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Round Two  
Summary Report

EGYPT 2010

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Completion of this survey was a fully collaborative effort between FHI and the Egyptian Ministry of Health (MOH) with the support of the Global Fund through the National AIDS Program.

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**Round Two  
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**EGYPT 2010**



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## Preface

Egypt's commitment to the control of the HIV epidemic is clearly demonstrated since the detection of the first AIDS case in the country in 1986. The continuous efforts confirm Egypt's dedication to the international declarations and achievement of the Millennium Development Goals.

In 2003, FHI in collaboration with the National AIDS Program, held a Surveillance Consensus Meeting. The outcome of this meeting was crowned by a National HIV/AIDS and STI Surveillance Plan in 2004 aiming at restructuring the Surveillance System, informing key stakeholders of the surveillance strategy, as well as allowing for monitoring of the HIV epidemic.

The National plan spelled out the need for more rigorous active HIV surveillance through regular second generation HIV biological and behavioral surveillance surveys among most at risk populations and the general population. In 2006, Egypt pioneered in implementing the first round of this series of surveys.

The Biological and Behavioral Surveillance Survey 2010 is the second of its kind in the series aiming to provide data on the progress of the HIV epidemic in the country. Evidence documenting Egypt's HIV status should be considered as a guiding force for designing and implementing an adequate and appropriate response to control the epidemic.

Dr. Cherif Soliman  
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## Introduction

The National AIDS Program (NAP), affiliated to the Egyptian Ministry of Health (MOH), has been making a concerted effort since 1986 to ensure that Egypt maintains its low prevalence of HIV/AIDS. According to the National Surveillance Plan, the HIV Biological Behavioral Surveillance Survey (Bio-BSS) was designed as a model system to track behavioral and biological trends in the HIV epidemic.

The first round of the Bio-BSS in Egypt was conducted by FHI in 2006. The goal of this round was to establish a second-generation HIV surveillance system that provides baseline data for monitoring behavioral and biological information among Most at Risk Populations (MARPs) over time. This round focused on four groups at high risk of HIV infection: male and female street children, female sex workers (FSWs), men who have sex with men (MSM), as well as male and female injecting drug users (IDUs). These groups were selected as they were known to have links with the general population and may act as bridge populations spreading the HIV infection beyond the MARPs.

The 2006 Bio-BSS has provided a wealth of information on the behavioral practices, knowledge of STI/HIV/AIDS and HIV prevalence among selected MARPs. The study results were an alarm to the practice of multiple risk behaviors and low HIV/AIDS awareness. The results of this initial round demonstrated that HIV infection, though low, has started in FSWs and IDUs. It also, showed the potential of HIV infection being concentrated in MSM (Table 1).

Table I.1: HIV sero-prevalence, Bio-BSS, Egypt, 2006

Groups	HIV Sero-prevalence (%)
Male SC	0.0
Female SC	0.0
FSW	0.8
MSM*	6.2
Male IDUs*	0.6
Female IDUs	0.0

\*RDS population estimates

The first Bio-BSS experience in the country proved fruitful and confirmed the need for regular surveillance of the HIV/AIDS situation in the country. Based on the recommendation of the 2006 Bio-BSS and the National HIV/AIDS STI Surveillance Plan to conduct successive rounds of Bio-BSS in two years time among same groups using same methods of research, the MOH with support from the Global Fund requested FHI to conduct the Second Round of Bio-BSS in Cairo, Alexandria and Luxor in 2010.

## Goal and Objectives

The overall goal of the second round Bio-BSS is to conduct a timely second round aiming to track behavioral and biological trends in MARPs that influence the

epidemic in Egypt. This in turn will help to construct an advocacy package for policy makers that would support HIV prevention and care. The General objectives of this survey are to target MARPs to:

- Track behavioral data
- Track biological data
- Provide counseling and referral to HIV care and support services

The overarching aim of this summary report is to provide a summary of the key findings of Egypt's second round of Bio-BSS 2010.

## Method

The second round of the Bio-BSS was conducted using the same target populations of the first round for consistency. For this reason the survey included the MARPs in Cairo and Alexandria Governorates. The MOH also recommended including IDUs in Alexandria and MSM in both Cairo and Luxor as an attempt to expand coverage of MARPs in the country.

Field work for this survey took place between August and December 2010. The survey tracked four target groups: male and female street children, FSWs, MSM, and male IDUs.

The respondent driven sampling (RDS) method was used to select the MSM and IDUs. As for the FSWs and Street Children, a non probability sampling technique was used for selection (Table 1).

Table I.2: Sample size and collaborating NGO, Bio-BSS, Egypt, 2010

	Governorate	Sample size		Collaborating NGOs
		Targeted	Achieved	
Male street children	Cairo	200	200	Gozour, Caritas/Egypt , Children's Cooperative
Female street children	Cairo	200	200	
Female sex workers	Cairo	200	200	Freedom Program
Men who have sex with men	Cairo	200	260	Life Program
Men who have sex with men	Alexandria	200	262	Friends of Life
Men who have sex with men	Luxor	200	269	Nour Al-Islam
Male injecting drug user	Cairo	200	275	Freedom Program
Male injecting drug users	Alexandria	200	285	Freedom Program

The Bio-BSS 2006 experience highlighted the difficulty in reaching females in general and female injecting drug users in particular. As the second round data collection period was around 5 months, it was decided to include street girls and FSWs in the research while including female IDUs will not be successful over this short period of field work.

## **Section One**

### **Risk Behaviors among Street Children**

- 1.1 Background characteristics of street children
- 1.2 Practice of risk behaviors among street children
- 1.3 Sexually transmitted infections and HIV/AIDS awareness among street children

## 1.1 Background characteristics of street children

There were difficulties in recruiting street girls than boys. Reaching the targeted sample size for girls required a longer period of time and additional efforts.

A total of 200 street boys and 200 street girls between the age of 12 and 17 years were enrolled in the study with a median age of 15.0 years for street boys and 14.0 years for street girls.

The level of school enrollment was very low as around a quarter of street boys and 40.0% of street girls never attended school. From those who attended schools, the majority dropped out after primary education and very few attended higher educational levels.

Street boys were more active than street girls as most of them were engaged in income generating activities especially washing cars and selling small products. It is worth mentioning that 14.9% of street boys and 5.6% of street girls begged on the street while a few of them resorted to stealing (5.2% of boys and 1.1% of girls) and sex work (2.1% of boys and 2.2% of girls) to earn money. Table 1.1 shows the background characteristics of street children.

Table 1.1: Background characteristics of street children, Bio-BSS, Egypt, 2010

	Street boys (n=200)	Street girls (n= 200)
<b>Age</b>		
Median age at last birthday	15.0 years	14.0 years
<b>Education</b>		
Percent who never attended school	25.5%	40.0 %
Percent who attended primary school	59.0%	33.0%
Percent who attended preparatory school or higher	15.5%	27.0%
<b>Money earning activities</b>		
Percent working to earn money	97.0%	44.5 %

## 1.2 Practice of risk behaviors among street children

Street children reported practicing risk behaviors as many of them were engaged in alcohol consumption, drug abuse and sexual activity. Alcohol consumption was less practiced than drug abuse with 17.5% of street boys and 12.0% of street girls reported consuming alcohol at least once per week in the 30 days prior to the survey. As for other substances, 68.0% of street boys and 25.9% of street girls reported that they ever tried any type of non-injecting drugs. Furthermore, 7.0% of street boys and 2.0% of street girls reported injecting drugs in the 12 months preceding the survey (Figure 1.1).

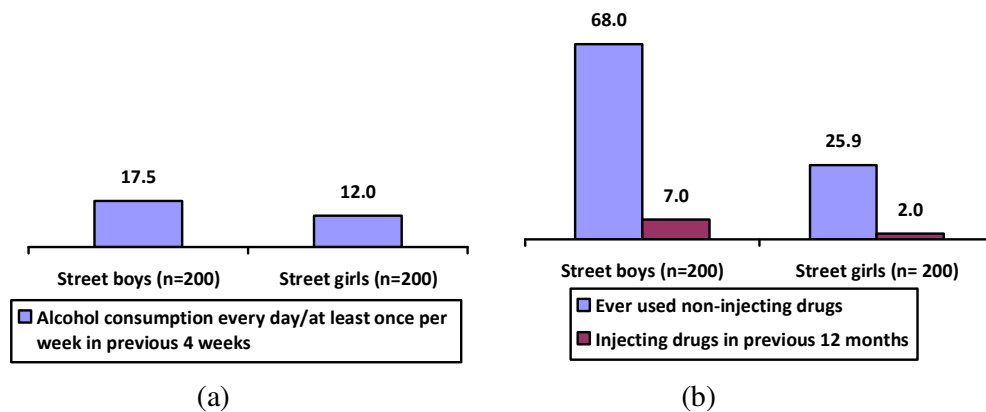


Figure 1.1: Alcohol consumption (a) and drug abuse (b) among street children, Bio-BSS, Egypt, 2010

As shown in Table 1.2, several street children were sexually active with almost all of them practicing unprotected sex. About half of street boys and 16.0% of street girls reported ever having sex. The median age at first sex was 13.0 years (range 5-17 years) for street boys and 14.0 years (range 9-17 years) for street girls. From those who ever had sex, over a half of street boys and a third of street girls were engaged in commercial and non-commercial sexual activity in the 12 months preceding the survey.

Despite that very few street children reported selling sex as means for earning money, 7.7% of sexually active street boys and half of sexually active street girls reported having commercial sex in the 12 months preceding the survey. Moreover, many sexually active street children were engaged in non-commercial sexual activity (94.2% of boys and 60.0% of girls).

Unprotected sexual activity appeared to be prevailing. Sexually active street girls did not use condoms in last sex or past 12 months in any type of sexual relations. Sexually active street boys didn't use condoms with commercial sex partners while few of them reported condom use with non-commercial sex partners in last sex (4.1%) and over the 12 months preceding the survey (8.2%).

Street children were victims of sexual abuse. Both street boys and girls were forced to have sex with opposite sex partner. Forced sex by partner of the opposite sex in the past 12 months was reported by 3 out of the 10 sexually active street girls (30.0%) and 6 out of the 52 sexually active street boys (11.5%).

MSM activity was another form of sexual abuse reported by street boys. Among the sexually active street boys in the 12 months preceding the survey, 44.2% reported ever having sex with a male partner and 15.0% reported being forced to have sex with male partner.

Table 1.2: Sexual activity among street children, Bio-BSS, Egypt, 2010

	Street boys		Street girls	
	n	%	n	%
<b>Ever had sex</b>				
Percent who ever had sex	200	46.5%	200	16.0%
<b>Of those who ever had sex</b>				
Percent who had sex in the 12 months preceding the survey	93	55.9%	32	31.3%
<b>Of those who had sex in the 12 months preceding the survey</b>				
Percent who had sex with				
Commercial sex partner	52	7.7%	10	50.0%
Non-commercial sex partner	52	94.2%	10	60.0%
<b>Of those who reported sex with commercial or non-commercial sex partner in the 12 months preceding the survey</b>				
Percent who reported condom use in last sex				
Commercial sex partner	4	0.0%	5	0.0%
Non-commercial sex partner	49	4.1%	6	0.0%
Percent who reported condom use at least once in past 12 months				
Commercial sex partner	4	0.0%	5	0.0%
Non-commercial sex partner	49	8.2%	6	0.0%
<b>Of those who had sex in the 12 months preceding the survey</b>				
Percent who reported ever had sex with same sex	52	44.2%	NA	NA
Percent who reported being forced to have sex in the past twelve months with				
Same sex	20	15.0%	NA	NA
Opposite sex	52	11.5%	10	30.0%

### 1.3 Sexually transmitted infections and HIV/AIDS awareness among street children

Despite that the knowledge of sexually transmitted infections (STIs) and HIV was low especially among street girls, street children reported hearing more about HIV than STIs. Less than half street boys and 16.0% of street girls heard of STIs while 69.5% of street boys and 28.5% of street girls heard of HIV.

Of those who ever heard of HIV, very few knew about the possibility of being tested for HIV with test results being kept confidential. Furthermore, screening for HIV didn't sufficiently reach street children. From those who ever heard of HIV, 5.8% of street boys and 5.3% of street girls were ever tested and only one street boy was tested for HIV in the 12 months preceding the survey (Figure 1.2).

Television appeared to be the best mean for disseminating information to street children. Most of them reported watching television with 69.0% of street boys and 63.5% of street girls watched television every day in the 4 weeks prior to the survey.



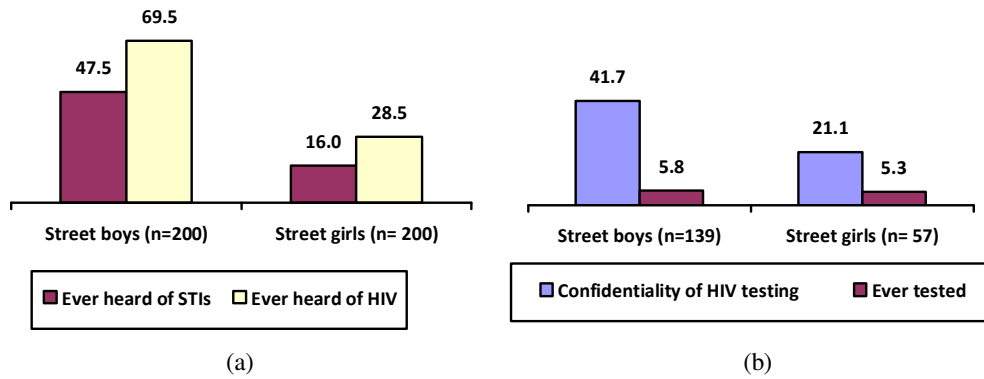


Figure 1.2: Percentage of street children reporting a) STIs and HIV knowledge; b) Knowledge of HIV testing confidentiality and ever being tested; Bio-BSS, Egypt, 2010

## **Section Two**

### **Risk Behaviors among Female Sex Workers**

- 2.1 Background characteristics of female sex workers
- 2.2 Substance abuse and sexual activity among female sex workers
- 2.3 Sexually transmitted infections and HIV/AIDS awareness among female sex workers

## 2.1 Background characteristics of female sex workers

Similar to street girls, reaching the targeted sample size for female sex workers required a longer period of time and additional efforts.

Table 2.1 shows the background characteristics of female sex workers. A total of 200 FSWs with a median age of 27.0 years (range 18-62 years) were interviewed. Around a quarter of them had no chance to attend schools. Most of them dropped out of school either in primary or preparatory education levels with less than a fifth reaching secondary school or higher.

FSWs didn't appear to be mobile as most of them (81.0%) were born and practiced sex work (89.5%) in Cairo. Around a third of FSWs reported being engaged in other work activities as means to earn money with most of them working as house maids.

FSWs appeared to have bridges to the general population through marriage as 89.0% of them were ever married. Moreover, at the time of the survey, 45.5% of the FSWs were married.

Table 2.1: Background characteristics of female sex workers, Bio-BSS, Egypt, 2010

	Female sex workers (n=200)
<b>Age</b>	
Median age at last birthday	27.0 years
Percent under 20 years of age	10.5%
<b>Education</b>	
Percent who never attended school	24.0%
Percent who attended primary or preparatory school	58.0%
Percent who attended secondary school or higher	18.0%
<b>Work other than sex work</b>	
Percent who have another work	31.0%
<b>Marital status</b>	
Percent who ever married	89.0%
Percent who are currently married	45.5%

## 2.2 Substance abuse and sexual activity among female sex workers

Alcohol consumption appeared to be an uncommon practice, as 21.5% of FSWs consumed alcohol at least once per week in the month prior to the survey. However, substance abuse other than alcohol appeared to be more prevailing, as over a half of FSWs reported ever abusing drugs and 6.0% reported injecting drugs in the 12 months preceding the survey (Table 2.2).

Table 2.2: Alcohol consumption and drug abuse among female sex workers, Bio-BSS, Egypt, 2010

	Female sex workers (n=200)
	%
<b>Alcohol consumption</b>	
Percent who reported consuming alcohol in the four weeks preceding the survey	
Everyday	4.0%
At least once per week	17.5%
<b>Drug abuse</b>	
Percent who reported drug abuse	
Ever used non-injecting drugs	51.5%
Injecting drugs in the previous 12 months	6.0%

Unprotected sex was another alarming risk practice among female sex workers. Condom use with commercial clients was very low as only one quarter reported condom use in last commercial sex and 41.0% reported condom use at least once in the 30 days prior to the survey. In the week preceding their interviews, 36.5% of FSWs had non-commercial sex partners. However, only 11.0% out of them used condoms the last time they had sex with non-commercial sex partner and 27.4% used condoms at least once over the past 12 months (Figure 2.1).

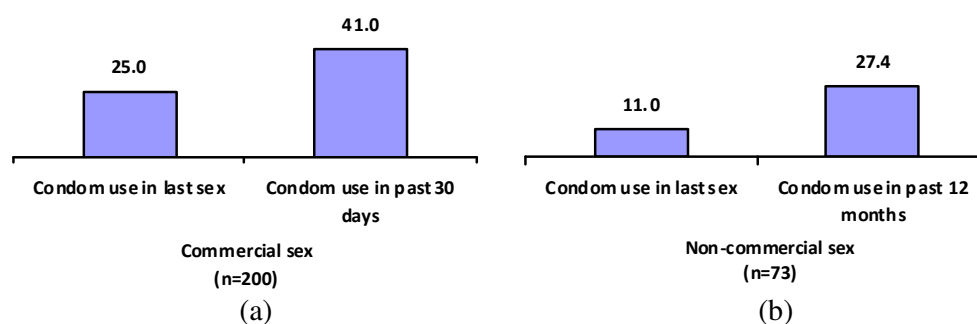


Figure 2.1: Percent of Female sex workers who reported condom use with commercial (a) and non-commercial sex partners (b), Bio-BSS, Egypt, 2010

### 2.3 Sexually transmitted infections and HIV/AIDS awareness among female sex workers

Figure 2.2 shows STIs and HIV knowledge. The majority of FSWs (74.0%) heard of STIs, 66.9% of them were able to identify a female symptom and 23.0% were able to identify a male symptom. Moreover, 30.6% reported suffering from a genital ulcer/sore and 20.4% from genital discharge.

Despite that 89.0% of FSWs heard of HIV/AIDS and at least half of them stated correct modes of transmission and means of prevention, lots of misconceptions existed. Many FSWs (56.2%) stated that a healthy looking person can't harbor the HIV infection. Furthermore, many of them thought that HIV could be transmitted by sharing a meal with an infected person (36.5%) and through a mosquito bite (20.8%).

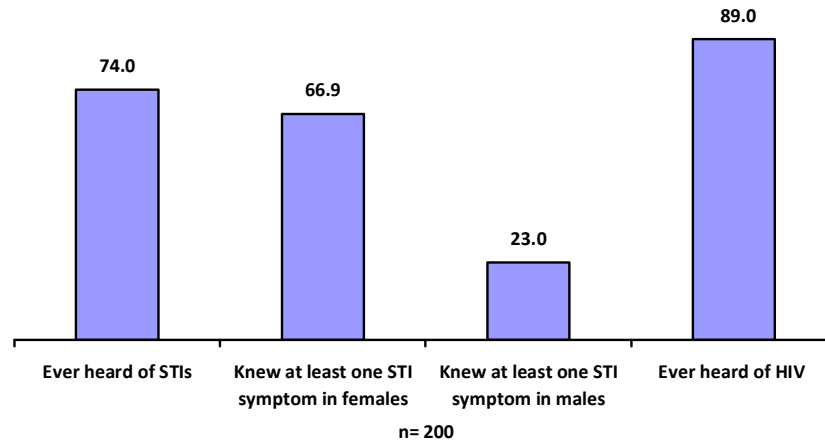


Figure 2.2: Percentage of female sex workers reporting STIs and HIV knowledge, Bio-BSS, Egypt, 2010

From those who ever heard of HIV, less than half knew that HIV testing can be done confidentially. Despite the HIV high risk of infection and spread in FSWs, HIV screening does not sufficiently reach them as only 3.4% of those who heard of HIV were ever tested. Moreover, only 2 out of the 6 FSWs who were ever tested for HIV reported being tested in 12 months prior to the survey (Figure 2.3).

Television appeared to be the best mode for disseminating information to this target group. Almost all FSWs watch television and 77.0% reported watching television every day in the 4 weeks prior to the survey.

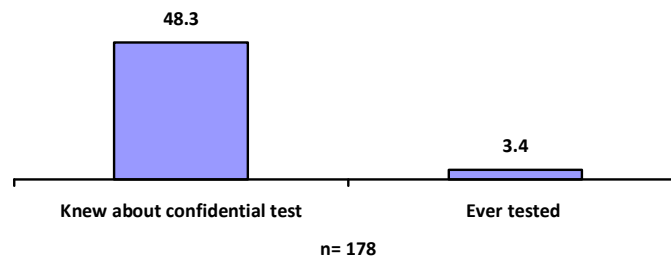


Figure 2.3: Percentage of female sex workers reporting knowledge of HIV testing confidentiality and ever being tested, Bio-BSS, Egypt, 2010

## **Section Three**

### **Risk Behaviors among Men Who Have Sex with Men**

- 3.1 Background characteristics of men who have sex with men
- 3.2 Substance abuse among men who have sex with men
- 3.3 Sexual activity among men who have sex with men
- 3.4 Sexually transmitted infections and HIV/AIDS awareness among men who have sex with men

### 3.1 Background characteristics of men who have sex with men

A total of 260 MSM from Cairo, 262 MSM from Alexandria and 269 MSM from Luxor were recruited using the RDS method. Table 3.1 shows the background characteristics of the three MSM groups. The age of the MSM groups ranged from 16 to 59 years with the MSM in Luxor being younger (median age: MSM Cairo= 22.5 years, MSM Alexandria= 22.5 years and MSM Luxor= 21.0 years).

MSM Cairo and MSM Alexandria had better education opportunities than MSM Luxor. Few MSM Cairo 7.4% (95%CI=2.6-12.9%) and 15.6% (95%CI=10.5-22.3%) of MSM Luxor never attended school while almost all MSM Alexandria attended school. Moreover, 55.7% (95%CI=45.2-62.5%) of MSM Cairo and 45.0 % (95%CI=38.6-54.5%) of MSM Alexandria reached secondary school or higher compared to 2.9% (95%CI=1.2-5.5%) of MSM Luxor.

MSM Luxor appeared to be more mobile than the other two groups. Comparable proportions of MSM Cairo (30.5%, 95%CI=22.2-36.5%) and MSM Alexandria (32.6%, 95%CI=25.4-37.7%) reported that they spent one month or more away from home in the 12 months prior to the survey as compared to 45.3%(95%CI=39.7-52.7%) of MSM Luxor.

MSM Luxor appeared to have more sexual relations with female partners than the two other groups. They reported higher proportions of ever having sex with female sex partners (86.5%, 95%CI=80.6-91.4%) than those in Alexandria (59.2%, 95%CI=50.1-65.0%) and the least were those of Cairo (39.8%, 95%CI=32.5-49.1%). Comparable proportions of MSM Luxor (16.5%, 95%CI=10.9-21.3%) and Alexandria (16.2%, 95%CI=10.1-21.0%) were ever married to female partners, and was slightly higher than the proportions of ever married MSM in Cairo (10.0%, 95%CI=5.6-14.6%). However, the proportion of marriage at the time of the survey was much higher among MSM Luxor (14.0%, 95%CI=8.7-18.7%) than MSM Cairo (3.4%, 95%CI=1.2-6.7%) and Alexandria (4.7%, 95%CI=1.5-5.1%) where proportions didn't differ.

### 3.2 Substance abuse among men who have sex with men

Table 3.2 shows alcohol consumption and drug abuse among the three MSM groups. The three MSM groups reported less alcohol consumption than drug abuse. MSM Luxor reported higher alcohol intake than the other two groups as 27.8% (95% CI=22.3-34.9%) reported alcohol intake every day in the four weeks prior to the survey compared to 4.2% (95% CI=2.0-6.0%) for MSM Alexandria and the least were MSM Cairo with 2.0% (95% CI=0.1-3.6%).

Still MSM Luxor reported higher proportions of non-injecting drug abuse (97.0%, 95% CI=94.4-99.0%) than MSM Alexandria (70.1%, 95%CI=61.8-76.4) and the lowest proportions were for MSM Cairo (48.8%, 95% CI=41.7-58.9%). The proportion of injecting drugs was higher in MSM Alexandria (4.9%, 95%CI=2.8-7.9) and Luxor (4.8%, 95%CI=2.6-7.7) than MSM Cairo (2.3%, 95%CI=0.6-4.5%).

Table 3.1: Background characteristics of men who have sex with men, Bio-BSS, Egypt, 2010

Background characteristics	MSM Cairo (n= 260)		MSM Alexandria (n= 262)		MSM Luxor (n= 269)	
	Sample estimate %	Population estimate % (95% CI)	Sample estimate %	Population estimate % (95% CI)	Sample estimate %	Population estimate % (95% CI)
<b>Age</b>						
Age range in years	18-59years		16-59years		17-48years	
Median age at last birthday	22.5years		22.5years		21.0years	
<b>Education</b>						
Percent who never attended school	4.6%	7.4% (2.6-12.9%)	3.1%	(-)*	17.1%	15.6% (10.5-22.3%)
Percent who attended primary or preparatory school	35.0%	36.9% (31.2-47.4%)	54.9%	55.0% (45.5-61.4%)	78.4%	81.5% (74.3-86.9%)
Percent who attended secondary school or higher	60.4%	55.7% (45.2-62.5%)	42.0%	45.0% (38.6-54.5%)	4.5%	2.9% (1.2-5.5%)
<b>Mobility</b>						
Percent who have spent one month or more away from home in the 12 months preceding the survey	29.6%	30.5% (22.2-36.5%)	35.1%	32.6% (25.4-37.7%)	46.5%	45.3% (39.7-52.7%)
<b>Relation with female sex partners</b>						
Percent who ever had sex with a female partner	43.5%	39.8% (32.5-49.1%)	55.0%	59.2% (50.1-65.0%)	87.4%	86.5% (80.6-91.4%)
Percent who ever married to female partner	10.4%	10.0% (5.6-14.6%)	16.0%	16.2% (10.1-21.0%)	17.5%	16.5% (10.9-21.3%)
Percent who are currently married to female partner	3.5%	3.4% (1.2-6.7%)	4.9%	4.7% (1.5-5.1%)	14.2%	14.0% (8.7-18.7%)

\* As almost all MSM Alexandria attended school, the group of who never attended school was too small, thus estimates cannot be generated.



Table 3.2: Alcohol consumption and drug abuse among men who have sex with men, Bio-BSS, Egypt, 2010

Background characteristics	MSM Cairo (n= 260)		MSM Alexandria (n= 262)		MSM Luxor (n= 269)	
	Sample estimate %	Population estimate % (95% CI)	Sample estimate %	Population estimate % (95% CI)	Sample estimate %	Population estimate % (95% CI)
<b>Alcohol consumption</b>						
Percent who reported consuming alcohol in the four weeks preceding the survey						
Everyday	3.1%	2.0% (0.1-3.6%)	4.6%	4.2% (2.0-6.0%)	28.6%	27.8% (22.3-34.9%)
At least once per week	13.1%	11.2% (5.8-16.9%)	24.8%	25.1% (18.5-30.8%)	34.2%	33.6% (27.1-40.0%)
Less than once per week	82.3%	85.2% (80.1-91.5%)	70.6%	70.7% (61.8-76.4%)	32.3%	35.1% (28.5-42.1%)
<b>Drug abuse</b>						
Percent who reported drug abuse						
Ever used non-injecting drugs	51.2%	48.8% (41.7-58.9%)	70.6%	70.1% (61.8-76.4%)	97.4%	97.0% (94.4-99.0%)
Injecting drugs in the previous 12 months	2.3%	2.3% (0.6-4.5%)	5.7%	4.9% (2.8-7.9%)	6.3%	4.8% (2.6-7.7%)

### 3.3 Sexual activity among men who have sex with men

Table 3.3 shows the sexual activity in the three groups. The majority of MSM in the three groups had oral sex in the 6 months prior to the survey. The reported proportions of oral sex in the 6 months prior to the survey were nearly similar in the three groups ranging from 81.9% to 96.2%.

Still considerable proportions of the three groups reported practicing anal sex in the 6 months prior to the survey. MSM Cairo appeared to practice both active and passive anal sex as over half of them were insertive and/or receptive in the 6 months preceding the survey. MSM Cairo were more receptive (59.3%, 95% CI=51.6-68.4%) and less insertive (66.7%, 95% CI=59.9-74.3%) than the other two groups.

The MSM Alexandria group appeared to practice active and passive anal sex. However, they were more insertive (88.1%, 95% CI=81.6-91.9%) than receptive (35.9%, 95% CI=30.9-44.3%) in the 6 months prior to the survey.

MSM Luxor appeared to have different sexual behaviors than the other two groups as they practiced active anal sex more than passive. Almost all of them were insertive and very few were receptive (8.8%, 95% CI=5.8-13.2%) in the 6 months prior to the survey.

The three MSM groups appeared to have commercial and non-commercial MSM activity. However, MSM Cairo and Alexandria were less indulged in commercial MSM activity and more engaged in non-commercial MSM relations than MSM Luxor in the 6 months prior to the survey.

MSM Cairo had more non-commercial MSM relations (74.5%, 95% CI=69.8-84.5%) than commercial sexual relations (33.2%, 95% CI=24.1-40.1%).

MSM Alexandria had nearly similar MSM sexual relations as MSM Cairo. They still had more non-commercial MSM relations (83.1%, 95% CI=75.7-88.5%) than commercial sexual relations (31.8%, 95% CI=26.3-40.6%).

MSM Luxor, appeared to have different behaviors than the other two groups as the majority reported commercial MSM relations (92.0%, 95% CI=87.8-95.1%) and a few reported non-commercial MSM activity (21.6%, 95% CI=17.0-30.5%) in the 6 months prior to the survey.

Nearly similar proportions ranging from 2.9% to 20.1% of the three MSM groups reported being forced by their male partners to have sex in the 6 months preceding the survey.

Table 3.4 shows condom use during MSM activity for the three groups. Unprotected sex appeared to be prevailing among the three MSM groups in both oral and anal sexual activity. MSM Alexandria were the least to use condoms during oral sex and MSM Luxor were the least to use condoms during commercial or non-commercial anal sex.

Table 3.3: Sexual activity among men who have sex with men, Bio-BSS, Egypt, 2010

Background characteristics	MSM Cairo (n= 260)		MSM Alexandria (n= 262)		MSM Luxor (n= 269)	
	Sample estimate %	Population estimate % (95%CI)	Sample estimate %	Population estimate % (95%CI)	Sample estimate %	Population estimate % (95%CI)
<b>Had oral sex in previous 6 months</b>						
Percent who had oral sex	91.9%	88.6% (81.9-95.0%)	90.5%	92.0% (88.1-94.5%)	93.3%	93.0% (88.0-96.2%)
<b>Had anal sex in previous 6 months</b>						
Percent who were insertive	65.8%	66.7% (59.9-74.3%)	87.4%	88.1% (81.6-91.9%)	98.9%	(-)*
Percent who were receptive	63.5%	59.3% (51.6-68.4%)	43.1%	35.9% (30.9-44.3%)	11.9%	8.8% (5.8-13.2%)
<b>Of those who had anal sex in previous 6 months</b>	(n= 250)		(n= 262)		(n= 269)	
Percent who had sex with commercial sex	34.8%	33.2% (24.1-40.1%)	31.7%	31.8% (26.3-40.6%)	90.7%	92.0% (87.8-95.1%)
Percent who had sex with non-commercial sex	78.8%	74.5% (69.8-84.5%)	84.0%	83.1% (75.7-88.5%)	22.7%	21.6% (17.0-30.5%)
<b>Of those who reported anal sex in previous 6 months</b>	(n= 250)		(n= 262)		(n= 269)	
Percent who were forced to have anal sex by male partner	10.8%	12.7% (5.9-17.8%)	13.7%	14.6% (10.3-20.1%)	8.2%	6.4% (2.9-11.1%)

\* As almost all MSM Luxor were insertive, the non-insertive group was too small, thus estimates cannot be generated.

Table 3.4: Condom use among men who have sex with men, Bio-BSS, Egypt, 2010

Background characteristics	MSM Cairo (n= 260)		MSM Alexandria (n= 262)		MSM Luxor (n= 269)	
	Sample estimate %	Population estimate % (95%CI)	Sample estimate %	Population estimate % (95%CI)	Sample estimate %	Population estimate % (95%CI)
<b>Of those who reported oral sex in previous 6 months</b>	(n= 239)		(n= 237)		(251)	
Percent who reported condom use in Last oral sex	18.8%	14.4% (11.5-23.4%)	5.9%	5.1% (2.6-7.8%)	14.3%	11.7% (7.4-16.6%)
Oral sex in previous 6 months	31.4%	26.4% (20.0-33.8%)	13.1%	10.2% (6.4-14.5%)	21.9%	14.3% (1.0-19.9%)
<b>Of those who reported anal commercial sex in previous 6 months</b>	(n= 87)		(n= 83)		(n= 244)	
Percent who reported condom use With most recent commercial client	25.3%	21.9% (4.2-22.6%)	24.1%	54.9% (33.1-74.5%)	12.3%	10.7% (5.1-16.5%)
In commercial sex in last 6 months	51.7%	51.0% (21.4-62.8%)	41.0%	34.4% (10.4-55.0%)	25.4%	22.0% (16.0-27.4%)
<b>Of those who reported anal non-commercial sex in previous 6 months</b>	(n= 197)		(n= 220)		(n= 61)	
Percent who reported condom use With most recent non-commercial partner	28.4%	25.0% (13.6-31.4%)	14.5%	19.2% (13.6-28.7%)	14.8%	11.8% (1.9-36.5%)
In non-commercial sex in last 6 months	56.3%	15.6% (7.2-19.2%)	31.8%	6.7% (3.5-10.9%)	23.0%	19.4% (0.7-36.6%)

### **3.4 Sexually transmitted infections and HIV/AIDS awareness among men who have sex with men**

MSM Cairo and MSM Alexandria heard more about STIs and HIV than MSM Luxor (Table 3.5). Nearly similar proportions of MSM Cairo (88.3%, 95%CI=82.7-93.6%) and MSM Alexandria (90.3%, 95%CI=86.1-94.2%) heard of STIs whereas less than fifth of MSM Luxor (19.0%, 95%CI=13.6-24.6%) heard of STIs.

The three groups heard more about HIV than STIs. However, MSM Cairo and Alexandria appeared to have better HIV awareness than MSM Luxor.

Almost all MSM Alexandria heard about HIV (99.5%, 95%CI=98.5-99.6%), among them 81.1% (95%CI=73.7-84.3%) knew of the possibility of having a confidential HIV testing yet only 14.5% (95%CI=9.4-19.9%) of them were ever tested. Of the last, 50.6 % (95%CI=19.5-61.8%) were tested in the 12 months prior to the survey.

The majority of MSM Cairo heard of HIV (92.2%, 95%CI=87.7-96.9%), among them 75.5% (95%CI=73.7-84.3%) knew of the possibility of having a confidential HIV testing and 22.1% (95%CI=14.3-29.1%) of them were ever tested and 80.3% (95%CI=54.6-96.1%) were tested in 12 months prior to the survey.

MSM Luxor had insufficient HIV awareness. Despite the multiple risk practices, only 33.3% (95%CI=27.6-40.9%), of them heard of HIV. Of those who heard of HIV, the majority (84.7%, 95%CI=48.2-94.5%) knew of the possibility of having a confidential HIV testing . However, HIV screening didn't sufficiently reach this target group as only 2.0% were ever tested and no one reported being tested in the 12 months prior to the survey.

Television still appears to be the best source for disseminating information to this target group as the majority of the three MSM groups watched television regularly in the four weeks prior to the survey.

Table 3.5: Percentage of men who have sex with men reporting STIs and HIV knowledge, knowledge of HIV testing confidentiality and ever being tested, Bio-BSS, Egypt, 2010

Background characteristics	MSM Cairo (n= 260)		MSM Alexandria (n= 262)		MSM Luxor (n= 269)	
	Sample estimate %	Population estimate % (95%CI)	Sample estimate %	Population estimate % (95%CI)	Sample estimate %	Population estimate % (95%CI)
<b>STI knowledge</b>						
Percent who ever heard of STIs	89.2%	88.3% (82.7-93.6%)	88.9%	90.3% (86.1-94.2%)	19.7%	19.0% (13.6-24.6%)
<b>HIV knowledge</b>						
Percent who ever heard of HIV	93.1%	92.2% (87.7-96.9%)	99.6%	99.5% (98.5-99.6%)	33.5%	33.3% (27.6-40.9%)
<b>Of those who heard of HIV</b>	(n= 242)		(n= 161)		(n= 90)	
Percent who knew of confidentiality of testing	76.4%	75.5% (65.0-79.8%)	73.2%	81.1% (73.7-84.3%)	80.0%	84.7% (48.2-94.5%)
Percent who were ever tested	23.6%	22.1% (14.3-29.1%)	22.6%	14.5% (9.4-19.9%)	2.2%	2.0% (-)*
<b>Of those who were ever tested</b>	(n= 57)		(n= 59)		(n= 2)	
Percent who tested in last 12 months	61.4%	80.3% (54.6-96.1%)	54.2%	50.6% (19.5-61.8%)	0.0%	-

\* As almost all MSM Luxor were never tested, the group of those who were tested was too small, confidence interval (alpha=0.05) cannot be calculated.

## **Section Four**

### **Risk Behaviors among Male Injecting Drug Users**

- 4.1 Background characteristics of male injecting drug users
- 4.2 Substance abuse among male injecting drug users
- 4.3 Sexual activity among male injecting drug users
- 4.4 Sexually transmitted infections and HIV/AIDS awareness among male injecting drug users

## 4.1 Background characteristics of male injecting drug users

Table 4.1 shows the background characteristics of the two male IDU target groups. A total of 275 male IDUs from Cairo and 285 male IDUs from Alexandria were recruited using RDS method. Male IDUs Cairo were slightly older (range: 20 - 64 years, median= 34.0 years) than those in Alexandria (range 20 – 62 years, median= 27.0 years).

The majority of IDUs attended school. IDUs Alexandria appeared to have better chances of education as 50.2% (95%CI=42.3-56.7%) of them reported reaching secondary school or higher as compared to 33.9% (95%CI=27.7- 41.0%) of Male IDUs Cairo.

Male IDUs appeared to be mobile especially those in Alexandria. In the 12 months preceding the survey, 46.0% (95%CI=39.6-53.3%) of IDUs Alexandria reported having spent at least one month away from their homes as compared to IDUs Cairo (22.1%, 95%CI=16.6-28.7%).

Male IDUs had links with the general population through marriage. Male IDUs Cairo appeared to have more links than male IDUs Alexandria. The proportion of those who reported ever being married was higher among male IDUs Cairo (56.4%, 95%CI=48.1-65.7%) than for male IDUs Alexandria (34.0%, 95%CI=28.0-42.6%). At the time of the survey, still higher proportions of male IDUs Cairo (48.7%, 95%CI=40.8-58.4%) were married as compared to male IDUs Alexandria (29.3%, 95%CI=22.8-37.3%).

## 4.2 Alcohol consumption and injecting drug practices among male injecting drug users

Male IDUs did not report high levels of alcohol consumption as around 15.0% of both groups didn't consume alcohol in the 4 weeks prior to the survey (Table 4.2). Risk injecting behaviors were reported by both groups especially male IDUs Alexandria. As shown in Table 4.2, 79.8% (95%CI=75.0- 85.8%) of male IDUs Alexandria reported injecting drugs with used needles in the 30 days prior to the survey as compared to 30.7% (95%CI=22.3-37.4%) of male IDUs Cairo. Moreover, 40.5% (95%CI=34.9-48.9%) of male IDUs Alexandria reported sharing needles with at least one person in the 30 days prior to the survey as compared to 22.9 % (95%CI=16.7-32.4%) of male IDUs Cairo.

Still male IDUs Alexandria reported drug dealing more than those in Cairo as 66.2% (95%CI=59.9-73.1%) of male IDUs Alexandria reported ever selling drugs as compared to 32.1% (95%CI=24.2-39.3%) of male IDUs Cairo.



Table 4.1: Background characteristics of male injecting drug users, Bio-BSS, Egypt, 2010

	IDU Cairo (n= 275)		IDU Alexandria (n= 285)	
	Sample estimate %	Population estimate % (95% CI)	Sample estimate %	Population estimate % (95% CI)
<b>Age</b>				
Age range in years	20-64 years		20-62 years	
Median age at last birthday	34.0years		27.0years	
<b>Education</b>				
Percent who never attended school	4.7%	7.7% (2.3-14.7%)	5.3%	6.8% (3.3-10.5%)
Percent who attended primary or preparatory school	54.9%	58.4% (50.7-65.8%)	46.7%	43.0% (36.9-50.5%)
Percent who attended secondary school or higher	40.4%	33.9% (27.7-41.0%)	48.1%	50.2% (42.3-56.7%)
<b>Mobility</b>				
Percent who have spent one month or more away from home in the 12 months preceding the survey	25.8%	22.1% (16.6-28.7%)	43.9%	46.0% (39.6-53.3%)
<b>Marital status</b>				
Percent who ever married to female partner	56.7%	56.4% (48.1-65.7%)	32.3%	34.0% (28.0-42.6%)
Percent who are currently married to female partner	45.1%	48.7% (40.8-58.4%)	27.1%	29.3% (22.8-37.3%)

Table 4.2: Alcohol consumption and drug abuse among male injecting drug users, Bio-BSS, Egypt, 2010

Background characteristics	IDU Cairo (n= 275)		IDU Alexandria (n= 285)	
	Sample estimate %	Population estimate % (95% CI)	Sample estimate %	Population estimate % (95% CI)
<b>Alcohol consumption</b>				
Percent who reported consuming alcohol in the four weeks preceding the survey				
Consumed alcohol	13.1%	11.3% (7.2-16.1%)	14.4%	13.8% (9.7-18.9%)
Didn't consume alcohol	86.9%	88.7% (83.9%-92.8%)	85.6%	86.2% (81.1-90.3%)
<b>Drug injection</b>				
Percent who reported injecting drugs with used needles in the 30 days preceding the survey	35.3%	30.7% (22.3-37.4%)	82.5%	79.8% (75.0-85.8%)
Percent who reported injecting drugs with used needle or syringe in last time injecting drug	14.5%	% (%)	55.1%	53.7% (45.5-60.6%)
Percent who reported sharing needles with one or more persons in the 30 days preceding the survey	25.1%	22.9% (16.7-32.4%)	40.7%	40.5% (34.9-48.1%)
<b>Drug dealing</b>				
Percent who reported drug dealing	36.4%	32.1% (24.2-39.3%)	62.5%	66.2% (59.9-73.1%)

### **4.3 Sexual activity among male injecting drug users**

Table 4.3a and Table 4.3b show the sexual activity and condom use in both groups. Almost all male IDUs in both groups reported ever had sex with 94.9% (95%CI=92.3-98.6%) of male IDUs Cairo and 96.0% (95%CI=93.9-98.0%) of male IDUs Alexandria. Male IDUs in both groups had non-commercial partners rather than commercial partners. However, it is worth mentioning that 13.1% (95%CI=7.0-20.2%) of male IDUs Cairo and 10.8% (95%CI=7.0-17.4%) of male IDUs Alexandria exchanged sex for money.

Despite sexual activity, practice of unprotected sex was prevailing among the two groups. Comparable proportions of both groups of around 3.0% reported condom use with regular non-commercial sex partners. Condom use with non-regular non-commercial sex partners was higher than with regular non-commercial sex partners in both groups as 30.4% (95%CI=22.9-76.6%) of male IDUs Cairo and 17.3% (95%CI=5.9-52.5%) of male IDUs Alexandria reported condom use in these relations. Moreover, 12.2% (95%CI=4.8-25.0%) of male IDUs Cairo and few male IDUs Alexandria reported condom use with commercial sex partners.

Male IDUs in both groups reported MSM activity as 14.3% (95%CI=5.3-32.3%) of male IDUs Cairo and 7.7% (95%CI=2.9-14.8%) of male IDUs Alexandria reported ever having sex with a male partner.

### **4.4 Sexually transmitted infections and HIV/AIDS awareness among male injecting drug users**

As shown in Table 4.4, over 80.0% of male IDUs in both groups heard of STIs, however, knowledge of STIs was slightly better among Male IDUs Alexandria than those in Cairo. Almost all IDUs in both groups heard of HIV. However, just over a third of those who heard of HIV knew about the possibility of taking a confidential HIV testing. HIV screening didn't sufficiently reach male IDUs as only 9.5% in both groups were ever tested for the infection.

Television still appeared to be the best source for disseminating information to this target group as the majority of the two male IDU groups watched television regularly in the four weeks prior to the survey.

Table 4.3a: Sexual activity among male injecting drug users, Bio-BSS, Egypt, 2010

	IDU Cairo (n= 275)		IDU Alexandria (n= 285)	
	Sample estimate %	Population estimate % (95% CI)	Sample estimate %	Population estimate % (95% CI)
<b>Ever had sex</b>				
Percent who ever had sex	97.5%	94.9% (92.3-98.6%)	96.1%	96.0% (93.9-98.0%)
<b>Of those who have ever had sex</b>	(n= 268)		(n= 274)	
Percent who had sex in the 12 months preceding the survey	74.6%	75.9% (69.9-82.0%)	77.7%	79.7% (72.4-84.5%)
<b>Of those who had sex in the 12 months preceding the survey</b>	(n= 200)		(n= 213)	
Percent who had sex with one or more				
Commercial sex partner	14.5%	13.1% (7.0-20.2%)	15.0%	10.8% (7.0-17.4%)
Regular non-commercial sex partner	87.5%	83.0% (71.2-91.7%)	85.4%	86.3% (79.2-91.8%)
Non-regular non-commercial sex partner	30.5%	33.8% (26.2-51.4%)	43.9%	42.2% (30.1-48.3%)
<b>Sex with male partner</b>	(n= 200)		(n= 213)	
Percent who ever had sex with male partner	11.0%	14.3% (5.3-32.3%)	6.6%	7.7% (2.9-14.8%)

Table 4.3b: Condom use among male injecting drug users, Bio-BSS, Egypt, 2010

	IDU Cairo (n= 275)		IDU Alexandria (n= 285)	
	Sample estimate %	Population estimate % (95% CI)	Sample estimate %	Population estimate % (95% CI)
<b>Of those who reported sex with regular non-commercial sex partner in the 12 months preceding the survey</b>	(n= 175)		(n= 182)	
Percent who reported condom use in last sex	5.1%	3.2% (0.5-11.3%)	4.4%	2.6% (0.5-6.6%)
Percent who reported condom use in last 12 months	8.0%	4.3% (1.0-14.9%)	16.0%	18.7% (0.1-23.5%)
<b>Of those who reported sex with non-regular non-commercial sex partner in the 12 months preceding the survey</b>	(n= 61)		(n= 93)	
Percent who reported condom use in last sex	11.5%	30.4% (23.9% -77.2%)	16.1%	17.3% (5.9-52.5%)
Percent who reported condom use in last 12 months	18.0	(-)*	26.6%	24.1% (11.4-57.3%)
<b>Of those who reported sex with commercial sex partner in the 12 months preceding the survey</b>	(n= 29)		(n= 32)	
Percent who reported condom use in last sex	24.1%	12.2% (4.8-25.0%)	25.0	(-)*
Percent who reported condom use in last 12 months	34.5%	(-)*	28.1%	(-)*

\* As one group was too small, estimates cannot be calculated.

Table 4.4: Percentage of male injecting drug users reporting STIs and HIV knowledge, knowledge of HIV testing confidentiality and ever being tested, Bio-BSS, Egypt, 2010

	IDU Cairo (n= 275)		IDU Alexandria (n= 285)	
	Sample estimate %	Population estimate % (95% CI)	Sample estimate %	Population estimate % (95% CI)
<b>STI Knowledge</b>				
Percent who ever heard of STIs	84.7%	80.8% (74.0-87.9%)	88.8%	91.4% (87.9-94.0%)
<b>HIV Knowledge</b>				
Percent who ever heard of HIV	98.9%	(-)*	100.0%	(-)*
<b>Of those who heard of HIV</b>	(n= 272)		(n= 285)	
Percent who knew of testing confidentiality	39.0%	32.5 (24.7-39.5%)	41.1%	36.6% (30.4-43.9%)
Percent who ever tested	11.8%	9.5 (5.7-13.4%)	11.9%	9.5% (5.4-12.4%)
<b>Of those who were ever tested</b>	(n= 32)		(n= 34)	
Percent who tested in last 12 months	46.9%	(-)*	35.3%	43.1% (28.6-93.7%)

\* As almost all cases are present in one group, the other group was too small, thus estimates cannot be calculated.

## **Section Five**

### **HIV Sero-prevalence among Most at Risk Populations**

## 5.1 HIV sero-prevalence among most at risk populations

HIV sero-prevalence for all targeted groups are shown in Table 5.1. Blood samples were drawn from all study populations and the results were confirmed.

Blood samples were drawn and results were confirmed for all street children. One street boy was detected positive for HIV, giving a sero-prevalence of 0.5% and one street girl was detected positive for HIV, giving a sero-prevalence of 0.5%.

Blood samples were drawn and results were confirmed for all FSWs. HIV sero-prevalence was zero among FSWs.

Blood samples were drawn from all MSM in the three target groups. HIV blood test results were confirmed for 259 out of 260 MSM Cairo, for all MSM Alexandria and for 268 out of 269 MSM Luxor. Population estimates for HIV sero-prevalence was 5.7% (95%CI=2.6-10.1%) for MSM Cairo and 5.9% (95%CI=3.0-10.2%) for MSM Alexandria. None of MSM Luxor were sero-positive.

Blood samples were withdrawn from all male IDUs in the two target groups. HIV blood test results were confirmed for 274 out of 275 IDU Cairo and for 284 out of 285 IDU Alexandria. Population estimates for HIV sero-prevalence was 6.8% (95%CI=3.9-10.8%) for IDU Cairo and 6.5% (95%CI=3.3-10.3%) for IDU Alexandria.

Table 5.1: HIV sero-prevalence among most at risk populations, Bio-BSS, Egypt 2010

	Blood samples		HIV Sero-prevalence	
	Collected	Confirmed	Sample estimates %	Population estimates % (95% CI)
Street boys	200	200	0.5%	NA
Street girls	200	200	0.5%	NA
FSW	200	200	0.0%	NA
MSM Cairo*	260	259	5.4%	5.7% (2.6-10.1%)
MSM Alexandria*	262	262	6.9%	5.9% (3.0-10.2%)
MSM Luxor*	269	268	0.0%	-
Male IDUs Cairo*	275	274	7.7%	6.8% (3.9-10.8%)
Male IDUs Alexandria*	285	284	6.7%	6.5% (3.3-10.3%)

\*RDS population estimates



## **Section Six**

### **Conclusion and Recommendations**

#### 6.1 Conclusion

#### 6.2 Recommendations

## 6.1 Conclusion

The evidence produced by this survey provides wealth of HIV/AIDS-related information. The biological results had three major findings. First the results confirmed the concentration of HIV infection in MSM population that was detected in Bio-BSS 2006. Second, they detected the growth and the concentration of the HIV epidemic among male injecting drug users. Third, they identified HIV positive cases among street boys and girls.

The MARPs in Egypt have links with the general population through marriage, regular or non-regular non-commercial sexual relations with opposite sex even among street children and MSM. These links are the path to the growth of the epidemic beyond the MARPs communities to the general population.

Even though numerous prevention interventions targeting MARPs were implemented in the country over the past few years, HIV awareness remains insufficient among MARPs. Unprotected sex remains prevailing and condom is inadequately used or recognized as an HIV prevention method.

Despite of the NAP incessant efforts for HIV screening and the presence of voluntary counseling and testing centers, HIV screening in MARPs remain scarce. Very few of them were ever tested for HIV.

Overlapping of risk behaviors including commercial sex, injecting drugs and MSM activity is a common finding among different groups of MARPs.

MSM Luxor, though indulged in more risk behaviors and having less HIV awareness than MSM Cairo and MSM Alexandria, didn't harbor the HIV infection. There are only two possible explanations. First, according to the NAP statistics, HIV cases are still scarce in Luxor governorate. Second, the MSM Luxor differ in their characteristics and MSM activity from those in Cairo and Alexandria.

## 6.2 Recommendations

- Supporting the National efforts in monitoring the HIV epidemic by regular conduction of the second generation biological and behavioral surveillance surveys among MARPs, vulnerable groups and the general population according to the National Surveillance Plan. Future surveys need to include more population groups and to cover a wider geographical area of Egypt.
- Encouraging more NGOs to collaborate with the NAP to outreach MARPs. Identifying and building the capacities of potential NGOs and dedicated health care providers to implement proper interventions for MARPs with the provision of related prevention and care services at all governorate levels. This should be based on the experience of the successful ongoing pilot outreach programs.

- Developing targeted specific strategies and interventions for different groups of MARPs that encompass counseling, STI management and HIV care and support. Such interventions should deal with different risky behaviors with an efficient monitoring and evaluation system.
- Supporting the ongoing sentinel services and VCT sites to interrupt the HIV spread in high transmission networks. This can be implemented by setting an integrated plan of action to organize and expand the current activities to cover the various MARPs subpopulations and the referral mechanism for health care services.
- Building the capacity of health care providers to offer non-stigmatized HIV services for MARPs.
- Developing an appropriate Strategic Behavioral Communication (SBC) intervention to increase HIV/STI awareness among MARPs and to enhance their health seeking behaviors.
- Creating an encouraging environment to persuade female participation in future HIV interventions. New innovative approaches need to be implemented to target vulnerable women, female sex workers and female street Children.
- Conducting an in depth qualitative research to address the low condom use among MARPs as well as the general population.
- Creating an enabling environment to decrease HIV stigma and discrimination. This could be achieved through opening an HIV dialogue among the various stakeholders to share HIV experience and developing a context-specific communication strategy to improve public awareness and to engage the society at large.