugs. About five percent (5.1%) reported that they used drugs every day, 3.1% reported that they used drugs

at least once a week and 10.0% reported that they used drugs less than once a week. The rest (81.4%) declined to respond to the question. Association of drug use with sites was statistically significant ( $p$ -value =  $<.001$ ). The highest proportion of drug use was reported among the drivers interviewed in Ndola (12.0%) whilst the lowest was among those interviewed in Chirundu (8.0%). Dagga is the drug mostly (16.9%) used by the drivers and varied ( $p$ -value =  $<.001$ ) from 13.3% in Chililabombwe to 19.6% in Solwezi.

### 4.2.3 Sexual behaviour and partners

Sexual behaviour and partner, and condom use characteristics are shown in table 37.

**Table 37 Ever had sex, Sex in last 12 months, Age at first sexual intercourse and number of sexual partners in the last 12 months among the Long Distance Truck Drivers by sites, BSS 2015**

ESG 2018

Characteristics	Chililabombwe	Chirundu	Kapiri Mposhi	Livingstone and Kazungula	Ndola	Solwezi	Total	P-value
	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	0.036
Ever had sex	150 (99.3)	502 (99.8)	155 (100.0)	288 (99.7)	173 (98.9)	130 (97.7)	1398 (99.4)	
<b>*Total</b>	<b>151</b>	<b>503</b>	<b>155</b>	<b>289</b>	<b>175</b>	<b>133</b>	<b>1406</b>	
Have had sex in last 12 months	149 (98.7)	497 (99.0)	154 (99.4)	284 (98.6)	167 (96.5)	128 (97.0)	1379 (98.4)	0.033
<b>*Total</b>	<b>151</b>	<b>502</b>	<b>155</b>	<b>288</b>	<b>173</b>	<b>132</b>	<b>1401</b>	
Age at first sexual intercourse								
Median	18	19	19	18	18	19	18	<.001
Range	12 - 30	12 - 30	12 - 29	14 - 31	12 - 27	12 - 28	12 - 31	
Number of sexual partners in last 12 months								
Median	2	2	2	2	2	2	2	0.008
Range	0 - 20	1 - 78	1 - 51	0 - 51	1 - 35	0 - 16	0 - 78	
	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	0.068
1	52 (35.6)	181 (37.1)	68 (44.4)	124 (44.3)	56 (33.3)	38 (29.9)	519 (38.1)	
2	42 (28.7)	143 (29.3)	37 (24.2)	80 (28.6)	51 (30.4)	38 (29.9)	391 (28.7)	
3-4	26 (17.8)	82 (16.8)	26 (17.0)	50 (17.9)	27 (16.1)	22 (17.3)	233 (17.1)	
5+	26 (17.8)	82 (16.8)	22 (14.2)	26 (9.3)	34 (20.2)	29 (22.8)	219 (16.1)	
<b>*Total</b>	<b>146</b>	<b>488</b>	<b>153</b>	<b>280</b>	<b>168</b>	<b>127</b>	<b>1362</b>	

\*includes all sexual partners (wives, live-in partners, female sex workers, regular sex partner etc).

When asked if they have ever had sex, the affirmative response to this question was universal (99.4%) among the LDTDs. The overall median age at sexual debut for the drivers was 18 years and ranged from 12.0 years to 31.0 years. Median age at sexual debut varied across the sites ( $p$ -value =  $<.001$ ). The median number of sexual partners was 2 overall and in all the sites. This ranged from 0 to 78 and comprises all sexual partners (wives, live-in partners, sex workers, regular sex partner etc.). A third (33.2%) reported 3 or more sexual partners in last 12 months.

#### 4.2.3.1 Types of sexual partners

Type of sexual partners in the last 12 months among the LDTDs with sites is shown in table 38.

**Table 38 Type of sexual partners in the last 12 months among the Long Distance Truck Drivers by sites, BSS 2015**

Characteristics	Chililabombwe	Chirundu	Kapiri Mposhi	Livingstone and Kazungula	Ndola	Solwezi	Total	P-value
Wife								
	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	0.089
0	14 (9.3)	34 (6.8)	15 (9.7)	39 (13.5)	24 (13.9)	11 (8.3)	137 (9.8)	
1	121 (80.1)	429 (85.5)	128 (82.6)	231 (80.2)	139 (80.4)	110 (83.3)	1158 (82.7)	
2+	16 (10.6)	39 (7.7)	12 (7.7)	18 (6.3)	10 (5.7)	11 (8.4)	106 (7.5)	
Total	151	502	155	288	173	132	1401	
Living in partner								
0	124 (83.2)	457 (92.0)	141 (91.0)	258 (90.9)	152 (90.5)	111 (86.1)	1243 (90.0)	0.043
1	25 (16.8)	37 (7.4)	14 (9.0)	26 (9.2)	15 (8.9)	18 (14.0)	135 (9.8)	
2+	0 (0.0)	3 (0.6)	0 (0.0)	0 (0.0)	1 (0.6)	0 (0.0)	4 (0.2)	
Total	149	497	155	284	168	129	1382	
Girlfriend not living in partner								
0	104 (70.0)	305 (61.4)	100 (64.5)	181 (63.7)	81 (47.9)	78 (60.5)	849 (61.4)	0.023
1	32 (21.5)	148 (30.0)	41 (26.5)	85 (30.0)	69 (40.8)	38 (29.5)	413 (30.0)	
2+	13 (8.5)	44 (8.6)	14 (9.0)	19 (6.3)	19 (11.3)	13 (10.0)	121 (8.6)	
Total	149	497	155	284	169	129	1383	
Female sex worker								
0	100 (67.1)	343 (69.2)	108 (70.0)	203 (71.5)	114 (67.5)	80 (62.0)	948 (68.6)	0.116
1	13 (8.7)	26 (5.2)	15 (10.0)	28 (9.9)	12 (7.1)	15 (11.6)	109 (8.0)	
2+	36 (24.2)	127 (25.6)	32 (20.0)	53 (18.6)	43 (25.4)	34 (26.4)	325 (23.4)	
Total	149	496	155	284	169	129	1382	
Casual sex partner not girlfriend nor female sex worker								
0	140 (93.7)	474 (95.6)	149 (96.1)	264 (93.3)	156 (92.3)	116 (90.0)	1299 (94.1)	0.065
1	7 (2.7)	15 (3.0)	5 (3.2)	10 (3.5)	5 (3.0)	6 (4.7)	48 (3.5)	
2+	2 (3.6)	7 (1.4)	1 (0.7)	9 (3.2)	9 (4.7)	7 (5.3)	34 (2.4)	
Total	149	496	155	283	170	129	1381	

#### 4.2.3.1.1 Wives, Live-In Sexual Partners

When asked about having sexual intercourse with wives, the majority (82.7%) of the drivers reported having had sex with one wife in the last 12 months, with an additional 7.5% reporting that they have had sex with two or more wives in the last 12 months. One hundred and thirty five (9.8%) of the drivers reported having a live-in sexual partner twelve months prior to survey. Association of drivers reporting having had sex with zero, one or more live-in sexual partners with sites in the last 12 months were significant ( $p$ -value = 0.043). At 16.8%, Chililabombwe was the site with the highest proportion of the drivers who had had sex with a live-in partner whilst the lowest was in Chirundu (7.4%).

#### 4.2.3.1.2 Girlfriend not living in partner

When asked about sexual intercourse with girlfriends, 30.0% of the drivers reported having had sex with one girlfriend in the last 12 months, with an additional 8.6% reporting that they have had sex with two or more girlfriends in the last 12 months. Association of drivers reporting having had sex with zero, one or more girlfriends with sites in the last 12 months were statistically significant ( $p$ -value = 0.023). At 40.8%, Ndola was the site with the highest proportion of the drivers who had had sex with a girlfriend in the last 12 months whilst the lowest was in Chililabombwe (21.5%).

#### 4.2.3.1.3 Female sex workers

When asked about sexual intercourse with commercial sex workers, 8.0% of the drivers reported having had sex with one female sex worker in the last 12 months, with an additional 23.4% reporting that they have had sex with two or more female sex workers in the last 12 months. Association of drivers reporting having had sex with zero, one or more female sex workers with sites in the last 12 months were not significant (p-value = 0.116.).

#### 4.2.3.1.4 Casual sex partner not girlfriend or female sex worker

When asked about sexual intercourse with a casual sex partner, not a girlfriend or female sex worker, only 3.5% of the drivers reported having had sex with casual sex partner in the last 12 months, with an additional 2.5% reporting that they have had sex with two or more casual sex partners in the last 12 months. Association of drivers reporting having had sex with zero, one or casual sex partners with sites in the last 12 months were not statistically significant (p-value = 0.065).

### 4.2.3.2 Frequency of sexual intercourse

Frequency of sexual intercourse among LDTDS 30 days prior to interview with various sexual partners with sites is shown in table 39.

**Table 39 Frequency of sexual intercourse in the last 12 months among the Long Distance Truck Drivers by sites, BSS 2015**

Characteristic	Chililabombwe	Chirundu	Kapiri Mposhi	Livingstone and Kazungula	Ndola	Solwezi	Total	P-value
<b>Frequency of sexual intercourse with wife over the last 30 days</b>								
Mean	4.3	5.5	4.7	4.6	5.4	5.7	5.1	0.021
Median	3	4	4	3	4	4	4	<.001
Range	0 - 33	0 - 40	0 - 30	0 - 24	0 - 24	0 - 32	0 - 40	
<b>Total</b>	<b>132</b>	<b>454</b>	<b>134</b>	<b>240</b>	<b>141</b>	<b>116</b>	<b>1217</b>	
<b>Frequency of sexual intercourse with Living-in partner over the last 30 days</b>								
Mean	2.9	3	3.3	2.5	3.7	3.3	3.1	0.914
Median	2	2.7	2	2	2.5	2	2	0.767
Range	0 - 9	1 - 10	1 - 15	0 - 20	1 - 10	0 - 20	0 - 20	
<b>Total</b>	<b>21</b>	<b>33</b>	<b>14</b>	<b>20</b>	<b>16</b>	<b>18</b>	<b>122</b>	
<b>Frequency of sexual intercourse with girlfriend over the last 30 days</b>								
Mean	1.9	2	2.1	2.1	2.3	2.4	2.2	0.388
Median	2	1	2	2	2	2	2	0.137
Range	0 - 6	0 - 35	0 - 20	0 - 21	0 - 15	0 - 9	0 - 35	
<b>Total</b>	<b>42</b>	<b>193</b>	<b>54</b>	<b>103</b>	<b>87</b>	<b>51</b>	<b>530</b>	
<b>Frequency of sexual intercourse with female sex workers over the last 30 days</b>								
Mean	2.3	2.6	2.3	1.7	1.9	2.6	2.2	0.037
Median	2	2	2	1	1	1	2	0.028
Range	0 - 7	0 - 15	0 - 10	0 - 12	0 - 10	0 - 15	0 - 15	
<b>Total</b>	<b>39</b>	<b>153</b>	<b>48</b>	<b>79</b>	<b>54</b>	<b>49</b>	<b>432</b>	

#### 4.2.3.2.1 Frequency of sexual intercourse with wife over the last 30 days

The frequency of sexual intercourse with their wives among the LDTDS in last 30 days ranged from 0 to 40, with the mean at 5.1 and the median at 4. The differences between sites in the means and the medians of this frequency were statistically significant; p-values 0.021 and <.001 respectively. The highest mean and median frequency of sexual intercourse was reported from

the drivers interviewed in Solwezi (5.7 and 4 respectively) whilst the lowest was reported from the drivers interviewed in Chililabombwe (4.3 and 3 respectively).

#### **4.2.3.2.2 Frequency of sexual intercourse with Living-in partner over the last 30 days**

The frequency of sexual intercourse with their Living-in partner among the LDTDS in last 30 days ranged from 0 to 20, with the mean at 3.1 and the median at 2. The differences with the means and the medians of this frequency from site to site were not statistically significant: p-values 0.914 and 0.767 respectively.

#### **4.2.3.2.3 Frequency of sexual intercourse with girlfriend over the last 30 days**

The frequency of sexual intercourse with their girlfriends among the LDTDS in last 30 days ranged from 0 to 35, with the mean at 2.2 and the median at 2. The differences between the sites in the means and the medians of this frequency were not statistically significant: p-values 0.388 and 0.137 respectively.

#### **4.2.3.2.4 Frequency of sexual intercourse with female sex workers over the last 30 days**

The frequency of sexual intercourse with female sex workers among the LDTDS in last 30 days ranged from 0 to 15, with the mean at 5.1 and the median at 4.0. The differences between sites in the means and the medians of this frequency were significant; p-values 0.021 and <.001 respectively. The highest mean and median frequency of sexual intercourse with female sex workers was reported from the drivers interviewed in Chirundu (2.6 and 2 respectively) whilst the lowest was reported from the drivers interviewed in Solwezi (1.7 and 1 respectively). The frequency of sexual intercourse with female sex workers was also high in Solwezi (2.6).

#### **4.2.3.3 Condom use**

Frequency of condom use during sexual intercourse with their partners among the LDTDS with sites is shown in table 40.

Condom use was relatively low at last sexual intercourse with wife: 7.5%. Although it is desirable that condom use is 100.0% at sexual intercourse with female sex workers (FSWs), girlfriends, and regular and non-regular sexual partners, condom use at last sex with female sex workers, regular sex partners, and with non-regular sex partners was 86.1%, 63.5% and 76.8% respectively. Association of condom use at last sexual intercourse with wife, living-in partner, female sex workers and casual or non-regular sex partner with sites was not statistically significant (p-values = 0.159, 0.101, 0.904 and 0.625 respectively). However, association of condom use at last sexual intercourse with girlfriend or regular sexual partner with sites was statistically significant (p-value = 0.006). At 71.5%, Chirundu had the highest percentage of drivers who reported having used a condom the last time they had sexual intercourse with their girlfriend or regular sexual sex partner.

When asked if they had had sexual intercourse in past 12 months with someone other than their wife or living-in partner without using a condom 21.8% of the LDTDs said 'yes' they had. Association of the LDTDs who said 'yes' they had had sexual intercourse in past 12 months with someone other than their wife or living-in partner without using a condom with the sites was statistically significant (p-value = 0.002). At 37.9%, Ndola had the highest proportion of the LDTDs who said 'yes' they had had sexual intercourse in past 12 months with someone other than their wife or living-in partner without using a condom, whilst the lowest proportion was in Chililabombwe at 16.8%.

**Table 40 Condom use at last sexual intercourse, and consistence in condom use in last 12 months with different sex partners among the Long Distance Truck Drivers by sites, BSS 2015**

With different sex partners among the Long Distance Truck Drivers by Sites, DSS 2010								
Characteristic	Chililabombwe	Chirundu	Kapiri Mposhi	Livingstone and Kazungula	Ndola	Solwezi	Total	P-value
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	
<b>Condom use last sex with wife</b>								
Used condom	4 (3.0)	34 (7.4)	8 (5.9)	26 (10.7)	13 (9.3)	7 (5.9)	92 (7.5)	0.159
Did not use condom	128 (97.0)	426 (92.6)	127 (94.1)	216 (89.3)	126 (90.7)	111 (94.1)	1134 (92.5)	
<b>Total</b>	<b>132</b>	<b>460</b>	<b>135</b>	<b>242</b>	<b>139</b>	<b>118</b>	<b>1226</b>	
<b>Condom use last sex with a living in partner</b>								
Used condom	12 (57.1)	22 (64.7)	5 (35.7)	13 (65.0)	11 (68.8)	15 (83.3)	78 (63.4)	0.101
Did not use condom	9 (42.9)	12 (35.2)	9 (64.3)	7 (35.0)	5 (31.3)	3 (16.7)	45 (36.6)	
<b>Total</b>	<b>21</b>	<b>34</b>	<b>14</b>	<b>20</b>	<b>16</b>	<b>18</b>	<b>122</b>	
<b>Condom use last sex with girlfriend/Regular partner</b>								
Used condom	26 (61.9)	138 (71.5)	38 (70.4)	58 (56.3)	47 (53.4)	30 (58.8)	337 (63.5)	0.006
Did not use condom	16 (38.1)	55 (28.5)	16 (29.6)	45 (43.7)	41 (47.0)	21 (41.2)	194 (36.5)	
<b>Total</b>	<b>42</b>	<b>193</b>	<b>54</b>	<b>103</b>	<b>88</b>	<b>51</b>	<b>531</b>	
<b>Condom use last sex with FSW (commercial partner)</b>								
Used condom	45 (91.9)	130 (84.4)	34 (70.8)	76 (96.2)	48 (88.9)	40 (81.6)	373 (86.1)	0.904
Did not use condom	4 (8.2)	24 (15.6)	14 (29.2)	3 (3.8)	6 (11.1)	9 (18.4)	60 (13.9)	
<b>Total</b>	<b>49</b>	<b>154</b>	<b>48</b>	<b>79</b>	<b>54</b>	<b>49</b>	<b>433</b>	
<b>Condom use last sex with non-regular partner</b>								
Used condom	6 (66.7)	16 (72.7)	5 (100.0)	12 (75.0)	16 (88.9)	8 (66.7)	63 (76.8)	0.625
Did not use condom	3 (33.3)	6 (27.3)	0 (0.0)	4 (25.0)	2 (11.1)	4 (33.3)	19 (23.2)	
<b>Total</b>	<b>9</b>	<b>22</b>	<b>5</b>	<b>16</b>	<b>18</b>	<b>12</b>	<b>82</b>	
<b>Consistence of condom use:</b>								
<b>In last 12 months, had sexual intercourse with partner other than wife or living-in partner without using a condom</b>								
Yes	25 (16.8)	95 (19.1)	35 (22.9)	56 (19.6)	64 (37.9)	27 (20.8)	302 (21.8)	0.002
No	124 (83.2)	403 (80.9)	118 (77.1)	229 (80.4)	105 (62.1)	103 (79.2)	1082 (78.2)	
<b>Total</b>	<b>149</b>	<b>498</b>	<b>153</b>	<b>285</b>	<b>169</b>	<b>130</b>	<b>1384</b>	

### 4.3 Knowledge, accessibility and availability of condoms

Knowledge, use and accessibility of male condoms among the Long Distance Truck Drivers by sites are shown in table 41.

Awareness of male condoms was nearly universal (99.6%), but was not different from site to site (p-value = 0.792).

#### 4.3.1 Use of male condoms

Over two-thirds (69.2%) of the drivers interviewed reported ever buying a male condom, and this proportion was not different from site to site (p-value = 0.053).

When asked if they have 'ever' used a condom, over half (53.6%) of the drivers refused to answer whilst almost a third (27.9%) reported that they have 'ever' used a condom before. This proportion was not associated with sites (p-value = 0.074). Of those who responded to the question if they have 'ever' used a condom, 60.2% (388/645) of the LDTDs reported that they have 'ever' used a male condom before.



**Table 41 Knowledge, use and accessibility of male condoms among the Long Distance Truck Drivers by sites, BSS 2015**

Characteristic	Chililabombwe	Chirundu	Kapiri Mposhi	Livingstone and Kazungula	Ndola	Solwezi	Total	P-value
	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	
Ever heard of male condom								
Yes	149 (99.3)	496 (99.6)	154 (99.3)	285 (100)	170 (100)	130 (98.5)	1384 (99.6)	0.792
No	1 (0.7)	2 (0.4)	1 (0.7)	0 (0.0)	0 (0.0)	2 (1.5)	6 (0.4)	
Total <sup>a</sup>	150	498	155	285	170	132	1390	
Ever bought condom								
Yes	89 (59.3)	348 (69.9)	109 (70.8)	191 (67.0)	132 (77.7)	92 (69.7)	961 (69.2)	0.053
No	61 (40.7)	150 (30.1)	45 (29.2)	94 (33.0)	38 (22.3)	40 (30.3)	419 (30.2)	
Total <sup>a</sup>	150	498	154	285	170	132	1389	
Ever used male condom								
Yes	41 (27.3)	154 (30.9)	37 (23.9)	89 (31.2)	37 (21.8)	30 (22.7)	388 (27.9)	0.074
No	33 (22.0)	80 (16.1)	38 (24.5)	45 (15.8)	31 (18.2)	30 (22.7)	257 (18.5)	
No response	76 (50.7)	264 (53.0)	80 (51.6)	151 (53.0)	102 (60.0)	72 (54.6)	745 (53.6)	
Total <sup>a</sup>	150	498	155	285	170	132	1390	
Places to obtain condoms								
Yes	140 (93.3)	482 (96.8)	148 (95.5)	279 (97.9)	159 (93.5)	124 (93.9)	1332 (95.8)	0.566
No	10 (6.7)	16 (3.2)	7 (4.5)	6 (2.1)	11 (6.5)	8 (6.1)	58 (4.2)	
Total <sup>a</sup>	150	498	155	285	170	132	1390	
Number of condoms available at time of interview								
0	34 (32.4)	90 (27.4)	27 (31.0)	45 (22.7)	58 (42.7)	28 (31.1)	282 (29.9)	<.001
1 - 3	30 (28.6)	85 (25.9)	25 (28.7)	35 (17.7)	43 (31.6)	30 (33.3)	248 (26.2)	
4 +	41 (39.0)	153 (46.7)	35 (40.2)	118 (59.6)	35 (25.7)	32 (35.6)	414 (43.9)	
Total	105	328	87	198	136	90	944	

Knowledge of a place where to obtain male condoms was nearly universal (95.8%), and was not associated with sites (p-value = 0.566).

Nearly three-quarters (70.2%) of the drivers had one or more male condoms available to them at the time of interview, and this proportion was associated with sites (p-value <.001). The highest proportion with no condom available to them at the time of interview was in Ndola (42.7%), whilst the lowest was in the Livingstone and Kazungula site (22.7%).

### 4.3.2 Reasons for non-use of male condoms

Reasons for non-use of male condoms among the Long Distance Truck Drivers by sites are shown in tables 41 and 42.

#### 4.3.2.1 Did not use condom because it was not available

When asked if it was because they were not available that the LDTDs had had sexual intercourse in past 12 months with someone other than their wife or living-in partner without using a condom 22.3% of the LDTDs said 'yes'. Association of proportions of the LDTDs who said 'yes' it was because they were not available that the LDTDs had had sexual intercourse in past 12 months with someone other than their wife or living-in partner without using a condom with the sites was not statistically significant (p-value = 0.329).

#### 4.3.2.2 Did not use condom because it was too expensive

When asked if it was because they were too expensive that the LDTDs had had sexual intercourse in past 12 months with someone other than their wife or living-in partner without using a condom 1.4% of the LDTDs said 'yes'. Association of proportions of the LDTDs who said 'yes' it was because they were too expensive that the LDTDs had had sexual intercourse in past 12 months with someone other than their wife or living-in partner without using a condom with the sites was not statistically significant (p-value = 0.072).

**Table 42 Reasons for non-use of male condoms among the Long Distance Truck Drivers by sites, BSS 2015 (1)**

Characteristic	Chililabombwe	Chirundu	Kapiri Mposhi	Livingstone and Kazungula	Ndola	Solwezi	Total	P-value
Did not use condom because it was not available								
Yes	2 (8.3)	27 (29.0)	11 (31.4)	9 (17.0)	12 (20.0)	4 (15.4)	65 (22.3)	0.329
No	22 (91.7)	66 (71.0)	24 (68.6)	44 (83.0)	48 (80.0)	22 (84.6)	226 (77.7)	
Total	24	93	35	53	60	26	291	
Did not use condom because it was too expensive								
Yes	0(0.0)	4(4.3)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	4(1.4)	0.072
No	24(100.0)	89(95.7)	35(100.0)	53(100.0)	60(100.0)	26(100.0)	287(98.6)	
Total	24	93	35	53	60	26	291	
Did not use condom because partner objected								
Yes	5(20.8)	14(15.1)	5(14.3)	5(9.4)	8(13.3)	2(7.7)	39 (13.4)	0.195
No	19(79.2)	79(85.0)	30(85.7)	48(90.6)	52(86.7)	24(92.3)	252 (86.6)	
Total	24	93	35	53	60	26	291	
Did not use condom because do not like them								
Yes	1 (4.2)	9 (9.7)	3 (8.6)	4 (7.6)	2 (3.3)	5 (19.2)	24 (8.3)	0.682
No	23 (95.8)	84 (90.3)	32 (91.4)	49 (92.5)	58 (96.7)	21 (80.8)	267 (91.8)	
Total	24	93	35	53	60	26	291	
Did not use condom because used other contraceptives								
Yes	2(8.3)	7(7.5)	2(5.7)	0(0.0)	6(10.0)	0(0.0)	24 (8.3)	0.213
No	22(91.7)	86(92.5)	33(94.3)	53(100.0)	54(90.0)	26(100.0)	267 (91.8)	
Total	24	93	35	53	60	26	291	
Did not use condom because did not think it necessary								
Yes	13 (54.2)	32 (34.4)	11 (31.4)	14 (26.4)	26 (44.1)	10 (38.5)	106 (36.6)	0.468
No	11 (45.8)	61 (65.6)	24 (68.6)	39 (73.6)	33 (55.9)	16 (61.5)	184 (63.5)	
Total	24	93	35	53	59	26	290	
Did not use condom because did not think of it								
Yes	6 (25.0)	19 (20.4)	4 (11.4)	6 (11.3)	9 (15.0)	11 (42.3)	55 (18.9)	0.429
No	18 (75.0)	74 (79.6)	31 (88.6)	47 (88.7)	51 (85.0)	15 (57.7)	236 (81.9)	
Total	24	93	35	53	60	26	291	
Did not use condom because wanted pregnancy								
Yes	3 (12.5)	10 (10.9)	3 (8.57)	5 (9.4)	3 (5.0)	3 (11.5)	27 (9.3)	0.401
No	21 (87.5)	82 (89.1)	32 (91.4)	48 (90.6)	57 (95.0)	23 (88.5)	263 (90.7)	
Total	24	92	35	53	60	26	290	
Did not use condom because they did not think the partner had any disease								
Yes	3 (12.5)	10 (10.9)	3 (8.57)	5 (9.4)	3 (5.0)	3 (11.5)	84 (29.0)	0.005
No	21 (87.5)	82 (89.1)	32 (91.4)	48 (90.6)	57 (95.0)	23 (88.5)	206 (71.0)	
Total	24	93	35	52	60	26	290	

**Table 43 Reasons for non-use of male condoms among the Long Distance Truck Drivers by sites, BSS 2015 (2)**

Characteristic	Chililabombwe	Chirundu	Kapiri Mposhi	Livingstone and Kazungula	Ndola	Solwezi	Total	P-value
Did not use condom because it could reduce pleasure								
Yes	3 (12.5)	23 (24.7)	8 (22.9)	10 (18.9)	7 (11.7)	5 (19.2)	56 (19.2)	0.284
No	21 (87.5)	70 (75.3)	27 (77.1)	43 (81.1)	53 (88.3)	21 (80.8)	235 (80.8)	
Total	24	93	35	53	60	26	291	
Did not use condom because of itching								
Yes	0 (0.0)	5 (5.4)	0 (0.0)	1 (1.9)	1 (1.7)	1 (3.9)	8 (2.8)	0.647
No	24 (100.0)	88 (94.6)	35 (100.0)	52 (98.1)	59 (98.3)	25 (96.2)	283 (97.3)	
Total	24	93	35	53	60	26	291	

#### **4.3.2.3 Did not use condom because partner objected**

When asked if it was because partner objected that the LDTDs had had sexual intercourse in past 12 months with someone other than their wife or living-in partner without using a condom 13.4% of the LDTDs said 'yes'. Association of the LDTDs who said 'yes' it was because partner objected that the LDTDs had had sexual intercourse in past 12 months with someone other than their wife or living-in partner without using a condom with the sites were not statistically significant (p-value = 0.195).

#### **4.3.2.4 Did not use condom because do not like them**

When asked if it was because they do not like them that the LDTDs had had sexual intercourse in past 12 months with someone other than their wife or living-in partner without using a condom 8.3% of the LDTDs said 'yes'. Association of the LDTDs who said 'yes' it was because they do not like them that the LDTDs had had sexual intercourse in past 12 months with someone other than their wife or living-in partner without using a condom with the sites were not statistically significant (p-value = 0.682).

#### **4.3.2.5 Did not use condom because used other contraceptives**

When asked if it was because they used other contraceptives that the LDTDs had had sexual intercourse in past 12 months with someone other than their wife or living-in partner without using a condom 8.3% of the LDTDs said 'yes'. Association of the LDTDs who said 'yes' it was because they used other contraceptives that the LDTDs had had sexual intercourse in past 12 months with someone other than their wife or living-in partner without using a condom with the sites were not statistically significant (p-value = 0.213).

#### **4.3.2.6 Did not use condom because did not think it necessary**

When asked if it was because they did not think it necessary that the LDTDs had had sexual intercourse in past 12 months with someone other than their wife or living-in partner without using a condom 36.6% of the LDTDs said 'yes'. Association of the LDTDs who said 'yes' it was because they did not think it necessary that the LDTDs had had sexual intercourse in past 12 months with someone other than their wife or living-in partner without using a condom with the sites were not statistically significant (p-value = 0.468).

#### **4.3.2.7 Did not use condom because they did not think of it**

When asked if it was because they did not think of it that the LDTDs had had sexual intercourse in past 12 months with someone other than their wife or living-in partner without using a condom 18.9% of the LDTDs said 'yes'. Association of the LDTDs who said 'yes' it was because they did

not think of it that the LDTDs had had sexual intercourse in past 12 months with someone other than their wife or living-in partner without using a condom with the sites were not statistically significant (p-value = 0.429).

#### **4.3.2.8 Did not use condom because they wanted a pregnancy**

When asked if it was because they wanted a pregnancy that the LDTDs had had sexual intercourse in past 12 months with someone other than their wife or living-in partner without using a condom 9.3% of the LDTDs said 'yes'. Association of the LDTDs who said 'yes' it was because they wanted a pregnancy that the LDTDs had had sexual intercourse in past 12 months with someone other than their wife or living-in partner without using a condom with the sites were not statistically significant (p-value = 0.401).

#### **4.3.2.9 Did not use condom because they did not think the partner had any disease**

When asked if it was because they did not think the partner had any disease that the LDTDs had had sexual intercourse in past 12 months with someone other than their wife or living-in partner without using a condom 29.0% of the LDTDs said 'yes'. Association of the LDTDs who said 'yes' it was because they did not think the partner had any disease that the LDTDs had had sexual intercourse in past 12 months with someone other than their wife or living-in partner without using a condom with the sites were statistically significant (p-value = 0.005). At 12.5%, Chililabombwe had the highest proportion of the LDTDs who said 'yes' they had had sexual intercourse in past 12 months with someone other than their wife or living-in partner without using a condom because they did not think the partner had any disease, whilst the lowest proportion was in the Livingstone and Kazungula site at 5.0%.

#### **4.3.2.10 Did not use condom because it could reduce pleasure**

When asked if it was because it could reduce pleasure that the LDTDs had had sexual intercourse in past 12 months with someone other than their wife or living-in partner without using a condom 9.2% of the LDTDs said 'yes'. Association of the LDTDs who said 'yes' it was because it could reduce pleasure that the LDTDs had had sexual intercourse in past 12 months with someone other than their wife or living-in partner without using a condom with the sites were not statistically significant (p-value = 0.284).

#### **4.3.2.11 Did not use condom because of itching**

When asked if it was because of itching that the LDTDs had had sexual intercourse in past 12 months with someone other than their wife or living-in partner without using a condom 2.8% of the LDTDs said 'yes'. Association of the LDTDs who said 'yes' it was because of itching that the LDTDs had had sexual intercourse in past 12 months with someone other than their wife or living-in partner without using a condom with sites were not statistically significant (p-value = 0.647).

### **4.4 Knowledge, accessibility and availability of female condoms**

Knowledge and accessibility of female condoms among the LDTDs is shown in table 44.

When asked if they have ever heard of female condoms 85.8% said 'yes', and 11.1% reported that they have used female condoms before. Association of the LDTDs who said 'yes' they have ever heard of female condoms with sites of interview was statistically significant (p-value = 0.010). This proportion was highest in the Livingstone and Kazungula (90.5%) site and lowest in Ndola (78.2%). However association of the LDTDs who said 'yes' they used female condoms before with sites of interview were not statistically significant (p-value = 0.248).

When asked if they know of a person or place from whom or where respectively to get female condoms, over half (55.2%) said 'yes'. Association of the LDTDs who said 'yes' they know of a person or place from whom or where respectively to get female condoms with sites of interview were statistically significant ( $p$ -value = 0.022). This proportion was highest in Solwezi (61.8%) and lowest in Chirundu (50.1%).

**Table 44 Knowledge and accessibility of female condoms among the Long Distance Truck Drivers by sites, BSS 2015**

Interview by Kates, 2002-2003

Characteristic	Chililabombwe	Chirundu	Kapiri Mposhi	Livingstone and Kazungula	Ndola	Solwezi	Total	P-value
Ever heard of female condoms								
Yes	127 (86.4)	440 (88.7)	122 (80.3)	258 (90.5)	133 (78.2)	104 (80.0)	1184 (85.8)	0.010
No	20 (13.6)	56 (11.3)	30 (19.7)	27 (9.5)	37 (21.8)	6 (20.0)	196 (14.2)	
Total	147	496	152	285	170	130	1380	
Ever used female condoms								
Yes	10 (7.9)	50 (11.4)	11 (9.1)	35 (13.7)	12 (9.0)	13 (12.5)	131 (11.1)	0.248
No	117 (92.1)	390 (88.6)	110 (90.9)	221 (86.3)	121 (91.0)	91 (87.5)	1050 (88.9)	
Total	127	440	121	256	133	104	1181	
Know of a person or place from whom or where respectively to get female condoms								
Yes	72 (57.1)	221 (50.1)	70 (57.4)	148 (57.6)	77 (58.3)	63 (61.8)	651 (55.2)	0.022
No	54 (42.9)	220 (49.9)	52 (42.6)	109 (42.4)	55 (41.7)	39 (38.2)	529 (44.8)	
Total	126	441	122	257	132	102	1180	
Shops are the most comfortable or preferable place from where to buy female condoms								
Yes	25 (22.3)	92 (22.4)	27 (22.7)	51 (20.0)	30 (23.3)	18 (18.0)	243 (21.6)	0.233
No	87 (77.7)	318 (77.6)	92 (77.3)	204 (80.0)	99 (76.7)	82 (82.0)	882 (78.4)	
Total	112	410	119	255	129	100	1125	
Pharmacies are the most comfortable or preferable place from where to buy female condoms								
Yes	75 (67.0)	269 (65.6)	67 (55.8)	140 (54.9)	87 (67.4)	58 (7.4)	696 (61.8)	0.078
No	37 (33.0)	141 (34.4)	53 (44.2)	115 (45.1)	42 (32.6)	43 (42.6)	431 (38.2)	
Total	112	410	120	255	129	101	1127	
Markets are the most comfortable or preferable place from where to buy female condoms								
Yes	9 (8.1)	37 (9.0)	14 (11.7)	22 (8.6)	12 (9.3)	13 (12.9)	107 (9.5)	0.206
No	102 (91.9)	373 (91.0)	106 (88.3)	233 (91.4)	117 (90.7)	88 (87.1)	1019 (90.5)	
Total	111	410	120	255	129	101	1126	
Bars, guest houses and hotels are the most comfortable or preferable place from where to buy female condoms								
Yes	16 (14.3)	80 (19.5)	28 (23.3)	45 (17.7)	25 (19.5)	12 (11.9)	206 (18.3)	0.245
No	96 (85.7)	330 (80.5)	92 (76.7)	210 (82.4)	103 (80.5)	89 (88.1)	920 (81.7)	
Total	111	410	120	255	129	101	1126	

When asked about places from where to buy female condoms, the majority (61.8%) of the drivers reported that pharmacies are the most comfortable or preferable place from where to buy female condoms. Differences in these proportions across sites were not statistically significant ( $p$ -value = 0.078).

#### 4.5 Knowledge of Sexually Transmitted Diseases

Knowledge on sexually transmitted diseases (STD's) related characteristics are shown in tables 45 and 46.

#### 4.5.1 Heard of diseases passed through sexual intercourse

The proportion of the LDTDs who reported that they have heard of diseases passed through sexual intercourse (STD's) was nearly universal (97.2%), and this proportion varied (p-value = 0.002) from site to site. The proportion of the LDTDs who reported that they have heard of diseases passed through sexual intercourse was highest in the Livingstone and Kazungula site (99.0%) and lowest in Chililabombwe (94.0%).

**Table 45 Knowledge on sexually transmitted diseases related characteristics among the Long Distance Truck Drivers by sites, BSS 2015**

Characteristic	Chililabombwe	Chirundu	Kapiri Mposhi	Livingstone and Kazungula	Ndola	Solwezi	Total	P-value
Heard of diseases passed through sexual intercourse								
Yes	142 (94.0)	494 (98.2)	149 (96.1)	286 (99.0)	169 (96.6)	126 (94.7)	1366 (97.2)	0.002
No	6 (4.0)	9 (1.8)	3 (1.90)	3 (1.0)	4 (2.3)	2 (1.5)	27 (1.9)	
No response	3 (2.0)	0 (0.0)	3 (1.9)	0 (0.0)	2 (1.1)	5 (3.8)	13 (0.9)	
Total	151	503	155	289	175	133	1406	
Symptom of a STD in males - Genital discharge								
Yes	93 (61.6)	345 (68.6)	101 (65.2)	208 (72.0)	111 (63.4)	86 (64.7)	944 (67.2)	0.005
No	51 (33.80)	149 (29.6)	48 (31.0)	78 (27.0)	60 (34.3)	43 (32.3)	427 (30.40)	
No response	7 (4.6)	9 (1.8)	6 (3.9)	3 (1.0)	4 (2.3)	4 (3.0)	33 (2.4)	
Total	151	503	155	289	175	131	1404	
Symptom of a STD in males - Burning pain on urination								
Yes	46 (30.5)	157 (31.2)	51 (32.9)	97 (33.6)	63 (36.0)	52 (39.1)	466 (33.1)	<.001
No	98 (64.9)	336 (66.8)	96 (61.9)	189 (65.4)	107 (61.1)	76 (57.1)	902 (64.2)	
No response	7 (4.6)	10 (2.0)	8 (5.2)	3 (1.0)	5 (2.9)	5 (93.8)	38 (2.7)	
Total	151	503	155	289	175	133	1406	
Symptom of a STD in males - Genital ulcers/sores								
Yes	79 (52.3)	307 (61.0)	87 (56.1)	179 (61.9)	101 (57.7)	67 (50.4)	820 (58.3)	<.001
No	65 (43.1)	187 (37.2)	61 (39.4)	107 (37.0)	70 (40.0)	62 (46.6)	552 (39.3)	
No response	7 (4.6)	9 (1.8)	7 (4.5)	3 (1.0)	4 (2.3)	4 (3.0)	34 (2.4)	
Total	151	503	155	289	175	133	1406	
Symptom of a STD in males - Swelling in groin area								
Yes	35 (23.2)	140 (27.8)	48 (31.0)	103 (35.6)	56 (32.0)	46 (34.6)	428 (30.4)	<.001
No	109 (72.2)	353 (70.2)	101 (65.2)	183 (63.3)	115 (65.7)	82 (61.7)	943 (67.1)	
No response	7 (4.6)	10 (2.0)	6 (3.9)	3 (1.0)	4 (2.3)	5 (3.8)	35 (2.5)	
Total	151	503	155	289	175	133	1406	

#### 4.5.2 Symptom of STD in males - Genital discharge

When asked to describe any symptom of a STD, the majority (67.2%) of the drivers reported genital discharge. Differences in this proportion across sites were statistically significant (p-value = 0.005). At 72.0%, the Livingstone and Kazungula site had the highest proportion of the drivers who described genital discharge as a symptom of a STD, whilst the lowest was in Chililabombwe (61.6%).

#### 4.5.3 Symptom of STD in males – Burning pain on urination

Only about a third (33.1%) of the drivers described burning pain or urination as a symptom of a STD. Association of knowledge of burning pain during urination as a symptom of a STD with sites was statistically significant (p-value = <. 001). At 39.1%, Solwezi site had the highest proportion of the drivers who described burning pain during urination as a symptom of a STD, whilst the lowest was in Chirundu (31.2%).

#### **4.5.4 Symptom of STD in males – Genital ulcers or sores**

Close to two-thirds (58.3%) of the drivers described genital sores or ulcers as a symptom of a STD. Association of knowledge of genital sores or ulcers as a symptom of a STD with sites was statistically significant ( $p\text{-value} = <.001$ ). At 61.9%, the Livingstone and Kazungula site had the highest proportion of the drivers who described genital sores or ulcers as a symptom of a STD, whilst the lowest was in Solwezi (50.4%).

#### **4.5.5 Symptom of STD in males – swelling in groin area**

Only about a third (30.4%) of the drivers described swelling in groin area as a symptom of a STD. Association of knowledge of genital sores or ulcers as a symptom of a STD with sites was statistically significant ( $p\text{-value} = <.001$ ). At 35.6%, the Livingstone and Kazungula site had the highest proportion of the drivers who described swelling in groin area as a symptom of a STD, whilst the lowest was in Chililabombwe (23.2%).

#### **4.5.6 Symptom of STD in females – Genital discharge**

When asked to describe any symptom of a STD in women, the majority (43.3%) of the drivers reported genital discharge. Association of knowledge of genital discharge as a symptom of a STD in women with sites was statistically significant ( $p\text{-value} = 0.002$ ). At 51.2%, Livingstone and Kazungula site had the highest proportion of the drivers who described genital discharge as a symptom of a STD, whilst the lowest was in Chililabombwe (36.6%).

#### **4.5.7 Symptom of STD in females – Abdominal pain**

Only about a quarter (24.8%) of the drivers described abdominal pain as a symptom of a STD in women. Association of knowledge of abdominal pain as a symptom of a STD in women with sites was statistically significant ( $p\text{-value} = 0.014$ ). At 29.0%, Solwezi site had the highest proportion of the drivers who described abdominal pain as a symptom of a STD, whilst the lowest was in Chirundu (17.9%).

#### **4.5.8 Symptom of STD in females – Foul smelling vaginal discharge**

Over a fifth (23.4%) of the drivers described foul smelling vaginal discharge as a symptom of a STD in women. Association of knowledge of foul smelling vaginal discharge as a symptom of a STD in women with sites was not statistically significant ( $p\text{-value} = 0.271$ ).

#### **4.5.9 Symptom of STD in females – Burning pain during urination**

Only 19.5% of the drivers described burning pain during urination as a symptom of a STD in women. Association of knowledge of burning pain during urination as a symptom of a STD in women with sites was not statistically significant ( $p\text{-value} = 0.001$ ). At 30.1%, Solwezi had the highest proportion of the drivers who described swelling in groin area as a symptom of a STD, whilst the lowest was in Chililabombwe (15.1%).

#### **4.5.10 Symptom of STD in females – Genital ulcers or sores**

Well over a third (38.3%) of the drivers described genital ulcers or sores as a symptom of a STD. Association of knowledge of genital ulcer as a symptom of a STD in women with sites was not statistically significant ( $p\text{-value} = 0.094$ ).

#### **4.5.11 Symptom of STD in females – Swellings in the groin area**

Only 16.4% of the drivers described swellings in the groin area as a symptom of a STD. Association of this proportion with the sites was not statistically significant ( $p\text{-value} = 0.154$ ).

**Table 46 Symptoms of STDs described by the Long Distance Truck Drivers by sites, BSS 2015**

Characteristic	Chililabombwe	Chirundu	Kapiri Mposhi	Livingstone and Kazungula	Ndola	Solwezi	Total	P-value
	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	
Symptom of a STD in females - Abdominal pain								
Yes	27 (17.9)	113 (22.5)	45 (29.0)	83 (28.7)	48 (27.4)	32 (24.1)	348 (24.8)	0.014
No	116 (76.8)	380 (75.6)	103 (66.5)	202 (69.9)	122 (69.7)	93 (69.9)	1016 (72.3)	
No response	8 (5.3)	10 (2.0)	7 (4.5)	4 (1.4)	5 (2.9)	8 (6.0)	42 (3.0)	
Total	151	503	155	289	175	133	1406	
Symptom of a STD in females - Genital discharge								
Yes	61 (40.4)	184 (36.6)	70 (45.2)	148 (51.2)	83 (47.4)	63 (47.4)	609 (43.3)	0.002
No	83 (55.0)	310 (61.6)	79 (51.0)	137 (47.4)	88 (50.3)	65 (48.9)	762 (54.2)	
No response	7 (4.6)	9 (1.8)	6 (3.9)	4 (1.4)	4 (2.3)	5 (3.8)	35 (2.5)	
Total	151	503	155	289	175	133	1406	
Symptom of a STD in females - Foul smelling discharge								
Yes	30 (19.9)	114 (22.7)	32 (20.7)	68 (23.6)	48 (27.4)	37 (27.8)	329 (23.4)	0.271
No	114 (75.5)	379 (75.4)	117 (75.5)	218 (75.4)	123 (70.3)	92 (69.2)	1043 (74.2)	
No response	7 (4.6)	10 (1.9)	6 (3.9)	3 (1.0)	4 (3.0)	4 (3.0)	34 (2.4)	
Total	151	503	155	289	175	133	1406	
Symptom of a STD in females - Burning pain on urination								
Yes	31 (20.5)	76 (15.1)	28 (18.1)	54 (18.7)	45 (25.7)	40 (30.1)	274 (19.5)	0.001
No	113 (74.8)	417 (82.9)	120 (77.4)	231 (79.9)	125 (71.4)	87 (65.4)	1093 (77.7)	
No response	7 (4.6)	10 (2.0)	7 (4.5)	4 (1.4)	5 (2.9)	6 (4.5)	39 (2.8)	
Total	151	503	155	289	175	133	1406	
Symptom of a STD in females - Genital ulcers/sores								
Yes	57 (37.8)	173 (34.4)	61 (39.4)	128 (44.3)	66 (37.7)	53 (39.9)	538 (38.3)	0.094
No	87 (57.6)	319 (63.4)	87 (56.1)	157 (54.3)	105 (60.0)	74 (55.6)	829 (59.0)	
No response	7 (4.6)	11 (2.2)	7 (4.5)	4 (1.4)	4 (2.3)	6 (4.5)	39 (2.8)	
Total	151	503	155	289	175	133	1406	
Symptom of a STD in females - Swellings in groin area								
Yes	17 (11.7)	84 (16.7)	29 (18.7)	54 (18.7)	25 (14.3)	25 (18.0)	234 (16.4)	0.154
No	126 (83.4)	410 (81.5)	120 (77.4)	231 (79.9)	146 (83.4)	103 (77.4)	1136 (80.8)	
No response	8 (5.3)	9 (1.8)	6 (3.9)	4 (1.4)	4 (2.3)	5 (3.8)	36 (2.6)	
Total	151	503	155	289	175	133	1406	
Symptom of a STD in females - Itching								
Yes	29 (19.2)	106 (21.1)	37 (28.9)	69 (23.9)	36 (2.6)	33 (24.8)	310 (22.1)	0.357
No	114 (75.5)	387 (76.9)	112 (72.3)	216 (74.7)	135 (77.1)	95 (71.4)	1059 (75.3)	
No response	8 (5.3)	10 (2.0)	6 (3.9)	4 (1.4)	4 (2.3)	5 (3.8)	37 (2.6)	
Total	151	503	155	289	175	133	1406	

#### 4.5.12 Symptom of STD in females – Itching

About a fifth 22.1% of the drivers described itching as a symptom of a STD. Association of this proportion with the sites was not statistically significant (p-value = 0.357).

#### 4.6 HIV related awareness, knowledge and attitudes

Awareness of HIV related characteristics are shown in tables 47, 48 and 49.



#### 4.6.1 Awareness of HIV

Awareness of HIV among the drivers was nearly universal. When asked if they had ever heard of HIV, almost all (99.4%) of the drivers said 'yes'. Differences in this proportion across sites were statistically significant (p-value = 0.047). At 100.0%, Ndola had the highest proportion of the drivers who said they had heard of HIV, whilst the lowest was in Solwezi (97.7%).

When asked if they know someone living with HIV or AIDS, three-quarters (75.4%) of the drivers said 'yes'. Association of knowing someone living with HIV or AIDS with sites was not statistically significant (p-value = 0.051).

**Table 47 Awareness of HIV the Long Distance Truck Drivers by sites, BSS 2015**

Characteristic	Chililabombwe	Chirundu	Kapiri Mposhi	Livingstone and Kazungula	Ndola	Solwezi	Total	P-value
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	
Ever heard of HIV								
Yes	150 (99.3)	502 (99.8)	152 (98.1)	288 (99.7)	175 (100.0)	130 (97.7)	1397 (99.4)	0.047
No	0 (0.0)	1 (0.2)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.1)	
No response	1 (0.7)	0 (0.0)	3 (1.9)	1 (0.4)	0 (0.0)	3 (2.3)	8 (0.6)	
Total	151	503	155	289	175	133	1406	
Know someone with HIV or AIDS								
Yes	106 (70.2)	386 (76.7)	109 (70.3)	215 (74.4)	132 (76.6)	112 (84.2)	1060 (75.4)	0.051
No	43 (28.5)	111 (22.1)	42 (27.1)	72 (25.6)	41(23.4)	18 (13.5)	327 (23.3)	
Not sure	1 (0.7)	4 (0.8)	0 (0.0)	1 (0.0)	1 (0.0)	0 (0.0)	7 (0.0)	
No response	1 (0.70)	2 (0.4)	4 (2.6)	1 (0.0)	1 (0.0)	3 (2.3)	12 (1.3)	
Total	151	503	155	289	175	133	1406	

#### 4.6.2 Knowledge on HIV – Routes of transmission

Knowledge on HIV transmission among the LDTDs was high. When asked if one can be infected with the virus through a mosquito bite, only 10.7% of the drivers gave the incorrect answer of 'yes'. Taking site of interview into account, association of this response with site was not statistically significant (p-value = 0.053).

When asked if one can get infected with the virus through sharing a meal with a HIV infected person, only 14.0% of the drivers gave the incorrect answer of 'yes'. Association of this proportion site of interview was not statistically significant (p-value = 0.082).

When asked if one can get infected with the virus through sharing a needle with a HIV infected person, nearly all (95.1%) of the drivers gave the correct answer of 'yes', and association of this proportion to site was not statistically significant (p-value = 0.489).

When asked if an infected pregnant woman can pass on the virus to the unborn child, two-thirds (61.2%) of the drivers gave the correct answer of 'yes', and association of this proportion with site was statistically significant (p-value = < .001). At 69.2%, Chirundu had the highest proportion of the drivers who gave the correct answer of 'yes' when asked if an infected pregnant woman can pass on the virus to the unborn child, whilst the lowest was in Solwezi (54.9%).

When asked if an infected mother can pass on the virus to the child through breast-feeding, three-quarters (75.4%) of the drivers gave the correct answer of 'yes'. Association of this proportion with the sites is statistically significant (p-value = 0.062).

#### **4.6.3 Knowledge on HIV – Protection from infection**

Knowledge on ways to protect themselves from infection with the HIV virus was high. When asked if one can protect himself from the virus by using condoms every time during sexual intercourse, 87.3% of the drivers gave the correct answer of 'yes'. Association of this proportion with the sites was statistically significant ( $p$ -value = 0.034). At 88.2%, the Livingstone and Kazungula site had the highest proportion of the drivers who gave the correct answer of 'yes' when asked if one can protect himself from the virus by using condoms every time during sexual intercourse, whilst the lowest was in Kapiri Mposhi (76.1%).

When asked if one can protect themselves from the virus by being faithful to one faithful uninfected sexual partner, 87.7% of the drivers gave the correct answer of 'yes'. Association of this proportion with the sites was statistically significant ( $p$ -value = 0.006). At 92.7%, the Livingstone and Kazungula site had the highest proportion of the drivers who gave the correct answer of 'yes' when asked if one can protect themselves from the virus by being faithful to one faithful uninfected sexual partner, whilst the lowest was in Solwezi (80.1%).

When asked if one can protect himself from the virus by abstaining from sexual intercourse, 89.4% of the drivers gave the correct answer of 'yes'. Association of this proportion with the sites was significant ( $p$ -value = 0.004). At 94.5%, the Livingstone and Kazungula site had the highest proportion of the drivers who gave the correct answer of 'yes' when asked if one can protect himself from the virus by abstaining from sexual intercourse, whilst the lowest was in Solwezi (81.2%).

When asked if a healthy looking person can have HIV, over ninety per cent (94.2%) of the drivers gave the correct answer of 'yes'. Association of this proportion with the sites was statistically significant ( $p$ -value = 0.010). At 96.6%, Ndola had the highest proportion of the drivers who gave the correct answer of 'yes' when asked if a healthy looking person can have HIV, whilst the lowest was in Kapiri Mposhi (89.0%).

##### **4.6.3.1 Complete knowledge of protection from HIV infection**

Knowing the ABC of protection from HIV infection, that is, knowing that one can protect himself from HIV infection by abstaining from sexual intercourse, been faithful to one faithful uninfected partner and using a condom every time of sexual intercourse is considered as complete knowledge of protection from HIV infection. Complete knowledge of protection from HIV infection was high among the LDTDs, 72.2%. Variation of knowledge of the ABC of protection from HIV infection from site to site was not statistically significant ( $p$  value = 0.234).

##### **4.6.3.2 Comprehensive knowledge of protection from HIV infection**

In addition to knowing the ABC of protection from HIV infection, a person who also knows that HIV cannot be acquired from sharing a meal with an infected person. Also knowing that HIV can be acquired by being injected with needles that have already been used by someone else and a healthy looking person can be infected with HIV is considered to have comprehensive knowledge of protection from HIV infection. About two-thirds (57.5%) of the drivers had comprehensive knowledge of protection from HIV infection. Variation of this proportion from site to site was not statistically significant ( $p$  value = 0.323).

**Table 48 Knowledge of HIV transmission routes the Long Distance Truck Drivers by sites, BSS 2015**

BCC 2019

Characteristic	Chililabombwe	Chirundu	Kapiri Mposhi	Livingstone and Kazungula	Ndola	Solwezi	Total	P-value
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	
Get HIV from mosquito bite								
Yes	15 (9.9)	49 (9.7)	15 (9.7)	26 (9.0)	31 (17.7)	14 (10.5)	150 (10.7)	0.053
No	116 (76.8)	397 (78.9)	119 (96.8)	233 (80.6)	124 (70.9)	106 (79.7)	1095 (77.9)	
Don't know	19 (12.6)	53 (10.5)	17 (11.0)	28 (9.7)	20 (11.4)	10 (7.5)	147 (10.5)	
No response	1 (0.7)	4 (0.9)	4 (2.6)	2 (0.7)	0 (0.0)	3 (2.3)	13 (0.9)	
Total	151	503	155	289	175	133	1406	
Get HIV by sharing a meal								
Yes	24 (15.9)	70 (13.9)	17 (11.0)	29 (10.0)	33 (18.9)	24 (18.1)	197 (14.0)	0.082
No	122 (80.8)	421 (83.7)	129 (83.2)	252 (87.2)	135 (77.1)	102 (76.7)	1161 (82.6)	
Don't know	4 (2.7)	11 (2.2)	6 (3.9)	7 (2.4)	6 (3.4)	4 (3.0)	38 (2.7)	
No response	1 (0.7)	1 (0.2)	3 (1.9)	1 (0.4)	1 (0.6)	3 (2.3)	10 (0.7)	
Total	151	503	155	289	175	133	1406	
Get HIV through sharing of infected needles								
Yes	145 (96.0)	478 (95.0)	144 (92.9)	276 (95.5)	168 (96.0)	126 (94.7)	1337 (95.1)	0.489
No	2 (1.3)	15 (3.0)	5 (3.2)	9 (3.1)	6 (3.4)	2 (1.5)	39 (2.8)	
Don't know	3 (2.0)	8 (1.6)	3 (1.9)	3 (1.0)	0 (0.0)	2 (1.5)	19 (1.4)	
No response	1 (0.7)	2 (0.4)	3 (1.9)	1 (0.4)	1 (0.6)	3 (2.3)	11 (0.7)	
Total	151	503	155	289	175	133	1406	
Mother to child HIV transmission								
Yes	88 (58.3)	348 (69.2)	93 (60.0)	161 (55.7)	96 (54.9)	74 (55.6)	860 (61.2)	<.001
No	50 (33.1)	128 (25.4)	45 (29.0)	116 (40.1)	63 (36.0)	46 (34.6)	448 (31.9)	
Don't know	12 (8.0)	25 (5.0)	14 (9.0)	11 (3.8)	15 (8.6)	10 (7.5)	87 (6.2)	
No response	1 (0.7)	2 (0.4)	3 (1.9)	1 (0.4)	1 (0.6)	3 (2.3)	11 (0.7)	
Total	151	503	155	289	175	133	1406	
Get HIV through breastfeeding								
Yes	115 (76.2)	379 (75.3)	112 (72.3)	221 (76.5)	127 (72.6)	106 (79.7)	1060 (75.4)	0.062
No	18 (11.9)	71 (14.1)	13 (8.4)	36 (12.5)	31 (17.7)	15 (11.3)	184 (13.1)	
Don't know	17 (11.3)	51 (10.2)	27 (17.4)	31 (10.7)	16 (9.1)	9 (6.8)	151 (10.8)	
No response	1 (0.7)	2 (0.4)	3 (1.9)	1 (0.4)	1 (0.6)	3 (2.3)	11 (0.7)	
Total	151	503	155	289	175	133	1406	
Have complete knowledge of HIV infection prevention								
Yes	49 (31.6)	373 (74.2)	49 (31.6)	232 (80.3)	113 (64.6)	87 (65.4)	1015 (72.2)	0.234
No	104 (68.9)	130 (25.8)	106 (68.4)	57 (19.7)	62 (35.4)	46 (34.6)	391 (27.8)	
Total	151	503	155	289	175	133	1406	
Have comprehensive knowledge of HIV infection prevention								
Yes	72 (47.7)	305 (60.6)	84 (54.2)	192 (66.4)	85 (48.6)	64 (48.1)	809 (57.5)	0.323
No	79 (52.3)	198 (39.4)	71 (45.8)	97 (33.6)	90 (51.4)	69 (51.9)	596 (42.5)	
Total	151	503	155	289	175	133	1406	

#### 4.6.4 Practices towards people infected with HIV

Practices related characteristics of LDTDs are shown in table 50. Practices towards people infected with HIV are positive or rather 'good'.

**Table 49 Protection from HIV related characteristics among the Long Distance Truck Drivers by sites, BSS 2015.**

Characteristic	Chililabombwe	Chirundu	Kapiri Mposhi	Livingstone and Kazungula	Ndola	Solwezi	Total	P-value
	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	<i>n (%)</i>	
Protect from HIV by using condoms every time during sexual intercourse								
Yes	131(86.8)	419(83.3)	118(76.1)	255(88.2)	142(81.1)	106(79.7)	1171(83.3)	0.034
No	13(8.6)	67(13.3)	27(17.4)	26(9.0)	26(14.9)	17(12.8)	176(12.5)	
Don't know	6(4.0)	16(3.2)	7(4.5)	7(2.4)	7(4.0)	7(5.3)	50(3.6)	
No response	1(0.6)	1(0.2)	3(1.9)	1(0.4)	0(0.0)	3(2.3)	9(0.6)	
Total	151	503	155	289	175	133	1406	
Protect from HIV by being faithful								
Yes	121 (80.1)	446 (88.7)	139 (89.7)	268 (92.7)	149 (85.1)	110 (82.7)	1233 (87.7)	0.006
No	25 (16.6)	50 (9.9)	12 (7.7)	18 (6.2)	22 (12.6)	16 (12.0)	143 (10.2)	
Don't know	4 (2.7)	5 (1.0)	1 (0.7)	2 (0.7)	4 (2.3)	4 (3.0)	20 (1.4)	
No response	1 (0.7)	2 (0.4)	3 (1.9)	1 (0.4)	0 (0.0)	3 (2.3)	11 (0.7)	
Total	151	503	155	289	175	133	1406	
Protect from HIV by abstaining								
Yes	129 (85.4)	457 (90.8)	137 (88.4)	273 (94.5)	153 (87.4)	108 (81.2)	1257 (89.4)	0.004
No	19 (12.6)	42 (8.4)	14 (9.0)	15 (5.2)	17 (9.7)	21 (15.8)	128 (9.2)	
Don't know	2 (1.3)	2 (0.4)	1 (0.7)	0 (0.0)	4 (2.3)	1 (0.8)	10 (0.7)	
No response	1 (0.7)	2 (0.4)	3 (1.9)	1 (0.4)	1 (0.6)	3 (2.3)	11 (0.7)	
Total	151	503	155	289	175	133	1406	
Healthy looking person get HIV								
Yes	135 (89.4)	483 (96.0)	138 (89.0)	277 (95.9)	169 (96.6)	122 (91.7)	1324 (94.2)	0.01
No	15 (9.9)	16 (3.2)	13 (8.4)	9 (3.1)	5 (2.9)	8 (6.0)	66 (4.7)	
Don't know	0 (0.0)	3 (0.6)	1 (0.7)	1 (0.4)	0 (0.0)	0 (0.0)	5 (0.4)	
No response	1 (0.7)	1 (0.2)	3 (1.9)	2 (0.7)	1 (0.6)	3 (2.3)	11 (0.7)	
Total	151	503	155	289	175	133	1406	

##### 4.6.4.1 Stigma related practices

When asked if a HIV infected student can attend school, almost all (97.6%) of the drivers gave the positive answer of 'yes'. Association of this proportion with the sites of interview was significant (p-value <.001). At 99.2%, Chirundu had the highest proportion of the drivers who gave the positive answer of 'yes' when asked if a HIV infected student can attend school, whilst the lowest was in Kapiri Mposhi (93.2%).

When asked if a HIV infected teacher can attend school, almost all (96.4%) of the drivers gave the positive answer of 'yes'. Association of this proportion with the sites of interview was significant (p-value = 0.005). At 99.2%, Chirundu had the highest proportion of the drivers who gave the positive answer of 'yes' when asked if a HIV infected teacher can attend school, whilst the lowest was in Kapiri Mposhi (91.6%).

**Table 50 Stigma practices related characteristics among the Long Distance Truck Drivers by sites, BSS 2015.**

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When asked if they can care for a HIV infected female relative, 95.6% of the drivers gave the positive answer of 'yes'. Association of this proportion with the sites of interview was not significant (p-value = 0.085).

When asked if they can buy food from a HIV infected shopkeeper, 84.5% of the drivers gave the positive answer of 'yes'. Association of this proportion with the sites of interview was not significant (p-value = 0.064).

When asked if it should remain a secret that a family member is infected with HIV, 38.8% of the drivers gave the answer of 'yes', which in this case is negative or rather not good. Association of this proportion with the sites of interview was significant ( $p$ -value = 0.001). At 48.6%, Ndola had the highest proportion of the drivers who gave the negative answer of 'yes' when asked if it should remain a secret that a family member is infected with HIV, whilst the lowest was in Chirundu (31.6%).

People who say and believe that a student with HIV can attend school, a teacher with HIV, can care for a HIV infected female relative, they can buy food from an infected HIV relative, and it should not remain a secret that a family member is infected with HIV are considered not to practice stigma. Slightly over half (50.6%) of the drivers do practice stigma, and variation of this proportion from site to site was statistically significant ( $p$  value = 0.042). At 58.3%, drivers interviewed in Chililabombwe were the highest in terms of practicing stigma while the lowest were those interviewed in Chirundu, 44.5%.

#### **4.7 STDs, HIV Testing and circumcision**

Sexually transmitted diseases (STDs), HIV testing and circumcision characteristics are shown in table 51.

##### **4.7.1 Sexually Transmitted Diseases**

Reported history of STDs was high among LDTD population. When asked if they had experienced a urethral discharge (UD) or a genital ulcer (GU) in the past 12 months, 13.3% of the drivers reported that they had had a UD, 8.2% reported that they had had a GU. An additional 16.3% reported that they had experienced either or both of the two signs of STDs. Truck drivers interviewed in Ndola reported the highest proportions of having experienced the UD or GU conditions.

##### **4.7.1 HIV Testing**

When asked if they have been ever tested for HIV, 84.1% of the drivers responded that they tested for HIV before. The proportions of those that reported ever tested ranged from 76.7% in Chililabombwe to 87.8% in Chirundu. The proportions were 79.0% in Kapiri Mposhi, 84.3% in the Livingstone Kazungula site, 83.3% in Ndola and 85.2% in Solwezi.

When asked when the most recent HIV test was taken, the majority (64.4%) reported that their last test was within the past year. Almost a quarter (22.3%) reported that their last test was within 1 to 2 years ago. The rest (11.3%) reported to have taken HIV test 2 years or more ago. HIV testing appeared highest in Chirundu (87.8%) and lowest in Chililabombwe (76.7%). When asked if they received the result for HIV test, almost all (99.0%) reported that they had received the test result.

##### **4.7.2 Circumcision**

Prevalence of circumcision is low among the LDTDs. When asked if they are circumcised, only 39.3% of the drivers reported that they were circumcised; however differences of this aspect among LDTDs according to the sites of interview were not statistically significant ( $p$ -value = 0.062).

**Table 51 Sexually transmitted diseases, HIV testing and circumcision among the Long Distance Truck Drivers by sites**

Characteristics	Chililabombwe	Chirundu	Kapiri Mposhi	Livingstone and Kazungula	Ndola	Solwezi	Total	P-value
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	
History of genital/urethral discharge past 12 months								
Had a discharge	20 (13.4)	64 (12.7)	18 (12.0)	32 (11.1)	34 (19.5)	18 (13.9)	186 (13.3)	0.312
Total	149	503	150	289	174	130	1395	
History of genital sores past 12 months								
Had sores	13 (8.7)	36 (7.2)	13 (8.7)	18 (6.2)	24 (13.8)	11 (8.5)	115 (8.2)	0.350
Total	130	502	150	289	174	130	1395	
History of either UD or GU last 12 months								
Had either a UD and GU	25 (16.7)	76 (15.1)	24 (16.0)	42 (14.5)	38 (21.8)	22 (16.9)	227 (16.3)	0.305
Total	150	503	150	289	174	130	1396	
Ever tested for HIV								
Tested	115 (76.7)	440 (87.8)	120 (79.0)	242 (84.3)	145 (83.3)	109 (85.2)	1171 (84.1)	0.789
Total	150	501	152	287	174	128	1392	
When got tested most recently								
Within the past year	70 (60.9)	284 (64.6)	74 (61.7)	161 (66.8)	88 (62.9)	73 (67.6)	750 (64.4)	0.067
Within 1 to 2 years	23 (20.0)	108 (24.6)	26 (21.7)	53 (22.0)	29 (20.7)	21 (19.4)	260 (22.3)	
With 2 to 4 years	17 (14.8)	27 (6.1)	7 (5.7)	14 (5.8)	17 (12.1)	9 (8.3)	91 (7.8)	
More than 4 years ago	5 (4.4)	21 (4.8)	13 (10.8)	13 (5.4)	6 (4.3)	5 (4.6)	63 (5.4)	
Total	115	440	120	241	140	108	1164	
Received HIV test result								
Yes	113 (98.3)	435 (98.9)	118 (98.3)	241 (99.6)	143 (100.0)	107 (98.2)	1157 (99.0)	0.622
Total	115	440	120	242	143	109	1169	
Circumcised								
Yes	79 (52.7)	149 (29.7)	62 (41.1)	122 (42.7)	76 (43.9)	57 (43.9)	545 (39.3)	0.062
Total	150	502	151	286	173	130	1392	
Ever talked to COH staff								
Yes	33 (22.0)	145 (28.9)	40 (26.7)	81 (28.2)	28 (16.2)	37 (28.5)	364 (26.2)	0.400
Total	150	501	150	287	173	130	1391	

### 4.7.3 Contact with Corridors of Hope

Many of the LDTDs have not been in contact with COH. When asked if they have ever talked to staff from COH, only 26.2% said that they have, differences of this aspect among the sites was not statistically significant (p-value = 0.400).

## 4.8 Comparison of BSS 2009 and BSS 2015 on selected variables among LDTDs

The 2015 survey included sites that were also included in the last round of the survey in 2009. These sites are Chirundu, Kapiri Mposhi, the Livingstone and Kazungula site and Solwezi. In 2015, Ndola was included. In this section, we compare 2009 and 2015 for the aggregate results for these two rounds of BSS.

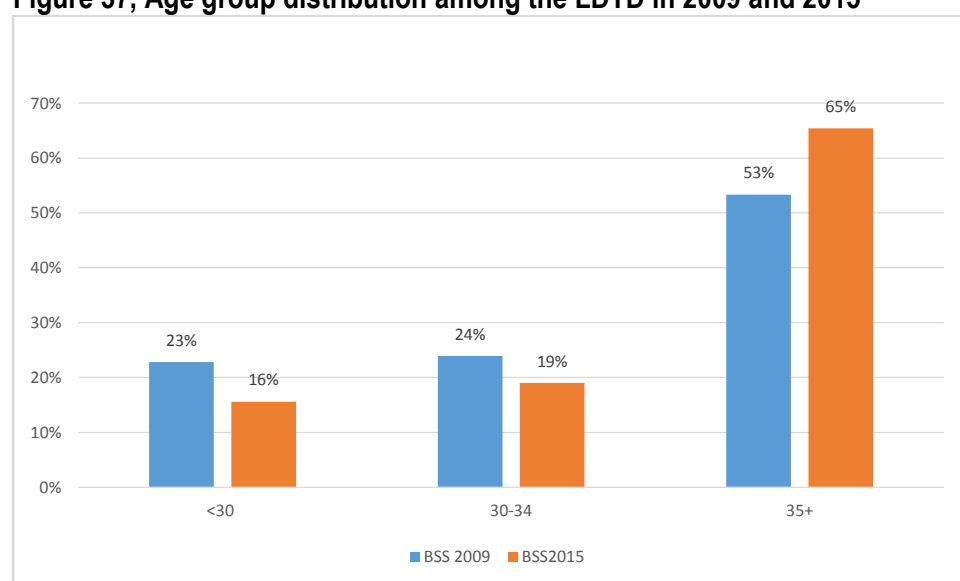
#### 4.8.1 Age Distribution of LDTDs

Table 52 and figure 39 below shows age distribution of LDTDs over the two-survey period. In 2015 the drivers interviewed were older ( $p$  value =  $<.001$ ). About a half, (53.3%) of drivers who participated in the 2009, survey was aged 35 and over while in 2015 the proportion was 65.4%.

**Table 52 Age groups of LDTD in 2009 and 2015**

Variable	BSS 2009	BSS 2015	P-value
Age group			
< 30 years	425/1861 (22.8%)	219/1406(15.6%)	<.001
30-34	444/1861 (23.9%)	267/1406 (19%)	
35+	992/1861(53.3%)	920/1406 (65.4%)	

**Figure 37, Age group distribution among the LDTD in 2009 and 2015**



#### 4.8.2 Trend in alcohol consumption

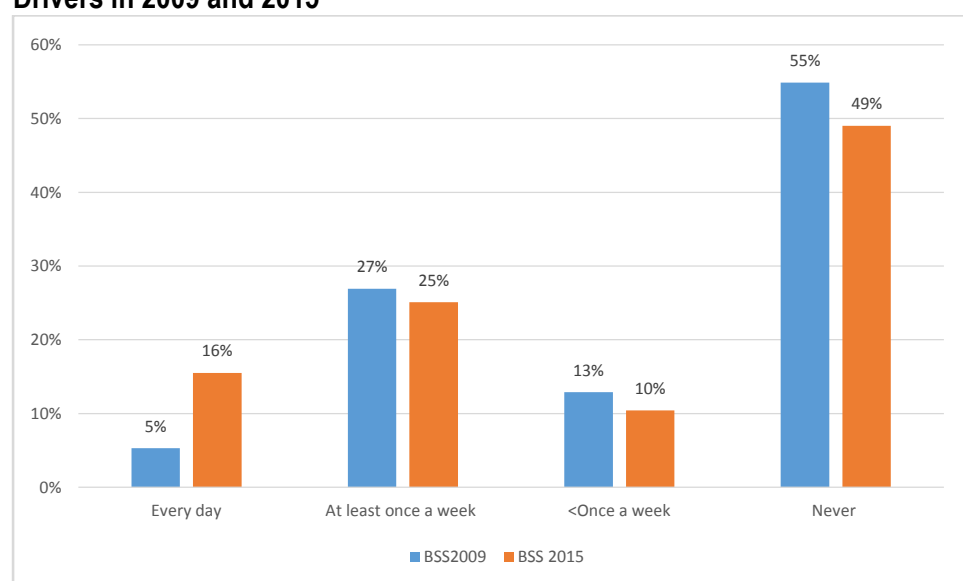
The percentage distributions of alcohol consumption among the Long Distance Truck Drivers in 2009 and 2015 are presented in table 53 and figure 37. The observed trend is significant ( $p$  value =  $<.001$ ). Everyday alcohol drinking has increased among the LDTDs between 2009 and 2015: 5.3% in 2009 and 15.5% in 2015. Never alcohol drinking has decreased with 2009 and 2015; 54.9% in 2009 and 49.0% in 2015.

**Table 53 Alcohol consumption among LDTDs in Last 4 weeks**

Variable	BSS 2009	BSS 2015	P value
Every day	99/1857 (5.3%)	217/1397 (15.5%)	<.001
At least once a week	499/1857(26.9%)	351/1397 (25.1%)	
Less than once a week	240/1857(12.9%)	145/1397(10.4%)	
Never	1019/1857 (54.9%)	684/1397(49.0%)	



**Figure 38, Trend in alcohol consumption last 4 weeks among the Long Distance Truck Drivers in 2009 and 2015**



#### **4.8.3 Proportion with Regular sex partner/Girlfriends in the Last 12 months in 2009 and 2015**

Proportions of LDTDs who had regular sex partners or girlfriends are presented in Table 54 and figure 38. The number of LDTD with 2 or more regular sex partners increased slightly. The observed increase was statistically significant (p value = 0.036).

**Table 54 Proportion of LDTD with Regular sex partner/Girlfriends**

Number of partners	BSS 2009	BSS 2015	p value
0	1039/1673 (62.1%)	849/1383 (61.4%)	0.036
1	554/1673 (33.1%)	413/1383(30%	
2+	80/1673 (4.8%)	121/1383 (8.6%)	

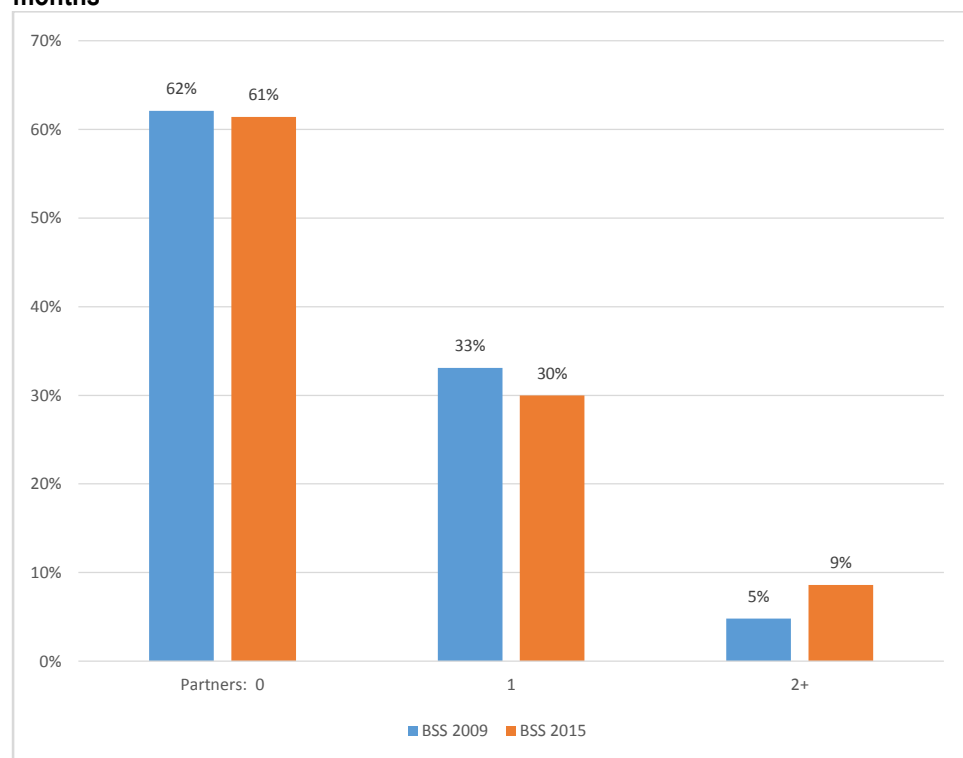
#### **4.8.4 Proportion with FSWs in the last 12 months in 2009 and 2015**

Proportions of LDTDs who had sex with FSWs are presented in Table 55 and figure 39. The number of LDTD had had sex with 2 or more FSWs increased slightly, 13.8% in 2009 and 23.4% in 2015. The observed increase was statistically significant (p value = <. 001).

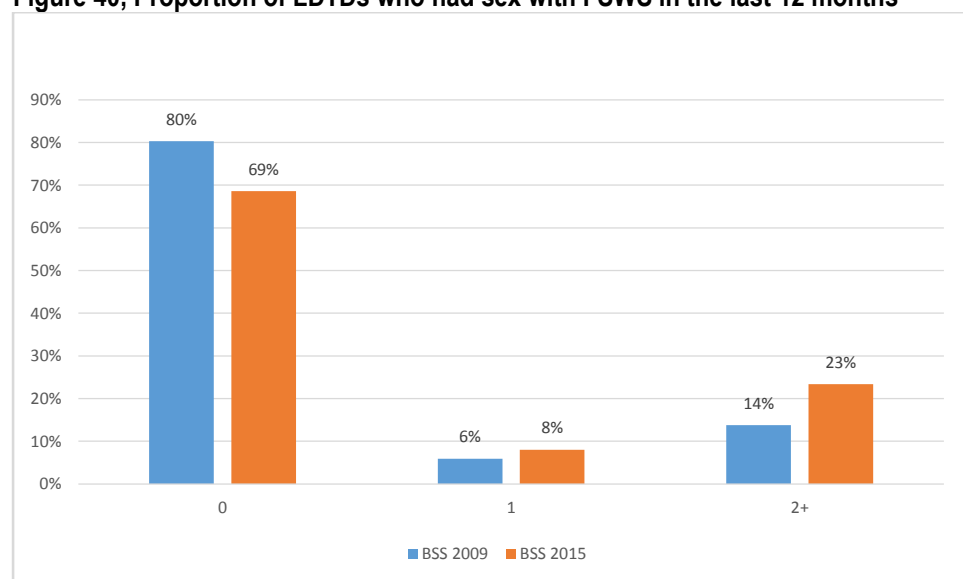
**Table 55 Proportion of LDTDs who had sex with FSWs in last 12 months**

Number of partners	BSS 2009	BSS 2015	p value
0	1339/1608 (80.3%)	948/1382 (68.6%)	<. 001
1	99/1608 (5.9%)	109/1382 (8.0%)	
2+	230/1668 (13.8%)	325/1382 (23.4%)	

**Figure 39, Proportion of LDTDs who had sex with regular Partners/Girlfriend in the last 12 months**



**Figure 40, Proportion of LDTDs who had sex with FSWS in the last 12 months**



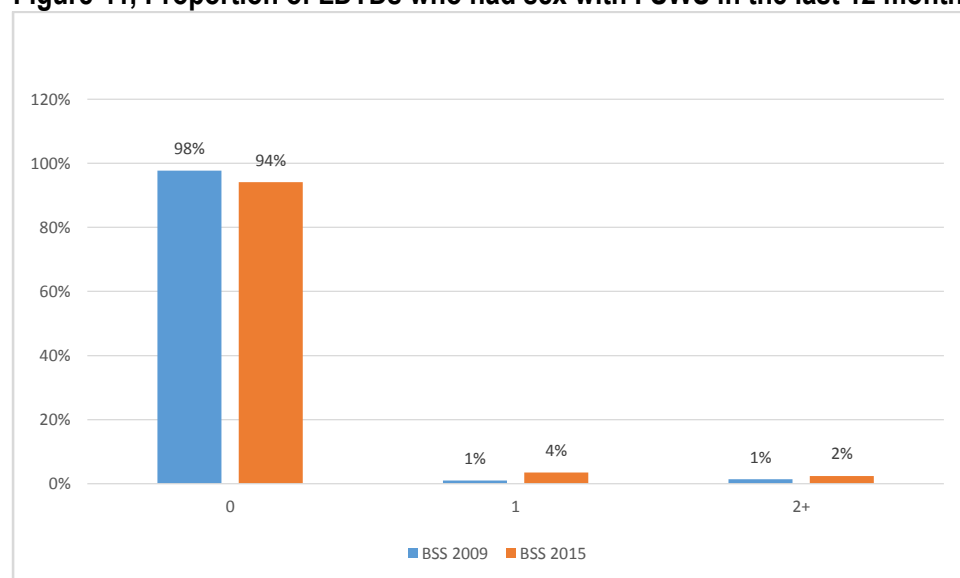
#### **4.8.5 Proportion of LDTDs who had sex with Casual (non regular, non FSWS) in the last 12 months in 2009 and 2015**

Proportions of who had sex with Casual (non-regular, non-FSWS) in the last 12 months in 2009 and 2015 presented in Table 56 and figure 40. The number of LDTDs had with 2 or more sex Casual (non-regular, non-FSWS) in the last 12 months increased slightly, 1.4% in 2009 and 2.4% in 2015. The observed increase was statistically significant ( $p$  value =  $< .001$ ).

**Table 56 Proportion of LDTDs who had sex with Casual partners in last 12 months**

Number of partners	BSS 2009	BSS 2015	p-value
0	1621/1660 (97.7%)	1299 (94.1%)	< .001
1	16/1660 (1%)	48 (3.5%)	
2+	23/1660 (1.4%)	34 (2.4%)	

**Figure 41, Proportion of LDTDs who had sex with FSWS in the last 12 months**



#### 4.8.6 Proportion of LDTDs who used a condom at last sex with FSWS and Regular sex partners Last 12 months in 2009 and 2015

Proportions of LDTDs who used a condom at last sex with FSWS and Regular sex partners last 12 months in 2009 and 2015 are presented in Table 57 and figure 41. The number of LDTDs who used a condom at last sex with FSWS, regular and casual sex partner's last 12 months increased, 73.1% in 2009 and 75.3% in 2015. The observed increase was statistically not significant (p value = 0.224).

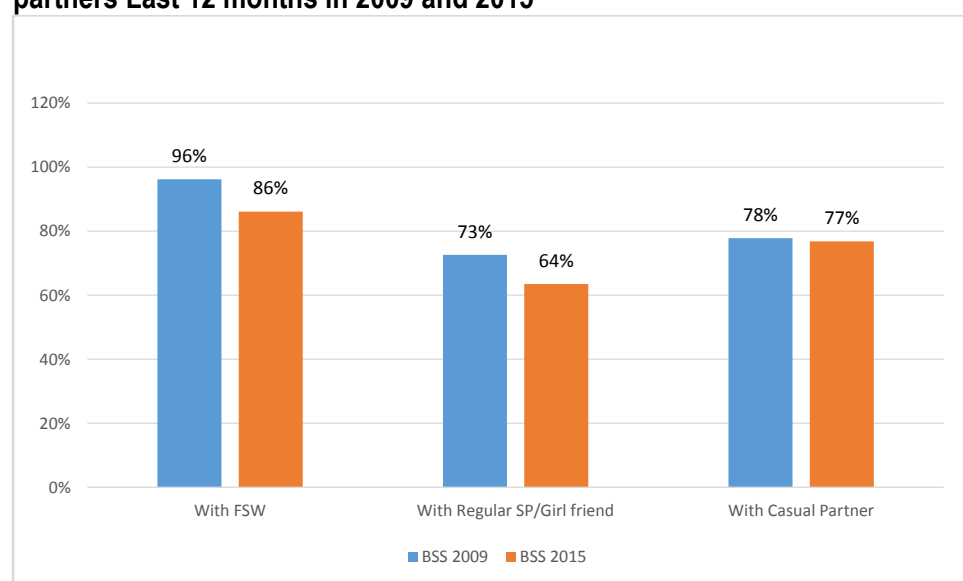
**Table 57 Proportion of LDTDs who used Condom at last sex with FSWS, Regular and casual sex partners Last 12 months in 2009 and 2015**

Variable	BSS 2009	BSS 2015	p value
Used condom last sex with FSW	329/342 (96.2%)	373/433 (86.1%)	0.224
Used condom last sex with Regular partner	382/633 (60.3%)	337/531(63.5%)	
Used condom last sex Casual partner	21/27 (77.8%)	63/82 (76.8%)	
<b>Total</b>	<b>732/1002 (73.1%)</b>	<b>773/1026 (75.3%)</b>	<b>0.224</b>

#### 4.8.7 Proportion of LDTDs who consistently used condoms in the Last 12 months with FSWS, Regular and casual sex partners in 2009 and 2015

Proportions of LDTDs who consistently used a condom at last sex with FSWS, Regular and casual sex partner's last 12 months in 2009 and 2015 are presented in Table 58 and figure 42. The number of LDTDs who consistently used a condom at last sex with FSWS, regular and casual sex partner's last 12 months decreased, 71.8% in 2009 and 68.7% in 2015. The observed decrease was statistically not significant (p value = 0.116).

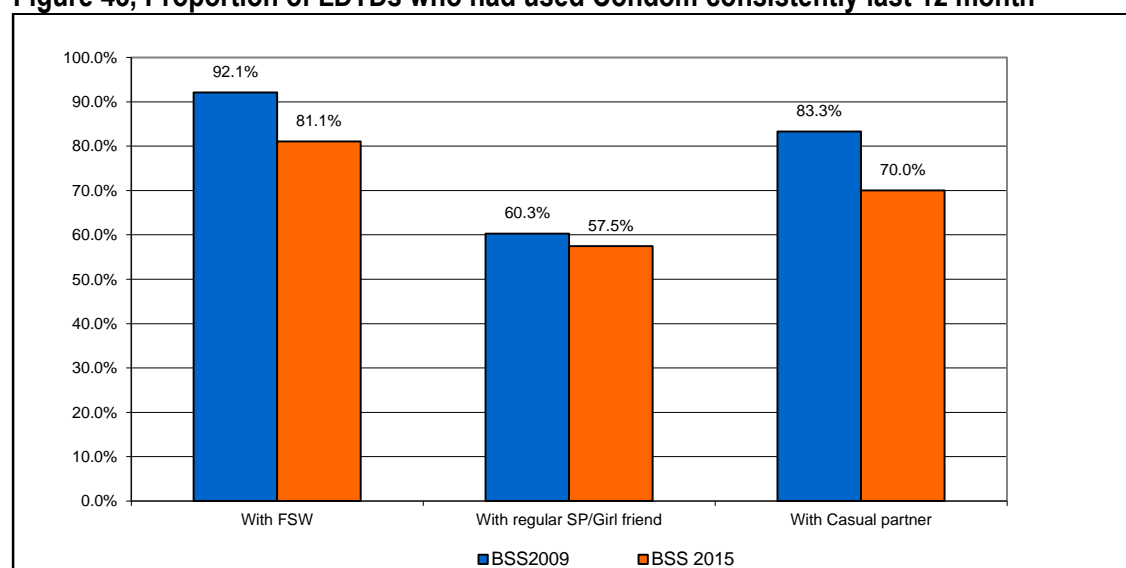
**Figure 42, Proportion who used Condom at last sex with FSWs, Regular and casual sex partners Last 12 months in 2009 and 2015**



**Table 58 Proportion of LDTDs who consistently used condoms in the Last 12 months with FSWs, Regular and casual sex partners in 2009 and 2015**

Variable	BSS 2009	BSS 2015	p-value
Consistently used Condom with FSW	315/342 (92.1%)	352/434 (81.1%)	
Consistently used Condom with Regular sex partner	382/633 (60.3%)	290/504 (57.5%)	
Consistently used condom with Casual partner	20/24 (83.3%)	56/80 (70.0%)	
<b>Total</b>	<b>717/999 (71.8%)</b>	<b>698/1018 (68.7%)</b>	<b>0.116</b>

**Figure 43, Proportion of LDTDs who had used Condom consistently last 12 month**



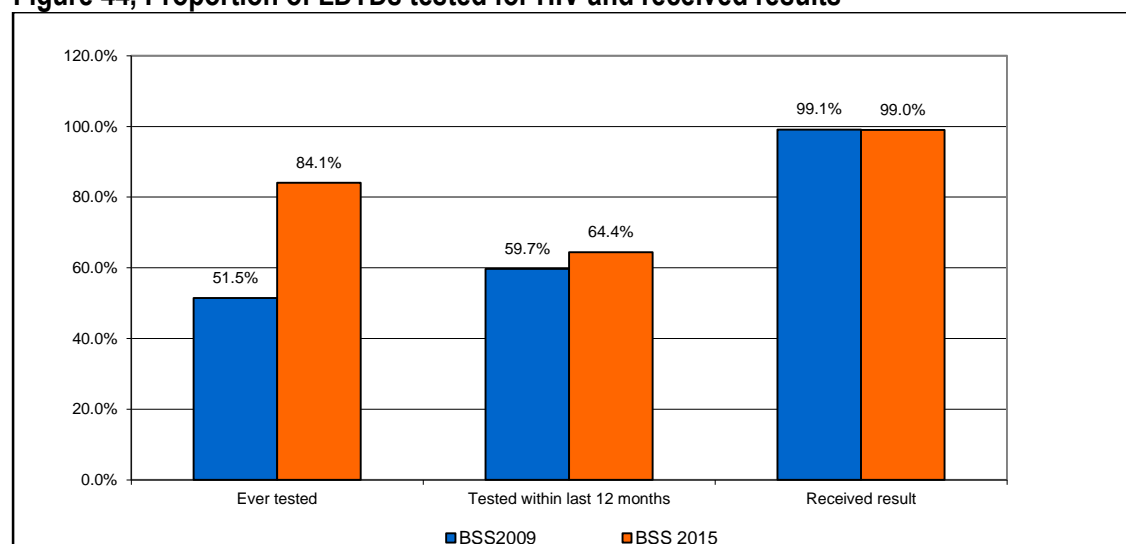
#### 4.8.8 Proportion of LDTDs who reported HIV testing and receiving results in 2009 and 2015

Proportions of LDTDs who reported HIV testing and receiving results in 2009 and 2015 are presented in Table 59 and figure 43. The number of LDTDs who reported HIV testing and receiving results increased, 65.5% in 2009 and 87.3% in 2015. The observed increase was statistically significant (p value = <. 001).

**Table 59 Proportion of LDTDs who reported HIV testing and receiving results in 2009 and 2015**

Variable	BSS 2009	BSS 2015	p-value
Ever been tested for HIV	954/1853 (51.5%)	1171/1392 (84.1%)	
Tested within last 12 months	562/942 (59.7%)	750/1164 (64.4%)	
Received test results	931/939 (99.1%)	1157/1169 (99.0%)	
<b>Total</b>	<b>2447/3734 (65.5%)</b>	<b>3078/3725 (87.3%)</b>	<b>&lt;.001</b>

**Figure 44, Proportion of LDTDs tested for HIV and received results**



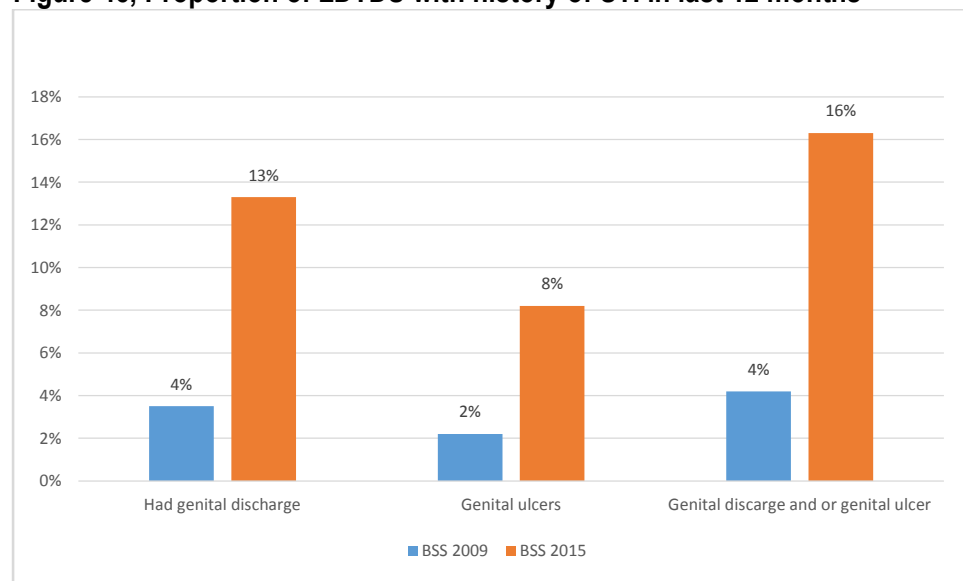
#### 4.8.9 Proportion of LDTDs who reported history of an STI in last 12 months in 2009 and 2015

Proportions of LDTDs who reported history of an STI in last 12 months in 2009 and 2015 are presented in Table 60 and figure 44. The number of LDTDs who reported history of an STI in last 12 months increased, 3.3% in 2009 and 12.6% in 2015. The observed increase was statistically significant (p value = <. 001).

**Table 60 Proportion of LDTDs with history of STI in last 12 months**

Variable	BSS 2009	BSS 2015	p-value
History of genital discharge	61/1766 (3.5%)	186/1395 (13.3%)	
History of genital ulcers	39/1769 (2.2%)	115/1395 (8.2%)	
History of genital discharge and genital ulcer	74/1769 (4.2%)	227/1396 (16.3%)	
<b>Total</b>	<b>174/5304 (3.3%)</b>	<b>528/4186 (12.6%)</b>	<b>&lt;.001</b>

**Figure 45, Proportion of LDTDs with history of STI in last 12 months**



#### **4.9 Discussion**

Since 2000, FHI 360 (Family Health International), through the Zambia Corridors of Hope project, has used the Behavioural Surveillance Survey (BSS) to track behaviour relevant to the spread of HIV among populations at a higher risk of HIV transmission. Indicators that register change have been used (7). These indicators do not only measure results of prevention efforts of the COH project, but corrective and cumulative efforts of organizations involved in the fight against HIV as part of a national response.

Long distance truck drivers (LDTDs) have been targeted by several interventions along truck corridors because as a group are a major client of female sex workers (FSWs) and constitute a significant high-risk group for HIV that need effective prevention efforts. LDTDs often engage in high-risk sexual behaviours characterized by multiple sexual partners, low consistent condom use and delayed treatment-seeking behaviours (8).

Just like in previous BSS studies, 2015 BSS findings among LDTDs are that the majority are married, have good academic education, and are engaged in multiple sex partnership with regular sex partners and female sex workers not always using a condom.

The 2015 BSS findings reconfirms that LDTDs are a high mobile population, crossing countries borders and staying at border sites for a considerably long period of time, others spending as many as four days at border site. This increases risk of acquiring STIs by creating condition for unsafe sex and reducing access to health services (9).

Alcohol is known to affect a person's intention for protected sex. Alcohol consumption among LDTDs was higher in 2015 compared to BSS 2009 by about 3 times (15% vs 5%). While alcohol per se does not transmit HIV and other STIs, it is well known in creating an environment for vulnerability to risk sexual behaviour such as sex without using a condom. Alcohol consumption has a causal effect on the likelihood to engage in unsafe sex and therefore should be included as a major factor in preventive efforts to HIV spread (10).

Multiple and concurrent sexual partners, low and inconsistent use of male and female condom are recognized as key drivers of HIV epidemic (11). In 2015, the proportion of truck drivers having sex with one or more regular partner or girlfriend was about similar as finding in 2009. About a third of long distance truck drivers have one or more regular sex partners or girlfriends apart from their wives while the proportion who had sex with one or more female sex workers in the last 12 months increased compared to 2009 BSS. In 2009, it was 19% while in 2015 it is 31% of LDTD with history of sexual contact with FSW in last 12 months. However, condom use at last sex with both regular and FSW reduced. Duration of a relationship appear to be a factor mostly associated with engaging in unprotected sex, condoms were used much less in long term or regular partner relationships (12). Condom use at last sex with regular partner reduced from 93% to 63% while FSWs from about 97% to 86% in 2009 and 2015 respectively. Condom use with spouses or wives was less than in 10% of relationships. The risks associated with HIV and other STIs are not limited to girlfriends as regular partners or to FSWs only but to their spouses as well. Prevention of infection from regular partners or from FSWs prevents infections to spouses. The male condom was mostly used; just about 10% used a female condom.

The number of LDTD with history suggestive of STIs was higher in 2015 BSS than in 2009. About 16% had either genital ulcers or urethral discharge compared to 4% in last 12 months of BSS 2015 and BSS 2009 respectively. Though majority of LDTDs had heard of STIs, knowledge of signs and symptoms was not as high especially knowledge of STIs in women. Slightly over a half mentioned genital discharge and genital ulcers as signs STI in men while just about a third mentioned them as signs in women. There is therefore a need to increase knowledge level around sexually transmitted infections, transmission, manifestations and dangers.

To be effective, the programs involved with interventions with mobile population need to use innovative outreach program activities and methodologies that may assist people including LDTDs to reflect on individual behaviour and to reinforce desired behaviour changes and knowledge. Addressing misconception on transmission of HIV and other STIs, understanding that correct and consistent use of a male or female condom prevents transmission of HIV and other STIs (13). The innovative approaches will include addressing main barriers to condom use, perceptions that a condom reduces sexual satisfaction and that a condom causes health problems and a reduction in sexual pleasure (14). These perceptions are embedded in responses obtained during the survey such as; not thinking that condom was necessary, not thought of them or that did not think partner had a diseases or partner objected or do not like them. The most common and preferred places to obtain condoms appear to be pharmacies, shops, bars and guesthouses. To increase access, these places could be some focused or targeted places. In India, an impact on HIV prevention program on condom use among LDTDs was found after exposure to information including media events and clinics and provision of the most effective package of services to increase consistent condom use (15).

As shown in this study, just like in many other study findings in the region, the majority of LDTDs have heard of HIV/AIDS (16), (17). The level of knowledge of HIV transmission and prevention is high among LDTDs. In this study of BSS 2015, LDTDs were found to have less stigmatizing attitudes such as accepting that HIV infected pupils attend school, a teacher with HIV attend school and caring of relative with HIV. However, some stigma related attitude still exist, concerning secrecy of HIV test, that it should remain a secret that a family member is infected. There are also LDTDs who still have misconception regarding transmission. Others still think HIV

is transmitted through mosquito bites and sharing of meals. Therefore, behaviour change efforts should continue targeting LDTDs to eliminate misconceptions. Furthermore, efforts aimed at dispelling misinformation require the strengthening of workplace education and the training of credible peer educators among the drivers and the workplace.

HIV counselling and testing is an entry point to care and treatment. UNAIDS and WHO have recommended safe, voluntary medical male circumcision as an additional, important strategy for the prevention of heterosexually acquired HIV (18). Though a high proportion of LDTDs are aware of counselling and testing services and most of them think it is possible in their community for someone to get a HIV test privately, a good proportion of them have not undergone testing. It is therefore necessary that the Program continue to address barriers that exist and prevent many from voluntary testing and get to treatment, care, and support. There are also many social and cultural impediments and challenges to other HIV prevention methods such as circumcision that need to be explored and addressed to have many people get circumcised.

#### **4.10 Recommendations**

The following part provides overall recommendations. They are divided into three sections: Program, Policy and Research.

##### **4.10.1 Program**

A number of LDTDs have other sexual partners, regular and non-regular the engage with without using condoms. There is need for ongoing HIV information and prevention campaigns that focus on special needs of mobile population such as LDTDs.

There is high prevalence of sexually transmitted infections reported among LDTDs. There is therefore need to strengthen STI services, improve condom promotion and availability, supporting and reinforcing behaviour change.

Projects that provide services to LDTDs should hire and train age-appropriate peer educators in strategies to promote use of condoms with different types of sex partners and to reach out to truck drivers on a peer-to-peer basis.

In developing strategies and activities, LDTDs should be invited to participate in formulating their own strategies for behaviour change and engage them in communication campaigns that promote safe sex practices and that move behaviour change beyond awareness-raising to sustaining the changes in behaviour.

A condom used correctly and consistently is a great barrier to HIV transmission. However, many sexual encounters remain unprotected. There is, therefore, a need to sustain efforts in communication strategies for behaviour change to reinforce consistent and correct use of either male or female condoms. Innovative approaches that will lead to translation of knowledge into sustained and consistent use of condoms are required.



In view of the continued existence of some misconceptions and stigma related to disclosure of HIV status, there is a need to continue developing better strategies for correcting misconceptions and stigma.

Knowing one's HIV status is an entry point to HIV care. It is encouraging to see that the proportion of LDTDs that have tested and know their HIV status has increased over the years. HIV counselling and testing should continue to be made more accessible through many outlets, including mobile VCT centres, to serve LDTDs who are waiting at border posts and depots. Increase in access to VCT services will enable as many LDTDs (and others) as possible to test and to get treatment and care as necessary. However caution should be exercised and sufficient preparations made regarding conducting HIV testing to waiting truck drivers to protect them from potential harm or possible negative effects (e.g. psychological effects) caused by knowing their status as they drive along the truck corridors and borders.

#### **4.10.2 Policy**

Regional HIV prevention program; to reduce exposures to high-risk situations, a comprehensive regional prevention program is needed to create an enabling environment to lower HIV risk. Core services for such an approach would include provision of recreational/entertainment and behavioural change information facilities located near the truck stops, treatment for STIs and expansion of STI/HIV counselling and testing services to reduce sexually transmitted infections.

Truck drivers continue to have sexual relationships with non-spousal partners when they are away from their homes. Organizations involved in HIV prevention activities need to lobby for institutionalization of HIV prevention activities, including lobbying for a company policy that allows truck drivers to be accompanied by wives, and to hold regular meetings at place of work for men to discuss issues of HIV.

Truck drivers continue to stay for long periods at border towns due to clearance procedures and personal behaviour, which increases the chances of engaging in risk sexual behaviours, including those that put them at risk of HIV infection. Therefore lobbying the government for mechanisms to quicken the clearance process should continue. The underlying factors that affect the clearance process needs a better understanding and find solutions and lobby for improvement/system change.

The study found that alcohol consumption has increased among LDTDs passing through the border towns of Zambia consume alcohol. Alcohol influence decision and has a causal effect on likelihood to engage in unsafe sex. Alcohol should therefore be included as a major factor and as a HIV prevention strategy at national level.

The significant role that conventional STIs play in facilitating HIV transmission and causing complications are well documented. The effective role of early management of STIs has also been demonstrated and recommended by WHO. Therefore, effective and early detection and management of STIs are critical and need to be strengthened in project providing STI services; non-governmental and government institutions, to reach the most-at-risk mobile population as well as the general population. Both the government, and programs and projects providing STI services, need to expand those services – screening, testing and treatment – and intensify

behaviour change communication efforts through mobile, outreach and static facilities to enable easy access to STI treatment services by LDTDs.

#### **4.10.3 Research**

Given gaps in behaviour change, such as high knowledge of HIV transmission and prevention on the one hand and unprotected sex and or misconceptions on transmission on the other, there is a need for operational research to help identify bottlenecks as to why HIV control efforts are failing and identify areas for improvement.

In addition to monitoring trends in key sexual behaviour variables, a biological component needs to be included among LDTDs in the next round of BSS to triangulate the findings of the self-reported behavioural surveys and the biological test results.

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## 6 Appendix: Questionnaires:

### 6.1 Female Sex Worker Questionnaire

Bio-BSS AMONG Female Sex Workers in Five Corridors of Hope Project Sites in Zambia.

**Sites: Ndola, Chirundu, Kapiri Mposhi, Livingstone, and Solwezi.**

**001 QUESTIONNAIRE IDENTIFICATION NUMBER** |\_\_|\_\_|\_\_|\_\_|

**002 DISTRICT** \_\_\_\_\_

**003 PROVINCE** \_\_\_\_\_

**004 PLACE** \_\_\_\_\_ (provide appropriate sample place)

**Introduction:** “My name is..... I’m working for the Corridors of Hope III (COH III) project and FHI360. We are asking you to take part in a research study in order to find out about female sex workers’ HIV/AIDS knowledge, attitudes and behaviour. We are interviewing over 1,000 FSWs in five district sites of Zambia which include here in [*name of town, province or site*].

Have you been interviewed in the past few days or weeks for this study? **IF THE RESPONDENT HAS BEEN INTERVIEWED BEFORE DURING THIS ROUND OF Bio-BSS, DO NOT INTERVIEW THIS PERSON AGAIN.** Tell them you cannot interview them a second time. Thank them and end the interview. If they have not been interviewed before, continue: get consent using the standard consent form.

	Visit 1	Visit 2	Visit 3
Date			
Interviewer			
Result			

**Results:** Completed 1; Responded not available 2; Refused 3; Partially completed 4; Others 5.

**005 INTERVIEWER: CODE** [\_\_|\_\_]

**Name** \_\_\_\_\_

**006 DATE INTERVIEW:** \_\_\\_\_\\_\_

D \M \Year**007 TOTAL TIME TAKEN**

\_\_\_\_\_

**008 CHECKED BY SUPERVISOR:** Signature \_\_\_\_\_ Date: \_\_\_\_\_

\_\_\_\_\_

The FEMALE SEX WORKER questionnaire includes the following sections:

Section 0 – Questionnaire identification data (6 codes)

Section 1 – Background characteristics 18

Section 2 – Marriage, family, work 10

Section 3 – Sexual history: numbers and types of partners 7

Section 4 – Sexual history: paying clients 6

Section 5 – Sexual history: non-paying partners 7

Section 6 – Male and female condoms 18

Section 7 – STDs 12

Section 8 – Knowledge, opinions, and attitudes towards HIV/AIDS 40

Section 9 – Exposure to prevention 22

**TOTAL NUMBER OF QUESTIONS: 140 questions**

**FHI360, Bio-BSS 2015:**

***Section 1: Background characteristics***

No.	Questions and filters	Coding categories	Skip to
100	TIME INTERVIEW STARTED	_____	
Q101	In what month and year were you born?	MONTH [__][__] DON'T KNOW MONTH 88 NO RESPONSE 99  YEAR [__][__] DON'T KNOW YEAR 88 NO RESPONSE 99	
Q102	How old were you at your last birthday?  <b>(COMPARE/RECONCILE Q101 &amp; Q102 IF NEEDED)</b>	AGE IN COMPLETED YEARS [__][__] DON'T KNOW 88 NO RESPONSE 99  <b>6.1.1.1.1.1.1.1 ESTIMATE BEST ANSWER</b>	
Q103	Have you ever attended school?	YES 1 NO 2 NO RESPONSE 99	<input type="checkbox"/> Q106
Q104	What is the highest level of school you completed: primary, secondary or higher?  <b>CIRCLE ONE</b>	PRIMARY 1 SECONDARY 2 HIGHER 3 NO RESPONSE 99	
Q105	How many total years of education have you completed up to now?	# YEARS COMPLETED [__][__] NO RESPONSE 99	
Q106	How long have you lived here in <b>(NAME OF COMMUNITY/TOWN NEIGHBORHOOD/VILLAGE)?</b>	NUMBER OF YEARS [__][__] RECORD 00 IF LESS THAN 1 YEAR DON'T KNOW 88 NO RESPONSE 99	
Q107	Where were you born	Copper belt Province 1 Lusaka Province 2 Central Province 3 Luapula Province 4 Eastern Province 5 Northern Province 6 Southern Province 7 North-Western Province 8 Western Province 9 Other (Specify.....) 10	
Q108	Where have you lived in past 12 months?	_____ _____ _____	
Q109	How many times have you moved from one town to another in the past 12 months and stayed, on	NUMBER OF TIMES [__][__] NO RESPONSE 99	

	average, at least 2 nights in each place?																																																		
Q110	In the past 3 months, have you spent at least one night at any of the following towns, Kazungula, Chirundu, Livingstone, Nakonde, Chipata, Kapiri Mposhi, Solwezi, Sesheke, Kasumbalesa and Katete.	Yes 1 No 2 Don't know 3	<input type="checkbox"/> Q112 <input type="checkbox"/> Q112																																																
Q111	Where did you spend a night in the following towns in past 3 months:	<table border="1"> <thead> <tr> <th></th> <th>Yes</th> <th>No</th> <th>Don't know</th> </tr> </thead> <tbody> <tr><td>Kazungula</td><td></td><td></td><td></td></tr> <tr><td>Chirundu</td><td>1</td><td>2</td><td>3</td></tr> <tr><td>Livingstone</td><td>1</td><td>2</td><td>3</td></tr> <tr><td>Nakonde</td><td>1</td><td>2</td><td>3</td></tr> <tr><td>Chipata</td><td>1</td><td>2</td><td>3</td></tr> <tr><td>Katete</td><td>1</td><td>2</td><td>3</td></tr> <tr><td>Kapiri Mposhi</td><td>1</td><td>2</td><td>3</td></tr> <tr><td>Solwezi</td><td>1</td><td>2</td><td>3</td></tr> <tr><td>Sesheke</td><td>1</td><td>2</td><td>3</td></tr> <tr><td>Kasumbalesa</td><td>1</td><td>2</td><td>3</td></tr> <tr><td></td><td>1</td><td>2</td><td>3</td></tr> </tbody> </table>		Yes	No	Don't know	Kazungula				Chirundu	1	2	3	Livingstone	1	2	3	Nakonde	1	2	3	Chipata	1	2	3	Katete	1	2	3	Kapiri Mposhi	1	2	3	Solwezi	1	2	3	Sesheke	1	2	3	Kasumbalesa	1	2	3		1	2	3	
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Kasumbalesa	1	2	3																																																
	1	2	3																																																
Q112	What is your religion?  <b>CIRCLE ONE</b>	Christian 1 Muslim 2 Buddhist 3 Hindu 4 Other (specify)..... 5 NO RELIGION 0 NO RESPONSE 99	<input type="checkbox"/> Q114 <input type="checkbox"/> Q114 <input type="checkbox"/> Q114 <input type="checkbox"/> Q114 <input type="checkbox"/> Q114 <input type="checkbox"/> Q114																																																
Q113	What is your Christian denomination or Church?  <b>CIRCLE ONE.</b>	CATHOLIC 1 UNITED CHURCH OF ZAMBIA 2 SEVENTH DAY ADVENTISTS 3 REFORMED CHURCH IN ZAMBIA 4 PENTECOSTALS(Born again) 5 ANGLICAN 6 JEHOVA'S WITNESS 7 OTHER (SPECIFY) ----- 8 NO RESPONSE 99																																																	
Q114	To which ethnic group/tribe do you belong?  <b>CIRCLE ONE.</b>	Lozi 1 Tonga 2 Nsenga/Ngoni 3 Bemba 4 Lala 5 Lamba 6 Kaonde 7 Other (specify)----- 8 NO RESPONSE 99																																																	



Q115	During the last 4 weeks how often have you had drinks containing alcohol? Would you say <b>READ OUT and CIRCLE ONE</b>	EVERYDAY 1 AT LEAST ONCE A WEEK 2 LESS THAN ONCE A WEEK 3 NEVER 4 DON'TKNOW 88 NORESPONSE 99																																	
Q116	Some people have tried a range of different types of drugs. Which of the following, if any, have you tried? <b>READ LIST AND ASK FOR ANY OTHER. CIRCLE ALL THAT APPLY.</b>	<table> <tr> <td></td><td>YES</td><td>NO</td><td>DK</td></tr> <tr> <td>Daga (Ichamba)</td><td>1</td><td>2</td><td>88</td></tr> <tr> <td>Heroin</td><td>1</td><td>2</td><td>88</td></tr> <tr> <td>Cocaine</td><td>1</td><td>2</td><td>88</td></tr> <tr> <td>Mandrax</td><td>1</td><td>2</td><td>88</td></tr> <tr> <td>Other:_____</td><td>1</td><td>2</td><td>88</td></tr> <tr> <td>_____</td><td>1</td><td>2</td><td>88</td></tr> <tr> <td>_____</td><td>1</td><td>2</td><td>88</td></tr> </table>		YES	NO	DK	Daga (Ichamba)	1	2	88	Heroin	1	2	88	Cocaine	1	2	88	Mandrax	1	2	88	Other:_____	1	2	88	_____	1	2	88	_____	1	2	88	IF NO TO ALL SKIP TO 201
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Mandrax	1	2	88																																
Other:_____	1	2	88																																
_____	1	2	88																																
_____	1	2	88																																
Q117	Would you say you took the above drug frequently?	<table> <tr> <td></td><td>YES</td><td>NO</td><td>DK</td></tr> <tr> <td>Daga (Ichamba)</td><td>1</td><td>2</td><td>88</td></tr> <tr> <td>Heroin</td><td>1</td><td>2</td><td>88</td></tr> <tr> <td>Cocaine</td><td>1</td><td>2</td><td>88</td></tr> <tr> <td>Mandrax</td><td>1</td><td>2</td><td>88</td></tr> <tr> <td>Other:_____</td><td>1</td><td>2</td><td>88</td></tr> <tr> <td>_____</td><td>1</td><td>2</td><td>88</td></tr> <tr> <td>_____</td><td>1</td><td>2</td><td>88</td></tr> </table>		YES	NO	DK	Daga (Ichamba)	1	2	88	Heroin	1	2	88	Cocaine	1	2	88	Mandrax	1	2	88	Other:_____	1	2	88	_____	1	2	88	_____	1	2	88	
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Other:_____	1	2	88																																
_____	1	2	88																																
_____	1	2	88																																
Q118	Some people have tried injecting drugs using a syringe. Have you injected drugs in the last 12 months?  <b>DRUGS INJECTED FOR MEDICAL PURPOSES OR TREATMENT OF ILLNESS DO NOT COUNT</b>	YES 1 NO 2 NO RESPONSE 3  _____																																	

**FHI360. FHI360, Bio-BSS 2015:**

**Section 2 Marriage, family, work**

No.	Questions and filters	Coding categories	Skip to
Q201	Have you ever been married?	YES 1 NO 2 NO RESPONSE 99	<input type="checkbox"/> Q203 <input type="checkbox"/> Q203
Q202	How old were you when you first married?	Age in years [__ __] DON'T KNOW 88 NO RESPONSE 99	
Q203	Are you <i>currently</i> married or living with a sexual partner?	currently married, living with spouse 1 currently married, living with other sexual partner 2	

		currently married, not living with spouse or any other sexual partner 3 not married, living with sexual partner 4 not married, not living with sexual partner 5 NO RESPONSE 99	<input type="checkbox"/> Q206 <input type="checkbox"/> Q206
Q204	Does your spouse/partner have other sexual partners/wives?	YES 1 NO 2 DON'T KNOW 88 NO RESPONSE 99	<input type="checkbox"/> Q206 <input type="checkbox"/> Q206
Q205	How many other partners does he have?	NUMBER OF PARTNERS [__][__] DON'T KNOW 88 NO RESPONSE	
Q206	Do you earn money- doing work other than sex work?	YES 1 NO 2 NO RESPONSE 99	<input type="checkbox"/> Q208
Q207	What is this other work?  <b>MULTIPLE ANSWERS POSSIBLE</b>	YES NO Marketer 1 2 Waitress 1 2 Vender 1 2 Owns restaurant 1 2 Other----- 1 2 ----- 88 DON'T KNOW 99 NO RESPONSE	
Q208	Are you supporting anyone (children, parents or others) now?	YES 1 NO 2 NO RESPONSE 99	<input type="checkbox"/> Q301
Q209	How many people are you supporting now?	NUMBER OF PEOPLE [__][__] NO RESPONSE 99	
Q210	Do the children/parents or others live with you now?	YES 1 NO 2 NO RESPONSE 99	

**FHI360 FHI 360, Bio-BSS 2015:**

***Section 3 Sexual history: numbers and types of partners***

No.	Questions and filters	Coding categories	Skip to
Q301	Now I'd like to ask you some questions that may be difficult and too personal to answer. But like I said at the beginning, your answers to these questions will be treated with strict confidentiality and	AGE IN YEARS [__][__] DON'T REMEMBER 88 NO RESPONSE 99	

	<p><b>will not be linked to you in any way. The questions that will follow will all be about your sexual partners...</b></p> <p>At what age did you first have sex?</p>		
Q302	At what age did you first receive money for sex?	AGE                      IN                      YEARS [ ][ ] DON'T REMEMBER                      88 NO RESPONSE                      99	
Q303	Where else did you do sex work before coming to this community? (other towns than site of interview)	_____ 1 NONE                      2 OTHER (specify)                      3 NO RESPONSE                      99	
Q304	<p>How long have you been doing sex work in this community?</p> <p><b>STATE TOWN/CITY WHERE YOU ARE DOING INTERVIEW</b></p>	YEARS                      [ ][ ] MONTHS                      [ ][ ] WEEKS                      [ ][ ] DAYS                      [ ][ ]	
Q305	<p>Among all of your partners in the last seven days (one week), how many were:</p> <p>a) PAYING CLIENTS: That is, how many were partners who you had sex with in exchange for money?</p> <p>b) NON-PAYING PARTNERS: How many Partners you had sex with who did not give you money in exchange for sex (<b>EXCLUDE HUSBAND, LIVE-IN SEXUAL PARTNERS</b>)</p> <p>c) LIVE-IN PARTNERS/SPOUSE</p>	<p>PAYING CLIENTS                      [ ][ ]            DON'T KNOW                      88            NO RESPONSE                      99</p> <p>NON-PAYING PARTNERS            [ ][ ]            DON'T KNOW                      88            NO RESPONSE                      99</p> <p>LIVE-IN            PARTNERS/SPOUSE [ ][ ]            DON'T KNOW                      88            NO RESPONSE                      99</p>	
Q306	<p>With how many <i>different</i> sexual partners in total have you had sex during the last seven days (one week)?</p> <p><b>(INCLUDE SPOUSES AND LIVE-IN SEXUAL PARTNERS)</b></p> <p><b>NOTE: CHECK TOTAL NUMBERS OF PARTNERS IN Q302, Q303 AND Q304</b></p>	<p>NUMBER IN LAST 7 DAYS            [ ][ ]            DON'T KNOW                      88            NO RESPONSE                      99</p>	

	TO MAKE SURE THE NUMBERS MATCH Q304.		
Q307	With how many different sexual partners in total have you had sex during the last 30 days (one month)?  (INCLUDE SPOUSES AND LIVE-IN SEXUAL PARTNERS)	NUMBER IN LAST 30 DAYS _____ DON'T KNOW 88 NO RESPONSE 99	

**FHI360, FHI360, Bio-BSS 2015:**

**Section 4 Sexual history: paying clients**

No.	Questions and Filters	Coding categories	6.1.1.1.1
Q401	On the last day you worked, how many clients (people who gave you money in the exchange of sex) did you have?	Number of clients _____ DON'T KNOW 88 NO RESPONSE 99	
Q402	The last time you had sex with a client ( <i>someone who gave you money in exchange of sex</i> ) how much money did you receive?	Enter amount of money in local currency _____ DON'T KNOW 88 NO RESPONSE 99	
Q403	The <b>last time</b> you had sex with a client, did you and your client use a condom?	YES 1 NO 2 DON'T KNOW 88 NO RESPONSE 99	<input type="checkbox"/> Q405 <input type="checkbox"/> Q405 <input type="checkbox"/> Q405
Q404	Who suggested condom use that time?  <b>DO NOT READ LIST</b>  <b>CIRCLE ONE</b>	Myself 1 My partner 2 Joint decision 3 DON'T KNOW 88 NO RESPONSE 99	<input type="checkbox"/> Q406 <input type="checkbox"/> Q406 <input type="checkbox"/> Q406 <input type="checkbox"/> Q406
Q405	Why didn't you and your client use a condom that time? Any other reasons?  <b>CIRCLE ALL ANSWERS MENTIONED</b>	<b>Y N</b> Not available 1 2 Too expensive 1 2 Partner objected 1 2 Don't like them 1 2 Used other contraceptive 1 2 Didn't think it was necessary 1 2 Didn't think of it 1 2 Other _____ 1 2  DON'T KNOW 88 NO RESPONSE 99	

Q406	In general, how often did you and all of your clients use condoms over the last 30 days ( -----mention date last 30 days from date of this interview),	EVERY TIME ALMOST EVERY TIME SOMETIMES NEVER DON'T KNOW NO RESPONSE	1 2 3 4 88 99	
------	--	--	------------------------------	--

**FHI360, FHI360, Bio-BSS 2015:**

*Section 5 Sexual history: non-paying partners*

No.	Questions and Filters	Coding categories	Skip to
Q501	<p><b>FILTER: CHECK Q305</b></p> <p>HAS NON-PAYING PARTNER <input type="checkbox"/></p> <p style="text-align: center;">↓</p>	<p>HAS NO NON-PAYING PARTNER <input type="checkbox"/></p>	<input type="checkbox"/> <b>Q601</b>
Q502	Think about your <b>most recent</b> non-paying sexual partner. How many times did you have sexual intercourse with this person over the past 30 days?	<p>NUMBER OF TIMES <input type="text"/></p> <p>DON'T KNOW 88</p> <p>NO RESPONSE 99</p>	
Q503	The <b>last time</b> you had sex with a NON-PAYING partner, did you and your partner use a condom?	<p>YES 1</p> <p>NO 2</p> <p>DON'T KNOW 88</p> <p>NO RESPONSE 99</p>	<input type="checkbox"/> <b>Q505</b> <input type="checkbox"/> <b>Q505</b> <input type="checkbox"/> <b>Q505</b>
Q504	<p>Who suggested condom use that time?</p> <p><b>DO NOT READ</b></p> <p><b>CIRCLE ONE</b></p>	<p>Myself 1</p> <p>My partner 2</p> <p>Joint decision 3</p> <p>DON'T KNOW 88</p> <p>NO RESPONSE 99</p>	<input type="checkbox"/> <b>Q506</b> <input type="checkbox"/> <b>Q506</b> <input type="checkbox"/> <b>Q506</b> <input type="checkbox"/> <b>Q506</b>
Q505	<p>Why didn't you and your partner use a condom that time?</p> <p><b>CIRCLE ALL MENTIONED (DO NOT PROBE)</b></p>	<p>Not available 1 2</p> <p>Too expensive 1 2</p> <p>Partner objected 1 2</p> <p>Don't like them 1 2</p> <p>Used other contraceptive 1 2</p> <p>Didn't think it was necessary 1 2</p> <p>Didn't think of it 1 2</p> <p>Other _____ 1 2</p> <p>DON'T KNOW 88</p> <p>NO RESPONSE 99</p>	
Q506	In general, how often did you and your non-paying partner(s) use a condom over the last 12 months?	<p>EVERY TIME 1</p> <p>ALMOST EVERY TIME 2</p> <p>SOMETIMES 3</p> <p>NEVER 4</p> <p>DON'T KNOW 88</p>	

	<b>Would you say every time, almost every time, sometimes, or never?</b>	NO RESPONSE 99	
507	During the past 12 months, did any of your sexual partner(s) paying or non-paying force you to have sex with them even though you did not want to have sex?	YES 1 NO 2 NO RESPONSE 99	

**FHI360,**

**Section 6 Male condoms**

No.	Questions and Filters	Coding categories	Skip to
Q601	FILTER: SEE Q403, Q406, Q503, Q506  CONDOM NOT USED .... [ ] ↓	Condom Used [ ]	<input type="checkbox"/> Q604
Q602	Have you ever heard of a male condom? <b>(Show picture or sample of one)</b> <i>I mean a rubber object that a man puts on his manhood before sex.</i> <input type="checkbox"/>	YES 1 NO 2 DON'T KNOW 88 NO RESPONSE 99	<input type="checkbox"/> Q611 <input type="checkbox"/> Q611
Q603	Have you and any sexual partner ever used a male condom?  <b>(Show picture or sample of one.)</b> (The respondent may not have used a condom with partners in sections 4-5, but may have used a condom at some other time in the past.)	YES 1 NO 2 DON'T KNOW 88 NO RESPONSE 99	
Q604	Do you know of any place or person from which you can obtain male condoms?	YES 1 NO 2 NO RESPONSE 99	<input type="checkbox"/> Q611
Q605	Have you ever bought a male condom?	YES 1 NO 2 NO RESPONSE 99	<input type="checkbox"/> Q607
Q606	Last time you bought, which brand was it?	Maximum 1 Lovers 2 Protector 3 Saxos 4 Others (specify) ____ 5 DO NOT KNOW 88 NO RESPONSE 99	
Q607	Last time you bought condoms, how much did you spend?	ZK _____ —	

Q608	Which places or persons do you know where you can obtain male condoms?  <b>PROBE AND RECORD ALL ANSWERS</b>  Any others?	<table><tr><td></td><td><b>Yes</b></td><td><b>No</b></td></tr><tr><td>Shop</td><td>1</td><td>2</td></tr><tr><td>Pharmacy</td><td>1</td><td>2</td></tr><tr><td>Market</td><td>1</td><td>2</td></tr><tr><td>Clinic</td><td>1</td><td>2</td></tr><tr><td>Hospital</td><td>1</td><td>2</td></tr><tr><td>Family planning centre</td><td>1</td><td>2</td></tr><tr><td>Bar/guest house/hotel</td><td>1</td><td>2</td></tr><tr><td>Peer educator</td><td>1</td><td>2</td></tr><tr><td>Friend</td><td>1</td><td>2</td></tr><tr><td>OTHER_____</td><td>1</td><td>2</td></tr><tr><td>NO RESPONSE</td><td>99</td><td></td></tr></table>		<b>Yes</b>	<b>No</b>	Shop	1	2	Pharmacy	1	2	Market	1	2	Clinic	1	2	Hospital	1	2	Family planning centre	1	2	Bar/guest house/hotel	1	2	Peer educator	1	2	Friend	1	2	OTHER_____	1	2	NO RESPONSE	99		
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Friend	1	2																																					
OTHER_____	1	2																																					
NO RESPONSE	99																																						
Q609	Which places do you feel comfortable buying or where do you prefer to buy condoms  <b>PROBE AND RECORD ALL ANSWERES</b>  Any others	<table><tr><td></td><td><b>Yes</b></td><td><b>No</b></td></tr><tr><td>Shop</td><td>1</td><td>2</td></tr><tr><td>Pharmacy</td><td>1</td><td>2</td></tr><tr><td>Market</td><td>1</td><td>2</td></tr><tr><td>Bar/Guest house/hotel</td><td>1</td><td>2</td></tr><tr><td>Peer educator</td><td>1</td><td>2</td></tr><tr><td>Friend</td><td>1</td><td>2</td></tr><tr><td>Other (Specify...)</td><td>1</td><td>2</td></tr><tr><td>NO RESPONSE</td><td>99</td><td></td></tr></table>		<b>Yes</b>	<b>No</b>	Shop	1	2	Pharmacy	1	2	Market	1	2	Bar/Guest house/hotel	1	2	Peer educator	1	2	Friend	1	2	Other (Specify...)	1	2	NO RESPONSE	99											
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Peer educator	1	2																																					
Friend	1	2																																					
Other (Specify...)	1	2																																					
NO RESPONSE	99																																						
Q610	How long does it take you to obtain a condom close to your house or to where you work?	<table><tr><td>Under 15 Mins</td><td>1</td></tr><tr><td>15 to 30 Mins</td><td>2</td></tr><tr><td>31 to 60 Mins</td><td>3</td></tr><tr><td>More than 60 Mins</td><td>4</td></tr><tr><td>DON'T KNOW</td><td>88</td></tr><tr><td>NO RESPONSE</td><td>99</td></tr></table>	Under 15 Mins	1	15 to 30 Mins	2	31 to 60 Mins	3	More than 60 Mins	4	DON'T KNOW	88	NO RESPONSE	99																									
Under 15 Mins	1																																						
15 to 30 Mins	2																																						
31 to 60 Mins	3																																						
More than 60 Mins	4																																						
DON'T KNOW	88																																						
NO RESPONSE	99																																						
Q611	How many condoms do you have on hand right now in your room (if brothel-based) or on your person (if street-based)?	<table><tr><td>Number of condoms on hand</td><td>__ __ </td></tr><tr><td>NO REESPONSE</td><td>99</td></tr></table>	Number of condoms on hand	__ __	NO REESPONSE	99																																	
Number of condoms on hand	__ __																																						
NO REESPONSE	99																																						

**FHI360, FHI360, Bio-BSS 2015:**

**Section 6(continued) female condoms**

Section 4 (continued) female condoms				
No.	Questions and Filters	Coding categories		Skip to
Q612	Have you ever heard of a female condom? (Show picture or sample of one.) <i>I mean a rubber object that a woman put into her vagina before sex</i>	YES	1	<input type="checkbox"/> Q701 <input type="checkbox"/> Q701
		NO	2	
		DON'T KNOW	88	
		NO RESPONSE	99	
Q613	Have you ever used a female condom?	YES	1	
		NO	2	

	(Show picture or sample of one.)	DON'T KNOW 88 NO RESPONSE 99	
Q614	Do you know of any place or person from which you can obtain female condoms?	YES 1 NO 2 NO RESPONSE 99	<input type="checkbox"/> Q701
Q615	Which places do you know where you can obtain female condoms?  <b>PROBE AND RECORD ALL ANSWERS</b>  Any others?	Yes No Shop 1 2 Pharmacy 2 2 Market 2 2 Clinic 2 2 Hospital 2 2 Family planning centre 2 2 Bar/guest house/hotel 2 2 Peer educator 2 2 Friend 2 2 OTHER _____ 1 2 NO RESPONSE 99	
Q616	Have you ever purchase female condom?	YES 1 NO 2 NO RESPONSE 99	<input type="checkbox"/> Q701
Q617	Why have you never purchased female condom?	It is expensive 1 Don't know where to buy them 2 Other _____ 3 NO RESPONSE 99	
Q618	How many female condoms do you have on hand right now in your room (if brothel-based) or on your person (if street-based)?	Number of condoms on hand  __ __  NO REESPONSE 99	

**FHI360, FHI360, Bio-BSS 2015:**

**Section 7 STDs**

No.	Questions and filters	Coding categories	Skip to
Q701	Have you ever heard of diseases that can be passed through sexual intercourse?	YES 1 NO 2 NO RESPONSE 99	<input type="checkbox"/> Q704
Q702	Can you describe any symptoms of STDs in women? ..... Any others?  <b>DO NOT READ OUT THE SYMPTOMS</b>  <b>CIRCLE 1 FOR ALL MENTIONED.</b>	Yes No ABDOMINAL PAIN 1 2 GENITAL DISCHARGE 1 2 FOUL SMELLING DISCHARGE 1 2 BURNING PAIN ON URINATION 1 2 GENITAL ULCERS/SORES 1 2 SWELLINGS IN GROIN AREA 1 2	



	<b>CIRCLE 2 FOR ALL NOT MENTIONED.</b>  <b>MORE THAN ONE ANSWER IS POSSIBLE.</b>	ITCHING 1 2 OTHER _____ 1 2 DO NOT KNOW 88 NO RESPONSE 99																									
Q703	Can you describe any symptoms of STDs in men? ..... Any others?  <b>DO NOT READ OUT THE SYMPTOMS</b>  <b>CIRCLE 1 FOR ALL MENTIONED.</b>  <b>CIRCLE 2 FOR ALL NOT MENTIONED.</b>  <b>MORE THAN ONE ANSWER IS POSSIBLE.</b>	<table><tr><td></td><td>Yes</td><td>No</td></tr><tr><td>GENITALDISCHARGE</td><td>1</td><td>2</td></tr><tr><td>BURNING PAIN ON URINATION</td><td>1</td><td>2</td></tr><tr><td>GENITALULCERS/SORES</td><td>1</td><td>2</td></tr><tr><td>SWELLINGS IN GROIN AREA</td><td>1</td><td>2</td></tr><tr><td>OTHER _____</td><td>1</td><td>2</td></tr><tr><td>DONOTKNOW</td><td></td><td>88</td></tr><tr><td>NORESPONSE</td><td></td><td>99</td></tr></table>		Yes	No	GENITALDISCHARGE	1	2	BURNING PAIN ON URINATION	1	2	GENITALULCERS/SORES	1	2	SWELLINGS IN GROIN AREA	1	2	OTHER _____	1	2	DONOTKNOW		88	NORESPONSE		99	
	Yes	No																									
GENITALDISCHARGE	1	2																									
BURNING PAIN ON URINATION	1	2																									
GENITALULCERS/SORES	1	2																									
SWELLINGS IN GROIN AREA	1	2																									
OTHER _____	1	2																									
DONOTKNOW		88																									
NORESPONSE		99																									
Q704	Have you had leakage (a genital <u>discharge</u> ) during the past 12 months? (..... <i>help client with month 12 month prior to survey</i> )	YES 1 NO 2 DON'T KNOW 88 NO RESPONSE 99																									
Q705	Have you had a sore on your private parts (genital <u>ulcer/sore</u> ) during the past 12 months (....get month 12 months prior to survey)	YES 1 NO 2 DON'T KNOW 88 NO RESPONSE 99																									
Q706	FILTER CHECK Q704 AND 705 HAD DISCHARGE OR SORE IN THE LAST 12 MONTHS  __	NO DISCHARGE OR ULCER  __  <input type="checkbox"/> IN LAST 12 MONTHS	<input type="checkbox"/> <b>Q710</b>																								
Q707	Did you do any of the following the last time you had a genital ulcer / sore or discharge: READ OUT; MORE THAN ONE ANSWER IS POSSIBLE  a. Seek advice/medicine from a government clinic or hospital?  b. Seek advice/medicine from a workplace clinic or hospital?  c. Seek advice /medicine from a church or charity-run clinic or hospital?	<table><tr><td>YES</td><td>NO</td></tr><tr><td>1</td><td>2</td></tr><tr><td>1</td><td>2</td></tr><tr><td>1</td><td>2</td></tr></table>	YES	NO	1	2	1	2	1	2																	
YES	NO																										
1	2																										
1	2																										
1	2																										

	<p>d. Seek medicine from a private clinic or hospital?</p> <p>e. Seek advice/medicine from a chemist?</p> <p>f. Seek advice/ medicine from a traditional healer?</p> <p>g. Bought capsules on the street?</p> <p>h. Took medicine you had at home?</p> <p>i. Seek advice/medicine from the COH/Blue house</p> <p>j. Stop having sex during the time when you had the symptoms?</p> <p>k. <b>Always</b> use a condom when having sex during the time you had symptoms?</p> <p>l. Tell your sexual partner about the discharge / STD?</p>	<p>1 2</p> <p>1 2</p> <p>1 2</p> <p>1 2</p> <p>1 2</p> <p>1 2</p> <p>1 2</p> <p>1 2</p>	
Q708	If yes to any of the above (a-i) how long or how many days did it take between beginning of symptoms and to seeking care?	<p>NUMBER OF DAYS       __ __ </p> <p>DO NOT KNOW      88</p> <p>NO RESPONSE      99</p>	
Q709	Last time you had STD which was first source of treatment?	<p>Government hospital/clinic      1</p> <p>Workplace clinic/hospital      2</p> <p>Sought treatment from private clinic      3</p> <p>Sought medicine from trad healer      4</p> <p>Sought treatment from COH house      5</p> <p>Bought medicine from pharmacy/chemist      6</p> <p>Bought medicine from market      7</p> <p>Others (specify.....)      8</p>	
Q710	Are you currently using any method to protect yourself from getting pregnant?	<p>YES      1</p> <p>NO      2</p> <p>NO RESPONSE      99</p>	<p><input type="checkbox"/> Q712</p> <p><input type="checkbox"/> Q712</p>
Q711	Which methods are you currently using to protect yourself from getting pregnant?	<p>Yes No</p> <p>TRADITIONALMETHOD 1 2</p>	

		ORALCONTRACEPTIVES PILLS 1 2  INJECTION 1 2  NORPLANT(JADELLE) 1 2  IUD 1 2  MALECONDOMS 1 2  FEMALECONDOMS 1 2  SPERMICIDES 1 2  DIAPHARM 1 2  NATURAL 1 2  OTHER..... 1 2  NORESPONSE 99	
Q712	Have you ever lost a pregnancy	YES 1 NO 2 DON'T KNOW 88 NO RESPONSE 99	

**FHI360, Bio-BSS 2015:**

***Section8 Knowledge, opinions, and attitudes***

No.	Questions and filters	Coding categories	Skip to
Q801	Have you ever heard of HIV or the disease called AIDS?	YES 1 NO 2 NO RESPONSE 99	<input type="checkbox"/> <b>Q901</b>
Q802	Do you know anyone who is infected with HIV or who has died of AIDS?	YES 1 NO 2 DON'T KNOW 88 NO RESPONSE 99	<input type="checkbox"/> <b>Q804</b>
Q803	Do you have a close relative or close friend who is infected with HIV or who has died of AIDS?	YES, A CLOSE RELATIVE 1 YES, A CLOSE FRIEND 2 NO 3 NO RESPONSE 99	
Q804		YES 1 NO 2	

	Can people <b>protect</b> themselves from the HIV virus by using a condom correctly every time they have sex?	DON'T KNOW 88 NO RESPONSE 99	
Q805	Can a person get the HIV from Mosquito bites?	YES 1 NO 2 DON'T KNOW 88 NO RESPONSE 99	
Q806	Can people protect themselves from the HIV virus by having <b>one uninfected faithful</b> sex partner?	YES 1 NO 2 DON'T KNOW 88 NO RESPONSE 99	
Q807	Can people protect themselves from the HIV virus by abstaining (not having) from sexual intercourse?	YES 1 NO 2 DON'T KNOW 88 NO RESPONSE 99	
Q808	Can a person get the HIV virus by sharing a meal with someone who is infected?	YES 1 NO 2 DON'T KNOW 88 NO RESPONSE 99	
Q809	Can a person get the HIV by getting injections with a needle that was already used by someone else?	YES 1 NO 2 DON'T KNOW 88 NO RESPONSE 99	
Q810	Do you think that a healthy-looking person can be infected with HIV the virus that causes AIDS?	YES 1 NO 2 DON'T KNOW 88 NO RESPONSE 99	
Q811	Can a pregnant woman infected with HIV or AIDS transmit the virus to her unborn child?	YES 1 NO 2 DON'T KNOW 88 NO RESPONSE 99	
Q812	Can a pregnant woman infected with HIV or AIDS pass the virus to her child at time of delivery (child birth)?	YES 1 NO 2 DON'T KNOW 88 NO RESPONSE 99	
Q813	Can a woman infected with HIV or AIDS pass the virus to her child through breastfeeding?	YES 1 NO 2 DON'T KNOW 88 NO RESPONSE 99	
Q814	What can a pregnant woman do to decrease the chance of passing HIV to her unborn child?	<div> <div>YES</div> <div>No</div> </div> <div> <div>Take medication (Antiretroviral)</div> <div>1</div> <div>2</div> </div> <div> <div>OTHER_____</div> <div>1</div> <div>2</div> </div>	

	<b>DO NOT READ LIST</b>  <b>CIRCLE ALL THAT ARE MENTIONED.</b>	DON'T KNOW 88 NO RESPONSE 99	
Q815	Do you know of any hospital program that is offering mother to child transmission of HIV prevention services?	YES 1 NO 2 DON'T KNOW 88 NO RESPONSE 99	<input type="checkbox"/> Q817 <input type="checkbox"/> Q817
Q816	Where are mother to child transmission prevention services offered in this site?	_____ _____ _____ DON'T KNOW 88	
Q817	Would you be willing to share a meal with a person you knew had HIV or AIDS?	YES 1 NO 2 DON'T KNOW 88 NO RESPONSE 99	
Q818	If a male relative of yours became ill with HIV, the virus that causes AIDS, would you be willing to care for him in your household?	YES 1 NO 2 DON'T KNOW 88 NO RESPONSE 99	
Q819	If a student has HIV but is not sick, should he or she be allowed to continue attending school?	YES 1 NO 2 DON'T KNOW 88 NO RESPONSE 99	
Q820	If a female relative of yours become ill with HIV, the virus that causes AIDS would you be willing to care for her in your household?	YES 1 NO 2 DON'T KNOW 88 NO RESPONSE 99	
Q821	If a teacher has HIV but is not sick, should he or she be allowed to continue teaching in school?	YES 1 NO 2 DON'T KNOW 88 NO RESPONSE 99	
Q822	If you knew a shopkeeper or food seller had the HIV virus, would you buy food from them?	YES 1 NO 2 DON'T KNOW 88 NO RESPONSE 99	
Q823	If a member of your family become ill with HIV, the virus that causes AIDS, would you want it to remain secret?	YES 1 NO 2 DON'T KNOW 88 NO RESPONSE 99	
Q824	Is it possible in your community for someone to get a confidential test to find out if they are infected with HIV? By confidential I mean that no one will know the result if you don't want them to know it.?	YES 1 NO 2 NO RESPONSE 99	

Q825	Do you personally know someone who has been denied health services in the last 12 months because he/she is suspected to have HIV or has AIDS?	YES 1 NO 2 NO RESPONSE 99	
Q826	Do you personally know someone who has been denied involvement in social events, religious services, or community events in the past 12 months because he/she is suspected to have HIV or has AIDS?	YES 1 NO 2 NO RESPONSE 99	
Q827	Do you personally know someone who has been verbally abused or teased in the past 12 months because he/she is suspected to have HIV or has AIDS?	YES 1 NO 2 NO RESPONSE 99	
Q828	<b><i>Restate confidentiality statement</i></b> I don't want to know the result, but have <i>you</i> ever had an HIV test?	YES 1 NO 2 NO RESPONSE 99	<input type="checkbox"/> Q8 30
Q829	Did you voluntarily undergo the HIV test, or were you required to have the test?	Voluntary 1 Required 2 NO RESPONSE 99	
Q830	Please do not tell me the result, but did you find out the result of your test?	YES 1 NO 2 NO RESPONSE 99	
Q831	When did you have your most recent HIV test?	WITHIN THE PAST YEAR 1 BETWEEN 1-2 YEARS 2 BETWEEN 2-4 YEARS 3 MORE THAN 4 YEARS AGO 4 DON'T KNOW 8 NO RESPONSE 9	
Q832	Would you be interested in having an HIV test?	YES 1 NO 2 NO RESPONSE 99	<input type="checkbox"/> Q8 32
Q833	Why would you not be interested in an HIV test?	SCARED 1 DON'T WANT TO KNOW 2 FEAR TO BE ISOLATED 3 THERE IS NO CURE FOR HIV 4 LACK OF CONFIDENTIALITY 5 OTHER SPECIFY-----6	
Q834	Do you think your chances of getting the AIDS virus are great, moderate, small, or do you think that you have	No chance 1 Small 2 Moderate 3	

	no chances of getting the AIDS virus?	Great 4 DO NOT KNOW 88 NO RESPONSE 99	<input type="checkbox"/> Q8 34 <input type="checkbox"/> Q8 34
Q835	Why do you think your chances of getting the AIDS virus are low?  <b>CIRCLE ALL MENTIONED</b>  Any other reason	USE CONDOMS 1 HAS ONLY ONE PARTNER 2 LIMITS NUMBER OF ARTNER 3 PARTNER HAS NO OTHERS 4 PARTNER LOOKS HEALTHY 5 PARTNER TESTED NEGATIVE 6 OTHER (SPECIFY.....) 88 NO RESPONSE 99	
Q836	Why do you think you are at some risk of getting the AIDS virus?  <b>CIRCLE ALL MENTIONED</b>  Any other?	Don't use condom Always 1 Condoms break 2 Condoms not 100% safe 3 Do not trust partner 4 Partner has other partners 5 Partner had STIs 6 Partner looks sick 7 Other (specify.....) 88 <hr/> No response 99	
Q837	If you believe that your partner has an STI, can you have sex with him if he refuses to use a condom?	YES 1 NO 2 NO RESPONSE 99	
Q838	Have you heard about antiretroviral (ARV) drugs (USE LOCAL NAMES/EXPLAIN) that people infected with the AIDS virus can get from a doctor at the hospital/clinic	YES 1 NO 2 NO RESPONSE 99	<input type="checkbox"/> Q8 38
Q839	If yes, do you know of somebody (friend, relative, or co-worker) who is taking antiretroviral drugs?	YES 1 NO 2 NO RESPONSE 99	
Q840	How easy do you think it is for people living with HIV/AIDS to receive health services in public health centres?	Very Easy 1 Somewhat Easy 2 Somewhat difficult 3 Very difficult 4 Don't know 5	

**FHI360, Bio-BSS 2015:**

***Section 9 Exposure to prevention***

No.	Questions and filters	Coding categories	Skip to
Q901	Some men have been circumcised, whom would you prefer to have sex with? A man who has been	AMANCIRCUMCISED 1 AMANNOTCIRCUMCISED 2 DON'TKNOW 8	

	circumcised or a man who has not been circumcised?	NORESPONSE 9	
Q902	Was the last sexual partner circumcised?	YES 1 NO 2 DON'T KNOW 8 NO RESPONSE 9	
Q903	What is the main reason men get circumcised for?	Tradition/religion 1 Health/Hygiene 2 Sexual satisfaction 3 Prevent genital infections 4 Other Specify _____ 5 Don't know 8	
Q904	Would you encourage your boyfriend/man to get circumcised?	Yes 1 No 2 DON'T KNOW 8 NO REPONSE 9	<input type="checkbox"/> Q913
Q905	What do you think of male circumcision? Do you think it can protect a man from contracting HIV during sexual intercourse if a woman is infected?	YES 1 NO 2 DON'T KNOW 3 NO RESPONSE 4	
Q906	When your friends have an STI where do they <b>MAINLY</b> seek care  <b>CIRCLE ONLY ONE ANSWER</b>	Government health facility 1 Private medical practitioners 2 Traditional practitioners 3 Self treatment 4 COHII project centre 5 DO NOT KNOW 6 NO RESPONSE 7	
Q907	If you had an STI where would you <b>PREFER</b> to seek care?  <b>CIRCLE ONLY ONE ANSWER</b>	Government health facility 1 Private medical practitioners 2 Traditional practitioners 3 Self treatment 4 COH project centre 5 DO NOT KNOW 6 NO RESPONSE 7	
Q908	Have you ever heard of COH centre/project?	YES 1 NO 2 NO RESPONSE 99	
Q909	How many times did you visit the COH Centres in the last 12 months?	_____	
Q910	Have you ever received service from mobile or outreach services provided by COH	YES 1 NO 2 NO RESPONSE 99	<input type="checkbox"/> Q914
Q911	How many times have you received STI services from COH or mobile/outreach service?	Once 1 Few times 2 Several times 3 NO RESPONSE 99	
Q912	Who introduced you to COH project?	PEER EDUCATORS (PE) 1	



		FRIEND WHO IS NOT PE 2 HEALTH CARE PROVIDER 3 OTHER(Specify.....) 4 NORESPONSE 99	
Q913	Last time you visited COH project were you given any information, or educational material?	YES 1 NO 2 NO RESPONSE 99	
Q914	Last time you sought care at COH facility, how satisfied were you with the care you received? Very satisfied, somewhat satisfied or not satisfied?	Very satisfied 1 Somewhat satisfied 2 Not satisfied 3 DON'T KNOW 88 NO RESPONSE 99	
Q915	Would you go back to COH facility if you needed it again?	YES 1 NO 2 DON'T KNOW 88 NO RESPONSE 99	<input type="checkbox"/> Q913
Q916	Why would you not go back to COH/CBI facility	YES NO Staff not friendly 1 2 No drugs 1 2 There is no privacy 1 2 Other (Specify.....) 1 2 NO RESPONSE 99	
Q917	Last time you visited COH/CBI facility how was the reception?	Very good 1 Good 2 Poor 3 DO NOT KNOW 88 NO RESPONSE 99	
Q918	If answered YES to Q906 (received service from mobile/outreach)  Last time you received service through mobile/outreach, how would you describe service received?	Very good 1 Good 2 Poor 3 DO NOT KNOW 88	
	Communication		
Q919	During the last 4 weeks how often have you listened to the radio? Would you say.....? READ OUT  CIRCLE ONE	Every day 1 At least once a week 2 Less than once a week 3 Did not list to radio in last weeks 4 DON'T KNOW 8 NO RESPONSE 9	
Q920	During the last 4 weeks how often have you watched TV? Would you say.....? READ OUT  CIRCLE ONE	Every day 1 At least once a week 2 Less than once a week 3 Did not list to radio in last weeks 4 DON'T KNOW 8 NO RESPONSE 9	

Q921	During the last 4 weeks how often have you read any of the daily news paper e.g. Post, Times of Zambia, and Zambia Daily mail? Would you say.....? <b>READ OUT</b>  <b>CIRCLE ONE</b>	Every day 1 At least once a week 2 Less than once a week 3 Did not list to radio in last weeks 4 DON'T KNOW 8 NO RESPONSE 9	
Q922	Do you feel you have adequate information regarding prevention of HIV and STIs?	YES 1 NO 2 NORESPONSE 9	
Q923	Sometimes we do not provide true or correct answers to a strangers/researcher for first time, Is their any response to the question/s that I have asked you that you would like to change?	YES 1 NO 2 NORESPONSE 9	
Q924	Have you been asked same set of questions or interviewed in the past in any of the sites; Chirundu, Chipata, Kapiri-Mposhi, Livingstone or Solwezi	YES 1 NO 2 DON'TKNOW 8 NORESPONSE 9	
Q925	Do you have a question/s to ask me?	YES 1 NO 2 NORESPONSE 9	
Q926	Time Interview completed	-----	

## 6.2 Long Distance Driver Questionnaire BSS 2015

### Behavioral Surveillance Survey (BSS) among Male Long Distance Truck Drivers in Five Corridors of Hope Project Sites in Zambia.

**Sites:** Ndola, Chirundu, Kapiri Mposhi, Livingstone/Kazungula, and Solwezi.

001 QUESTIONNAIRE IDENTIFICATION NUMBER |\_\_|\_\_|\_\_|\_\_|

002 DISTRICT \_\_\_\_\_

003 PROVINCE \_\_\_\_\_

004 PLACE \_\_\_\_\_ (provide appropriate sample place)

**Introduction:** “My name is..... I’m working for Tropical Diseases Research Centre in collaboration with the Corridors of Hope III (COH III) project under FHI360. We are interviewing people here in [\_\_\_\_\_ *name of town, province or site*] in order to find out about people’s HIV/AIDS knowledge, attitudes and behavior. Have you been interviewed in the past few days or weeks for this study? **IF THE RESPONDENT HAS BEEN INTERVIEWED BEFORE DURING THIS ROUND OF BSS, DO NOT INTERVIEW THIS PERSON AGAIN.** Tell them you cannot interview them a second time. Thank them and end the interview. If they have not been interviewed before, continue: get consent using the standard consent form.

	Visit 1	Visit 2	Visit 3
Date			
Interviewer			
Result			

Results: Completed 1; Responded not available 2; Refused 3; Partially completed 4; Others 5.

007 INTERVIEWER: CODE [\_\_|\_\_] Name \_\_\_\_\_

008 DATE OF INTERVIEW: \_\_ \ \_\_ \ \_\_  
D \ M \ Year

009 TOTAL TIME USED: Hrs. \_\_\_\_\_ Min. \_\_\_\_\_.

010 CHECKED BY SUPERVISOR: Signature \_\_\_\_\_ Date \_\_\_\_\_

The Male Long Distance Truck Driver questionnaire includes the following sections:

Section 0 – Questionnaire identification data (6 codes)	
Section 1 – Background characteristics	19 questions
Section 2 – Marriage & living in partnership	4 questions
Section 3 – Sexual history: numbers and types of partners	5 questions
Section 4 – Sexual history: wife, living with partner	12 questions
Section 5 – Sexual history: girlfriend/regular partner	6 questions
Section 6 – Sexual history: commercial partners & Non-regular partners'	13 questions
Section 7 – Male and female condoms	16 questions
Section 8 – STDs	5 questions
Section 9 – Knowledge, opinions, and attitudes towards HIV/AIDS	30 questions
Section 10 – Exposure to prevention	14 questions
<b>TOTAL NUMBER OF QUESTIONS .....</b>	<b>124 Questions</b>

## Section 1: Background characteristics

No.	Questions and filters	Coding categories	Skip to
Q100	TIME INTERVIEW STARTED		
Q101	In what month and year were you born?	<b>MONTH</b> [__] DON'T KNOW MONTH 88 NO RESPONSE 99 <b>YEAR</b> [__] DON'T KNOW YEAR 88 NO RESPONSE 99	
Q102	How old were you at your last birthday? (COMPARE AND CORRECT Q102 IF NEEDED)	AGE IN COMPLETED YEARS [__] DON'T KNOW 88 NO RESPONSE 99	
Q103	Have you <b>ever</b> attended school?	YES 1 NO 2 NO RESPONSE 99	→Q106 →Q106
Q104	What is the highest level of school you completed: primary, secondary or higher? <b>CIRCLE ONE</b>	PRIMARY 1 SECONDARY 2 HIGHER 3 NO RESPONSE 99	
Q105	How many total years of education have you completed up to now?	# YEARS COMPLETED [__] NO RESPONSE 99	
Q106	What is your religion?  <b>CIRCLE ONE</b>	CHRISTIAN 1 MUSLIM 2 BUDDHIST 3 HINDU 4 OTHER (SPECIFY)----- 5 NO RELIGION 6 NO RESPONSE 99	→Q108 →Q108 →Q108 →Q108 →Q108 →Q108
Q107	What is your Christian denomination or Church?	Catholic 1 United Church of Zambia 2 Seventh Day Adventist 3 Reformed Church in Zambia 4 Pentecostal (Born Again) 5 Anglican 6 Jehovah Witness 7 Baptist 8 Others (SPECIFY)_____ 9 NO RESPONSE 99	→Q108
Q108	How long have you stayed in days here at this site/border?	LESS THAN A DAY 1 ONE DAY 2 TWO DAYS 3 THREE DAYS 4 FOUR DAYS 5 FIVE DAYS AND MORE 6	
Q109	In the last 12 months have you been away from your home for more than one month altogether?	YES 1 NO 2 DON'T KNOW 3 NO RESPONSE 4	
Q110	How many times have you come through this border/site in the past 3 months?	NUMBER OF TIMES SINCE LAST [__] DON'T KNOW 88 NO RESPONSE 99	
Q111	How long did you stay last time you were at this border/site?	DURATION IN DAYS [__] DON'T KNOW 88 NO RESPONSE 99	
Q112	To which ethnic group or tribe do you belong	Ndebele 1 Shona 2 Bemba 3 Lozi 4 Nyanja ( Ngoni, Chewa, Nsenga) 5 Other (Specify)_____ 6	
Q113	In which country is your trucking company based? <b>CIRCLE ONE</b>	South Africa 1 Somalia 2 Malawi 3 Zimbabwe 4	

No.	Questions and filters	Coding categories	Skip to
		Tanzania 5 Kenya 6 Mozambique 7 Congo DR 8 Botswana 10 Zambia 11 OTHER (SPECIFY)----- 12 NO RESPONSE 99	
Q114	Where do you reside when you are not traveling?  <b>RESPONDENT TO PICK ONLY ONE</b>	South Africa 1 Somalia 2 Malawi 3 Zimbabwe 4 Tanzania 5 Kenya 6 Mozambique 7 Congo DR 8 Botswana 10 Zambia 11 OTHER (SPECIFY)----- 12 NO RESPONSE 99	
Q115	What is your country of origin?	South Africa 1 Somalia 2 Malawi 3 Zimbabwe 4 Tanzania 5 Kenya 6 Mozambique 7 Congo DR 8 Botswana 10 Zambia 11 OTHER (SPECIFY)----- 12 NO RESPONSE 99	
Q116	During the last 4 weeks how often have you had drinks containing alcohol? Would you say ..... <b>READ OUT</b> <b>CIRCLE ONE</b>	Every day 1 At least once a week 2 Less than once a week 3 Never 4 DON'T KNOW 88 NO RESPONSE 99	
Q117	Some people have tried injecting drugs using a syringe. Have you injected drugs in the past 12 months?  <b>DRUGS INJECTED FOR MEDICAL PURPOSES OR TREATMENT OF AN ILLNESS DO NOT COUNT</b>	YES 1 NO 2 DON'T KNOW 3 NO RESPONSE 4	
Q118	Some people have tried a range of different types of drugs. Which of the following, if any, have you tried? <b>READ LIST</b> Any other?	YES NO DK NR Daga (Ichamba) 1 2 88 99 Héroïne 1 2 88 99 Cocaine 1 2 88 99 Mandrax 1 2 88 99 Other (SPECIFY)----- 1 2 88 99	<b>IF NO DK NR → Q201</b>
Q119	<b>IF EVER TRIED ANY OF THE DRUGS</b> During the last 4 weeks, would you say you took the above drug 1-everyday, 2-at least once a week, 3-less than once a week, or 4- never.	YES NO DK NR Daga (Ichamba) 1 2 88 99 Héroïne 1 2 88 99 Cocaine 1 2 88 99 Mandrax 1 2 88 99 Other (SPECIFY)----- 1 2 88 99	

## Section 2 Marriage and live-in partnerships

No.	Questions and filters	Coding categories	Skip to
Q201	Have you <i>ever</i> been married?	YES 1 NO 2 NO RESPONSE 99	→ Q203 → Q203
Q202	How old were you when you first married?	Age in years [ ] DON'T KNOW 88 NO RESPONSE 99	
Q203	What is your <b>current marital</b> relationship?  (PROBE IF RESPONSE NOT CLEAR)	currently married, living with spouse 1 currently married, living with other sexual partner 2 currently married, not living with spouse or any other sexual partner 3 not married, living with sexual partner 4 not married, not living with sexual partner 5 NO RESPONSE 99	→ Q301 → Q301
Q204	<b>IF MARRIED:</b>  Do you have more than one wife?	YES 1 NO 2 NO RESPONSE 99	

## Section 3 Sexual history: numbers and types of partners

Now I'd like to ask you some questions that may be difficult and personal. But as I said at the beginning, your answers to these questions will be treated with strict confidentiality and will not be linked to you in any way. The questions that will follow will all be about your sexual activities and partners...

No.	Questions and filters	Coding categories	Skip to
Q301	Have you ever had sexual intercourse?  [For the purposes of this survey, "sexual intercourse" is defined as vaginal or anal sex]	YES 1 NO 2 NO RESPONSE 99	→Q801
Q302	At what age did you first have sexual intercourse?	AGE IN YEARS [ ] DON'T KNOW 88 NO RESPONSE 99	
Q303	Have you had sexual intercourse in the last 12 months? That is since August last year	YES 1 NO 2 NO RESPONSE 99	→Q801
Q304	Think about female <i>sexual</i> partners you've had in the last 12 months.  How many are:  a) your wife/s  b) living in partner  c) girlfriend/s not living with you (regular)  d) someone paid for sex (commercial)  e) non-regular, non-commercial (casual)	<b>WIVES</b> [ ] DON'T KNOW 88 NO RESPONSE 99  <b>LIVING IN PARTNER</b> [ ] DON'T KNOW 88 NO RESPONSE 99  <b>GIRL FRIEND</b> [ ] DON'T KNOW 88 NO RESPONSE 99  <b>PAID FOR SEX</b> [ ] DON'T KNOW 88 NO RESPONSE 99  <b>CASUAL</b> [ ] DON'T KNOW 88 NO RESPONSE 99	
Q305	-We've just talked about your female sexual partners. Have you ever had any male sexual partners?	YES 1 NO 2	→Q401

		<b>NO RESPONSE</b>	<b>99</b>	
	-Have you had sexual intercourse with any of your male partners in the past 12 months? ( <b>sexual intercourse defined as penetrative anal sex</b> )	<b>YES</b>	<b>1</b>	
		<b>NO</b>	<b>2</b>	→Q401
		<b>NO RESPONSE</b>	<b>99</b>	
	-How many male partners have you had intercourse with in the last 12 months?	<b>MALE partners</b>	[ ][ ]	
		<b>DON'T KNOW</b>	88	
		<b>NO RESPONSE</b>	99	

#### Section 4 Sexual history: Wife, Live in partnership

No.	Questions and Filters	Coding categories	Skip to
Q401	<b>FILTER: CHECK Q304a and/or Q304b</b>  HAD SEX WITH WIFE OR LIVING IN PARTNER DURING <u>PAST 12 MONTHS</u> .... [ ][ ]  ↓	DID NOT HAVE SEX WITH WIFE OR LIVING IN PARTNER DURING <u>PAST 12 MONTHS</u> [ ][ ]→	<b>Q501</b>
Q402	<b>If married</b>  How many times did you have sexual intercourse with your wife over the last 30 days?	Number of times [ ][ ] NO sex with WIFE 77 DON'T KNOW 88 NO RESPONSE 99	→Q407
Q403	The <b>last time</b> you had sex with wife; did you and your wife use a condom?	YES 1 NO 2 DON'T REMEMBER 88 NO RESPONSE 99	→Q405 →Q406 →Q406
Q404	Who suggested condom use that time?  <b>CIRCLE ONE</b>	Myself 1 Wife 2 Joint decision 3 NO RESPONSE 99	→Q406 →Q406 →Q406 →Q406
Q405	Why didn't you and your wife use a condom that time?  Any other reasons?  <b>DO NOT READ</b>  <b>CIRCLE ALL ANSWERS MENTIONED</b>	<b>Y N</b> Not available 1 2 Too expensive 1 2 Partner objected 1 2 Don't like them 1 2 Used other contraceptive 1 2 Didn't think it was necessary 1 2 Didn't think of it 1 2 Wanted pregnancy 1 2 Didn't think partner had a disease 1 2 Could reduce the pleasure 1 2 itching 1 2 Other (SPECIFY)_____ 1 2 DON'T KNOW 88 NO RESPONSE 99	
Q406	In general, how often did you and your wife (s) use a condom during the past 12 months?  Would you say every time, almost every time, sometimes or never?	EVERY TIME 1 ALMOST EVERY TIME 2 SOMETIMES 3 NEVER 4 DON'T KNOW 88 NO RESPONSE 99	
Q407	<b>Live in partner</b>  Do you have a live in partner, meaning a sexual partner living with you but not married to you?  <b>CHECK Q304b</b>	YES 1 NO 2 NO RESPONSE 99	→Q501



No.	Questions and Filters	Coding categories	Skip to
Q408	<b>If have live in partner</b> How many times did you have sexual intercourse with your living in partner over the last 30 days?	Number of times <input type="text"/> NO LIVE IN PARTNER 77 DON'T KNOW 88 NO RESPONSE 99	
Q409	The last time you had sex with a living in partner did you and your partner use a condom?	YES 1 NO 2 DON'T REMEMBER 8 NO RESPONSE 99	→Q411 →Q412 →Q412
Q410	Who suggested condom use that time? <b>CIRCLE ONE</b>	Myself 1 My partner 2 Joint decision 3 NO RESPONSE 99	→Q412 →Q412 →Q412 →Q412
Q411	Why didn't you and your partner use a condom that time? Any other reasons? <b>DO NOT READ LIST</b> <b>CIRCLE ALL ANSWERS MENTIONED</b>	Not available Y N Too expensive 1 2 Partner objected 1 2 Don't like them 1 2 Used other contraceptive 1 2 Didn't think it was necessary 1 2 Didn't think of it 1 2 Wanted pregnancy 1 2 Didn't think partner had a disease 1 2 Could reduce the pleasure 1 2 itching 1 2 Other (SPECIFY) _____ 1 2 DON'T KNOW 88 NO RESPONSE 99	
Q412	In general, how often did you and your live in partner(s) use a condom during the past 12 months? Would you say every time, almost every time, sometimes or never?	EVERY TIME 1 ALMOST EVERY TIME 2 SOMETIMES 3 NEVER 4 DON'T KNOW 88 NO RESPONSE 99	

### Section 5 Sexual history: GIRLFRIEND/ REGULAR partners

No.	Questions and Filters	Coding categories	Skip to
Q501	<b>FILTER: CHECK Q304c</b> HAD SEXUAL INTERCOURSE WITH A GIRL FRIEND (REGULAR/NOT LIVING TOGETHER) IN <u>LAST 12 MONTHS</u> ... <input type="checkbox"/> ↓	HAS NOT HAD SEXUAL INTERCOURSE WITH A GIRL FRIEND (REGULAR/NOT LIVING TOGETHER) IN <u>LAST 12 MONTHS</u> ... <input type="checkbox"/> →	→Q601
Q502	Think about your <b>most recent</b> girlfriend ( <i>someone you are not living together</i> ). How many times did you have sexual intercourse with this person over the last 30 days?	Number of times <input type="text"/> DON'T KNOW 88 NO RESPONSE 99	
Q503	The <b>last time</b> you had sex with a girlfriend ( <i>someone you are not living together</i> ), did you and your partner use a condom?	YES 1 NO 2 DON'T KNOW 88 NO RESPONSE 99	→Q505 →Q506 →Q506
Q504	Who suggested condom use that time? <b>CIRCLE ONE</b>	Myself 1 My partner 2 Joint decision 3 NO RESPONSE 99	→Q506 →Q506 →Q506 →Q506
Q505	Why didn't you and your partner use a condom that time? <b>DO NOT READ LIST</b> <b>CIRCLE ALL ANSWERS MENTIONED</b>	Not available Y N Too expensive 1 2 Partner objected 1 2 Don't like them 1 2 Used other contraceptive 1 2 Didn't think it was necessary 1 2 Didn't think of it 1 2	



Q608	<b>FILTER: CHECK Q304e</b>  IF HAD SEX WITH NON-REGULAR/NON-COMMERCIAL PARTNER DURING <u>PAST 12 MONTHS</u> .... [ ]  ↓	DID NOT HAVE SEX WITH NON-REGULAR /NON-COMMERCIAL PARTNER DURING <u>PAST 12 MONTHS</u> [ ]→	→Q701
Q609	Think about your <b>most recent other kind of sexual partner (non-regular and non-commercial)</b> . How many times did you have sexual intercourse with this person over the last 30 days?	Number of times [ ] DON'T KNOW 88 NO RESPONSE 99	
Q610	The <b>last time</b> you had sex with <b>other kind of sexual partner</b> ; did you and your partner use a condom?	YES 1 NO 2 DON'T KNOW 88 NO RESPONSE 99	→Q612 →Q613 →Q613
Q611	Who suggested condom use that time?  <b>CIRCLE ONE</b>	Myself 1 My partner 2 Joint decision 3 DON'T KNOW 88 NO RESPONSE 99	→Q613 →Q613 →Q613 →Q613 →Q613
Q612	Why didn't you and your partner use a condom that time?  <b>DO NOT READ LIST</b> <b>CIRCLE ALL ANSWERS MENTIONED</b>	Y N Not available 1 2 Too expensive 1 2 Partner objected 1 2 Don't like them 1 2 Used other contraceptive 1 2 Didn't think it was necessary 1 2 Didn't think of it 1 2 Wanted pregnancy 1 2 Didn't think partner had a disease 1 2 Could reduce the pleasure 1 2 itching 1 2 OTHER (SPECIFY)----- 1 2 DON'T KNOW 88 NO RESPONSE 99	
Q613	In general, how often did you and <b>other kind of sexual partner</b> (s) use a condom during the past 12 months? Would you say every time, almost every time, sometimes, or never?	EVERY TIME 1 ALMOST EVERY TIME 2 SOMETIMES 3 NEVER 4 DON'T KNOW 88 NO RESPONSE 99	

## Section 7 Condoms

No.	Questions and Filters	Coding categories	Skip to
Q701	<b>FILTER: SEE Q403, Q409, Q503, Q603, Q610</b>  CONDOMS NOT USED..... [ ] ↓	<b>CONDOMS USED</b> [ ]→	→Q704
Q702	Have you and a sexual partner <u>ever</u> used a male condom? (Show picture or sample of one.)  (The respondent may not have used a condom with partners in sections 4-6, but may have used a condom at some other time in the past.)	YES 1 NO 2 DON'T KNOW 88 NO RESPONSE 99	
Q703	Have you ever heard of a male condom? (Show picture or sample of one) (I mean a rubber object that a man puts on his penis before sex.)	YES 1 NO 2 DON'T KNOW 88 NO RESPONSE 99	

Q704	Have you ever bought a condom?	YES NO NO RESPONSE	1 2 99	→Q707
Q705	Last time you bought condom, which brand was it?	Maximum Lovers plus Care Protector Success Others (specify)----- DON'T KNOW NO RESPONSE	1 2 3 4 5 6 88 99	
Q706	Last time you bought condoms, how much did you spend?		ZK_____ DON'T KNOW 88	
Q707	How many condoms do you have on you now or do you have accessible condoms for use? <b>Would you please show them to me?</b>	Number of condoms NONE NO RESPONSE	_ _  88 99	
Q708	Do you know of any place or person from which you can obtain male condoms?	YES NO NO RESPONSE	1 2 99	→Q710 →Q710
Q709	Which places or persons do you know where you can obtain male condoms?  Any others?  <b>PROBE AND RECORD ALL ANSWERS</b>	Shop Pharmacy Market Clinic Hospital Family planning centre Bar/guest house/hotel Peer educator Friend OTHER(Specify) _____ NO RESPONSE	Yes No 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 99	
Q710	How long would it take you to obtain a condom (male or female) close to your house or to where you work?	Under 15 Mins 15 to 30 Mins 31 to 60 Mins More than 60 Mins DON'T KNOW NO RESPONSE	1 2 3 4 88 99	
Q711	<b>FOR SEXUALLY ACTIVE RESPONDENTS ONLY CHECK Q302</b> During the past 12 months, did you ever have sexual intercourse <i>without</i> using a condom with any sexual partner other than your wife or living in sex partner?	YES NO DON'T KNOW NO RESPONSE	1 2 88 99	→Q713
Q712	Why didn't you and your partner use a condom that time?  <b>ADD OTHER LOCALLY APPROPRIATE CATEGORIES AFTER PRE-TESTING.</b>  <b>CIRCLE ALL ANSWERS MENTIONED.</b>	Not available Too expensive Partner objected Don't like them Used other contraceptive Didn't think it was necessary Didn't think of it Wanted pregnancy Didn't think partner had a disease Could reduce the pleasure itching Other (SPECIFY) _____ DON'T KNOW NO RESPONSE	<b>Y N</b> 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 88 99	
Q713	<b>FEMALECONDOMS</b>  Have you ever heard of a female condom? <b>(Show picture or sample of one.)</b>	YES NO DON'T KNOW NO RESPONSE	1 2 88 99	→Q801 →Q801

Q714	Have you <u>ever</u> used a female condom? (Show picture or sample of one.)	YES NO DON'T KNOW NO RESPONSE	1 2 88 99	
Q715	Do you know of any place or person from which you can obtain female condoms?	YES NO NO RESPONSE	1 2 99	
Q716	Where would you feel most comfortable buying female condoms? Where do you prefer to buy condoms? (Read list)	Shop Pharmacy Market Bar/guest house/hotel Other (SPECIFY) _____ NO RESPONSE	Yes No 1 2 1 2 1 2 1 2 1 2 99	

### Section 8 STDs

No.	Questions and filters	Coding categories	Skip to
Q801	Have you ever heard of diseases that can be passed through sexual intercourse?	YES NO NO RESPONSE	1 2 99 →Q804
Q802	Can you describe any symptoms of STDs in men? Any others?  <b>DO <u>NOT</u> READ OUT THE SYMPTOMS</b>  <b>CIRCLE 1 FOR ALL MENTIONED.</b>  <b>CIRCLE 2 FOR ALL <i>NOT</i> MENTIONED.</b>  <b>MORE THAN ONE ANSWER IS POSSIBLE.</b>	Yes No GENITAL DISCHARGE 1 2 BURNING PAIN ON URINATION 1 2 GENITAL ULCERS/SORES 1 2 SWELLINGS IN GROIN AREA 1 2 OTHER (SPECIFY) _____ 1 2 DO NOT KNOW 88 NO RESPONSE 99	
Q803	Can you describe any symptoms of STDs in women? ..... Any others?  <b>DO <u>NOT</u> READ OUT THE SYMPTOMS</b>  <b>CIRCLE 1 FOR ALL MENTIONED.</b>  <b>CIRCLE 2 FOR ALL <i>NOT</i> MENTIONED.</b>  <b>MORE THAN ONE ANSWER IS POSSIBLE.</b>	Yes No ABDOMINAL PAIN 1 2 GENITAL DISCHARGE 1 2 FOUL SMELLING DISCHARGE 1 2 BURNING PAIN ON URINATION 1 2 GENITAL ULCERS/SORES 1 2 SWELLINGS IN GROIN AREA 1 2 ITCHING 1 2 OTHER (SPECIFY)----- 1 2 DO NOT KNOW 88 NO RESPONSE 99	
Q804	Have you had leakage (genital discharge) during the past 12 months?	YES NO DON'T KNOW NO RESPONSE	1 2 88 99
Q805	Have you had a genital ulcer/sore during the past 12 months?	YES NO DON'T KNOW NO RESPONSE	1 2 88 99

### Section 9 Knowledge, opinions, and attitudes

No.	Questions and filters	Coding categories	Skip to
Q901	Have you ever heard of HIV or the disease called AIDS?	YES NO	1 2 →Q923

		NO RESPONSE	99	
Q902	Do you know anyone who is infected with HIV or who has died of AIDS?	YES NO DON'T KNOW NO RESPONSE	1 2 88 99	→Q904
Q903	Do you have a close relative or close friend who is infected with HIV or who has died of AIDS?	YES, A CLOSE RELATIVE YES, A CLOSE FRIEND YES, CLOSE RELATIVE & FRIEND NO NO RESPONSE	1 2 3 4 99	
Q904	Can people <b>protect</b> themselves from the HIV virus by using a condom correctly every time they have sex?	YES NO DON'T KNOW NO RESPONSE	1 2 88 99	
Q905	Can a person get the HIV from Mosquito bites?	YES NO DON'T KNOW NO RESPONSE	1 2 88 99	
Q906	Can people protect themselves from the HIV virus by having <b>one faithful, uninfected</b> sex partner?	YES NO DON'T KNOW NO RESPONSE	1 2 88 99	
Q907	Can people protect themselves from the HIV virus by abstaining (not having) from sexual intercourse?	YES NO DON'T KNOW NO RESPONSE	1 2 88 99	
Q908	Can a person get the HIV virus by sharing a meal with someone who is infected?	YES NO DON'T KNOW NO RESPONSE	1 2 88 99	
Q909	Can a person get the HIV by getting injections with a needle that was already used by someone else?	YES NO DON'T KNOW NO RESPONSE	1 2 88 99	
Q910	Do you think that a healthy-looking person can be infected with HIV the virus that causes AIDS?	YES NO DON'T KNOW NO RESPONSE	1 2 88 99	
Q911	Can a pregnant woman infected with HIV or AIDS transmit the virus to her unborn child?	YES NO DON'T KNOW NO RESPONSE	1 2 88 99	
Q912	Can a pregnant woman infected with HIV or AIDS pass the virus to her child at time of delivery (child birth)?	YES NO DON'T KNOW NO RESPONSE	1 2 88 99	
Q913	Can a pregnant woman infected with HIV or AIDS pass the virus to her child through breastfeeding?	YES NO DON'T KNOW NO RESPONSE	1 2 88 99	
Q914	What can a pregnant woman do to reduce the chance of passing HIV to her unborn child?  <b>DO NOT READ LIST</b>  <b>CIRCLE ALL THAT ARE MENTIONED.</b>	Take medication (Antiretroviral) OTHER (specify)_____ DON'T KNOW NO RESPONSE	Yes No 1 2 1 2 88 99	

Q915	Do you know of any hospital/health facility program that is offering mother to child transmission of HIV prevention services?	YES NO DON'T KNOW NO RESPONSE	1 2 88 99	
Q916	Where are mother to child transmission prevention services offered in this site?	_____ Don't know 88		
Q917	Would you be willing to share a meal with a person you knew had HIV or AIDS	YES NO DON'T KNOW NO RESPONSE	1 2 88 99	
Q918	If a male relative of yours become ill with HIV, the virus that causes AIDS, would you be willing to care for him in your household?	YES NO DON'T KNOW NO RESPONSE	1 2 88 99	
Q919	If a student has HIV but is not sick, should he or she be allowed to continue attending school?	YES NO DON'T KNOW NO RESPONSE	1 2 88 99	
Q920	If a female relative of yours become ill with HIV, the virus that causes AIDS would you be willing to care for her in your household?	YES NO DON'T KNOW NO RESPONSE	1 2 88 99	
Q921	If a teacher has HIV but is not sick, should he or she be allowed to continue teaching in school?	YES NO DON'T KNOW NO RESPONSE	1 2 88 99	
Q922	If you knew a shopkeeper or food seller had the HIV virus, would you buy food from them?	YES NO DON'T KNOW NO RESPONSE	1 2 88 99	
Q923	If a member of your family become ill with HIV, the virus that causes AIDS, would you want it to remain secret?	YES NO DON'T KNOW NO RESPONSE	1 2 88 99	
Q924	Is it possible in your community for someone to get a confidential test to find out if they are infected with HIV? <b>By confidential I mean that no one will know the result if you don't want them to know it.</b>	YES NO DON'T KNOW NO RESPONSE	1 2 88 99	
Q925	<i>Restate confidentiality statement</i> I don't want to know the result, but have you ever had an HIV test?	YES NO NO RESPONSE	1 2 99	<b>If 2 skip to Q926</b>
Q926	When did you have your most recent HIV test?	WITHIN THE PAST YEAR BETWEEN 1-2 YEARS BETWEEN 2-4YEARS MORE THAN 4 YEARS AGO DON'T KNOW NO RESPONSE	1 2 3 4 88 99	
Q927	Did you voluntarily undergo the HIV test, or were you required to have the test?	Voluntary Required NO RESPONSE	1 2 99	
Q928	Please do not tell me the result, but did you find out the result of your test?	YES NO NO RESPONSE	1 2 99	
Q929	Would you be interested in having an HIV test?	YES NO NO RESPONSE	1 2 99	<b>If 1 skip to Q1001</b>
Q930	Why would you not be interested in an HIV test?	SCARED DON'T WANT TO KNOW FEAR TO BE ISOLATED THERE IS NO CURE FOR HIV	1 2 3 4	

		LACK OF CONFIDENTIALITY	5	
		OTHER SPECIFY-----	6	

### Section 10 Exposure to prevention

No.	Questions and filters	Coding categories	Skip to
Q1001	Some men have been circumcised, have you been circumcised?	YES 1 NO 2 NO RESPONSE 99	If 2 go to 1005
Q1002	(if yes to Q1001) At what age were you circumcised?	_____ Don't know/ don't remember 88	
Q1003	Were you circumcised using a traditional method or a medical method?	Traditional 1 Medical 2 DO NOT KNOW 88 NO RESPONSE 99	
Q1004	What is the <b>main reason</b> you were circumcised?  <b>DO NOT READ LIST</b>	Tradition/ religion 1 Health/ Hygiene 2 Sexual satisfaction 3 Prevent genital infections 4 Other (Specify) _____ 5 Don't know 88	
Q1005	Would you be interested in getting circumcised?	Yes 1 No 2 Don't know 88	If 2 go to 1007
Q1006	Why would you be interested?	Hygiene 1 Prevent HIV 2 Traditional/ culture 3 Others (Specify) 4	
Q1007	Why wouldn't you be interested in getting circumcised?	Not our culture 1 Fear of pain 2 No need 3 Not Safe 4 Not Affordable 5 Others (Specify) _____ 6	
Q1008	Have you ever talked to a staff member of the Corridors of Hope Project at this site/border or any of the sites?	YES 1 NO 2 NO RESPONSE 99	
Q1009	Have you ever visited the Corridors of Hope static center/drop in center for any reason?	YES 1 NO 2 NO RESPONSE 99	
Q1010	Last time you visited Corridor of Hope project center where you given any information, or educational material?	YES 1 NO 2 NO RESPONSE 99	
Q1011	Which is your main source of information on STIs and HIV	Radio 1 Television 2 Friends 3 Health center 4 COH 5 Other specify _____ 6	
Q1012	Do you feel you have adequate information regarding STIs and HIV?	YES 1 NO 2 NO RESPONSE 99	
Q1013	At your work place do you have programs on HIV?	YES 1 NO 2 DON'T KNOW 88 NO RESPONSE 99	
Q1014	If you are found to have HIV would the company allow you to continue working?	YES 1 NO 2 DON'T KNOW 88 NO RESPONSE 99	
Q1015	Have you been asked same set of questions or interviewed in the past in any of the sites; Chirundu, Kapiri-Mposhi, Livingstone/ Kazungula or Solwezi	YES 1 NO 2 DON'T KNOW 88 NO RESPONSE 99	
	Time Interview completed		



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