

REPORT

2010 CAMBODIA BEHAVIORAL SENTINEL SURVEILLANCE

Female Entertainment Workers
Moto-Taxi Drivers
People Living with HIV/AIDS

Prepared by

Chhea Chhorvann, MD, MPH, PhD

**Ministry of Health
National Center for HIV/AIDS, Dermatology and STDs**



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Abbreviations

AIDS	Acquired Immunodeficiency Syndrome
ART	Anti-retroviral treatment
BSS	Behavioral Sentinel Surveillance
CUP	Condom Use Program
DFSW	Direct Female Sex Worker
FSW	Female Sex Worker
HIV	Human Immunodeficiency Virus
HSS	HIV Sentinel Surveillance
IDFSW	Indirect Female Sex Worker
MSM	Men who have Sex with Men
NAP	National AIDS Program
NCHADS	National Center for HIV/AIDS Dermatology and STDs
NGO	Non-Governmental Organization
PLHIV	People Living with HIV/AIDS
STD	Sexually Transmitted Disease
STI	Sexually Transmitted Infection
VCCT	Voluntary Confidential Counseling and Testing

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BSS plays a crucial role in providing strategic information related to behaviors of populations at risk of contracting HIV/AIDS. The findings from BSS 2010 should be shared widely with all stakeholders working on HIV/AIDS and should also be used constructively to develop health programs, especially related to HIV/AIDS for the sentinel groups as well as the Cambodian population as a whole.

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Forward

As part of its HIV/AIDS strategic information, the National Center for HIV/AIDS Dermatology and STDS has conducted several rounds of Behavioral Sentinels Surveillance (BSS) which has been playing a crucial role in providing strategic information related to behaviors of populations at risk of contracting HIV/AIDS.

In 2010, the 8th round of BSS has been conducted. The study was conducted in 5 main cities/provinces among female entertainment workers, moto-taxi driver and AIDS patients receiving care in the AIDS treatment centers. As results, the consistent condom use with paying clients and with sweethearts has remained relatively stable in the past five years among female entertainment workers who reported having more than 2 clients per day. Still, there are some indications of a slow but steady decline in consistent condom use, and this will need to be addressed in future prevention interventions.

The findings from BSS 2010 should be shared widely with all stakeholders working on HIV/AIDS and should also be used constructively to develop health programs, especially related to HIV/AIDS for the sentinel groups as well as the Cambodian population as a whole. The National Center for HIV/AIDS, Dermatology and STDS strongly encourages the appropriate use of the information in the context to further improve the response to HIV/AIDS epidemic and to optimally mitigate its impact on the population.

Phnom Penh, November 2012



Mean Chhivun, MD., MPH
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1. Background and Rationale

Cambodia has been heralded worldwide as an HIV/AIDS “success story.” The latest HIV estimates and projections have shown a steady decline in HIV prevalence among the general population aged 15 to 49 years from a peak of 1.7% in 1998 to 0.8% in 2010.^a Significant results have been achieved by the 100% Condom Use Program (CUP) to curb heterosexual transmission of HIV between sex workers and their clients and sweethearts, which are main drivers of the epidemic.

Despite substantial declines, number of new HIV infections among sex workers and key client groups remains high. The 2006 HIV Sentinel Surveillance showed that, of the groups surveyed, brothel-based sex workers or direct female sex workers (DFSW) had the highest HIV prevalence at 14.7%.^b Sex workers and their clients are not only at risk of contracting HIV and sexually transmitted infections (STIs) themselves, they are also acting as bridging groups by passing these infections on to the general population including wives, girlfriends, husbands, and boyfriends.

Behavioral trends established through sentinel surveillance indicate that until 2003 consistent condom use among sex workers and their clients has increased and their risk-taking behaviors have declined. Thereafter trends have somewhat stabilized though these indicators have slowly but steadily deteriorated. This deterioration is largely due to the changes that have occurred in the commercial sex industry and increasing difficulties to reach most-at-risk populations with HIV prevention efforts including free condoms and HIV education and referral to testing and STI screening.

The 100% CUP, a centerpiece of Cambodia’s successful HIV prevention efforts, has ensured a large availability of condoms in brothels. However, since the widespread closure of brothels after the introduction of a new Law on Human Trafficking and Sexual Exploitation in early 2008, distribution of condoms to sex workers and their clients has become much more difficult. The crackdown has resulted in a move of sex workers from brothels to entertainment establishments such as karaoke bars and beer gardens where they cannot so easily be identified. In these venues condom distribution is hampered because their owners worry that condoms may be used as an indicator that sex is transacted onsite and that their establishments may be closed down.

Because the strict law enforcement to fight against human trafficking has led to cracking down on all brothels throughout the country, brothel-based female sex workers could no longer be easily identified in sentinel surveillance efforts. In addition, former brothels have been transformed into entertainment establishments such as karaoke bars or massage clubs. Thus, there has been a change in the surveillance methodology and in the sentinel groups selected in this round (Round 8) of the Behavioral Surveillance Survey (BSS).

The first round of BSS, conducted in 1997 by the National AIDS Program, provided baseline data on sexual behaviors among most-at-risk groups in Cambodia. Since then, seven rounds of behavioral surveillance have been conducted. Data generated by the behavioral surveillance

^aNCHADS (2011) Report Estimations and Projections of HIV/AIDS in Cambodia 2010-2015.

^bNCHADS (2006) HIV Sentinel Surveillance Survey.

surveys has guided the National Center for HIV/AIDS Dermatology and STDs (NCHADS) in shaping the responses to the HIV epidemic. Behavioral surveillance data have served both to advocate and plan for interventions and to monitor the effectiveness of these interventions.

The last round of BSS was conducted in 2007 among DFSW, beer promoters, beer garden workers, karaoke workers, moto-taxi drivers and men who have sex with men (MSM). While some of the most-at-risk groups were consistently included in behavioral surveillance to capture trends in high risk behaviors, some flexibility in survey design have allowed for the integration of new sentinel groups in order to assess the occurrence of new risk behaviors in specific populations. However, a low prevalence of risky sexual behaviors was detected in some of the new sentinel groups, such as male vocational students and government officials. These groups have therefore been dropped from sentinel surveys since 1999.

The survey methodology has as much as possible been kept consistent over different rounds to ensure results can be compared over time and trends can be established. There are, however, a few exceptions. For example, the self-administered approach used in 1997 for the vocational students group was changed to face-to-face interviews in 1998. Also, questionnaires have been adapted using the experience from previous rounds to increase the pertinence of questions and to obtain data needed for national and global reporting, while ensuring consistency of standard indicators allowing for monitoring of trends over time. The selection of sentinel groups has also largely remained the same.

The sentinel groups were selected because they were believed to represent the driving force of the HIV epidemic in Cambodia. However, due to changes in the commercial sex industry, the inclusion of brothel-based female sex worker was no longer feasible in this round of BSS. In contrast, female entertainment workers (FEW) were recruited into the survey as one of the sentinel groups. In addition, people living with HIV/AIDS (PLHIV) were also included in this round of BSS due to increases in their number and the shortage of information about their risk behaviors and their attitudes towards positive prevention (HIV prevention among HIV infected individuals).

The BSS is usually conducted in the capital city Phnom Penh and in the provincial capitals of Cambodia's four most populated provinces (Battambang, Sihanouk ville, Siem Reap, and Kampong Cham), resulting in a survey of urban groups. However, in this last BSS PLHIV were recruited not only from ART sites in these urban areas, but also from ART sites in other districts. The provinces, sentinel groups, and sample sizes in each BSS round are described in Table 1.

Table 1: Background information of BSS from 1997 to 2007

BSS	Sites	Target groups	Sample size
1997	KPC, SHV, BTB, SRP, PNP	DFSW, Beer girls, Working women, Military, Police, Moto-taxi drivers, Vocational students	4,356
1998	KPC, SHV, BTB, SRP, PNP	DFSW, Beer girls, Working women, Military, Police, Moto-taxi drivers, Vocational students	4,275
1999	KPC, SHV, BTB, SRP, PNP	DFSW, Beer girls, Military, Police, Moto-taxi drivers	3,400
2000	KPC, SHV, BTB, SRP, PNP	Household Male Survey	3,166
2001	KPC, SHV, BTB, SRP, PNP	DFSWs, Karaoke & Beer girls, Military, Police, Mot-taxi drivers	2,961
2003	KPC, SHV, BTB, SRP, PNP, PST, KHK, KRT, TKO, KPT	DFSW, Karaoke & Beer girls, Mil/pol, Moto-taxi driver	4,858
2007	KPC, SHV, BTB, SRP, PNP	DFSW, Karaoke, Beer girls, Beer-garden girl, Moto-taxi driver & MSM	3070

KPC: Kampong Cham; SHV: Sihanouk Ville; BTB: Battambang; SRP: Siem Reap; PNP: Phnom Penh; PST: Pursat; KHK: Koh Kong; KRT: Kratie; TKO: Takeo; KPT: Kampong Thom.

2. Objectives of Cambodia's BSS 2010

The objectives of the 2010 BSS are to:

- 1- Document HIV related risk behaviors among selected sentinel groups
- 2- Document knowledge and attitudes towards HIV/AIDS
- 3- Track trends in risk behaviors among most at risk groups in Cambodia
- 4- Explore common practices toward the use of VCCT, STI clinics and other health services
- 5- Investigate the attitude and practice towards positive prevention among PLHIV
- 6- Evaluate coverage and outcomes of interventions targeting selected sentinel groups

3. Methods

3.1 Survey Area

Sentinel groups were sampled from the population in the capital city and the capital of selected provinces (except PLHIV who were sampled from a larger number of provinces). The five most populated cities in Cambodia were consistently selected for BSS: Phnom Penh, Kampong Cham, Battambang, Siem Reap, and Sihanouk Ville.

3.2 Study Population

Maintaining the usefulness of BSS data for trend analysis in behavior change among existing sentinel groups is a top priority of NCHADS. A significant change in the BSS design would result in unclear trends, producing data that may have cross-sectional value but that would not allow for continuity in the analysis of the trends. To allow for trend analysis over time, the choice of survey sites and sentinel groups should be consistent. At the same time, the BSS is also used as exploratory research, aiming to identify new high-risk groups; therefore, new sentinel groups may be included while old groups may be dropped from one survey to another.

3.2.1 Female Entertainment Workers

Based on NCHADS Standard Operating Procedures (SOP), FEW include females working at entertainment establishments including brothel-based female sex workers, beer girls, beer-garden girls, karaoke girls, bar/night club girls, massage girls and free-lance sex workers. Due to the recent crackdown on brothels, it is no longer feasible to survey brothel-based female sex workers (aka DFSW). However, some former brothel-based female sex workers might still be found working in the same place where they used to work before the brothel closures, although the name of the establishment might have changed.

Findings from mapping exercises revealed that after the crackdown, some brothels have been closed and some have been transformed into karaoke bars or massage parlors. In the current BSS, females who continue working in these former brothels have not been labeled as “brothel-based female sex worker” or “direct female sex worker”. They have been included under the label of “Female Entertainment Worker” like beer promoters, beer garden staff and karaoke workers. However, females who have been working in former brothels might be very different from these groups as they may sell sex more consistently and more frequently. Therefore, a distinction was made between 3 groups of FEW in this survey: former brothel-based FEW, beer promoters and karaoke workers.

FEW working in any of the entertainment establishments known to have been a brothel before the 2008 crackdown were included in the survey to represent FEW from former brothels. It was assumed that these FEW are very similar to the group that used to be called “direct female sex workers” in the past in terms of commercial sex and risk behaviors.

In order to ensure that FEW working in former brothels could be included in the survey, a separate sampling frame was created for this group and their sample size was also separately calculated.

The criteria for eligibility to participate in the survey for FEW from former brothels were:

- Being female
- Aged at least 15 years
- Currently working at an establishment that used to be a brothel
- Able to speak and understand the Cambodian language
- Gave consent for the interview

While the previous round of surveys used information from beer promoters and karaoke workers to represent “indirect female sex workers”, this round of BSS recruited beer promoters and karaoke workers as sub-groups of FEW. Due to the different working environment of these two groups, two sampling frames created were created.

The eligibility criteria for beer promoters included:

- Being female
- Aged at least 15 years
- Currently working for a beer company as a beer promoter
- Present at the selected beer company or beer outlet at the time of the survey
- Able to speak and understand the Cambodian language
- Gave consent for the interview

The eligibility criteria for karaoke workers included:

- Being female
- Aged at least 15 years old
- Currently working at the selected establishments included in the survey
- Present at the establishment/spot at the time of the survey
- Able to speak and understand the Cambodian language
- Gave consent for the interview

3.2.2 Moto-Taxi Drivers

In previous rounds of behavioral surveillance, members of the military, police, and moto-taxi drivers were used as proxies for clients of female sex workers. However, representatives of the armed forces are aging cohorts of men as recruitment into their ranks has been frozen since 1995. In addition, there was some overlap between surveillance groups as some men from both military and police also work as moto-taxi drivers. For these reasons a decision was made to continue using only moto-taxi drivers as a proxy for male clients of female sex workers. There remains the possibility to include military or police personnel in future rounds of BSS or in integrated behavioral and biological sentinel surveys (IBBS).

The eligibility criteria for moto-taxi drivers to be surveyed were:

- Being male
- Aged at least 18 years
- Currently working as moto-taxi driver
- Present at the selected time-location at the time of the survey
- Able to speak and understand the Cambodian language
- Gave consent for the interview

3.2.3 People Living with HIV/AIDS

Apart from FEW and moto-taxi drivers, people living with HIV/AIDS (PLHIV) were also included in this survey round. This group is not a conventional high-risk sentinel group routinely included in the 7 previous rounds of BSS. PLHIV were included in this round because there has been a shortage of information regarding the risk behaviors among HIV infected individuals, especially after having greater access to anti-retroviral treatment (ART). Two groups of PLHIV have been targeted; those who are on anti-retrovirals (ARV) and those who are on pre-ART care.

The eligibility criteria for ARV patients to participate in the survey included:

- Being male or female aged at least 18 years
- Receiving ART at the time of the survey at selected ART sites
- Able to speak and understand the Cambodian language
- Gave consent for the interview

The eligibility criteria for pre-ART patients for participating in the survey were:

- Being male or female and aged at least 18 years
- Not yet eligible to receive ART and therefore receiving pre-ART at selected ART sites
- Able to speak and understand the Cambodian language
- Gave consent for the interview

3.3 Sample Size

The prevalence of consistent condom use in sweetheart relationships was used to calculate sample size for FEW and moto-taxi drivers. Past BSS showed that reported consistent use of condoms among DFSW is so high in Cambodia (around 95%) that no further increase could be easily detected. However, consistent condom use is much lower in sexual relationships by survey respondents with their sweethearts.^c Consistent condom use in sweetheart relationships was also used to calculate sample size in the previous round of BSS. The sample size for each sub-group of FEW was calculated independently and is presented below (Table 2).

Two proportion sample calculations with one-sided tests, with the power of 80% and the level of significance of 5% were used to estimate the sample size needed to compare the difference between the results from BSS 2007 and BSS 2010. It was assumed that the design effect of this consistent condom use with sweethearts among the groups was 2.

Similarly, in order to calculate the size for the PLHIV sample, it was assumed that the percentage of those who consistently use a condom with their spouse is 50% with a precision of 8%. The reason for arbitrarily selecting 50% was to maximize the sample size needed in estimating the parameter of interest among PLHIV. The design effect used was 2. An equal number of male and female PLHIV were recruited among pre-ART and ART patients for the survey.

^cSweetheart relationships are characterized by strong emotional attachments and are comparable to traditional romantic relationships involving mutual understanding, sensitivity, caring and trust.

To determine the final sample size needed it was assumed that 10% of prospective study participants would refuse to respond to the questionnaire.

Table 2: Estimated sample sizes for BSS 2010 sentinel groups

Group	Baseline value	Change detected	Sample size needed
Former brothel based FEW	53%	13%	400
Beer promoter	53%	13%	400
Karaoke worker	56%	13%	380
Moto-taxi driver	43%	8%	1010
Pre-ART patients	50%	8%	400 (200 for male and female)
ART patients	50%	8%	400 (for male and female)

The sample size was divided by 5 capital city/provincial towns; however, the sample size assigned to sentinel groups in Phnom Penh was doubled since the capital city shelters the greatest number of people belonging to high-risk groups. In addition it eased the recruitment by minimizing the number of participants required in other provinces.

Table 3: Proposed sample size per province and sentinel group (with 10% refusal rate)

Province	Sentinel groups						
	FEW former brothel	Beer promoters	Karaoke Workers	Moto-taxi driver	Pre-ART	ART patients	Total
Phnom Penh	148	148	142	338	144	144	1064
Battambang	73	73	70	168	74	74	532
Kampong Cham	73	73	70	168	74	74	532
Siem Reap	73	73	70	168	74	74	532
Sihanouk Ville	73	73	70	168	74	74	532
TOTAL	440	440	422	1010	440	440	3192

3.4 Recruitment of Study Participants

Recruitment of these high-risk populations required addressing their illegal status, the socially marginalized nature of many of these groups and the behaviors in which they engage. As such the following principles have been adhered to in the recruitment process.

3.4.1 Voluntary consent

Accessing potential participants for the study required going through intermediaries such as establishment managers, employers, etc. While these intermediaries were used to gain access to study sites/venues, they were not utilized for any component of recruitment and no information regarding recruitment was been given to these intermediaries.

3.4.2 Maximizing access

Efforts were coordinated with non-governmental organizations (NGOs) already working with sentinel groups. In some cases NGO representatives were included in the study team to help

explain more clearly the purpose, risk and benefits of the study. This approach has facilitated the study team's access to the target population and concurrently has helped strengthening the NGOs' ties with the community.

3.4.3 Maximizing protection of study subjects

The identity of study participants has consistently been protected. Participant names were not recorded anywhere and all of the study documents have been labeled with only a study number. The consent to take part in the study was voluntarily given by participants with witnessed verbal statement.

3.5 Sampling Strategy

Various sampling strategies were used to access sentinel groups depending on the possibilities of establishing their sampling frames. The sampling methods are repeatable even if they are not random. Sampling methodologies used are:

- Cluster sampling with equal probability for FEW
- Time-location sampling for moto-taxi drivers
- Stratified simple random sampling for PLHIV

3.5.1 Female Entertainment Workers

All female entertainment workers were selected through cluster sampling with equal probability. Clusters were entertainment establishments located in urban areas of each selected province.

FEW from Former Brothels

The NCHADS team with the Provincial AIDS Office (PAO) was responsible for establishing a list of former brothels in the selected capital city/provincial towns, by matching them with the list of brothels covered in the latest sentinel survey round. The Surveillance Unit was responsible for randomly selecting clusters from the list provided by the PAO. In each selected cluster, all of the FEW who met the selection criteria indicated above were interviewed. This 'take all' approach produced a self-weighted sample at the capital city/provincial town level. Entertainment establishments that were known to be former brothels were chosen until the required sample size was reached. In cases where the total number of FEW from former brothels in the provincial town was less than the required sample size, a 'take all' approach was applied, meaning that all FEW from former brothels were recruited. In fact, due to the closure of brothels, it was anticipated that recruiting enough participants into the sample of FEW from former brothels would prove challenging. Still, one of the aims of this round of BSS was to assess the feasibility of continuing to survey FEW from former brothels to ensure consistency with past surveillance efforts.

Participation in the survey was voluntary and verbal witnessed consent was given by all of the participants. The purpose of the survey was explained to all participants in the selected entertainment establishments then the interviewers in a private setting obtained verbal consent from each individual respondent before the start of the interview.

Beer Promoters and Karaoke Workers

Beer companies or beer outlets and karaoke establishments were considered as clusters in this study. In each capital city/provincial town, all clusters together with the number of women working therein were listed. Through this procedure two independent sampling frames were established, one for beer promoters and the other for karaoke workers. Each cluster was assigned a unique number, and then a random table was used to select the first clusters. In each selected cluster, all FEW present at the time of the visit were invited to participate in the survey. The random selection of the clusters was repeated until the required sample size was reached.

The sampling of beer promoters and karaoke workers involved the following activities:

- List all clusters (beer companies/beer outlets, karaoke establishments) as well as the number of FEW working in each of the clusters.
- Assign a number to each cluster on the list.
- Randomly select a cluster from the list using a random number table or a calculator and then find the selected cluster on the list.
- Interview all FEW in the selected clusters after obtaining their consent.
- Repeat the random selection to select more clusters and FEW until the total sample size is reached.

In Phnom Penh, where some beer companies and karaoke establishments are very large (i.e., employing more than 100 FEW), these were grouped into 2 to 5 clusters of 20 to 30 FEW based on their shift of work or affiliation to a specific team or outlet. All clusters (from all beer companies) were listed as the sampling frame for beer promoters in Phnom Penh. In provincial capitals, where the total number of potential participants in the study was less than the required sample size, a *'take all'* approach was used, meaning that all FEW were recruited, regardless of place of work in each selected province.

3.5.2. Moto-Taxi Drivers

Moto-taxi drivers were selected using time location sampling. The NCHADS team with PAO created a list of the parking spots and street corners where moto-taxi drivers usually congregate and the precise times the gatherings happen at each specific spot. Clusters are represented by each spot for a two-hour period. Where possible, the sampling frame was designed so that clusters include a morning, late morning, afternoon, and late afternoon shift.

As detailed in the example below, at a given location, a sampling frame to recruit moto-taxi drivers into the survey could include up to 3 time frames and consequently, the same location could be selected 3 times into the sample. Some other locations that were only active for a limited number of hours a day may be represented by a unique cluster.

Example of the sampling frame developed prior data collection:

1. Corner main place & street1 8AM to 10AM
2. Corner main place & street1 10AM to 12PM
3. Corner main place & street1 4PM to 6PM
4. Market south 8AM to 10AM
5. Market south 10AM to 12PM
6. River bank 4PM to 6PM

It should be noted that each cluster was not allowed to be selected twice in the survey. At the selected spot and time, all moto-taxi drivers present were eligible for the study. The team leader assigned a number for each moto-taxi driver who parked at the selected spot and randomly selected them into the study. For those who refused to participate, this was recorded as a refusal. As soon as an interviewer would complete an interview, he would invite the next moto-taxi driver who was still waiting to be interviewed or a newcomer, if no one else was waiting. After finishing with one cluster, the team leader would randomly select the next cluster from the list. This process was repeated until the required sample size in each province was reached.

3.5.3. People Living with HIV

PLHIV were included for the first time in the BSS. PLHIV from ART sites were recruited into this round of BSS using a stratified simple random sampling approach. Two groups of PLHIV were covered by the survey: patients who were on ART and patients who were on pre-ART at the time of the survey.

Two separate sampling frames were created for ART and pre-ART patients in each province. The sampling frames were generated from the databases used at ART sites in provinces selected for the study. Pre-ART and ART patients were then randomly selected from the two separate sampling frames.

In short, the sampling process for PLHIV consisted of:

- In each province, a list of all pre-ART and ART patients was established by combining the lists of ART patients from all ART sites in the selected province
- In each province, pre-ART and ART patients were randomly selected from the list for interview
- Selected pre-ART and ART patients were contacted and invited to come to the clinics for the interview

3.6 Study Teams

Each survey team included representatives from NCHADS who served as supervisors and one team leader, who were responsible for all of the technical work such as the identification of the sampling locations and the random selection of locations. The PAO staff served as local coordinators and were responsible for negotiating with local persons such as establishment owners to ensure access to the target populations.

The study supervisor ensured that the sampling procedures strictly followed protocol and ensured that data were collected in privacy and with anonymity, safely stored to prevent any breach of confidentiality. The study supervisor checked all of the questionnaires in the field to ensure the completeness of data and solved fieldwork problems with approval from the principle investigators.

Staff from the Provincial Health Departments and from the PAOs were tasked with conducting the interviews. Prior to conducting interviews, staff received training on non-judgmental

completion of the questionnaire and training on obtaining informed consent from the study participants who were all interviewed by an interviewer of their same sex.

3.7 Data Collection Procedures

All of the interviews were conducted privately and face-to-face by gender-matched interviewers. The supervisor ensured privacy by asking people, who out of curiosity would drop by an interview, to leave and to refrain from staying nearby the interviews.

3.8 Field Monitoring

Monitoring was conducted by the team leaders on a daily basis to ensure that data collection adhered to protocols and that informed consent procedures were executed and documented accordingly. All aspects of data collection were overseen by the principal investigator.

In addition to team leaders' routine monitoring, the principle investigators provided external supervision. The principle investigators reviewed the sampling frames, the sampling methodology, the records of cluster information sheets, the informed consent process and its documentation, the respect of participant's privacy and the adequate storage of survey forms.

3.9 Data Analysis

Questionnaires were kept in a safe place during field work and were brought to the Surveillance Unit at NCHADS when the data collection in a particular survey site ended. Two independent units at NCHADS performed double data entry. Data entry was performed using 'Epi data' which is easy to use and allows cross checking of the two entered datasets. The datasets were then cleaned before analysis.

4. Potential Risks and Benefits

4.1 Potential Risks

There are no physical risks associated with participation in the BSS; however, some minor psychological risks could have occurred due to the sensitive nature of the questions in the structured questionnaire. To minimize this risk, the questionnaire was administered by same-sex survey personnel in a private setting. The survey did not collect names or other identifiers and study participants were told that they could refuse to answer any of the questions or leave the interview at any time. The survey was entirely anonymous and no names or other personal identifiers were recorded anywhere.

In settings where "employers" (establishment managers) facilitated recruitment of study participants, special precautions were put in place to avoid any form of coercion by the employers or reprisals when individuals refused to participate in the study.

4.2 Potential Benefits

There is no direct benefit for participants taking part in this survey; however, indirect benefits can be expected because the information obtained from participants will be used to develop or adapt HIV/AIDS interventions geared to the sentinel groups and to the general population at large. In addition, each participant received a gift of appreciation for their participation in the study worth \$1.5 USD. For PLHIV the cost of transportation to and from the place of interview was reimbursed.

4.3 Ethical Review:

The protocol, consent forms and questionnaires were reviewed and approved by the National Ethics Committee April 2010.

5. Findings

The findings from the BSS 2010 are presented in three sections dealing separately with female entertainment workers (FEW), moto-taxi drivers (MTD) and people living with HIV/AIDS (PLHIV). Although the recruitment for FEW and FEW working in former brothel was done separately, the analysis could not follow this classification since the difference between these two subgroups of FEW is not clear.

5.1 FEMALE ENTERTAINMENT WORKERS

Demographic Characteristics

The mean age of FEW included in the current study was 25.2 years (Table 4). About one in five of them reported to have received no schooling. One in three had been living in the city/town where they were interviewed for less than one year. On average, they had been working in their current job for about 18 months.

Table 4: Demographic characteristics of FEW

Demographic Characteristic	N=1132
Mean age in years (Median)	25.2 (25)
Mean age at first marriage (Median)	19.2 (19)
Has had no schooling	20.0%
Has been living in the current city/town for less than 1 year	33.0%
Mean duration in current job (Median)	18 months (9.5 months)

Sexual Behaviors

Among all of the FEW who took part in this BSS, 14% reported that they had never had sex. For those who ever had sex, the mean age of first sex was 18.9 years. Most commonly their first sexual partner was their husband (62%), followed by their boyfriend (24%). 11.2% of the FEW

who reported ever having sex sold their first sex to a client. The average age of FEW when they first sold sex was 22 years, which is about 3 years older than the mean age of first sex.

Of the FEW who head ever had sex, 50% of them declared they received gift(s) or money in exchange of sex in the year preceding the interview. Among FEW who reported having sold or exchanged sex for gift(s) indicated having had sex with an average of 2.2 clients on the last day of work prior to the interview.

The great majority of FEW who ever had had sex (84%) said they had had sex with a sweetheart in the past year. 35% of them had been involved in group sex with more than one male partner, and it needs to be highlighted that about one in four of these FEW had experienced this situation against their will.

Table 5: Sexual behaviors of FEW

Sexual Behaviors	N=1132
Age at first sex (median)	18.9 (18)
Has never had sex	14%
Partner at first sex among those who have had sex	
Husband	62.0%
Boyfriend	24.0%
Client	11.2%
Other	2.8%
Had sex in exchange of gift(s) or money in the past year	49.9%
Age at first sex in exchange of gift or money	22 (22)
Number of clients on the last working day prior to interview	
No client on the last working day	54%
1 client	27.7%
2 clients	6.6%
3 clients	4.1%
4 or more	7.6%
Had sex with a sweetheart in the past year	84.0%
Has never had group sex (with more than one men)	65.1%
Ever agreed to have sex in group among FEW who reported having had sex in a group	77.0%

The data on sexual behaviors was analyzed more in depth to determine if a distinction could still be made between what used to be called “direct female sex workers” and “indirect female sex workers”, with the former selling sex much more consistently than the latter. For this purpose FEW were asked about the number of clients they had had on the last day of work before the interview, which revealed that among all FEW who ever had sex, 130 had had more than 2 clients on their last working day and 988 had had 2 or fewer clients. A comparison between the sexual behaviors of the two groups showed that they are quite different with FEW with more than two clients being similar to the former direct female sex worker sentinel group. Consequently, in this report the findings on some parameters will be stratified based on the number of clients FEW have had on the day preceding the interview.

Table 6 shows that a small group of FEW with more than 2 clients on the last day of work worked in establishments with a mean of 4 women per establishment. A large group of FEW with 2 or fewer clients (group of 30) were working in establishments. Interestingly, the availability of condoms was also different among the two groups, with 93.8% of FEW with more than 2 clients on the last working day reporting that condoms were available at their work place compared to only 33.6% of those who had had 2 or fewer clients. Also, 69.8% of the former had a regular partner compared to only 17.1% of the latter. There was little difference in number of months of work in the current establishment between the two groups.

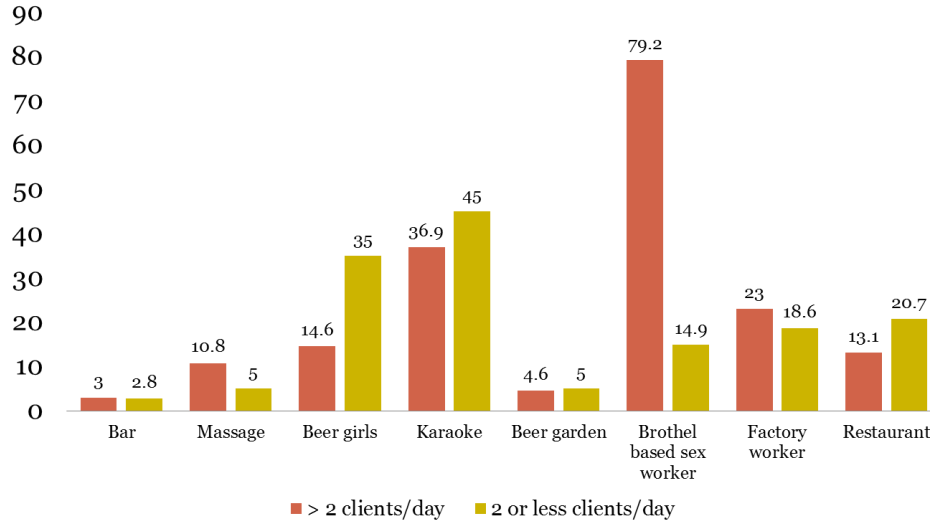
Table 6: Sexual behaviors by group of FEW

Parameters of interest	2 or less clients on last working day N=988	More than 2 clients on last working day N= 130
Mean number of FEW working in the same establishment (median)	50 (30)	7 (4)
Have a regular partner	17.1%	69.8%
Reported availability of condoms in the workplace	33.6%	93.8%
Mean number of months of work in the current establishment (median)	15 (7)	16 (6.5)

Working History

More than 79% of FEW who had more than 2 clients on the last day of work before the interview used to work in a brothel before they started working in another type of entertainment establishment. This confirms the assumption that this group includes a large number of females who in previous BSS rounds would have been captured in the “direct female sex workers” group. Over time it has been observed that there are considerable movements of FEW from one type of establishment to another. In this round 23% of FEW with more than 2 clients, compared to 18.6% of FEW with less than 2 clients, reported having previously worked as a factory worker.

Figure 1: Previous work of FEW



Condom Use

Self-reported condom use during last sex with a client among FEW was higher than 90%, regardless of the number of clients on the last working day. Still, those with more than 2 clients on the last working day used condoms with clients more consistently than the other FEW (97.7% versus 94.8%). This is certainly related to the greater availability of condoms in the workplace that was reported by members of the former group (93.8%) compared to that declared by members of the latter group (33.6%). It should be noted that condom availability has diminished if one compares these results with those of the previous 2007 BSS. This is not surprising considering that most brothels, where condoms were easily available in the past, have been closed and that establishment owners are reluctant to offer condoms as this may be seen as a sign that sex is transacted in their establishment and they may be asked to shut it down.

Table 7 shows that in both FEW groups consistent condom use rates decrease with a growth in the recall period. This suggests that condom use is not as consistent as one would hope, not even among the FEW who had more than 2 clients on the last working day and who tend to sell sex more frequently than the other FEW. Yet, in both groups the reported consistent condom use with clients in the past 3 months was around 80%.

Consistent condom use with sweethearts and regular partners continues to be alarmingly low in both FEW groups. Only a little more than half of all FEW interviewed in this round of BSS indicated they used a condom when they last had sex with a sweetheart. When the recall period is 3 months this indicator drops considerably, confirming that condom use by FEW with sweethearts is very inconsistent. However, the least consistent condom use occurs in sexual relationships with husbands or regular partners – only 22.2% of FEW with more than 2 clients on the last day of work and 16.5% of FEW with 2 or fewer clients on last day of work reported they always used a condom when they had sexual intercourse with their husband or regular partner.

Table 7: Self-reported condom used by groups of FEW

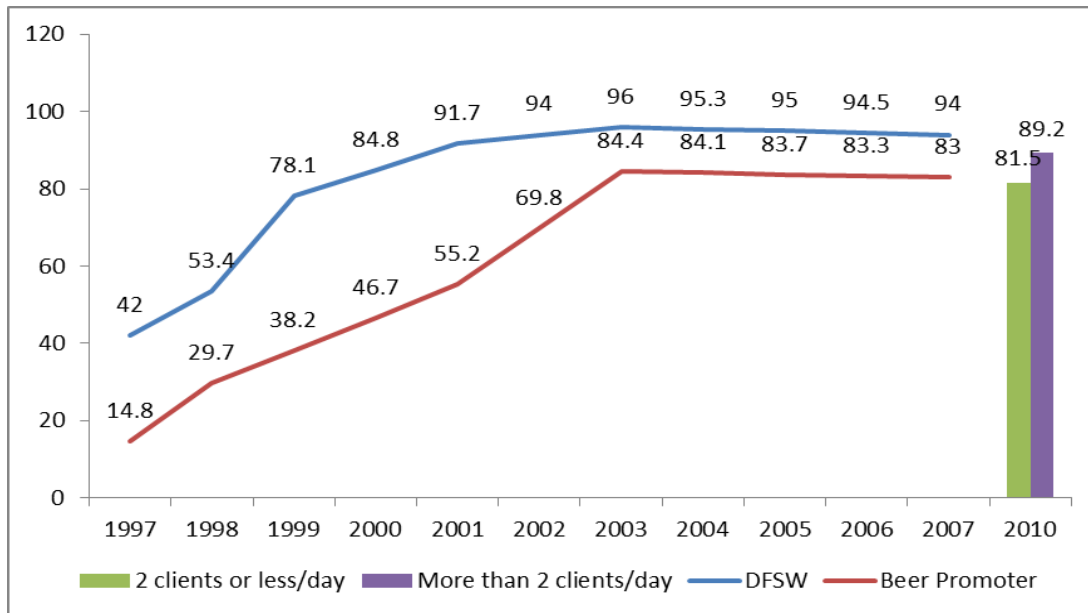
Parameters	2 or less clients on last working day	More than 2 clients on last working day
Used condom during last sex with client (paying partner)	94.8%	97.7%
Consistent condom use in the past week with clients	81.5%	89.2%
Consistent condom use in the past 3 months with clients	81.5%	83.7%
Used condom during last sex with sweetheart	55.3%	56.7%
Always used condom with sweetheart in the past 3 months	39.4%	48.3%
Always used condom with husband/regular partner in the past 3 months	16.5%	22.2%
Reported availability of condoms in the workplace	33.6%	93.8%

Trend in Consistent Condom Use

Trends in reported consistent condom among brothel-based female sex workers (direct sex workers) and beer promoters (a group of indirect sex workers) has been tracked over several years with data generated over time through the BSS. Due to the difficulties that were faced in this round of BSS with inclusion of exactly the same groups of FEW than those in the past, the present findings cannot so easily be compared with previous findings; however, it is worthwhile to take a look at these trends to assess the situation over time.

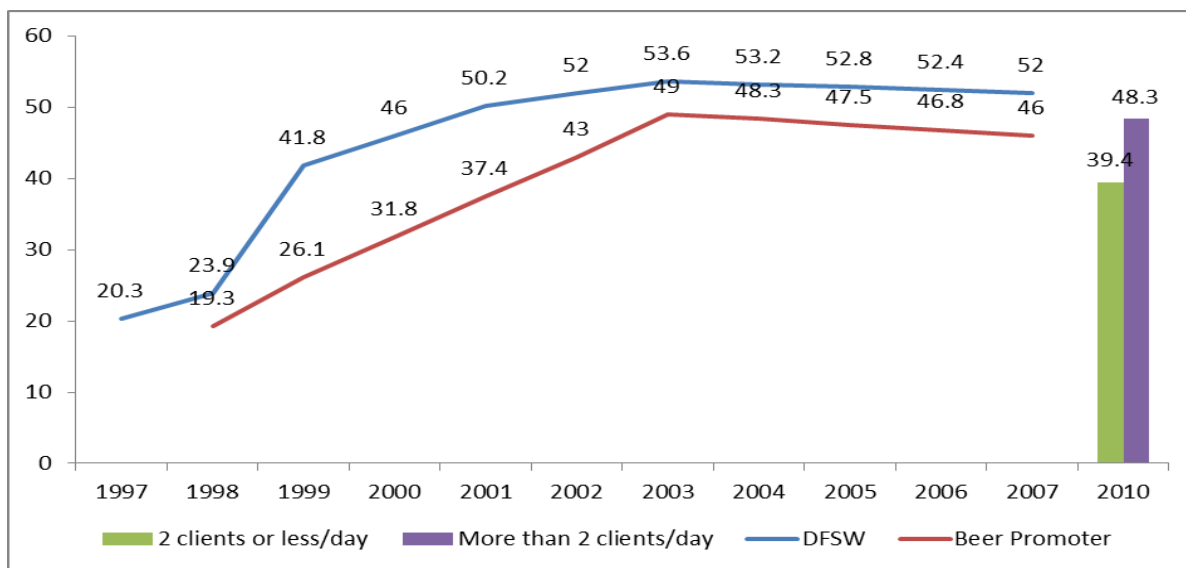
Figure 2 shows the trend in self-reported consistent condom use over time among FEW. While this increased significantly from 1997 to 2003 and then stabilized from 2004 onwards, it seems to have slightly dropped in recent years as suggested by the current BSS data. It is possible that this decrease is the result of changes in the sampling methodology, which is also why the data points in the graph are not connected. The groups surveyed in past rounds of BSS are not identical to the ones surveyed in this round and therefore their behaviors are not easily comparable for establishment of a clear trend over time. The trend in consistent condom use among FEW with paying clients has not changed significantly over time, though there has been a slow steady decline since 2004.

Figure 2: Trend in self-reported consistent condom use by FEW with clients



The trend of self-reported consistent condom use by FEW with sweethearts is similar to that of paying clients. For the same reasons cited above, the trend in consistent condom use has remained relatively stable since 2003 although there has been a slight drop in this indicator since the last BSS in 2007, especially among lower risk FEW who tend to sell sex less consistently (those with 2 or fewer partners on last working day).

Figure 3: Trend in self-reported consistent condom by FEW with sweethearts



Sources of HIV/AIDS Information

The majority of all FEW reported to have received information related to HIV/AIDS from peer/outreach/NGO staff in the 3 months preceding the survey (Figure 4). This kind of information was received to a much lesser extent from health staff working in STD clinics, VCCT sites and other information sources. FEW with more than 2 clients on the last day of work prior to the interview more often than the other group received HIV/AIDS related information from STI clinics and VCCT sites. This is not surprising, considering that FEW with more clients access these services more frequently. It is important to notice that about one in ten of all FEW who took part in the survey reported they had never received any information related to HIV/AIDS in the three months prior to the interview.

Figure 4: Sources of information related to HIV/AIDS

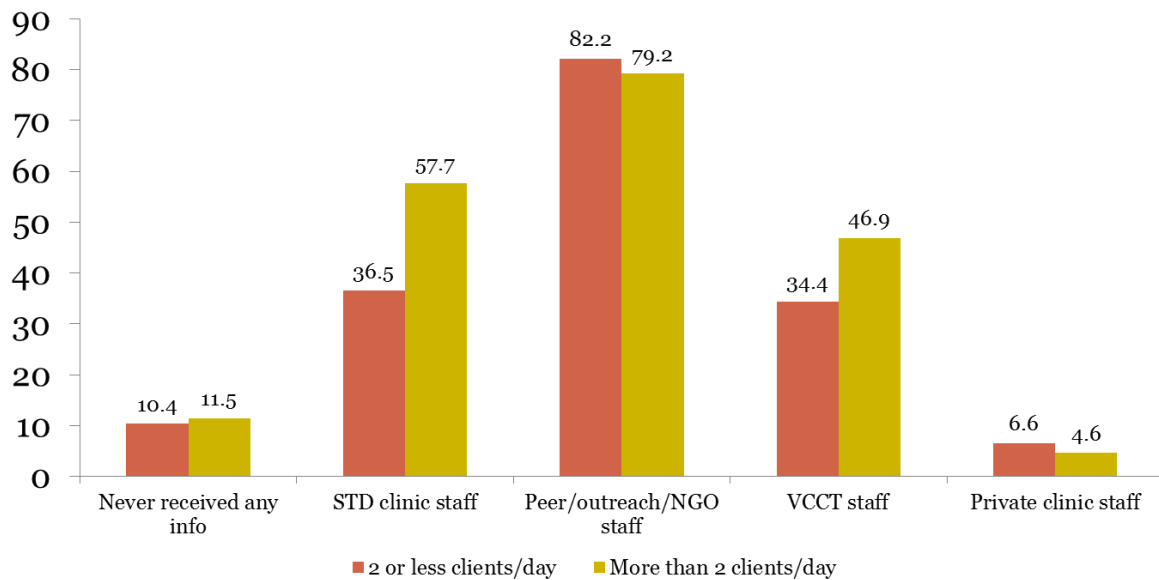
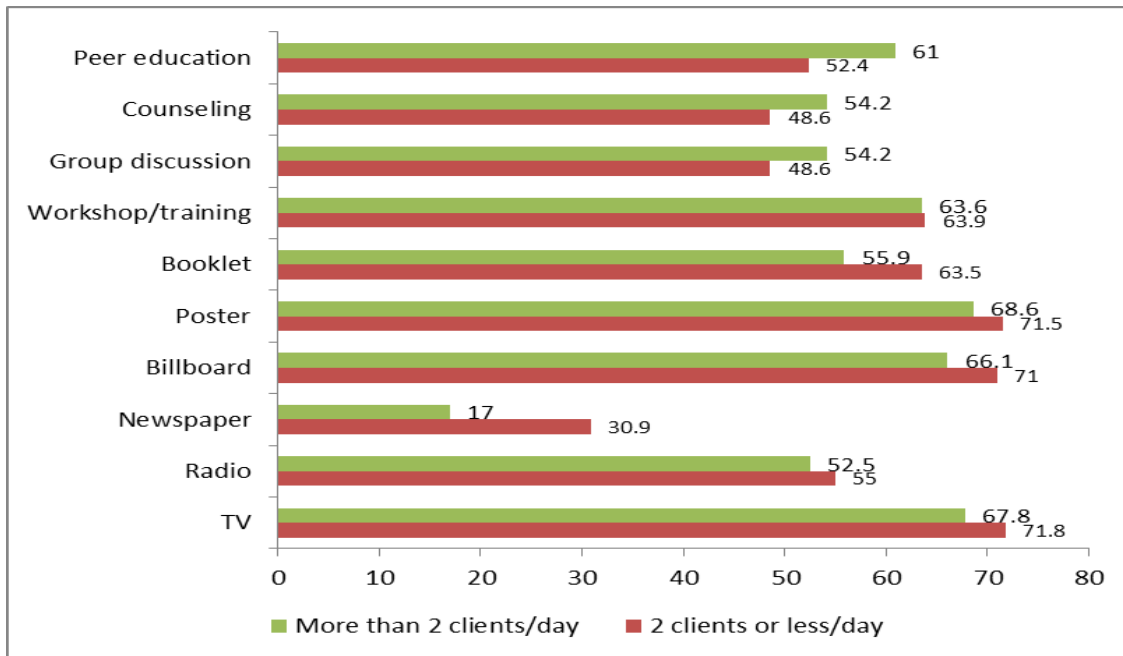


Figure 5 illustrates that the means of receiving health message related to HIV/AIDS among FEW who have 2 clients or fewer per day are not very different from FEW who have more than 2 clients per day.

Figure 5: Means of receiving HIV/AIDS information (in %) in the past 3 months



Knowledge about HIV/AIDS

All of the FEW included in the BSS 2010 were very knowledgeable about HIV/AIDS, especially how HIV transmission can be prevented (Figure 5). However, knowledge about the transmission of HIV from mother to baby (transmission in the womb and transmission during the delivery) was very weak; only about two thirds of FEW said they knew HIV can be transmitted in the mother's womb or during the delivery of the baby.

Figure 6: Knowledge about HIV/AIDS

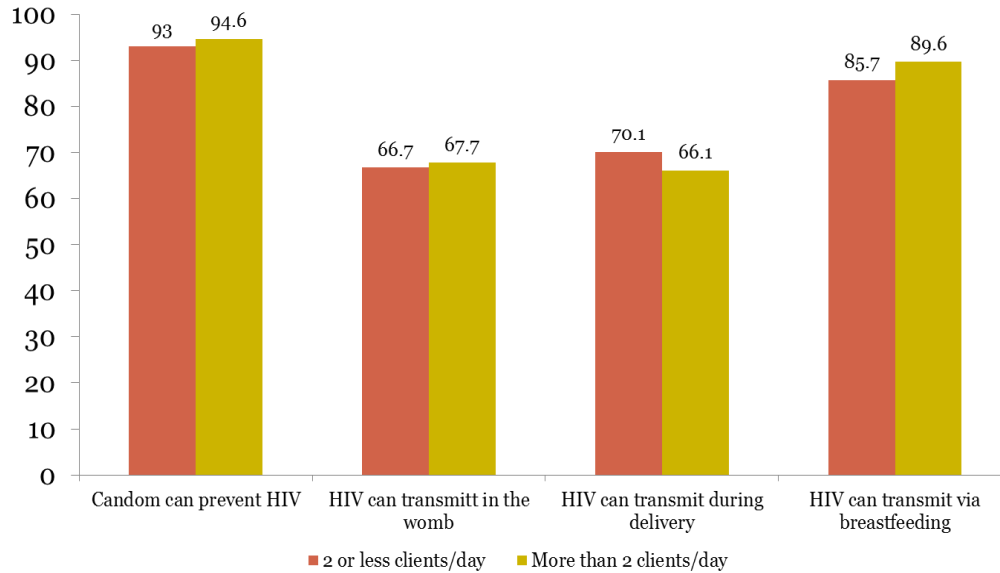
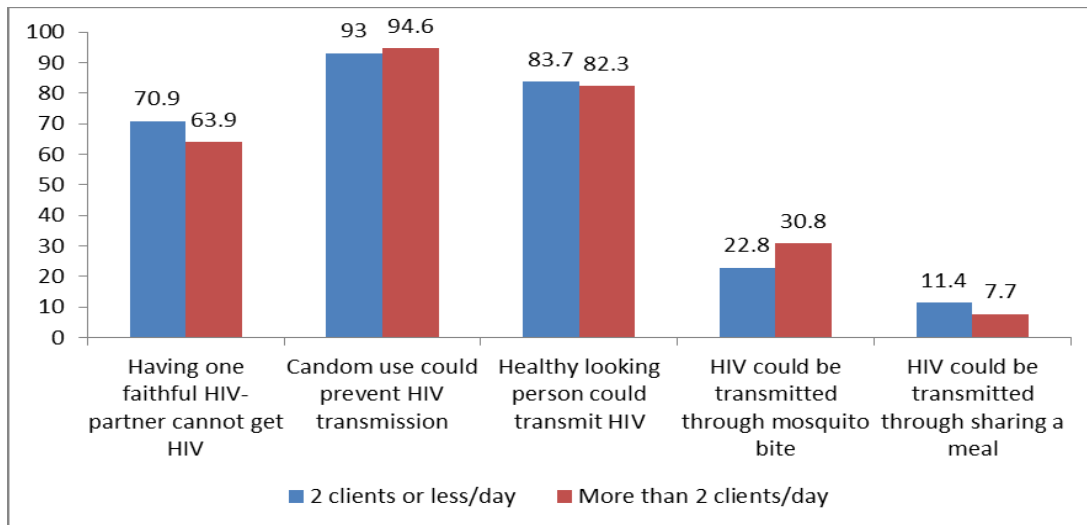


Figure 7: Knowledge of different modes of HIV transmission



Use of Health Services

When asked if they had ever had an abortion when working as a FEW approximately three quarters of FEW with more than 2 clients on the last working day responded affirmatively. This is surprising considering the high condom use rates illustrated above and the fact that almost an equivalent proportion reported having received information about reproductive health, family planning and safe abortion in the 3 months prior to the survey. Furthermore, the majority of FEW reported having received free condoms in the past year and knew where to go for an HIV test.

Table 8 shows that the majority of study participants who ever had an abortion while working as a FEW had their last abortion at a private clinic. The choice of method or place of abortion varies between the two FEW groups. A larger share of FEW with 2 or fewer clients on last working day bought drugs from a pharmacy to induce an abortion, whereas FEW with more than 2 clients visited a health center or hospital. Only a small proportion among each group attended an NGO and very few FEWs with 2 clients or fewer on the last day of work preceding the interview indicated they visited a traditional birth attendant.

Table 8: Health seeking behaviors for sexual productive health problems

Parameters	2 or less clients on last working day	More than 2 partners on last working day
Ever had abortion while working as FEW	59.6%	72.7%
Place for the last abortion		
Private clinic	54.9%	58.5%
Bought drugs from pharmacy	26.1%	14.6%
Health center/public hospital	11.8%	17.1%
NGO clinics	6.6%	9.8%
Traditional birth attendant	0.5%	--
Received information about reproductive health, family planning and safe abortion	69.7%	70.8%
Received free condom in the past year	76.3%	86.2%
Knows where to get an HIV test	83.8%	90.7%

Symptoms of Sexually Transmitted Infections

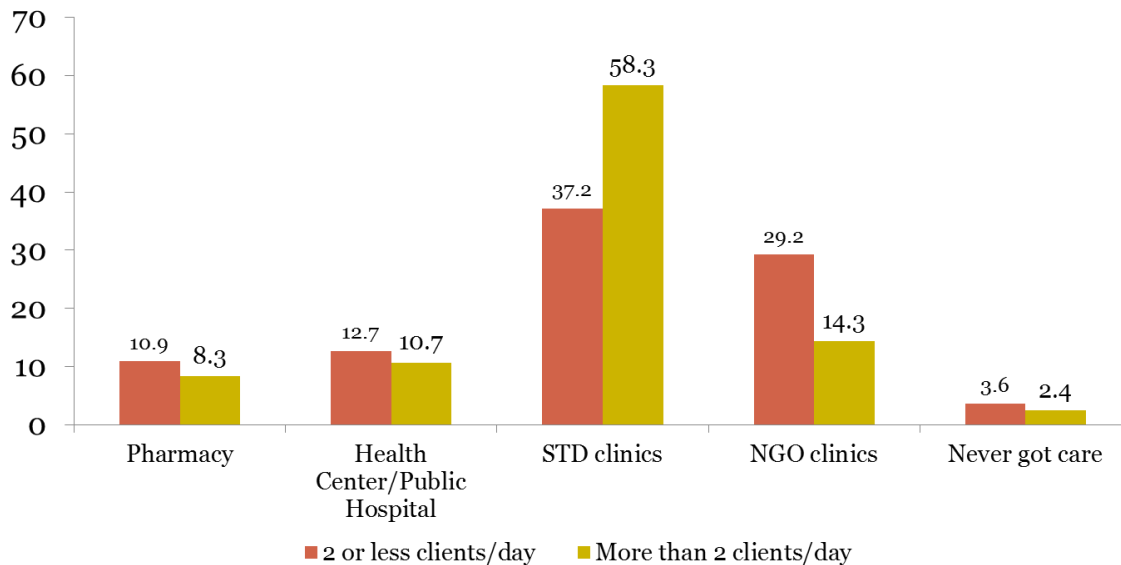
The most common symptoms of sexually transmitted infections (STI) reported by FEW in this survey were vaginal discharge/discharge with bad smell. A larger proportion of FEW with more than 2 clients on the last working day reported STI symptoms compared to FEW with 2 or fewer clients. The former also reported having cuts or sores on their genital organs or genital warts more often than the latter.

Table 9: Health seeking behavior related to STI

Parameters	2 or less clients on last working day	More than 2 clients on last working day
Reported STI symptoms in the past year		
Vaginal discharge/ discharge with bad smell	44.2%	62.3%
Cut or sore on genital organs	3.0%	5.4%
Genital warts	1.2%	4.6%
Reported using public STI clinics in the past 3 months		
One time	25.0%	20.2%
2-3 times	39.1%	59.6%
Never	20.7%	7.0%

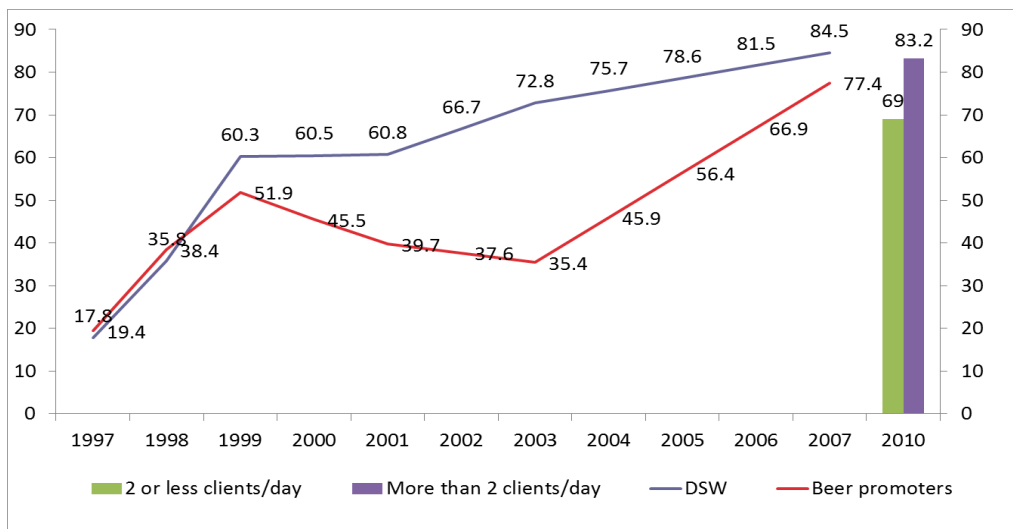
Places where FEW sought care for their last STI symptom were different between those who had more than 2 clients and those who had had 2 or fewer clients on the last working day. Those with more than 2 partners per day reported using STI clinics (58.3%), while only 37.2% of FEW who have 2 or fewer sexual partners per day used STI clinics to seek treatment when they experienced STI symptoms.

Figure 8: Places where FEW sought care for the last STI symptom



Utilization of health facilities and/or NGO clinics for care and treatment of STI symptoms has been increasing since 2003; more and more FEW are reporting the use of health facilities or NGO clinics for treatment of their STIs. However, this round of BSS shows there has been a drop in the reported use of STI services in recent years, especially among FEW who had 2 or fewer clients the last day of work before the interview.

Figure 9: Trend in the use of health facilities/NGO clinics for STI symptoms



HIV Testing and Knowledge about HIV/AIDS Care and Treatment

Table 10 shows that 63.7% of FEW who had 2 or fewer clients on the last working day reported having an HIV test in the year prior to the survey. This figure increased to 81.5% among FEW who had more than 2 clients. Almost all of the FEW who tested for HIV received counseling before or/and after the testing. A significantly lesser proportion of FEW were aware of the availability of ART and that they could get treatment if they needed it.

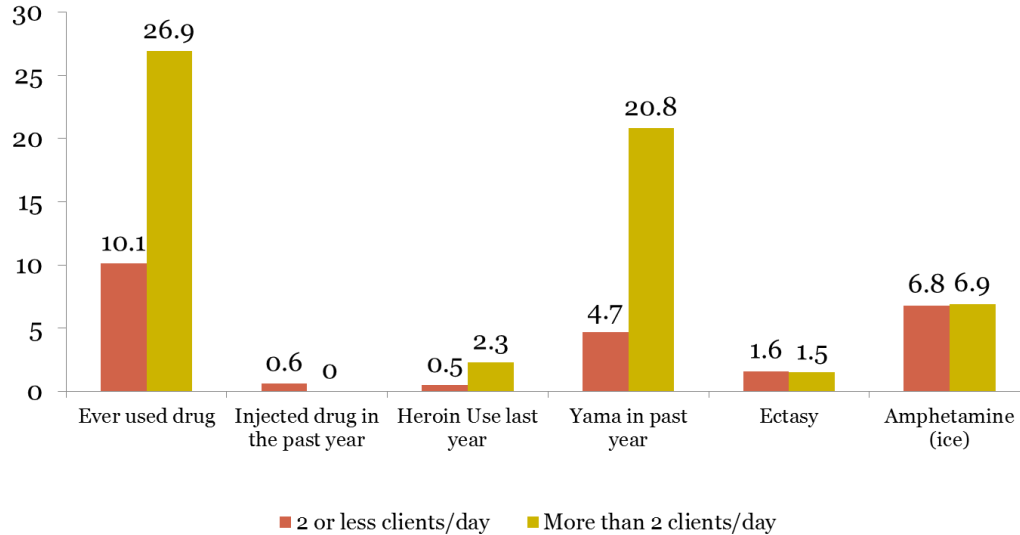
Table 10: HIV testing and knowledge about HIV/AIDS care and treatment

Parameters	2 or less clients on last working day	More than 2 clients on last working day
Received an HIV test in the past year	63.7%	81.5%
Received HIV test result last time they had test among testers	98.4%	98.1%
Received an HIV test AND received result in the past year among all EFW enrolled in the study	62.6%	80%
Received counseling before having HIV test	95.1%	95.4%
Received counseling when receiving HIV test result	94.8%	96.3%
Awareness of the availability of ARV drug	82.6%	86.7%
Believes she can receive ARV if she needed to	84.8%	90.8%

Drug Use and Types of Drugs Used

Drug use behaviors differ across the two FEW groups. About two thirds of FEW with 2 or more clients on the last working day reported that they had ever used drugs compared to one in ten FEW who only had 2 or fewer clients. Yama and amphetamine-type stimulants (ATS) such as Ice were the most commonly used drugs. 20.8% of FEW with more than 2 clients on the last day of work prior to the interview reported having used Yama in the 12 months preceding the survey compared to only 4.7% of the other FEW group. A small share (6.8% and 6.9%) of each group reported use of ATS in that same time period. It should be noted that only 0.6% of FEW with 2 or fewer clients on the last day of work and none of the FEW belonging to the other group reported having injected drugs in the past year.

Figure 10: Drug use and types of drug used



5.2 MOTO-TAXI DRIVERS

The average age of moto-taxi drivers who participated in this BSS was 34.3 years and had been working in that job on average for 6 years. Four in five of them were married and one in five was either unmarried or divorced/separated. Only a little over one fifth of all of the moto-taxi drivers reported that they had ever traveled far away from home and stayed away for more than 1 month.

Table 11: Demographic characteristics of moto-taxi drivers

Characteristics	N=1003
Mean age in years (Median)	34.3 (32)
Marital status	
Married	80.1%
Unmarried	12.4%
Divorced/separated	7.3%
Mean age at first marriage (Median)	24.8 (24)
Had no schooling or less than 5 years of schooling	22.3%
Has been living in the current city/town for less than 1 year	5.0%
Mean duration of work as moto-taxi driver	6 years (4)
Ever traveled far from home and stayed away for more than 1 month	22.7%

Sexual Behaviors

Only 2.5% of all moto-taxi drivers reported that they had never had sex. The mean age at first sex was 21.6 years, which is before the mean age when they first got married (24.8 years). 29% of moto-taxi drivers reported having had their first sex with a female commercial sex worker.

Moto-taxi drivers had high levels of sexual activity in the year preceding the survey. About one in three reported having more than three female sexual partners (including their wife). Close to one in five moto-taxi drivers indicated having had a sweetheart in the past year, though this proportion was a little smaller among those who were married. Two thirds of all of them had had sex with a sweetheart in the 12 months preceding the survey.

Table 12: Sexual behaviors of moto-taxi driver

Sexual Behaviors	N=1003
Has never had sex	2.5%
Age at first sex (median)	21.6 (21)
First sexual partner among those who experienced sex	
Wife	36.4%
Girlfriend	32.9%
Female commercial sex worker	29.0%
Mean number of female partners (incl. wife) they had sex with in the past month	1.3 (1)
Had more than 3 female partners (incl. wife) in the past year	34.4%
Had sweetheart in the past year	19.5%
Had sweetheart in the past year among married moto-taxi drivers	13.9%
Had sex with a sweetheart in the past year (among those who had sweetheart)	65.0%
Ever had group sex with multiple males and one female	4.8%

Approximately one third of all of the moto-taxi drivers who were interviewed in the current BSS reported having paid for sex in the past month. The great majority had met/recruited the last person who they had paid for sex at entertainment venues such as brothels, massage parlor or hotels/guesthouses. A smaller number had done so at a hotel and only very few in the street.

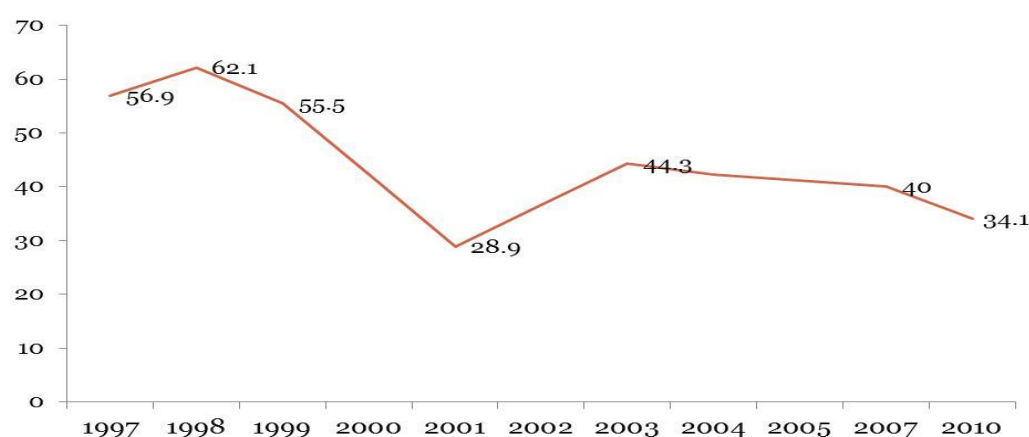
Close to half of the moto-taxi drivers reported that they had consumed alcohol (at least 3-6 cans of beer) before the last time they bought sex. In addition, more than one in ten of them reported having had sex with casual partners in the past month. Meanwhile, less than one moto-taxi driver out of one hundred said they had had sex with a man in the year preceding the interview.

Table 13: Sexual practices among moto-taxi drivers

Characteristics	N=1003
Has paid for sex in the past 12 months	34.1%
Places where they met/recruited paid sexual partner (last sex)	
Entertainment venues (brothel/karaoke/massage parlor)	82.7%
Hotel/guesthouses	16.4%
Street	1.5%
Amount of alcohol consumed before buying commercial sex (the last sexual encounter)	
At least some (at least 3-6 cans of beer)	47.0%
No drink at all	23.0%
Ever had sex with casual partner (not paid) in the past year (among those who ever had sex)	13.2%
How many condom (layers) was used during the last sex	
One	67.5%
Two	27.9%
Used lubricant last time they had sex	7.9%
Had sex with men in the past year	0.6%

The trend of buying commercial sex by moto-taxi drivers has been decreasing from 1997 to 2010, and has dropped from 56.9% to 34.1% buying sex in this time period.

Figure 11: Trend of buying commercial sex by moto-taxi drivers (1997-2010)



Condom use

In the 2010 BSS, only two thirds of moto-taxi drivers indicated they used a condom during their last sexual intercourse with a person they paid for sexual services. As many as one in four of them reported the use of two condoms at the same time which is known to be a factor of risk.

Furthermore, among those who reported using a condom in the past year, 8.2% reported experiencing condom breakage.

Condom use by moto-taxi drivers with sweethearts was found to be quite low. Just over one half of moto-taxi drivers used condoms consistently with their sweetheart(s) in the three months preceding the interview (Figure 9). Less than three quarters of them reported having used a condom at the last sex with a sweetheart, which has not much changed since the last BSS in 2007 when 71.7% of moto-taxi drivers reported having used a condom at last sex with a sweetheart.

Figure 12: Consistent condom use with sweetheart

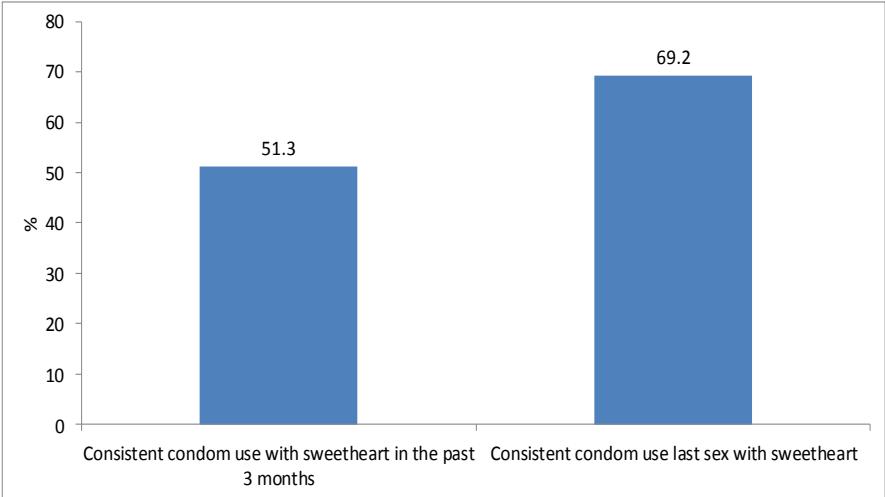
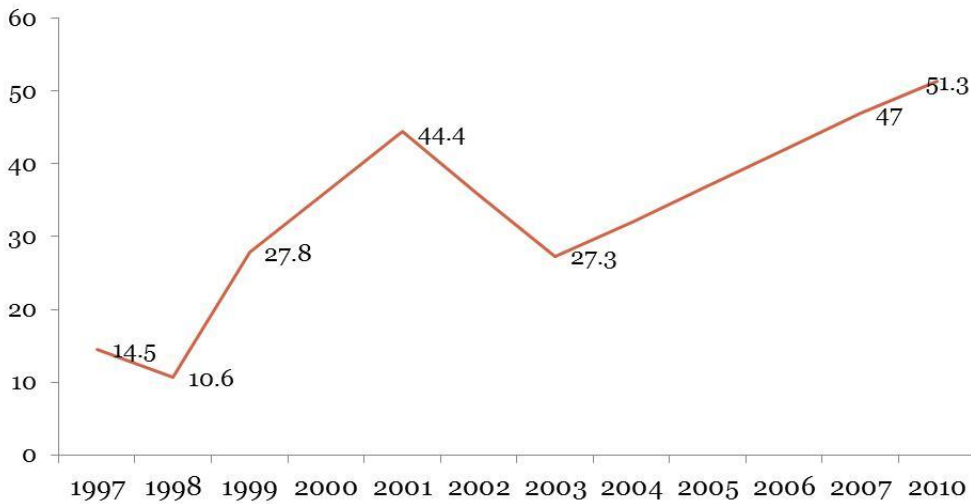


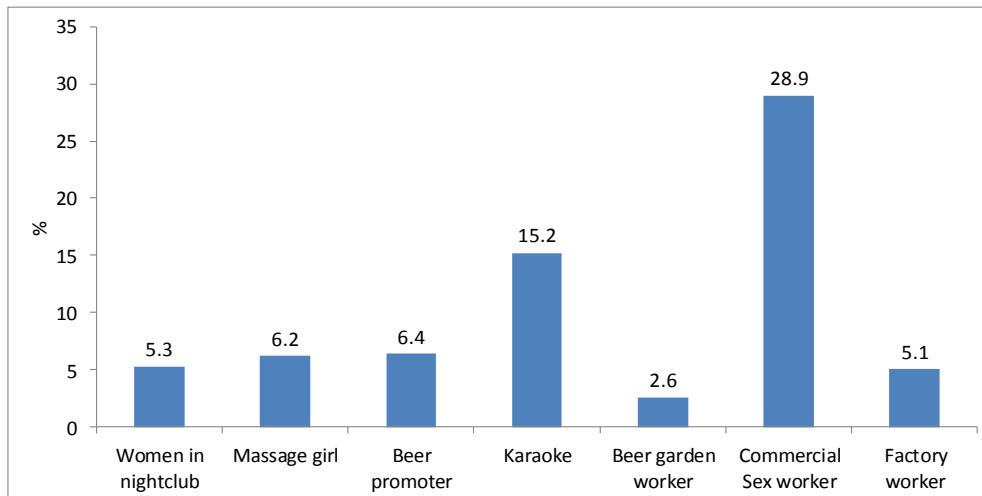
Figure 13 shows that self-reported consistent condom use in the 3 months preceding the survey with a sweetheart has increased over time. However, progress made with improving this indicator remains unsatisfactory.

Figure 13: Trend in consistent condom use in the past 3 months by moto-taxi drivers with sweethearts (1997-2010)



When asked about who they paid for sexual services in the past year, 28.9% of moto-taxi drivers cited commercial sex workers, 15.9% female karaoke workers and smaller proportions mentioned instead beer promoters, massage girls and women in night clubs. In this round of BSS 5.1% of moto-taxi drivers reported buying sex from female factory workers compared to 3.0% in the 2007 BSS, suggesting that female factory workers may represent an emerging high-risk group or some female commercial sex workers might have used factory worker occupation to hide the nature of their commercial sex work.

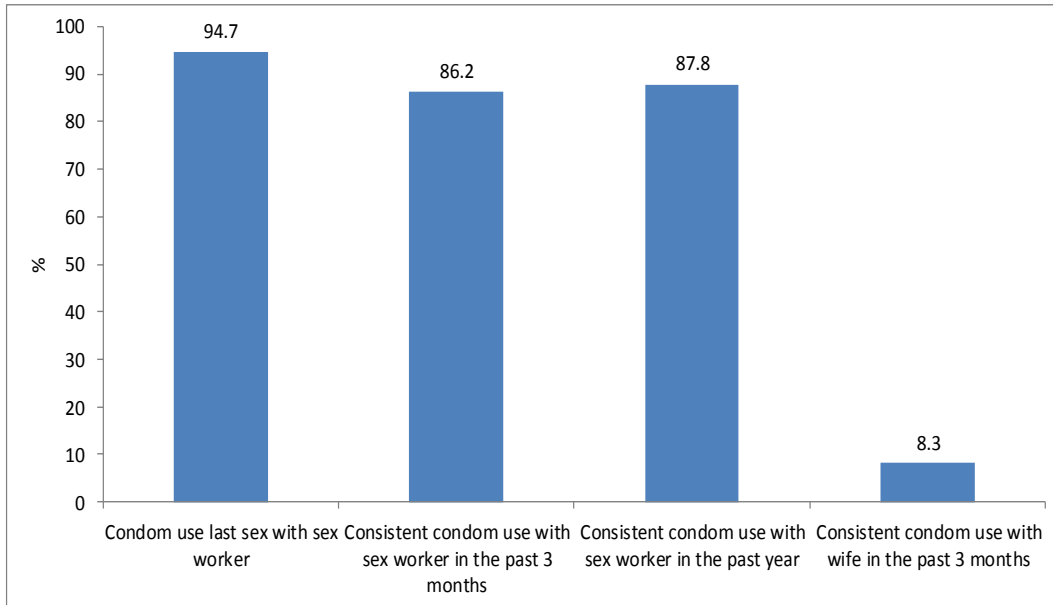
Figure 14: Commercial sex partners of moto-taxi drivers in the past year



94.7% of moto-taxi drivers indicated they had used a condom the last time they had sexual intercourse with a commercial sex worker compared to 95.2% in the 2007 BSS. However, the percentage of moto-taxi drivers who used condoms consistently in the past three months with a

commercial sex worker was much lower at 86.2%. In addition, the current BSS found consistent condom use with regular partners in the past 3 months to be very low (8.3%) compared to 16.4% in 2007 BSS.

Figure 15: Consistent condom use with different sexual partners



Overall, the trend in consistent condom use among moto-taxi drivers with commercial sex workers has remained unchanged since the last BSS in 2007 at approximately 86%.

Figure 16: Trend in consistent condom use in the past 3 months by moto-taxi driver with commercial sex workers (1997-2010)

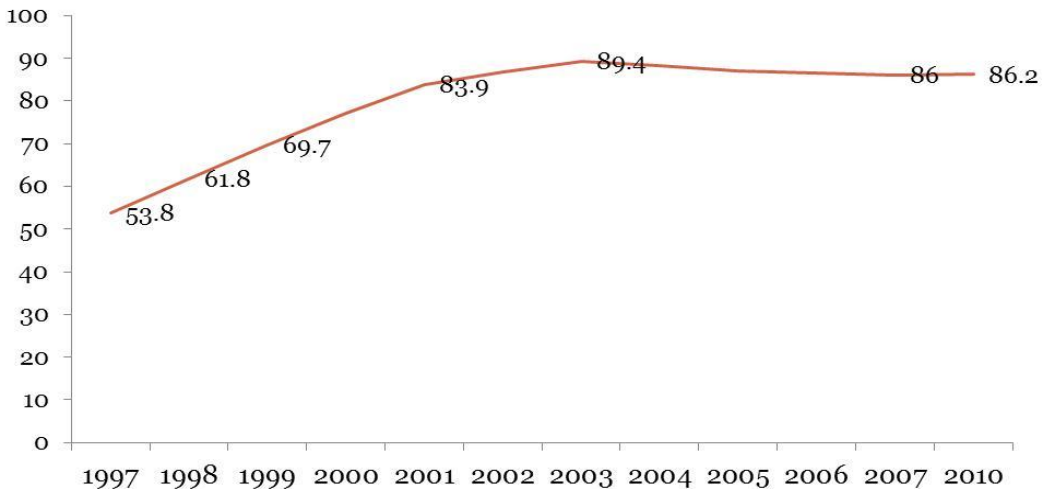
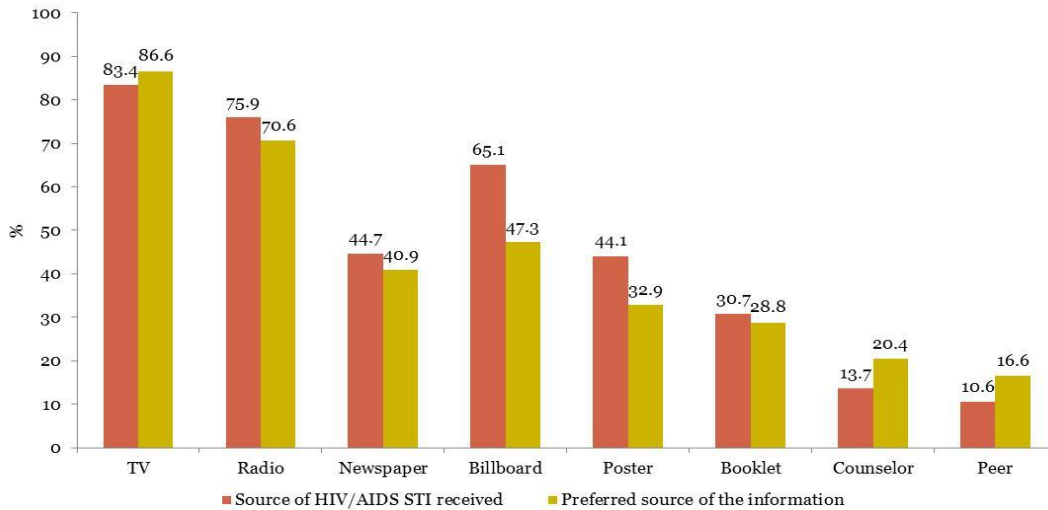
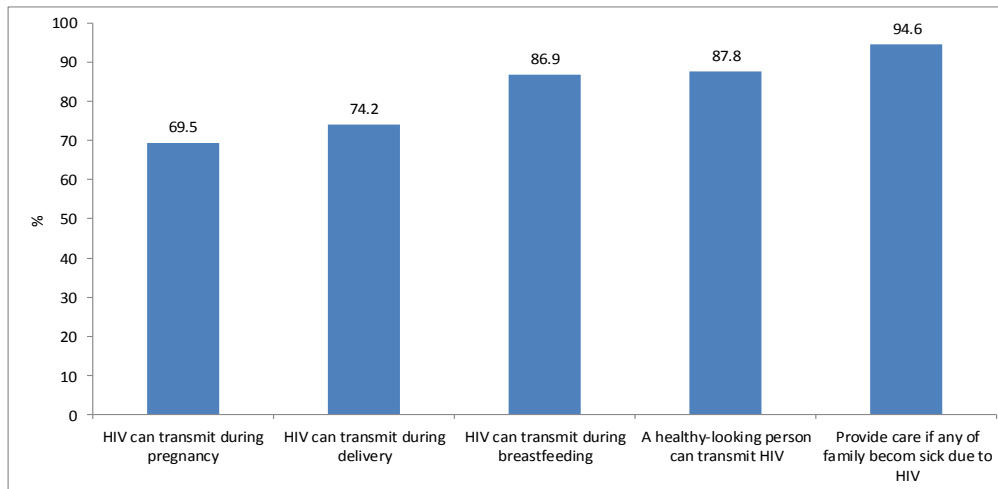


Figure 17: Sources and preferred sources of HIV related information by moto-taxi drivers



TV, radio and billboard are the most preferred source of receiving HIV/AIDS information mentioned by moto-taxi drivers included in the study. As expected, the majority of moto-taxi drivers reported receiving HIV/AIDS information from these sources.

Figure 18: Knowledge about HIV/AIDS transmission among moto-taxi drivers



In general, moto-taxi drivers are knowledgeable of HIV/AIDS; however, like FEW, knowledge of mother-to-child transmission of HIV was limited. Only 69.5% of moto-taxi drivers knew that HIV can be transmitted during pregnancy and 74.2% knew about vertical transmission during delivery. However, up to 94.6% said they would provide care if any family member became sick due to HIV.

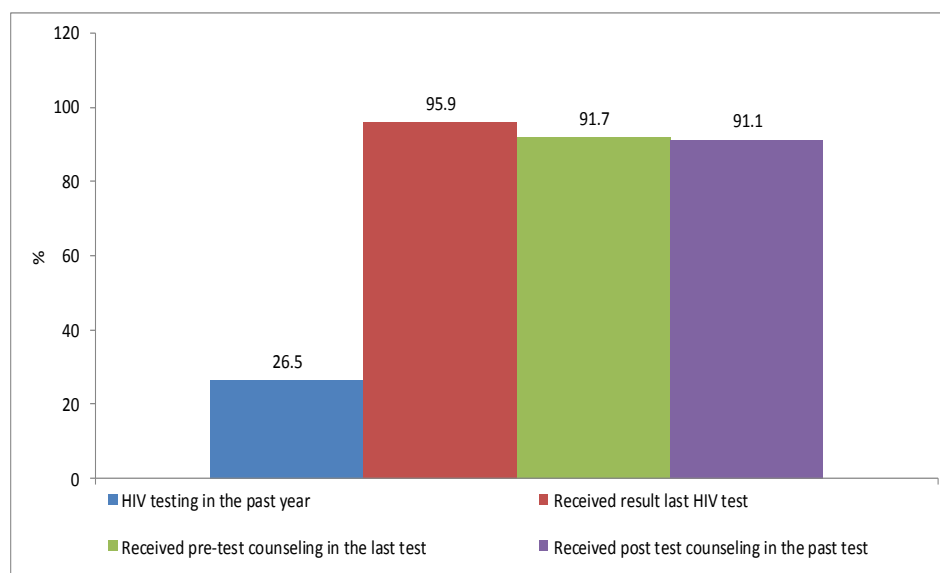
Table 14: Health seeking behaviors of moto-taxi drivers

Characteristics	N=1003
Reported any symptom of STI in the past year	3.0%
Sought treatment for last STI	
Pharmacy	33.3%
Private clinics	16.7%
Traditional doctor	20.0%
STI clinics/NGO clinics	13.0%
Did not get care	13.3%
Ever received reproductive health information/FP in the past 3 months	72.2%
Received free condoms in the past year	62.4%
Knows where to get an HIV test	81.0%
Is aware of the existence of antiretroviral treatment	87.7%
Believes being able to receive drug if needed	85.0%

Among those moto-taxi drivers who reported having had STI symptoms in the past year, 13.3% reportedly did not seek care and 33.3% reported buying medicine from a pharmacy to treat their STI symptoms.

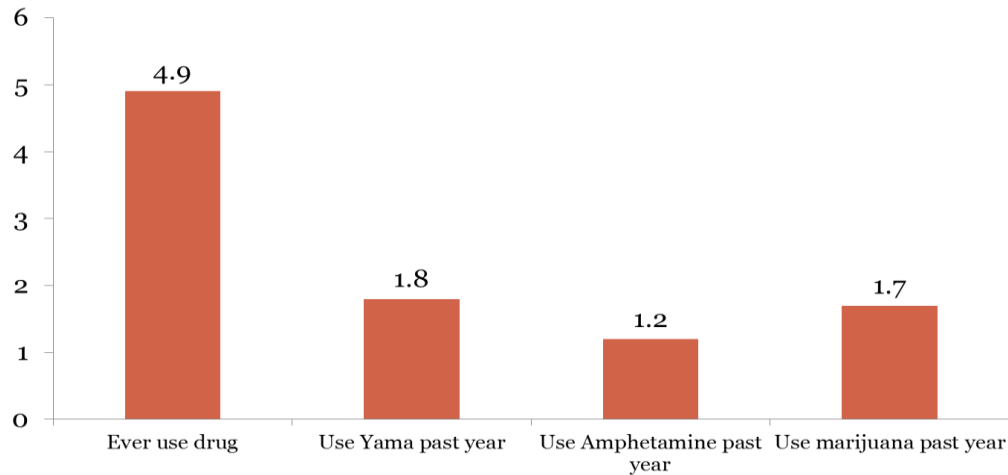
Regarding reproductive health messages, 72.2% of moto-taxi drivers reported having been exposed to family planning information in the past 3 months and 62.4% reported having received free condoms in the past year. 81% of moto-taxi drivers knew where they could go to get an HIV test and 87.7% were aware of the existence of antiretroviral therapy for AIDS patients.

Figure 19: Uptake of HIV testing in the past year among moto-taxi drivers



Out of the total number of moto-taxi drivers interviewed, 26.5% indicated that they did have an HIV test in the 12 months preceding the survey. Among those tested, more than 90% received pre-test and post-test counseling, and returned to receive their HIV test result.

Figure 20: Drug use and types of drug used by moto-taxi drivers



4.9% of moto-taxi drivers who participated in the study reported ever having used drugs. None of the respondents reported having injected drugs in the year prior to the survey. The most commonly used illicit drugs by moto-taxi drivers who ever used drugs in the past year were Yama (1.8%), marijuana (1.7%) and amphetamines (1.2%).

5. 3 PEOPLE LIVING WITH HIV/AIDS

Demographic Characteristics

For the purposes of the 2010 BSS, people living with HIV/AIDS (PLHIV) were divided into two sub-groups: patients receiving pre-ART services and patients who were on ART at the time of the study. In the next sections, findings for both groups (including both males and females) are presented in a disaggregated fashion. The total figures for pre-ART and ART patients might not be representative of the whole group since the characteristics of males and females within each group are not homogeneous.

Table 15: Demographic characteristics of the PLHIV

Characteristics	Pre-ART patients (n=416)		ART patients (n=480)	
	Male	Female	Male	Female
	134	282	224	255
Mean age in years	35.9	34.1	37.9	36.6
Marital status				
Married	77.6%	62.4%	79.0%	54.9%
Widowed/divorced	10.5%	33.7%	11.2%	40.4%
...Not married	6.7%	0.7%	8.5	1.2%
...Married but not living together	3%	3.2%	0.9%	3.5%
...Not married but living together	2.2%	0%	0.5%	0%
Has had no schooling	13.4%	35.2%	5.8%	31%
Mean years of schooling	6.9	5.4	7	5.5

Most of the PLHIV included in this study were in their mid-30s. The majority of them were married, though a very high proportion of females were widowed (33.7% of pre-ART female patients and 40.4% of ART female patients). One third of female PLHIV reported having received no education, compared to only one in ten males. Among those who had been to school, male PLHIV reported more years of schooling than female PLHIV.

Table 16: Status of HIV care and treatment among PLHIV

Characteristics	Pre-ART patients			ART patients		
	Male	Female	Total	Male	Female	Total
Mean duration of knowing their HIV positive status in months	27	43.7	38.4	50.9	60.6	56.1
HIV status is known by their spouse	94%	85.7%	88.3%	91.6%	86.1%	88.7%
Place where tested and found out HIV positive status						
Public hospital	34.3%	17.4%	22.8%	30.8%	16.1%	23%
VCCT	59.7%	77.6%	71.8%	61.5%	80.0%	71.2%
Private clinic	3.0%	4.6%	4.1	7.1%	3.9%	5.4%
Received counseling during the HIV positive test	97.8%	98.2%	98.1%	100%	96.9%	98.3%
Mean duration of being on treatment in months	16.9	32.9	27.7 (18)	33.9	35.7	34.8 (33)
Being a member of self-support group	30.6%	39.4%	36.5%	40.6%	55.3%	48.4%

Table 16 shows that the mean duration of time since PLHIV found out their HIV positive status was between 2 to 5 years, with the duration of females exceeding that of males. A majority of PLHIV indicated that their spouse was also infected with HIV, especially males, among whom more than nine out of ten said that this was the case.

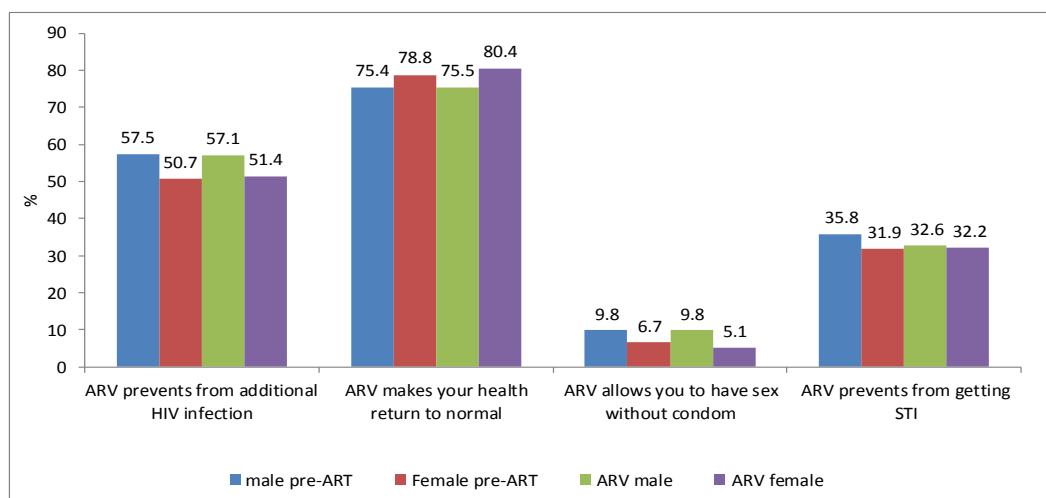
Care and Treatment

VCCT and public hospitals were the most common places where these study participants got tested and learned their HIV status. Female PLHIV got tested at a VCCT site more frequently than male PLHIV; male PLHIV more often got tested at a public hospital. In general, almost all PLHIV reported having received counseling at the time of their HIV testing.

The mean duration since when the two groups had been put on pre-ART and ART ranged between 1.4 to 2.9 years. As expected, PLHIV who at the time of the interview were on ART reported having received care and treatment over a longer time period than those enrolled in pre-ART

A major gender discrepancy was found with respect to self-help group adherence; female PLHIV said they belonged to such a group much more frequently than male PLHIV. Similarly, a significantly larger share of PLHIV on ART said they were a member of a self-help group compared to PLHIV on pre-ART. This suggests that the likelihood of becoming a member of such a group increases over time with the development of the illness and presumably increasing involvement with health care and other support services.

Figure 21: Perceptions about the benefit of ARV care and treatment among PLHIV



Overall, more than three quarters of PLHIV who responded to the questionnaire agreed that ARV drugs allowed their health status to return to fairly good or good. More than half of them felt that taking ARV drugs were preventing them from having an additional HIV infection.

Table 17: Current health status of PLHIV

Characteristics	Pre-ART patients			ARV patient		
	Male	Female	Total	Male	Female	Total
Current health status						
Good	3.0%	17.0%	12.5%	8.0%	15.3%	11.9%
Fairly good/normal	73.8%	58.5%	63.4%	80.8%	70.1%	74.7%
Not good	23.1%	24.5%	24%	12.0%	14.5%	13.4%
Health status compared to 6 months ago						
Improved	29.9%	40.4%	37%	50.4%	60.3%	55.7%
Remain the same	51.5%	40.1%	43.8%	38.8%	27.1%	32.6%
Poorer	18.6%	19.4%	19.1%	10.7%	12.5%	11.7%
Ever drink alcohol in the past 6 months	59.0%	24.5%	35.6%	57.4%	21.6%	38.3%
Amount of alcohol drunk last time						
A lot (more 6 cans of beer)	21.3%	4.2%	13.2%	14.4%	1.8%	10.6%
Some (3-6 cans of beer)	18.8%	11.1%	15.1%	15.9%	8.8%	13.8%
...Few cans	60%	84.7%	71.7%	68.9%	87.7%	74.6%

Generally, PLHIV on ARV treatment had a considerably better feeling about their health status at the time of the survey compared to PLHIV on pre-ART care. On average 23.8% of the former compared to only 13.3% of the latter said their health status was not good. In addition, the survey found interesting gender disparities, with females more often than males saying they were feeling either good or not good. Meanwhile, among PLHIV belonging to the pre-ART group, almost three quarters of males felt that their health was in between these two conditions, meaning “fairly good/normal,” compared to less than two thirds of the females belonging to this group.

When asked to compare their health status to that of 6 months prior to the survey, slightly more than one third of PLHIV on pre-ART indicated it had improved compared to more than half of PLHIV on ART. As many as one in five of the former said their health status had deteriorated compared to about one in ten among the latter. Female PLHIV in both groups claimed that their health status had improved more often than male PLHIV; meanwhile males more often than females reported that their health status had remained unchanged.

Alcohol Consumption

The survey also assessed alcohol consumption among PLHIV. It was found that more than half of male PLHIV reported ever drinking alcohol in the past 6 months, regardless of ARV status.

While there was not much difference between the pre-ART and ART groups, alcohol consumption among females was much less common than among males. Only one in four female PLHIV belonging to the pre-ART group ever drank alcohol in the past 6 months compared to almost three in five male on pre-ART. The situation was similar in the ART group. Male PLHIV not only drunk more often than female PLHIV, they also consumed larger amounts of alcohol.

Sexual Behaviors

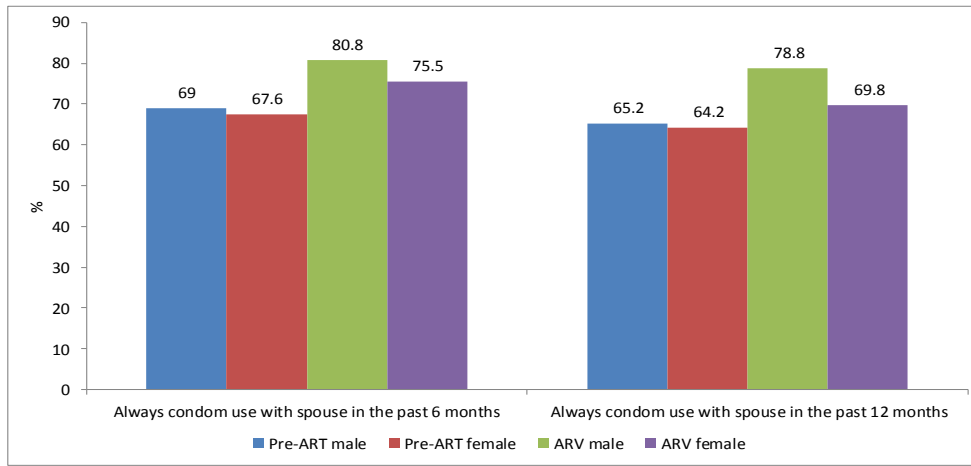
Table 18: Sexual behaviors among PLHIV

Characteristics	Pre-ART patients			ARV patients		
	Male	Female	Total	Male	Female	Total
Ever had sex in the past 6 months	80.3%	61.4%	67.4%	80.3%	53.8%	66.1%
Median number of sexual partners in the past month	1	1	1	1	1	1
Median number of sexual intercourses with spouse per month	3	2	2	2	2	2
Having sweetheart in the past 6 months	9.0%	5.7%	6.7	4.5%	3.9%	4.2
Had sex with sweetheart in the past 6 months (among those with sweetheart)	46.2%	47.1%	46.7%	50.0%	50.0%	50%
Condom use at last sex with sweetheart	87.5%	87.5%	87.5%	71.4%	85.7%	78.6%

The majority of PLHIV remained sexually active with little difference between those who were on pre-ART and those who were on ART. Males more frequently reported having had sex in the six months preceding the survey compared to females, with about four in five males reporting having had sex in this time period compared to only a little more than two thirds of females. The average number of sexual intercourses with their spouse was 2 per month. PLHIV reported that on average they had had one partner in the month prior to the survey; however, half of them indicated that they had had a sweetheart in the past 6 months. Condom use by PLHIV at last sexual intercourse with a sweetheart was low in all groups, below 90%.

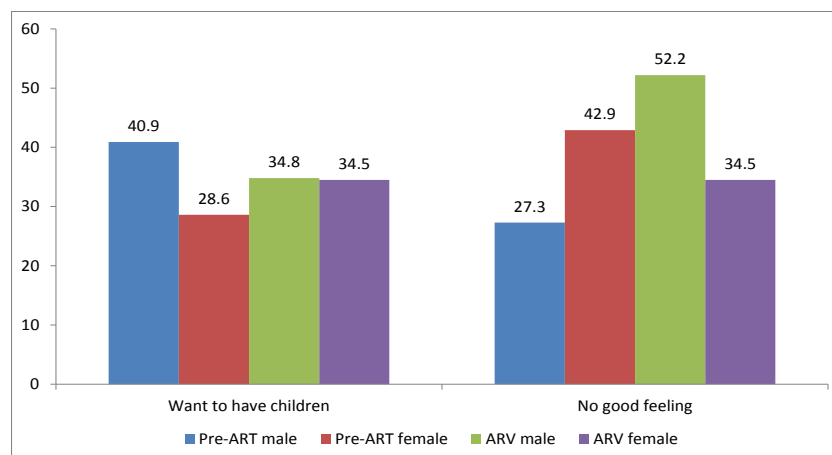
Condom Use

Figure 22: Consistent condom use with spouse among PLHIV



Reported consistent condom use by PLHIV with their spouse was even lower – in the pre-ART group, only around two thirds of PLHIV reported consistent condom use with their spouse in the year preceding the survey, with very little difference between males and females. Consistent condom use with spouse among PLHIV belonging to the ART group was a little higher with males reporting this practice more often than females.

Figure 23: Reasons for not using condoms consistently with spouse



When asked why they would not use condoms consistently with their spouse, about one third of all PLHIV said this was because they wanted to have children. Another frequently cited reason was the lack of a good feeling during the sexual intercourse, with about half of the males on ART citing this as the reason why they were not using condoms consistently with their spouse.

Commercial Sex Use

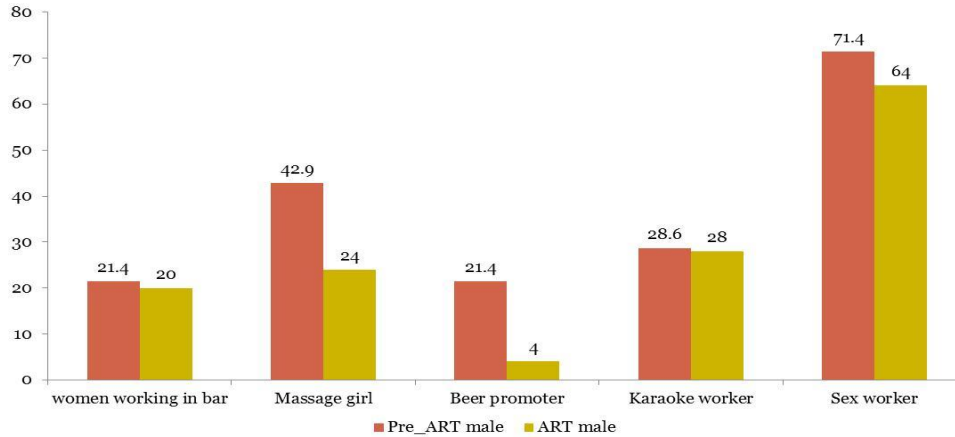
Table 19 shows that more than one in ten male PLHIV (who had sex in the past 6 months) reported having bought sex in the past 6 months. In this group only about half of those on pre-ART reported using a condom at their last sex with a sex worker and close to three quarters of those on ARV reported using a condom at last sex with a sex worker. As little as two thirds in each of the two groups reported consistent condom use with sex workers in the past year.

Table 19: Use of commercial sex by male PLHIV

	Pre-ART male	ARV male
Ever paid to have sex in the past 6 months (among those who had sex in the past 6 months)	9%	13.3%
Condom use at last sex with a sex worker (n=46)	52.4%	72.0%
Consistent condom use with sex worker in the past 3 months (n=21)	70.0%	63.6%
Consistent condom use with sex worker in the past year (n=27)	66.7%	66.7%
Ever had sex with casual partner in the past 6 months	5.2%	2.2%
Ever had sex with men in the past year	2.5%	0.5%
Ever had condom breakage/slippage in the past year	10.9%	5.2%
Used lubricant at last sex (in the past year)	8.8%	9.8%

Overall, only a very small number of male PLHIV, who participated in the study, reported ever having had sex with another man in the year preceding the interview.

Figure 24: Types of female commercial sexual partners



Out of those who ever bought sex in the past 6 months, the majority indicated they had done so from a sex worker (Figure 24). However, sex was also very often purchased from massage girls and karaoke workers and to a somewhat lesser extent from beer promoters and women working in bars.

HIV/AIDS and Family Planning Knowledge

PLHIV who participated in the study were asked where they received information related to HIV/AIDS. Health care staff working at OI/ART centers was the most commonly cited source followed by peer, outreach and NGO workers and staff of VCCT centers. Staff of STD clinics was mentioned to a lesser extent by PLHIV. As expected, PLHIV on ART more frequently cited OI/ART staff and peer/outreach/NGO workers compared to those on pre-ART who more often mentioned VCCT staff.

Figure 25: Source of information related to HIV/AIDS

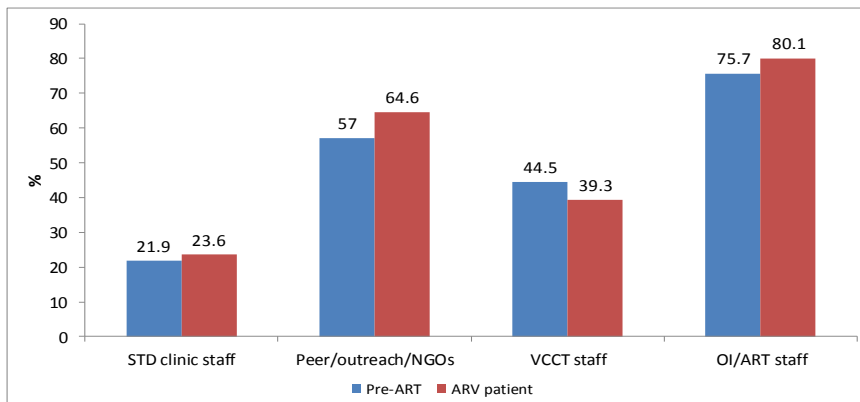


Table 20: Knowledge about HIV/AIDS and of family planning methods among PLHIV

Characteristics	Pre-ART patients			ART patients		
	Male	Female	Total	Male	Female	Total
Knows following family planning methods						
Intrauterine device (IUD)	41.8%	58.9%	53.4%	49.6%	62.0%	56.1%
Oral contraceptive	47.8%	72.7%	64.7%	59.4%	65.2%	62.5%
Condoms	95.5%	91.5%	92.8%	96.9%	92.8%	94.7%
People on ART can transmit HIV to their sexual partners	87.3%	90.4%	89.4%	95.1%	96.5%	95.8%
Taking ARV drugs can prevent STIs	38.4%	35.7%	36.6%	33.8%	34.5%	34.2%
HIV can be transmitted to baby during pregnancy	74.6%	70.2%	71.6%	80.8%	79.6%	80.2%
HIV can be transmitted to baby during delivery	79.9%	73.8%	75.7%	85.3%	83.1%	84.1%
HIV can transmit to baby during breastfeeding	89.6%	95.4%	93.5%	94.6%	97.7%	96.2%

Table 22 shows that almost all of the PLHIV who participated in the survey knew that condoms can be used for family planning. The use of oral contraceptive pills and intrauterine devices (IUD) for family planning purposes was known to a much smaller number of PLHIV, especially among males. In general, males had a better knowledge about family planning benefits of condoms, while females knew more about the use of oral contraceptive pills than males. Overall, the usage of IUD was the least known family planning method.

Around nine in ten PLHIV believed that people on ARV can transmit HIV to their sexual partners, although a larger percentage of PLHIV on ART than of PLHIV on pre-ART shared this belief. More than one third of all respondents believed that taking ARV drugs could help prevent STIs, revealing that there remain considerable misconceptions, which may require more effort from counseling services to dispel such beliefs.

Data presented in Table 20 shows an inconsistent understanding of how transmission of HIV may occur from mother to child during pregnancy or at/after delivery. Three quarters of all PLHIV indicated they knew that HIV can be transmitted from mother to child during pregnancy, four in five of them said they were aware that HIV can be transmitted to the baby at delivery, while almost all stated they knew that this kind of transmission can occur through breastfeeding. A closer look at the gender disaggregated data reveals that male PLHIV responded affirmatively to questions about transmission of HIV during pregnancy and delivery more often than female PLHIV.

STI Symptoms and Health Seeking Behavior

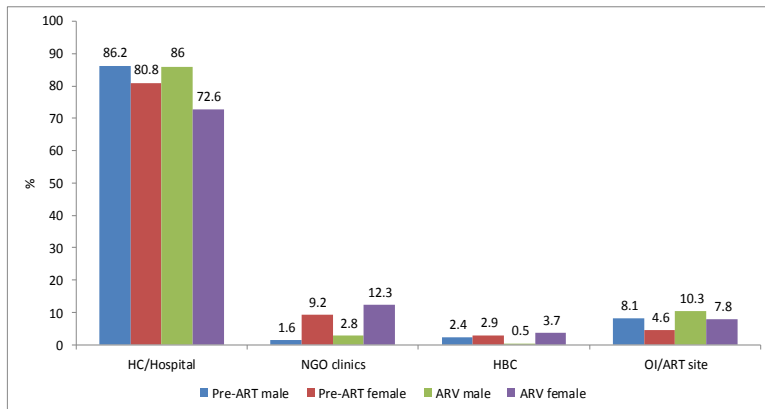
Around one half of all female and less than one quarter of all male PLHIV said they used an STI service in the past 12 months when they experienced STI symptoms. Female PLHIV reporting having STI symptoms in the past year much more frequently than male PLHIV, with more than two thirds of female PLHIV reporting having had an STI symptom in the 12 months preceding the survey; furthermore, more than 10% indicated that at that time they did not seek any treatment. Meanwhile, only a little more than one in ten males reported having had STI symptoms in that timeframe.

Table 21: STI symptoms and health seeking behavior among PLHIV

Characteristics	Pre-ART patients			ART patients		
	Male	Female	Total	Male	Female	Total
Reported any STI in the past year	16.4%	38.3%	31.3	8.5%	32.9%	21.5%
Places sought for the last STI treatment						
Pharmacy	27.3%	11.5%	14.1%	27.3%	5.7%	10%
Health Center/Public Hospital	27.3%	36.3%	34.8%	36.4%	37.5%	37.3%
Public STI clinics	22.7%	15.9%	17%	18.2%	15.9%	16.4%
NGO STI clinics	4.6%	15.0%	13.3%	4.6%	22.7%	19.1%
No treatment	9.1%	13.3%	12.6%	9.1%	13.6%	12.7%
Has Ever used STI services in the past 12 months after knowing their HIV status (among all participants)	24.5%	50.3%	41.7%	20.0%	48.7%	34.9%

PLHIV most often reported the use of a health center, public hospital or public STI clinic for the treatment of their last STI symptom; however, a large share of male PLHIV indicated that for this purpose they had simply purchased drugs at a pharmacy.

Figure 26: Places PLHIV visited to get family planning services



Health centers and public hospitals were the most common places where PLHIV in both respondent groups sought family planning services.

Figure 27: Sources of information about family planning

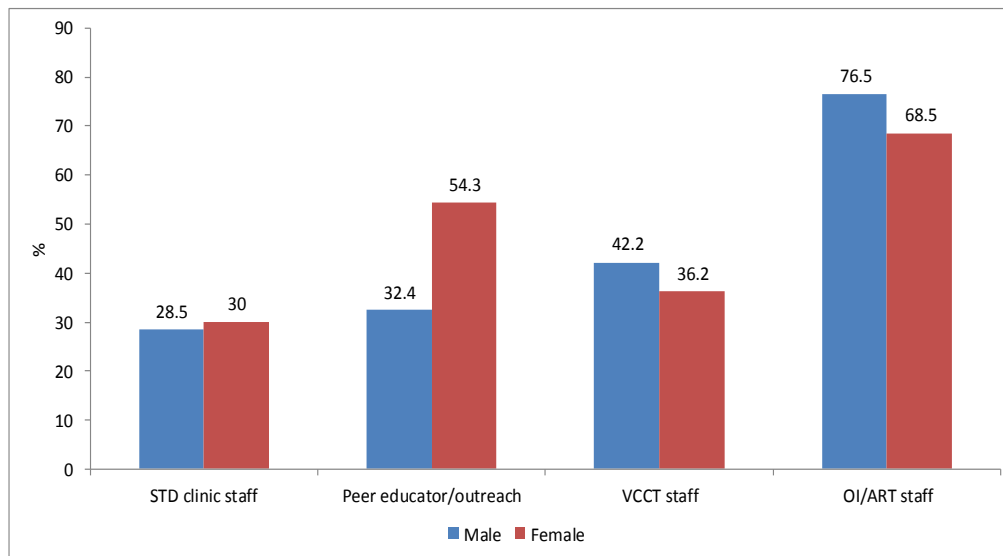


Figure 27 illustrates that staff working at OI/ART sites were considered by PLHIV the main providers of information about family planning. Other important sources of information include peer educators, outreach workers and staff from VCCT and STI clinics. STI clinic staff were mentioned in this context the least often by respondents.

Figure 28 illustrates accessibility of free condoms to PLHIV and education sessions instructing how to use them. Close to two thirds of study participants reported having received a free condom in the past year and almost three quarters said they received counseling about how to use condoms. PLHIV on ART more frequently got free condoms and counseling on how to utilize them compared to PLHIV on pre-ART.

Figure 28: Access to condoms among PLHIV

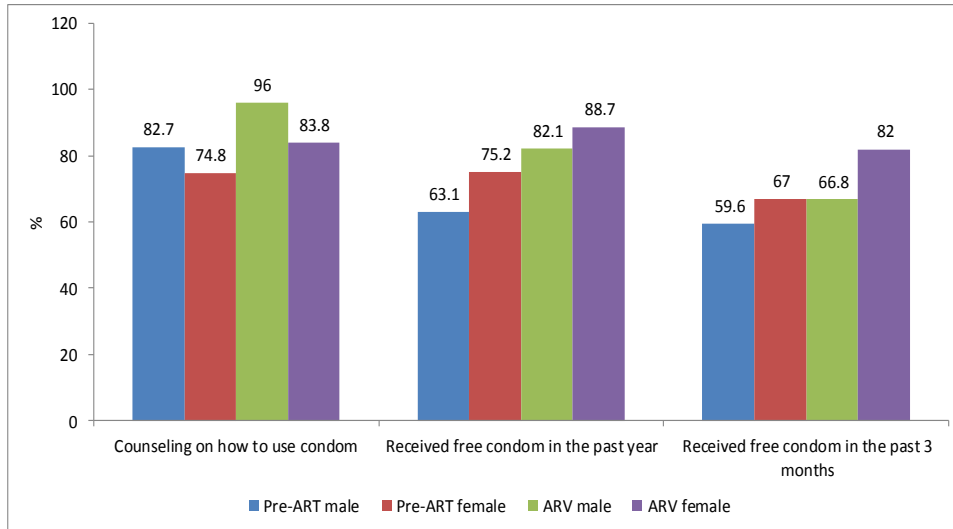
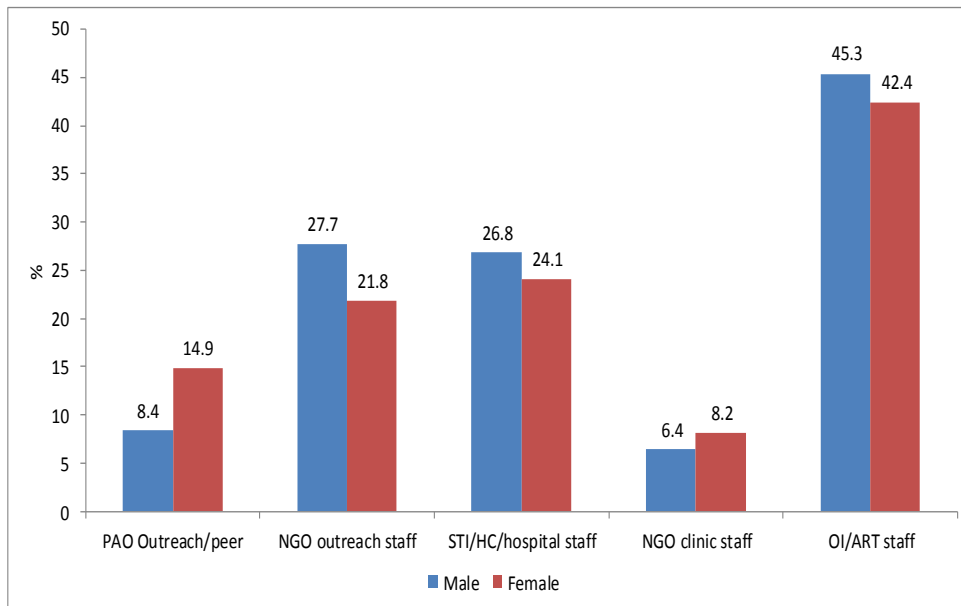


Figure 29: Persons who provided free condoms to PLHIV



Close to one half of all PLHIV who received free condoms indicated they got them from staff working at OI/ART sites. One in four of said they obtained free condoms from NGO outreach workers and from staff of STI clinics, health centers or hospitals. There was a relatively small gender difference, with the percentage of males exceeding that of females in all cases apart from the case of those having received free condoms from outreach/peer workers of the Provincial AIDS Offices (PAO).

Table 22: Utilization of pre-ART and ART services by PLHIV

Characteristics	Pre-ART patients			ART patients		
	Male	Female	Total	Male	Female	Total
Ever received counseling about OI/ARV drugs	97%	96.5%	96.6%	99	99.2	99.2%
Adhere to appointment keeping	97.8%	95%	95.9%	98.7%	98.4%	98.5%
Ever lost to follow up at one site before starting a new one	9.7%	11.4%	10.8%	7.2%	13.7%	10.7%
Ever received OI/ARV drugs from other patients						
Bought drugs	0%	1.8%	1.4%	0.5%	0.8%	0.6%
Borrowed drugs	0.8%	0.4%	0.2%	3.1%	3.9%	3.6
...No	99.3%	97.9%	98.3%	96.4%	95.3%	95.8%
Currently receiving OI/ARV drugs from at least 2 sites	0%	1.4%	1%	0.9%	2.8%	2%
Mean number of confirmation HIV tests taken after discovering HIV positive status	1.4	1.3	1.4	1.2	1.1	1.2

Almost all of the PLHIV who participated in the study reported having received counseling about their treatment regimen, especially those who were on ART. Similarly, almost all of them indicated they were adhering to appointments scheduled with health care providers.

Only about one in ten of all respondents reported ever having been lost to follow up at one site. Females across the two treatment groups reported this condition more often than their male counterparts.

When asked if they ever received OI/ARV drugs from other patients, only a very small number replied affirmatively and most of them indicated they had borrowed the drugs. It also should be noticed that only a very small number of PLHIV who responded to the questionnaire indicated that they were receiving OI/ART drugs from more than one site.

Spousal Characteristics and Knowledge

When asked about the HIV status of their spouse, more than two thirds of all PLHIV responded it was sero positive. Females more often than males provided this answer. Interestingly, only one half of male PLHIV on ARV treatment indicated their wife's status was positive. A small number of respondents indicated they did not know the HIV status of their spouse (7% on average). This was more often the case of females and of respondents on pre-ART.

Table 23: Knowledge among PLHIV about spouse HIV status

Characteristics	Pre-ART patients			ART patients		
	Male	Female	Total	Male	Female	Total
HIV status of spouse						
HIV positive	70.8%	78.2%	75.9%	50.3%	75.5%	63.6%
...HIV negative	23.9	11.7	15.5	44.9%	17.3%	30.3%
Don't know	5.3%	10.1%	8.6%	4.9%	7.2%	6.1%
Had pregnancy (herself or his wife) after learning about own HIV positive status	23.3%	32.4%%	28.9%	15.4%	24%%	20.1%
Has used PMTCT after knowing HIV status & becoming pregnant	69.0%	57.7%	60.5%	58.0%	72.2%	66.7%
Use of selective contraceptive methods after finding out HIV positive status						
Never use any contraceptive	3.5%	21%	14.9%	1.1%	8.7%	4.8%
Intrauterine device (IUD)	8.8%	3.7%	5.5%	9.3%	2.3%	5.9%
Oral contraceptives	14.9%	4.2%	7.9%	14.3%	6.9%	10.7%
Condoms	88.6%	68.2%	75.3%	91.2%	82.1%	86.8%
Has ever been referred to TB screening (among all study participants)	56.4%	46.4%	49.6%	75.9%	71.3%	73.4%

A larger proportion of PLHIV on pre-ART than of those on ART reported their spouses or themselves had a pregnancy after having learned about their own or their spouse's HIV positive status. Overall, about one in three of all respondents in the pre-ART group reported they themselves or their spouse had become pregnant after learning about their own or their spouse's HIV status compared to one in five belonging to the ART group. This is an interesting finding considering that three quarters of all male PLHIV reported using condoms as contraceptive methods since they found out their sero positive status. It suggests that condom use by PLHIV in intimate relationships is inconsistent.

Table 23 shows that only about 82% of female ART patients reported the use of condoms since the time they found about their HIV-positive status, while only 68% of female PLHIV belonging to the pre-ART group indicated using condoms. One in ten of all of the male PLHIV reported their spouses were using either oral contraceptives or intrauterine devices to prevent a pregnancy since they had found out their own or their spouse's sero positive status.

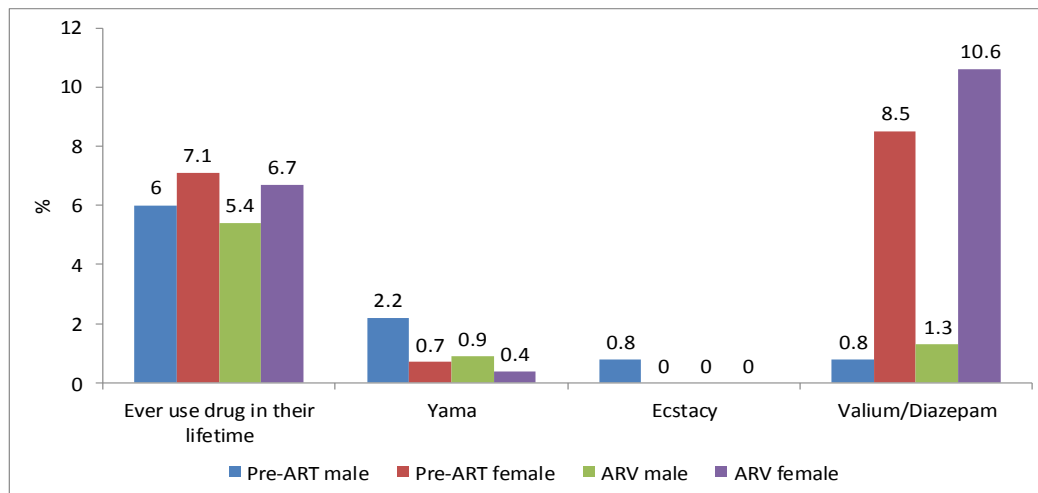
Around one half of all female and less than one quarter of all male PLHIV said they used an STI service in the past 12 months when they experienced STI symptoms. This is due to females having more often than males experienced STI symptoms in the past year and males more frequently than females seeking treatment at the pharmacy.

In addition, almost three quarters of PLHIV who were on ART were referred to TB screening, compared to only one half of PLHIV on pre-ART. A larger share of male PLHIV was referred to TB screening than female PLHIV in both treatment groups.

Drug Use

When asked if they ever had used illicit drugs in their lifetime, only about one in twenty PLHIV answered affirmatively, with females slightly more often than males declared they had used such drugs. Note that Valium and Diazepam were not considered illicit drug, but have been reported as drug of choice among females in pre-ART and ARV groups.

Figure 30: Drug use and types of drug use among PLHIV



6. Conclusions

6.1 Female Entertainment Workers

Because many brothels have been closed since 2008, it was not possible in this survey to clearly distinguish, like in past BSS, between direct female sex workers (DFSW) working in brothels and indirect female sex workers (IFSW) working in other entertainment establishments. The questionnaire was therefore administered to different types of female entertainment workers (FEW) including former brothel-based FEW, beer promoters and karaoke workers.

As it proved difficult to recruit a sufficient number of FEW from former brothels into the sample, a distinction between FEW was attempted based on the number of sexual clients they had had on their last working day prior to the interview. Consequently, FEW were classified into two groups: FEW who had 2 or fewer clients on their last day of work and FEW who had more than 2 clients. Data analysis showed that FEW with more than 2 clients/last working day had comparable characteristics to the former direct female sex worker sentinel group and most of them reported having worked as a brothel based sex worker in the past year. Therefore, this group was used as a proxy for the 'brothel based sex worker' or DFSW group, while FEW who had 2 or fewer clients on the last day of work were used as a proxy for those who in the past used to belong to the IDFSW group.

Analysis of FEW work history suggests that a large proportion of FEW were previously employed as factory workers. The transition from factory work to work in entertainment establishments needs further investigation and it is necessary to determine whether factory workers are becoming a new emerging group at high risk of HIV infection.

A clear trend in consistent condom use among direct and indirect female sex worker can no longer be established, because of the sampling problems that have been encountered in the current round of BSS. However, by distinguishing between FEW who had more than 2 clients and 2 or fewer clients on the last working day, it is apparent that consistent condom use with paying clients and with sweethearts has remained relatively stable in the past five years. Still, there are signs of a slow but steady decline in consistent condom use, and this will need to be addressed in future prevention interventions.

Condom use with sweethearts remains unacceptably low among all FEW. This suggests that condom use interventions have been less effective for sweetheart relationships. Lubricant use is also very low and condom breakage/slippage is alarmingly high especially among those who reported having had more than 2 clients on the last day of work. Leaving this issue unresolved might compromise efforts in preventing the spread of HIV/AIDS.

In general, FEW included in the study had a good knowledge about HIV/AIDS and its various modes of transmissions.

FEW have high reported prevalence of abortion while working as entertainment workers, which might reflect low condom use with sweethearts and regular partners leading to unwanted pregnancies. Further, the safe abortion practices are not common, as the majority of FEW who experienced abortion used private clinics and bought drugs from pharmacies instead of going to appropriate health facilities.

There has been high self-reporting of STI symptoms despite the fact that a large proportion of FEW went to STI clinics at least 1 time in the past 3 months and a high proportion of FEW went to health facilities for STI treatment.

Drug use remains an issue among FEW. The percentage of FEW having ever used drug is high among the highest risk sub-group of FEW – that is; FEW who reported having more than 2 sexual partners per day. However, injecting illicit drug is not common.

6.2 Moto-taxi driver

Across different rounds of BSS, Moto-taxi drivers have been a very dynamic group representing regular men from different backgrounds, since moto-taxi driving is often an extra income generating opportunity and moto-taxi drivers are very independent in terms of the working hours and activities.

When asked about their sexual behavior, more than 60% of moto-taxi drivers had their first sexual experience with girlfriends or female sex workers, suggesting that pre-marital sex is quite common among this group. In general, they are sexually active since only 2.5% have never had

sex in their lifetime and, among those who have ever had sex, 34% reported buying sex in the past 6 months.

Moto-taxi drivers reported having sex with women working in different sectors. About 5% of them reported having sex with female factory workers in the past year and 15.2% and 28.9% reported having sex with karaoke workers and commercial sex workers, respectively. This finding may confirm that some female factory workers have sex in exchange for money or gifts while working away from home or alternative, some commercial sex workers might have used factory workers to hide the nature of their work.

Condom use with paid partners remains high, but consistent condom use among sweethearts remains low. Moto-taxi drivers showed supportive attitudes towards people living with HIV/AIDS and good knowledge of HIV transmission, testing and ARV treatment. However, given their good understanding about HIV/AIDS, only about 26% reported having an HIV test in the past year.

Moto-taxi drivers most commonly buy drugs from pharmacies and seek consultation from private clinics when seeking STI treatment.

Illicit drug use is uncommon among moto-taxi drivers.

6.3 People Living with HIV/AIDS

Although PLHIV were studied a few years ago, this is the first time that this group has been included in the BSS. Data showed that their positive HIV status was discovered during hospital visit or at VCCT.

Given that PLHIV are on pre-ART or ARV, their knowledge about the usage of ARV in HIV prevention remains poor, as there are many misconceptions regarding the ability of ARV to prevent STIs.

Most participants acknowledged that their health has returned to normal or significantly improved since receiving pre-ART care or ARV.

The majority of pre-ART and ARV patients remained sexually active (50-80% reported that they had ever had sex in the past 6 months). Further analysis revealed that the level of sexual activity among those on ARV and those on pre-ART care are not very different.

Condom use with spouses is alarmingly low, particularly because some of spouses of HIV positive people are HIV negative. It is more disturbing that up to 10% of HIV positive individuals did not know the HIV status of their spouses.

Among male PLHIV included in the study, female commercial sex workers were the main paid sexual partners; however, there is only a small proportion of PLHIV who reported buying sex in the past 6 months. Condom use with paid sexual partners was not consistent.

Regarding HIV/AIDS care and treatment services, on average 10% of participants reported starting at a new OI/ART site (as a new patient) after being considered as lost to follow up at their previous site. This figure could be used to represent the magnitude of loss to follow up among PLHIV receiving care and treatment at various ART sites in Cambodia.

As expected, staff at ART sites have been one of the main sources of health related information, providing information ranging from topics such as OI/ARV to family planning and other reproductive health issues.

7. Recommendations

- Further study should be conducted to explore the risk behavior of female factory workers since it appears that more and more frequently factory workers are moving to employment as female entertainment workers
- Prevention efforts should be strengthened to sustain high levels of consistent condom use with paid sexual partners among FEW
- Innovative approaches are required to further increase consistent condom use with sweethearts
- Safe abortion services at health centers should be modified to attract more FEW
- Moto-taxi drivers are still a bridging group between high and low risk groups. More direct interventions should be piloted to increase condom use and HIV testing among this group as well as other clients of commercial sex workers.
- The misconception about ARV as protection against HIV/STI transmission still exists to some extent among patients receiving pre-ART and patients on ARV. More comprehensive counseling should be offered at the ART sites throughout the country to dispel these misconceptions.
- Condom use by PLHIV with commercial sex partners and regular partners remains low; therefore counselors and ART site staff should put more emphasis on the importance of consistent condom use.
- Interventions should be put in place to encourage disclosure of HIV status among couples in order to prevent HIV transmission within sero discordant couples and to prevent mother-to-child transmission.

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