



BEHAVIORAL SURVEILLANCE SURVEY

LAO PEOPLE'S DEMOCRATIC REPUBLIC, 2000-2001



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EXECUTIVE SUMMARY

Introduction

The Behavioral Surveillance System (BSS) is the first stage of an integrated second generation HIV surveillance system in the Lao PDR. Where the first generation of HIV surveillance collected biological data only, the second generation couples the measurement of trends in HIV risk behavior (the BSS) with HIV and STI prevalence. This system provides a more complete picture of HIV dynamics within the country than relying only on the interpretation of prevalence data, and it offers more specific information for intervention and policy planning. The National Committee for the Control of AIDS Bureau (NCCA.B) in Lao PDR and its partnering governmental and international organizations established an integrated HIV surveillance system in 2000 and conducted the BSS in 2000 and 2001. HIV and STI prevalence data was collected in 2001 and is reported in the *HIV Sentinel Surveillance and STI Periodic Prevalence Survey*.

Measuring HIV behavioral risk is of particular importance in an epidemic situation such as the one currently experienced by Lao PDR. HIV prevalence even among high risk populations remains low, but the increased volume of cross border traffic between higher prevalence countries, as well as the rapidly changing social and economic environment puts Lao PDR on the alert. The country must be diligent in monitoring a potential larger scale epidemic, and tracking behaviors that could lead to HIV transmission allows Lao PDR to proactively address intervention needs before an epidemic takes hold.

Methodology

Five provinces including Champasak in southern Laos, Savannakhet, Khammuane and Vientiane Municipality in the central region and Luang Prabang in northern Laos were chosen for the study based on their population density, HIV case reporting, and the existence of behaviors putting some populations at risk for HIV. These provinces are the five most populous areas along Route 13, the main land transportation route of Lao PDR, and they were identified as centers for internal and cross-border mobile and migratory populations. Target groups in each province were chosen based on their size, accessibility, levels of HIV risk behavior, and mobile/migratory status. The groups included male and female cross border seasonal migrant workers, female factory workers, service women, long distance truck drivers, police and military.

Detailed geographical mapping was conducted for each of the groups, and a two stage cluster sampling methodology was employed for all populations where a 'take all' selection was not possible. A two-week training was provided for interviewers and supervisors, and data collection took place over a 12-week period. Data entry was done in EpiInfo 6.0, and analysis was conducted, adjusting for weighting and design effect when appropriate, using STATA 6.4.

Results

Approximately one third of truck drivers and one quarter of police reported paying for sex in the past year, with 21% of truck drivers and 13% of police reporting 3 or more commercial partners in the past year. In contrast, 12% of military and 6% of male migrant workers reported a commercial sex partner in the past 12 months, and fewer than 6% of the military and 2% of the migrants had multiple commercial partners. Two-thirds of the truck drivers, military and migrant men reporting using a condom during every sex act with a commercial partner, and three-fourths of the truck drivers reported the same. Sex with a non-regular partner in the past 12 months ranged from a low of 12% among migrants, to 18% of military, 20% of truck drivers, and 29% of police. Fewer than one third of the men said that the consistently used condoms with their non-regular partners.

Among the service women sampled, 61% had sold sex for money in the past 12 months and 68% reported having either a commercial or non-regular sex partner in the same time period. However, a majority of the service women reported no more than 5 partners per year. Consistent condom use among service women with commercial partners was 73%, falling to 44% with non-regular partners.

The other female groups in the BSS displayed low levels of risk behavior as many were both married and monogamous (female seasonal migrant workers) or reported virgins (female factory workers).

There was no reported injection drug use among any of the populations surveyed.

While 21% of the service women reported a STI symptom in the past year, 5% or less of all other populations identified that they had a symptom of a potential sexually transmitted infection.

Of all populations, only participants from the uniformed services reported that over half of them had received any form of HIV education or services in the past 12 months, and access to interventions was lowest among male and female migrant workers and female factory workers.

Conclusions and Recommendations

Truck drivers, service women and police emerged as groups with higher levels of potential risk for HIV. Though it was anticipated that male migrants would be a high risk population, few of them reported commercial or non-regular sex partners. While all populations reported at least moderate levels of condom use with commercial partners, behavioral change interventions should be implemented to increase consistent condom use and a strong condom social marketing program should be maintained. Interventions to increase HIV knowledge are important for all populations, and particularly migrant workers and female factory workers.

While the migrants reached in this survey were not particularly at risk, the passive surveillance system indicates the existence of high risk migrant populations contracting HIV. Qualitative research should be conducted to identify these more vulnerable migrant populations for monitoring and interventions. Among service women, the reported levels of condom use and the interpretation of the sex partner definitions should be followed up using qualitative methodologies. Future surveillance should continue to monitor the high risk groups and explore other potential at-risk populations, while questionnaires should be augmented to allow analysis of risk taking activities by high and low prevalence sites.



INTRODUCTION

Lao PDR stands in a unique position among Asian countries confronting HIV. The country continues to experience low HIV prevalence even among populations deemed to be at high risk of acquiring the virus, while it shares its borders with countries battling HIV in epidemic proportions, especially Thailand, Cambodia, and Myanmar. Lao PDR is in the 'alert' stage of a potential epidemic, and the implications for the country could be enormous. As trade and new land routes open up into neighboring countries, the prospect of HIV being introduced through migrating and mobile populations in Lao PDR is increasing. Communities previously isolated to both the virus and HIV intervention efforts would be vulnerable to its spread. The National Committee for the Control of AIDS Bureau (NCCA) in Lao PDR and its partnering governmental and international organizations recognize this susceptibility and have taken steps to increase both surveillance and intervention programs in an attempt to avert an HIV/AIDS epidemic in the country.

As of the year 2000 in ten reporting provinces, 717 people have tested HIV positive out of 61,130 blood samples tested. There have been 190 reported AIDS cases and 72 people have died of AIDS. The provinces reporting the highest number of people testing positive for HIV are Savannakhet, Vientiane Municipality and Champasak. The number of HIV cases in these provinces in 1999 and 2000 was 125, 78 and 34, respectively. A majority of the people with HIV are males aged 20-29, and the primary mode of transmission is through heterosexual intercourse¹. Case reports from

Savannakhet indicate that most positive cases at their facilities are male seasonal migrant workers to Thailand who are already displaying opportunistic infections associated with AIDS. The second most populous group testing positive in Savannakhet have been service women who exchange sex for money.

In 1997, the Ministry of Health attempted to institute a HIV sentinel surveillance program to develop a clearer picture of HIV seroprevalence in Lao PDR instead of relying on case reports. After completion of two of the four target provinces, the surveillance was aborted. Other smaller studies of HIV prevalence in specific target populations have been conducted, but a large scale study of HIV prevalence and the behaviors leading to its spread was still lacking in Lao PDR. At the recommendation of the NCCA and international organizations working in HIV/AIDS, it was decided that the rapid implementation of a second generation HIV surveillance system, studying HIV-related risk behavior and the prevalence of HIV and other sexually transmitted infections, was mandatory for understanding and combating HIV in Lao PDR.

The Behavioral Surveillance Survey (BSS) was conducted in 2000-2001 by the NCCA in partnership with Family Health International (FHI), the Office of the Population Technical Assistance Team (OPTA), and five Provincial Committees for the Control of AIDS (PCCA)

¹ National Committee for the Control of AIDS Bureau, Ministry of Health, *Country Report on HIV/AIDS*, Lao PDR, November 2000.

including Luang Prabang, Vientiane Municipality, Khammuane, Savannakhet, and Champasak. It is an integral part of the second generation HIV surveillance system. Using standardized and country specific indicators, the BSS had two primary objectives: 1) to determine HIV/AIDS related behaviors among mobile and migratory populations in Lao PDR and measure behavioral changes over time, and 2) to systematically measure HIV risk behavioral trends among sub-populations who may be vulnerable to HIV.

The second important step in this combined surveillance project is the HIV Sentinel Surveillance (HSS) and STD Periodic Prevalence Survey (SPPS) conducted in Lao PDR in 2001 and coordinated by the NCCA with FHI, the Lao PDR HIV/AIDS Trust, WHO, CHASPPAR, and the EU/STD Project. The biological markers of HIV prevalence studied in the HSS:SPPS, in combination with the behavioral data collected in the BSS, provide important information to help understand the relationship between behavior and infection and allow interventions to be targeted in the most productive and cost effective ways.



METHODOLOGY

Province and Sample Selection

The NCCA, PCCA and collaborating organizations performed an initial assessment of provinces and target populations for potential inclusion in surveillance. Five provinces including Champasak in southern Laos, Savannakhet, Khummuane and Vientiane Municipality in the central region and Luang Prabang in northern Laos were chosen for the study based on their population density, HIV case reporting, and the existence of behaviors putting some populations at risk for HIV. These provinces are the five most populous areas along Route 13, the main land transportation route of Lao PDR, and they were identified as centers for internal and cross-border mobile and migratory populations. Target groups in each province were chosen based on their size, accessibility, levels of HIV risk behavior, and mobile/migratory status.

Male Truck Drivers

(Vientiane Municipality and Champasak Province)

This population consists of both the truck drivers and drivers' assistants. All truck drivers included in the BSS were males aged 15 and over who drove long distance routes either within Lao PDR or across international borders. Truck drivers are considered to be a mobile population because they often spend

long periods of time away from their family and have the opportunity to stay overnight in Laos or in another country. This time away from their communities offers greater opportunities with fewer social constrictions to have multiple sexual partners - including commercial sex partners. For this reason, truck drivers are a population with potentially high risk for acquiring HIV.

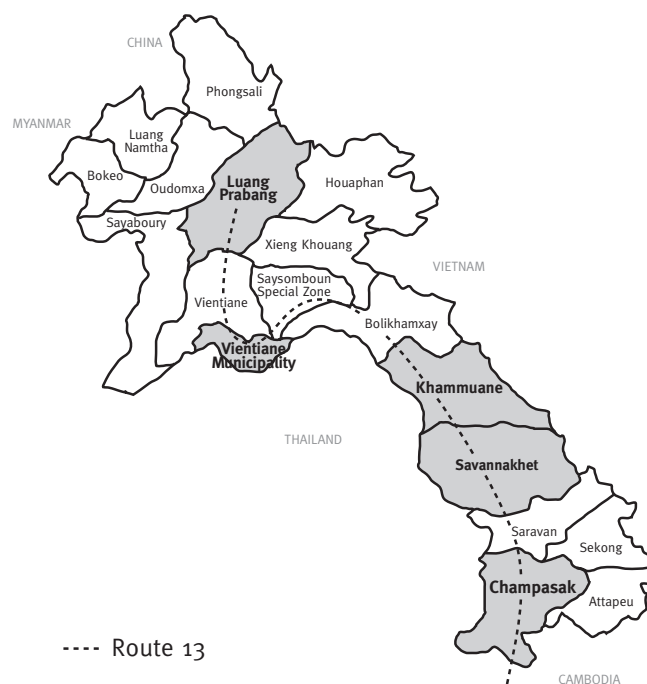
Male and Female Seasonal Migrant Workers

(Khummuane, Savannakhet and Champasak Provinces)

There is a great deal of work-related seasonal migration from Lao PDR into Thailand. Because most migrant laborers are working illegally, no accurate statistics exist on this population. However, it has been estimated that up to 100,000 Lao are working in Thailand. Most often the laborers enter Thailand without working permits, and the men are employed as field workers while the women work in restaurants and private houses². For the purposes of this study, seasonal migrant workers were defined as men and women who work in Thailand and return to their communities in Lao PDR at least one time a year. This time parameter was chosen for two reasons: 1) to enable study teams to identify and interview migrant workers upon their return home from June to September

² Chantavanich S, Beesey A, and Paul S. *Mobility and HIV/AIDS in the Greater Mekong Sub-Region*. Asian Development Bank. Bangkok, Thailand. 2000

Figure 1: Map of Selected Provinces



during the planting season, and 2) seasonal migrant workers who return home with some frequency provide a potential conduit for transmitting the HIV virus from high prevalence Thailand into Lao PDR. Case reports from various provincial hospitals show that seasonal migrant workers make up the greatest proportion of men testing positive for HIV in Laos, and they are often in an advanced stage of the disease at the time of testing.

Female Factory Workers (Vientiane Municipality)

The factory workers selected for this study were all women working in small to large garment factories in Vientiane Municipality and living in dormitories either on the factory grounds or nearby. These women were considered internal (domestic) migrants because most had left their homes and families to seek work in the city. A majority of the garment workers in Vientiane were women below the age of 20. The factory-owned dormitories had strict regulations and curfews, usually 10:00 pm. If women were not back in the dormitories by the time of curfew, they were not allowed to enter and had to spend the night off grounds.

Service Women (Vientiane Municipality and Luang Prabang, Khammuane, Savannakhet and Champasak Provinces)

Formal, brothel-based sex work is rare in Lao PDR, and prostitution is illegal. Defining and identifying women who sell sex for money in Lao PDR can be particularly difficult. Women working in small drink shops and nightclubs may engage in commercial sex transactions, but their employment in these venues does not automatically signify that they are selling sex, as opposed to just serving beer or having conversation with their customers. To develop a better understanding of the behavioral risks of service women, the study did not screen participants to find out whether they were commercial sex workers. Instead, all women who worked in these establishments and had direct contact with the patrons, whether by selling them drinks or sitting with them, were defined as service women. For this reason, the term ‘commercial sex worker’ cannot be used to fit this population.

Military

(Vientiane Municipality and Luang Prabang, Khammuane, Savannakhet and Champasak Provinces)

The support and assistance of the Ministry of Defense was instrumental in the successful implementation of this study among military personnel. The military identified 11 sites for inclusion in the study; three in Vientiane, two in Luang Prabang, one in Khammuane, three in Savannakhet, and two in Champasak. Male mobile military personnel, both on duty and in training, were the primary people found at these sites. Military personnel may often move to different provinces for work, and thus were considered a mobile population. In addition, the initial assessment found that they often were the clients of service women.

Police

(Vientiane Municipality and Luang Prabang, Khammuane, Savannakhet and Champasak Provinces)

Similar to the Lao military, the Ministry of the Interior provided complete support and assistance to the study team. They identified ten sites - representative of the police force as a whole - for inclusion in the study; six in Vientiane, one in Luang Prabang, one in Khammuane, one in Savannakhet, and one in Champasak. Although less so than the military, police in the Lao PDR may be mobile due to the nature of their jobs. They also were named as potential clients of service women.

Questionnaire Development

The BSS core questionnaire was adapted to fit the country context. The process of BSS questionnaire development was as follows:

- Review of BSS core questionnaire
- Development of country specific questionnaire for men and women
- Testing questionnaire with target groups
- Questionnaire revision

- Retesting of questionnaire with target groups
- Finalized questionnaire

Questions included those exploring sex with high risk partners, condom use, injection drug use, knowledge and beliefs about HIV transmission, history of sexually transmitted disease symptoms and STD health seeking behavior.

Interviewer and Supervisor Selection and Training

The Provincial Committee for the Control of AIDS (PCCA) in each province selected interviewers and team supervisors for their province.

- Selection criteria for interviewers included the following:
 - Under thirty years old;
 - Able to travel away from home for 2 or more months at a time;
 - Completed at least high school (though all those selected had completed more than high school);
 - Working as a government official (but not as a health worker); and
 - Strong interpersonal and communication skills.

Participants were interviewed by same sex interviewers, and there was one national supervisor from the NCCA overseeing each province.

Training of interviewers and supervisors was 10 days and covered the following:

- The purpose of the BSS
- Overview of the questionnaire
- HIV and STD information
- Required field work forms including cluster information sheets
- 70% of the training time was used for role playing and practicing interviewing techniques

Table 1: Total Sample Size by Target Groups and Sites, and Sampling Methodology

Target group	Luang Prabang	Vientiane	Khummuane	Champasak	Savannakhet	TOTAL	Sampling Methodology
Male							
Truck Drivers	-	280	-	201	-	481	Take all
Military	16	48	11	80	89	244	1 st stage: Stratification 2 nd stage: Random Sampling
Police	25	142	21	23	31	242	1 st stage: Stratification 2 nd stage: Random Sampling
Seasonal Migrant Workers	-	-	78	191	123	392	1 st stage: PPS 2 nd stage: Take all
Female							
Service Women	70	360	70	109	155	764	1 st stage: PPS 2 nd stage: Random Sampling
Factory Workers	-	1,041	-	-	-	1,041	1 st stage: PPS 2 nd stage: Random Sampling
Seasonal Migrant Workers	-	-	114	179	143	436	1 st stage: PPS 2 nd stage: Take all
Total	111	1,871	294	783	541	3,600	

* Sample sizes were calculated to allow for the detection of 10-15% changes in risk behaviors over time with a confidence interval of 95%.

* Probability proportional to size (PPS) and stratification are representative probability sampling.

Mapping

All populations were geographically mapped in each of the provinces. There was a mapping team for each province composed of one member of the PCCA, one from NCCA, and one from a provincial mass organization.

- Participants were trained in:
 - How to create a map
 - How to ask for information for the map
 - Mapping practice (1 day)

Mapping fieldwork was completed in two weeks. At the conclusion, a wrap-up meeting was held to review the exercise and output. Additional fieldwork was then done to finalize some of the maps.

Sampling

Detailed and accurate mapping was the cornerstone of the cluster sampling methodology used for some study populations. Because many of the populations of interest were sampled difficult to identify, in the first stage they were sampled by clusters, or gathering points, and then in the second stage individuals were randomly selected within each cluster, in order to achieve a representative probability sample. Where possible, all sub-population members in the province were selected.

Field Work

For the first two weeks of BSS data collection, all supervisors were in Vientiane Municipality working with all interviewers. This helped the NCCA to supervise them and to insure that everybody had the same knowledge and skills. At the end of these two weeks, 12 additional weeks of fieldwork were undertaken in the other four provinces.

Data Analysis

A coding manual in English and Laos was developed, as was an analysis guide for male, female, and service women populations. Data entry was done by NCCA surveillance staff using EpiInfo 6.4. Data was then cleaned and exported to STATA 6.0. For the populations sampled using a cluster sampling methodology, analysis was conducted adjusting for weighting (service women) and design effect (service women, factory workers, police, military).

RESULTS

Socio-Economic Characteristics

Over 75% of the truck drivers, military and police were 25 and older, and more than half were older than 29. Male seasonal migrant workers were almost evenly divided between those over and under 25, with 19% of them being under 20 years old. Two-thirds of the female seasonal migrant workers were under the age of 25, and over one-third were under 19. A majority of the factory women fell below the age of 20, and less than 10% were thirty years or older. Three-fourths of the service women were below age 25. (Table 2)

Mobility creates both a physical and a “social” separation from one’s home community. It can effectively remove people from many of the moral codes that govern their actions. People who spend long periods apart from their families may have greater opportunity and less social restrictions to engage in multiple sexual relationships. Looking at marital status and time spent away from one’s home and family of a group - particularly if they are staying in another country - can illustrate the opportunity of engaging in HIV risk behavior that is afforded to a population and the possibility that they may bring the consequences home to their spouses.

Seventy-four percent of the long distance truck drivers reported that they were currently married. Within the past 12 months, 41.4% of them had been away from their communities and families for extended periods of time, and 71.9% had stayed overnight outside of Laos. (Table 3)

Seventy-one percent of the military and 57.0% of the police were married. These two populations had less opportunity to stay overnight outside of Laos than the truck drivers (4.9% of military and 9.5% of police). However, 34% of the military and 28.1% of the police reported having spent two or more consecutive weeks away from their homes.

The marital and movement characteristics of male and female seasonal migrant workers were similar to each other. Forty-five percent of the male and 41.1% of the female seasonal migrant workers were currently married. Almost all male and female seasonal migrant workers stayed away from their communities for at least two weeks at a time (99.2 and 96.8, respectively), and 100% of both groups had stayed overnight in Thailand in the past 12 months.

Although female factory workers were chosen for the study only if they were living in factory dormitories and not with their families, only seven percent of the factory women reported that they had been away from their communities for two or more continuous weeks in the past 12 months. Interviewers had defined ‘community’ to the factory workers as where they were currently living, the dormitories, and not as their home province. Three percent of the women said that they had stayed overnight outside of Lao PDR in the past 12 months.

Of the service women sample, 4.8% were married, 20.6% had traveled away from their communities for an extended period of time, defined again as where they were currently living, and 11.8% outside of Lao PDR in the past 12 months.

Table 2: Age in Years for All Populations

Age Categories	15-19 % (95% CI)	20-24 % (95% CI)	25-29 % (95% CI)	> = 30 % (95% CI)
Truck Drivers	6.2 (4.4, 8.8)	14.6 (11.7, 18.0)	16.0 (13.0, 19.6)	63.2 (58.8, 67.4)
Military	1.6 (0.2, 12.6)	10.3 (4.4, 21.9)	25.0 (19.9, 30.9)	63.1 (51.4, 73.5)
Police	1.2 (0.3, 5.8)	17.8 (10.9, 27.7)	22.3 (16.2, 29.9)	58.7 (47.2, 69.3)
Male Seasonal Migrant Workers	19.1 (15.5, 23.4)	37.5 (32.8, 42.4)	20.9 (17.2, 25.3)	22.5 (18.6, 26.9)
Female Seasonal Migrant Workers	36.0 (31.6, 40.7)	33.3 (29.0, 37.8)	19.0 (15.6, 23.0)	11.7 (9.0, 15.1)
Factory Workers	53.2 (49.2, 57.2)	37.6 (34.1, 41.1)	7.3 (5.9, 9.1)	1.9 (1.3, 2.9)
Service Women	35.7 (30.9, 40.8)	40.3 (36.0, 44.7)	16.7 (13.9, 19.9)	7.4 (5.5, 9.9)

Table 3: Marital Status and Mobility for All Populations

Marital Status and Mobility	Currently Married % (95% CI)	Away from Home / Community at Least Two Continuous Weeks in Past 12 Months % (95% CI)	Stayed Overnight Outside of Laos in Past 12 Months % (95% CI)
Truck Drivers	73.8 (69.7, 77.6)	41.4 (37.0, 45.9)	71.9 (67.7, 75.8)
Military	70.9 (55.5, 82.6)	34.0 (26.2, 42.8)	4.9 (2.4, 9.9)
Police	57.0 (50.7, 63.2)	28.1 (22.1, 35.0)	9.5 (5.5, 16.1)
Male Seasonal Migrant Workers	45.4 (40.5, 50.4)	99.2 (97.6, 99.8)	100
Female Seasonal Migrant Workers	41.1 (36.5, 45.8)	96.8 (94.6, 98.1)	100
Factory Workers	1.8 (1.1, 3.1)	7.5 (5.9, 9.6)	2.9 (1.9, 4.4)
Service Women	4.8 (3.3, 7.0)	20.6 (16.9, 25.0)	11.8 (9.5, 14.7)

Table 4: Mean Years of Schooling among Populations with Schooling and Literacy among All Populations

Schooling and Literacy	Years of Schooling Mean (95% CI)	Not Able to Read % (95% CI)
Truck Drivers	9.1 (8.8, 9.3)	1.0 (0.4, 2.5)
Military	10.4 (9.7, 11.1)	0
Police	11.7 (11.0, 12.5)	0
Male Seasonal Migrant Workers	6.3 (6.0, 6.6)	18.1 (14.6, 22.3)
Female Seasonal Migrant Workers	5.5 (5.2, 5.7)	22.9 (19.2, 27.1)
Factory Workers	7.2 (7.0, 7.3)	2.3 (1.5, 3.5)
Service Women	6.6 (6.4, 6.9)	14.1 (11.4, 17.3)

Table 5: Drug and Alcohol Use among All Populations

Alcohol and Drug Use	Frequency of Alcohol Consumption in Past 4 Weeks % (95% CI)				Ever Injected Drugs %
	Everyday	At Least Once a Week	Less Than Once a Week	Never	
Truck Drivers	7.5 (5.4, 10.2)	48.7 (44.2, 53.1)	27.9 (24.0, 32.1)	16.0 (13.0, 19.6)	0
Military	3.3 (1.7, 6.3)	50.8 (40.1, 61.5)	23.4 (16.9, 31.3)	22.5 (15.1, 32.2)	0
Police	2.9 (1.5, 5.6)	52.9 (42.9, 62.7)	33.1 (23.9, 43.7)	11.2 (6.8, 17.8)	0
Male Seasonal Migrant Workers	5.9 (3.9, 8.7)	49.0 (44.0, 54.0)	13.0 (10.0, 16.7)	31.9 (27.4, 36.7)	0
Female Seasonal Migrant Workers	0.2 (0.03, 1.6)	8.7 (6.4, 11.8)	9.6 (7.2, 12.8)	81.4 (77.5, 84.8)	0
Factory Workers	0.2 (0.1, 0.8)	5.8 (4.2, 7.4)	24.0 (21.0, 27.4)	70.0 (66.4, 73.4)	0
Service Women	51.2 (45.4, 57.0)	37.6 (32.4, 43.1)	6.6 (4.8, 9.1)	4.5 (3.0, 6.9)	0

The most educated sub-population surveyed was the police followed by the military and truck drivers. The mean years of schooling among police was 11.7, military was 10.4, and truck drivers was 9.1. No member of the police and military groups reported that he was not able to read, and only 1.0% of the truck drivers were not able to read.

Male and female seasonal migrant workers were the least educated population; 18.1% of the male seasonal migrant workers were illiterate with a mean 6.3 years of schooling, and 22.9% of the female seasonal migrant workers were illiterate with a mean 5.5 years of schooling. Among factory workers, 7.2 was the mean number of years educated and 2.3% were not able to read. While service women reported only slightly lower mean years of schooling (6.6) than the factory workers, 14.1% of their population was not able to read, a much higher percentage than in the factory workers. (Table 4)

Over one-half of the service women reported that they drank alcohol everyday and almost 90% said that they drank at least once a week. Among the other sub-populations, all males groups reported that 8% or less drank alcohol daily and all female groups reported that 1% or less drank alcohol daily. More than one-half of the truck drivers, military, police and male seasonal migrant workers drank alcohol at least once a week. No interviewees in any of the seven sub-populations reported that they had ever injected drugs. (Table 5)

Sexual Activity and Condom Use

Three types of sex partners are looked at in this study. The first, **commercial partners**, are women whom the respondent paid for sex. 'Paying' a sex partner is defined as an exchange of cash for sex. Exchange of non-monetary gifts is not included because it creates a gray area around the division between commercial and non-regular sex partners. **Regular partners** are defined as

either spouses or live-in sex partners. A non-regular partner is anyone who is not a regular or a commercial sex partner. A **non-regular partner** may be a long term girlfriend of many years or a one time sexual encounter. Such sexual relationships may not preclude multiple sexual partners in the same way that a cohabitating partner might, so all are considered high risk sexual contacts in this study.

Male Populations

Over 90% of the truck drivers, military, and police reported that they had ever had sexual intercourse, while two-thirds of the male seasonal migrant workers had ever had sex. Seventy-four percent of the truck drivers had a regular partner in the past 12 months. 20.2% had at least one non-regular partner and 31.2% had at least one commercial partner in the past 12 months. The truck drivers were the only male group in the study that had a higher proportion with commercial partners than non-regular partners. (Figure 2)

Of the military interviewed, 71.3% had sex with a regular partner in the past 12 months, 18.0% with a non-regular partner, and 11.5% with a commercial sex partner. Fewer police reported that they had a regular sex partner than the military (59.9%) and a higher proportion of the police reported having at least one non-regular and commercial sex partner in the past year (28.5% and 24.0%, respectively) than did the military.

The male seasonal migrant workers, the youngest male group included in this study, reported slightly fewer than half with a regular sex partner in the past year. Twelve percent of the seasonal migrant workers had a non-regular partner in the past 12 months, and 5.9% reported sex with a commercial sex partner in the past 12 months.

An important indicator for measuring a person's risk of acquiring HIV is whether he has had sex with a commercial sex worker. The likelihood that that same person will have sexual intercourse with an HIV positive partner then rises with an increased number

Figure 2: Percent of Male Populations Who Ever Had Sex and Percent with Different Partner Types in the Past 12 Months

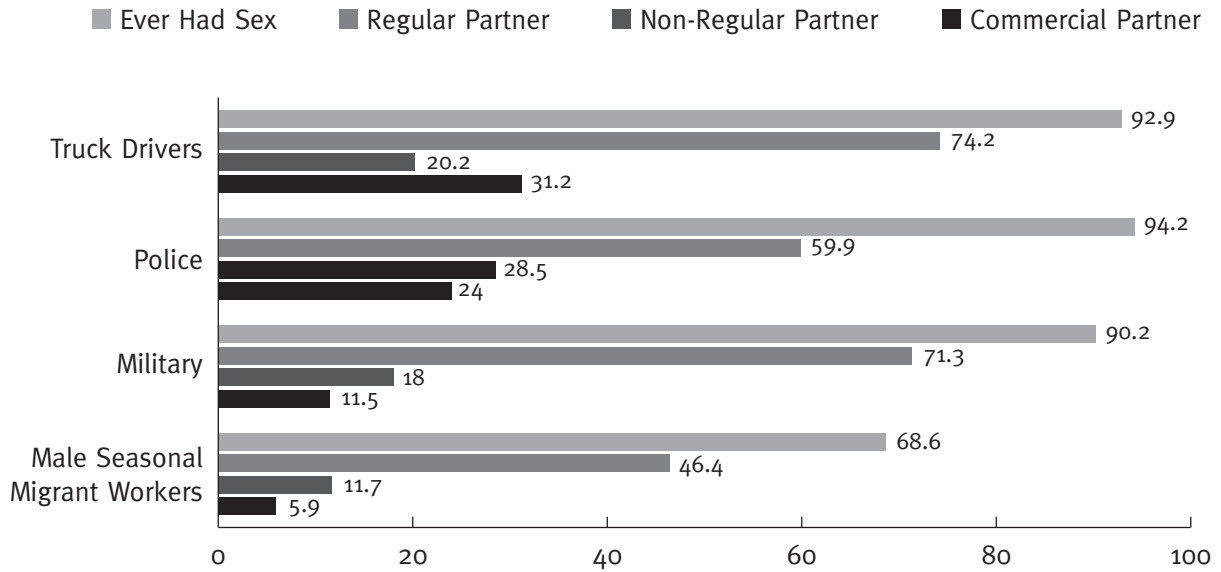


Table 6: Number of Commercial Sex Partners in Past Year of Male Populations

	Number of Commercial Sex Partners			
	0 partners	1 partner	2 partners	> = 3 partners
Truck Drivers	68.5 (64.1, 72.4)	3.8 (2.4, 5.9)	6.7 (4.7, 9.3)	21.0 (14.7, 21.6)
Military	88.5 (83.3, 93.2)	5.7 (4.0, 8.2)	2.1 (0.7, 5.6)	3.7 (1.9, 7.2)
Police	76.0 (67.0, 83.2)	4.1 (1.9, 8.9)	7.0 (3.7, 12.9)	12.8 (7.2, 21.8)
Seasonal Migrant Workers	94.1 (91.3, 96.1)	3.3 (1.9, 5.6)	1.3 (0.5, 3.0)	0.3 (0.04, 1.8)

of different high risk partners. While a majority of all four male populations said they did not have commercial sex in the past year, the populations varied in terms of the number of partners reported.

Sixty-eight percent of the truck drivers reported that they had no commercial partners in the past 12 months, the smallest proportion of all male populations. A greater number of truck drivers reported three or more commercial partners in the past year (21.2%) than reported two (6.7%) or one (3.7%) commercial partners. Slightly more

than 10% of the military said they had a commercial partner in the past year, with 5.7% reporting one partner, 2.1% two partners, and 3.7% three or more partners. Thirteen percent of the police population stated that they had had sex with three or more different commercial sex partners in the last year. Only a small proportion (6.9%) of the male seasonal migrant workers reported having commercial sex in the past year, and of those who did have a commercial partner, the majority had only one. (Table 6)

Figure 3: Condom Use during Last Sex and Consistent Condom Use in the Past 12 Months with Commercial Partners among Male Populations with a Commercial Sex Partner

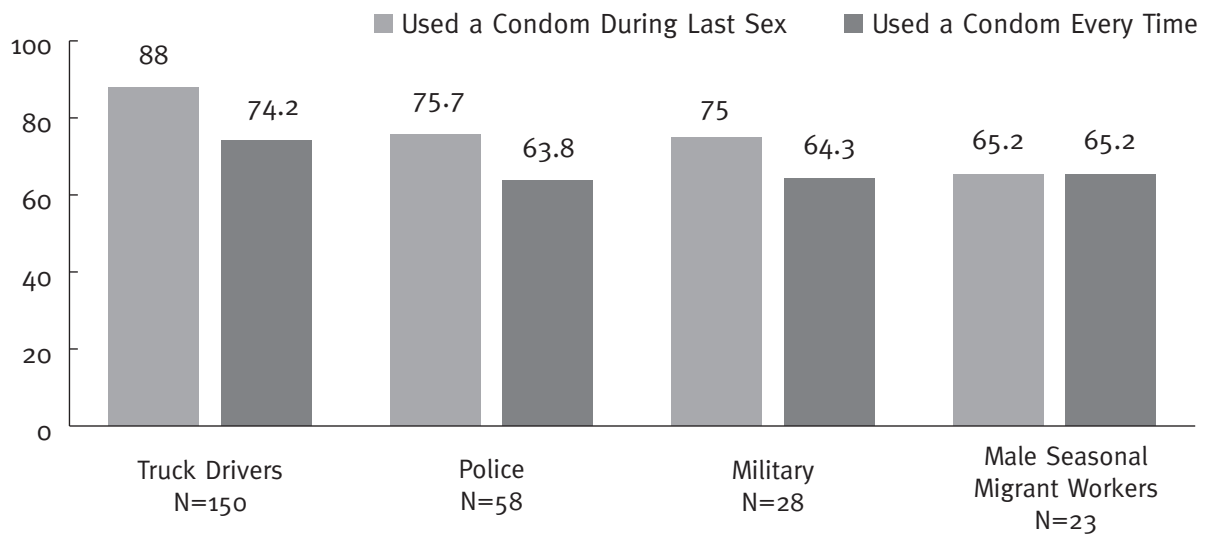
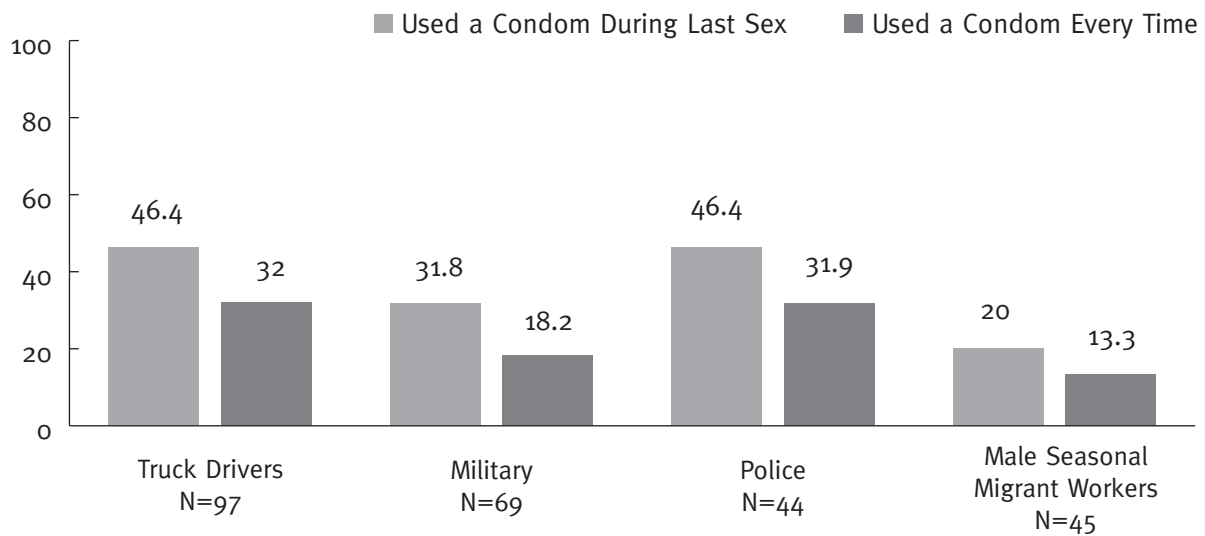


Figure 4: Condom Use during Last Sex and Consistent Condom Use in the Past 12 Months with Non-Regular Partners among Male Populations with a Non-Regular Sex Partner



Truck drivers, the male population with the greatest number of commercial sex partners, used condoms the most frequently of all males groups. Eighty-eight percent of the truck drivers answered that they had used a condom during last sex with a commercial partner, and 74.2% of the them reported using a condom every time in the last year with all commercial sex partners. Military and police reported similar proportions using a condom during last sex (75%) and every time (64%) with a commercial sex worker. Male seasonal migrant workers had the lowest reported condom use during last sex of the male populations (65.2%). (Figure 3)

Both last time and consistent condom use with a non-regular partner were below 50% among all male populations. Of the men who had a non-regular partner in the past 12 months, 46.4% of the truck drivers, 31.8% of the military, 46.4% of the police, and 20.0% of the seasonal migrant workers reported using a condom during last sex with a non-regular partner. Thirty percent of the truck drivers, 18.2% of the military, 31.9% of the police, and 13.3% of the seasonal migrant workers used a condom consistently during every act of sexual intercourse with a non-regular partner in the past 12 months. (Figure 4)

Female Populations

Ninety percent of the female factory workers living in dormitories in Vientiane Municipality reported that they had *never* had sexual intercourse. Of all the factory workers, 3.8% had sex with a regular partner and 2.2% had sex with a non-regular partner in the past year. Slightly more than half of the female seasonal migrant workers reported that they had ever had sex. Forty-one percent of them said they had sex with a regular partner and 2.8% with a non-regular partner in the past 12 months. (Figure 5)

Service Women

The mean age of first sex among service women who ever had sex was 17.4, while service women who reported selling sex for money began commercial sex work on average at 20 years of age. Service women

reported earning a median amount of 300,000 kip with their last client (~ USD 34), ranging from 20,000 kip (~ USD 2) to 4,000,000 kip (~ USD 455). On the last day that the service women who sold sex for money had a client, they reported a mean of 1.1 clients. Almost one-third of all service women interviewed were able to produce a condom at the time of the interview. (Table 7)

In order to better understand who are the clients of service women in Lao PDR, the women were asked the profession of their last client. While almost one-half stated that they did not know, businessman (23%) and government worker (14%) were the most common responses among the service women who did know the profession of their last client. Five percent of their partners worked in a company, 4% were tourists, and 2% were military, police, truck drivers or taxi drivers. (Figure 6)

Figure 5: Percent of Female Populations Who Ever Had Sex and Percent with a Regular or Non-Regular Partner in the Past 12 Months

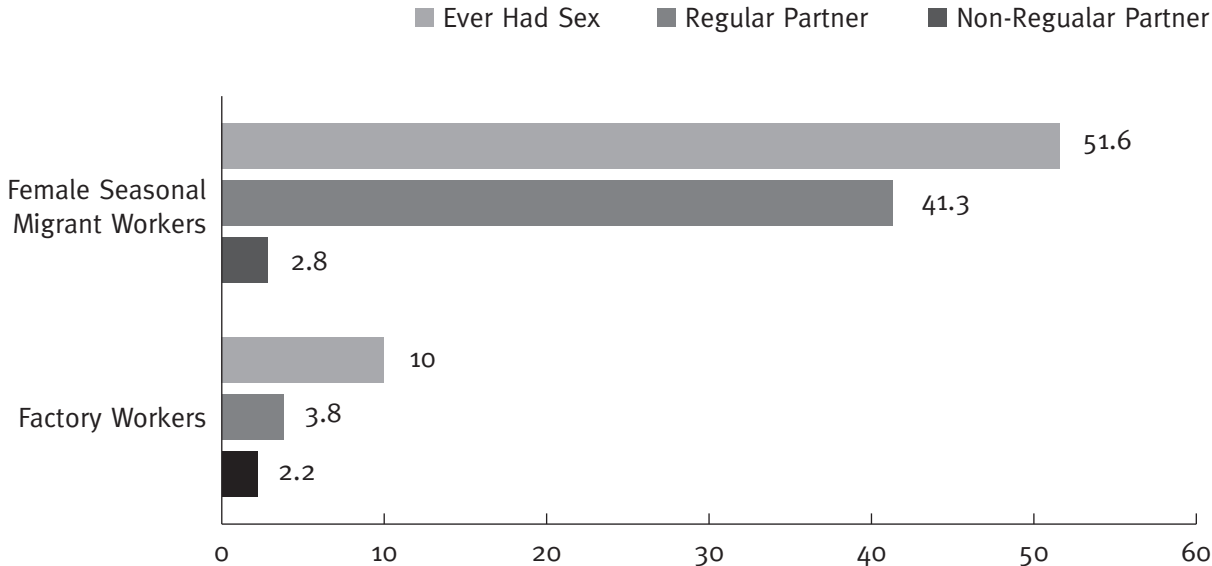


Table 7: Dynamics of Sex Work among Service Women

Age at First Sex Mean	Age First Sold Sex Mean	Amount Earned with Last Client Median	Number of Clients on Last Day had a Client Mean	Condoms in Possession during Interview %
17.4	20.2	300,000 kip	1.1	31.7

Figure 6: Profession of Last Client among Service Women

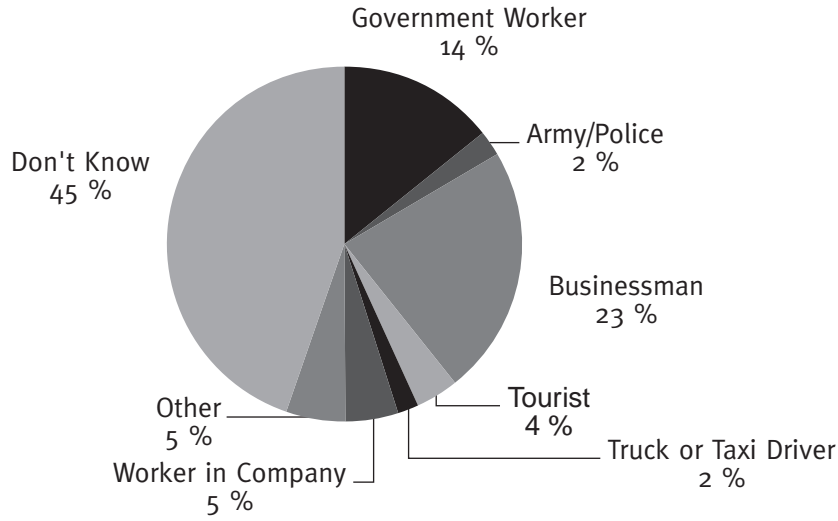
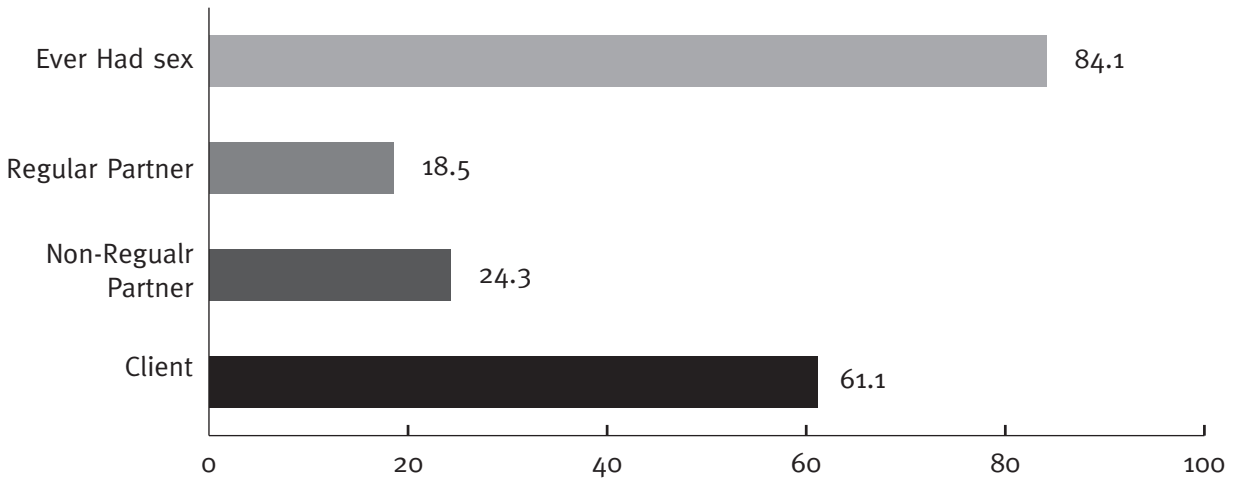


Figure 7: Percent of Service Women Who Ever Had Sex, Had Sex in the Past 12 Months, and Percent with Different Partner Types in the Past 12 Months.



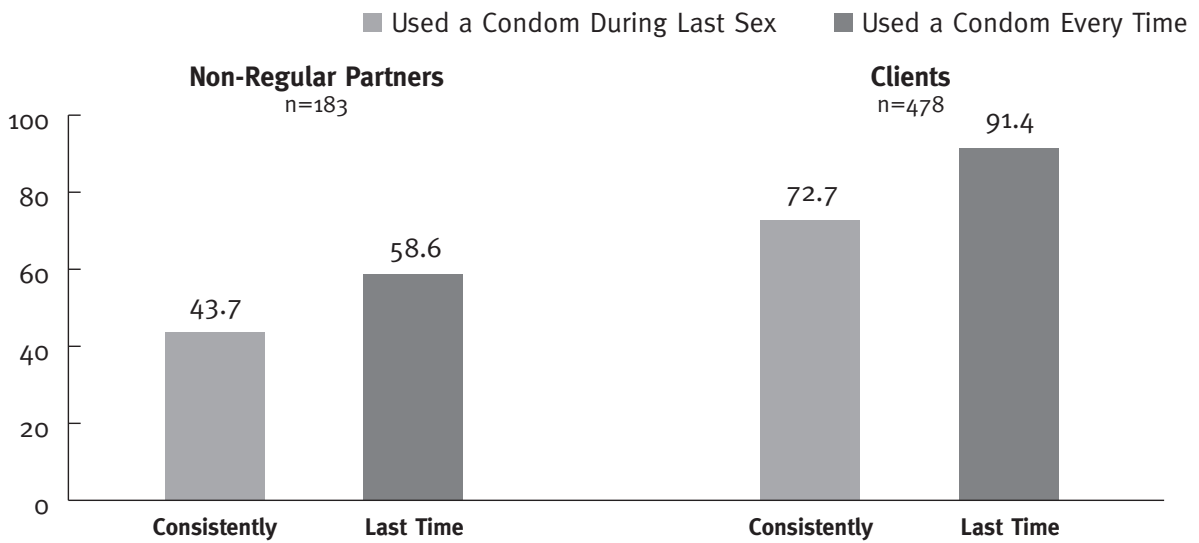
As previously described, service women are not necessarily selling sex for money, but because of the nature of their jobs, they are more likely to have the opportunity to engage in commercial sex work than women who do not work directly with customers in drinking establishments. Eighty-four percent of this relatively young population said that they had had sex, and three-fourths of the service women had sex in the past 12 months. Eighteen percent had a regular partner in the

past 12 months. Five percent of the service women reported that they were currently married, so it is likely that a majority of the regular partners of the service women are not spouses. One-quarter of the service women said they had a non-regular partner in the past year, and almost two-thirds reported that they had sold sex for money in the past 12 months. (Figure 7)

Table 8: Number of Clients on Last Day Sold Sex of Service Women Who Sold Sex for Money

Number of Clients on Last Day Sold Sex % (95% CI)			
1 client	2 clients	3 clients	> = 4 clients
95.5 (93.0, 97.2)	2.9 (1.7, 5.1)	0.6 (0.1, 2.4)	1.0 (0.4, 2.6)

Figure 8: Condom Use during Last Sex and Consistent Condom Use in the Past 12 Months among Service Women with a Non-Regular Sex Partner or Client

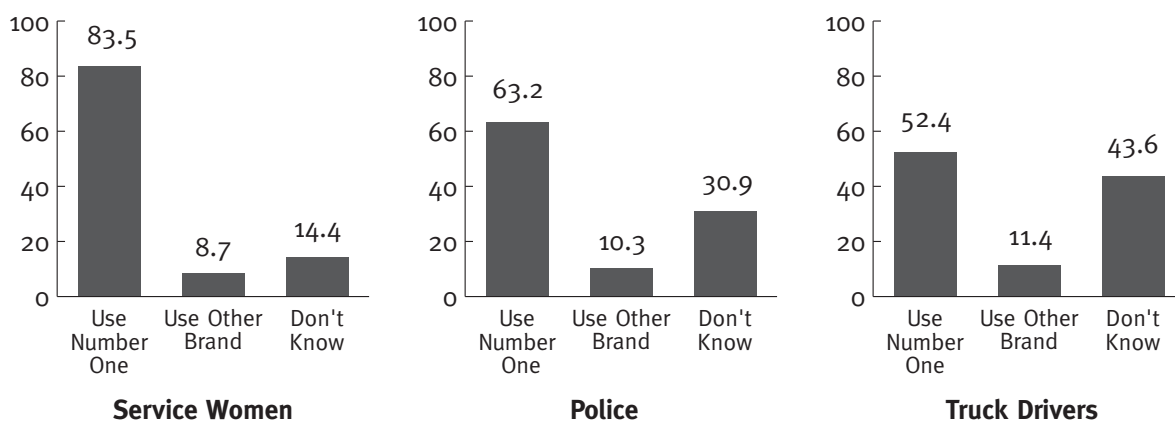
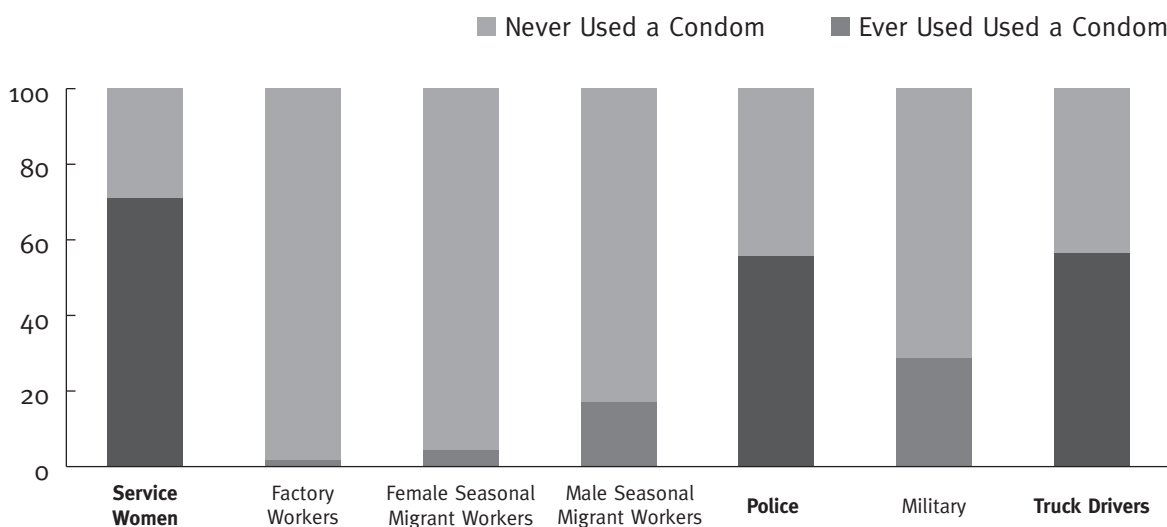


One aspect of increased risk of acquiring HIV for commercial sex workers is the frequency of clients over a specific time period. Of the service women who had commercial sex in the past year, almost all reported having only one client on the last day worked, 2.9% had two clients, and less than 2% had 3 or more clients. (Table 8)

Over 50% of the service women that had sex with a non-regular partner in the past 12 months had used a condom during last sex;

while 43.7% reported using a condom every time with non-regular partner(s) in the last year. A vast majority of the service women who had a paying client in the past 12 months said they had used condoms. Ninety-one percent reported that they had used a condom during last sex with a client and 72.7% used a condom consistently with all clients in the past month. (Figure 8)

Figure 9: Percent of All Populations Who Have Used a Condom



Figures 10,11, and 12: Condom Brands Used by Service Women, Police and Truck Drivers among Those Who Ever Used a Condom

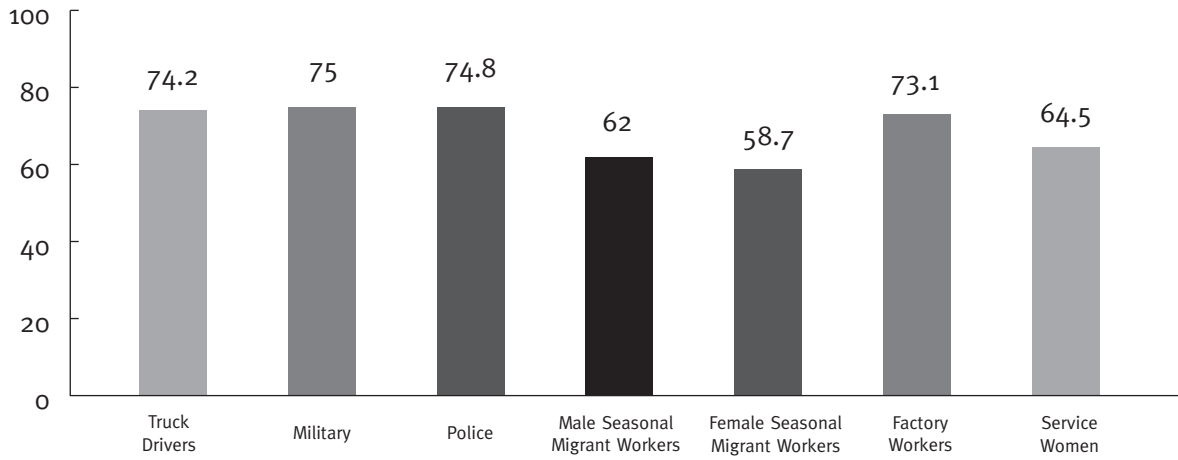
Condom Use and Brands

Less than 10% of the female factory workers and female seasonal migrant workers populations had ever used as condom as did less than 20% of the male migrant workers and less than 30% of the police. Only service women, police and truck drivers reported a majority of their populations had ever used a condom. Of the service women who had used a condom, 83.5% used Number One condoms, 8.7% used another brand and 14.4% did not know what they used. Sixty-three percent of the police and 52.4% of the truck drivers used Number One condoms while about 10% of both populations used another brand. Thirty-one percent of the police and 43.6% of the truck drivers reported that they did not know what brand of condom they used. (Figure 9-12)

HIV Knowledge and Beliefs

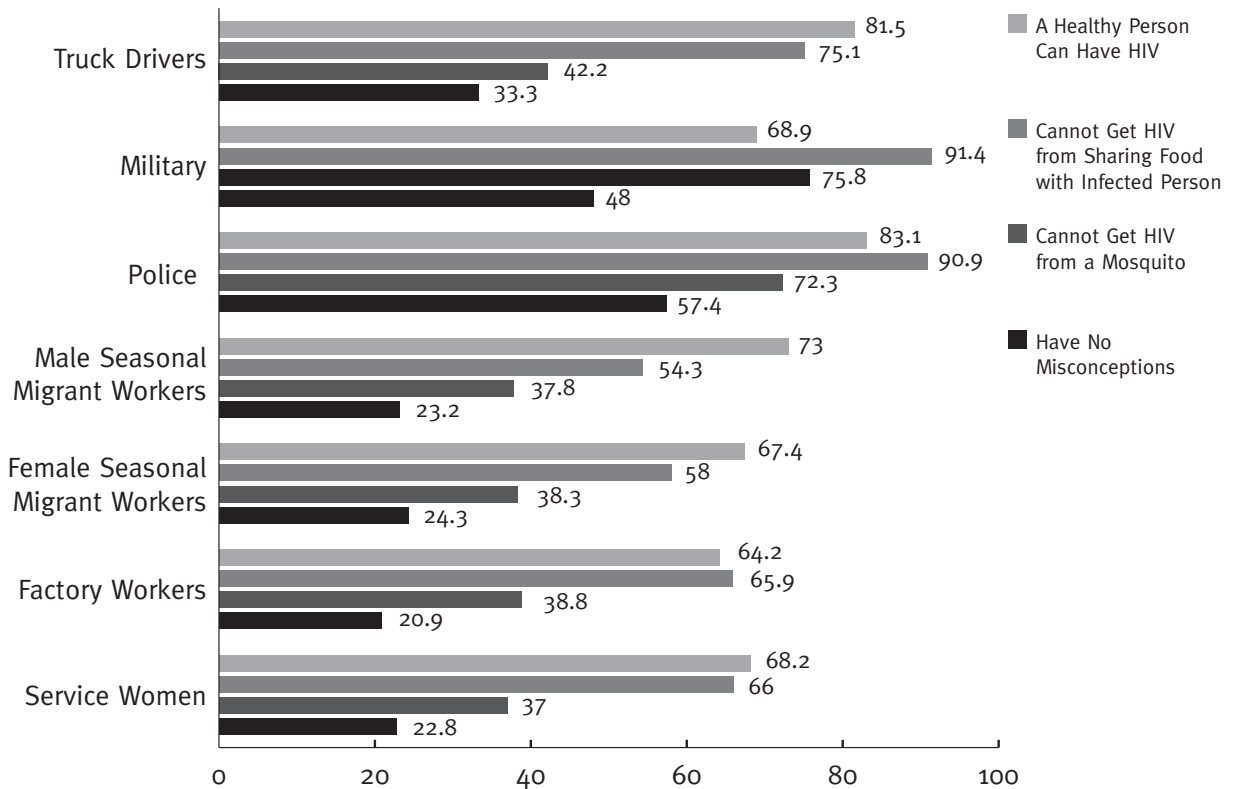
An important aspect of all HIV/AIDS interventions is ensuring that populations are empowered with correct knowledge about how HIV transmission can be prevented. Without a knowledge base, behavior change is not possible. However, in every community there will also be prevalent misconceptions regarding HIV even among populations who are well educated in methods of HIV transmission. All male and female populations were asked a series of questions designed to help gauge not only their knowledge of how to prevent the sexual transmission of HIV, but also misconceptions they held about HIV/AIDS.

Figure 13: Percent of all Populations Who Can Correctly Identify Three Means* of Reducing the Risk of Acquiring HIV



*Three Means: Using a Condom Consistently, Remaining Faithful to One Faithful, Uninfected Partner and Abstaining Completely from Sex

Figure 14: Percent of All Populations Who Have No Misconceptions about HIV/AIDS



Seventy-five percent of the truck drivers, military and police were able to identify consistent condom use, remaining faithful to one faithful, uninfected partner, and abstaining completely from sex as methods of protecting themselves against HIV. Sixty-two percent of the male and 58.7% of the female seasonal migrant workers could do the same. Three-quarters of the female factory workers knew the three methods of reducing their risk while less than two-thirds of the service women correctly identified all three methods. (Figure 13)

While HIV knowledge is generally high among the truck drivers, military and police, these populations still hold misconceptions surrounding HIV. In addition, although the three groups had similarly proportional answers to the knowledge questions, their beliefs about HIV varied considerably. When asked whether a healthy looking person could be infected with HIV, 81.5% of the truck drivers, 68.9% of the military and 83.1% of the police stated that it was possible. Over 90% of the military and police and 75% of the truck drivers knew that it was not possible for a person to get HIV from sharing food with an infected person; however, only three-fourths of the military and police and less than half of the truck drivers know that HIV could not be transmitted by a mosquito. One-third of the truck drivers, 48% of the military, and 57% of the police did not hold any of these three common misconceptions about HIV. (Figure 14)

Although male seasonal migrant workers had higher levels of knowledge about some methods to reduce sexual transmission of HIV than the female seasonal migrant workers did, both groups had similar beliefs regarding HIV. Over three-fourths of the male and female migrant workers said that it was possible to be healthy and still have HIV, about one-half knew that food sharing was not a source of infection, and one-third knew that mosquitoes did not pass the virus. Less than one-quarter of both the male and female seasonal migrant workers held none of these three commonly mistaken beliefs.

A similar proportion of female factory workers knew that healthy people can have

HIV and that HIV was not passed through food (64.2% and 65.9%), as did the service women (68.2% and 66%). Almost 39% of the factory workers and 37.0% of the service women knew they were not at risk of acquiring HIV from mosquitoes. Less than 25% of both populations were able to respond correctly to all three questions.

Exposure to HIV/AIDS Information

Just as there was a wide range of HIV knowledge across the sub-populations, there were also large discrepancies in exposure to HIV information from group to group. Only 21.9% of the male seasonal migrant workers and 14.5% of the female seasonal migrant workers had received some type of HIV/AIDS education in the past six months. This is despite the fact that the seasonal migrant workers spent long periods of time in Thailand. (Figure 15)

Fewer than one-third of the female factory workers and one-half of the service women and truck drivers had gotten HIV information in the past six months from any source. The police and military fared somewhat better than other groups in being reached by HIV education. Fifty-five percent of the police and 64.8% of the military had received information on HIV prevention and control over the past six months.

Sexually Transmitted Diseases

Among all populations, only service women reported with any frequency having a genital ulcer or sore or unusual discharge in the past 12 months (21.1%). Five percent of the police, 3.9% of the female seasonal migrant workers, 2.5% of the military, and less than 2% of the truck drivers, male seasonal migrant workers and female factory workers reported an STD symptom in the past 12 months. (Figure 16)

Figure 15: Percent of All Populations Who Have Received Information on HIV Prevention and Control in the Past 6 Months

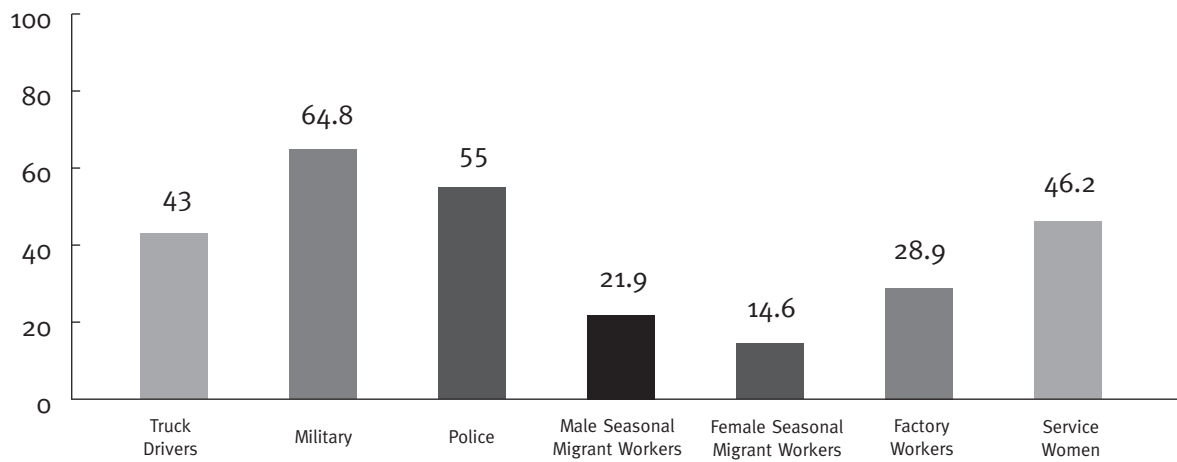
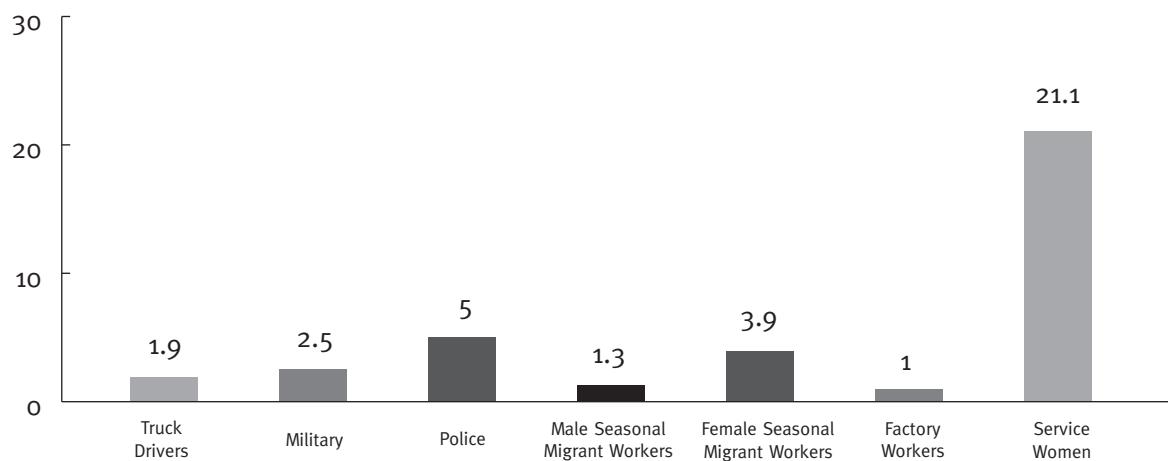


Figure 16: Percent of All Populations Reporting a STD Symptom in the Past 12 Months



HIV Testing and Personal Experience

Of the populations surveyed, the service women reported the highest percentage having received a voluntary HIV test (19.7%) and knowing their results (18.3%). Thirteen percent of the police had been voluntarily tested and knew their status. Almost 10% of the truck drivers and 5% of the military had received a voluntary HIV test with a slightly smaller percentage knowing their results. Among seasonal migrant workers, 6.9% of the men and 5.3% of the women had undergone

voluntary HIV testing, and all of them reported that they knew their disease status. Few female factory workers had ever received an HIV test (0.4%). (Figure 17)

While less than 15% of all populations had ever known someone living with or whom had died of HIV/AIDS, male and female seasonal migrant workers were the most likely to have known someone (14.0% and 11.2%, respectively). Nine percent of the police and military, 8% of the service women and truck drivers, and 3% of the factory workers responded that they had ever known a person who was living with or had died from HIV/AIDS. (Figure 18)

Figure 17: Percent of All Populations Who Have Ever Had a Voluntary HIV Test and Percent Who Received Their Results

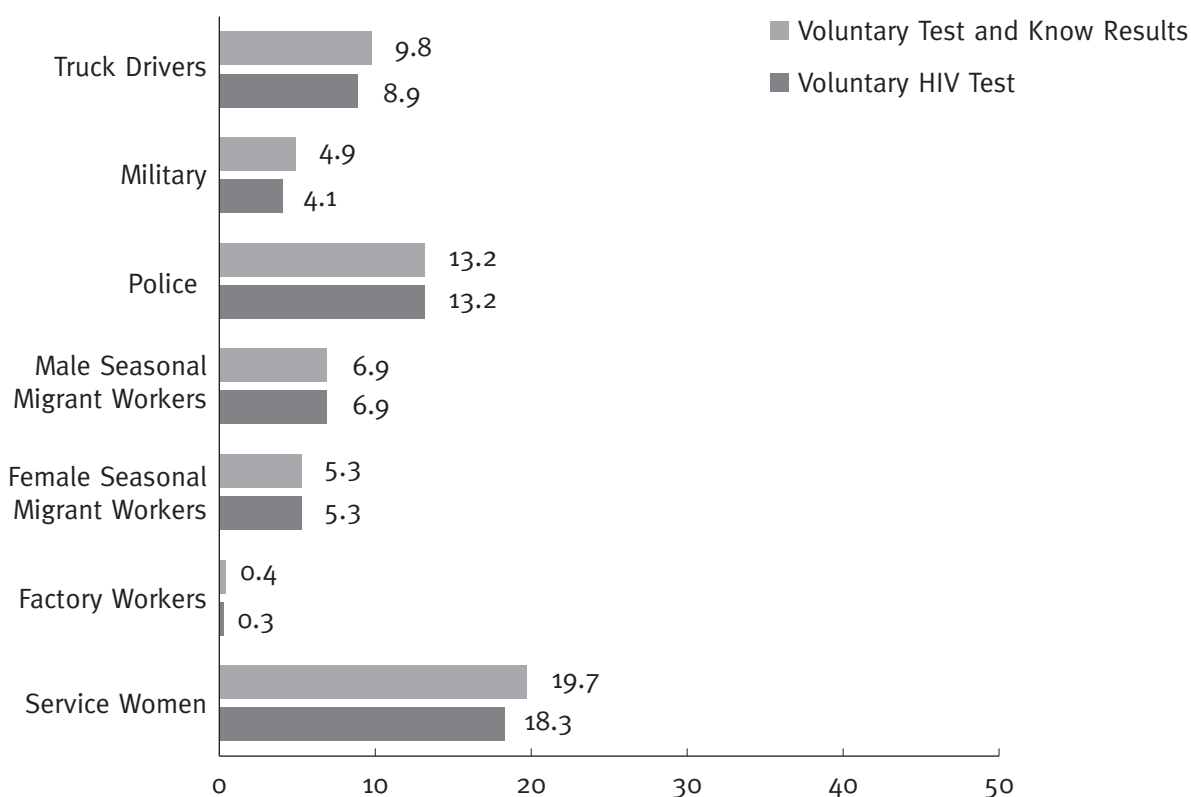
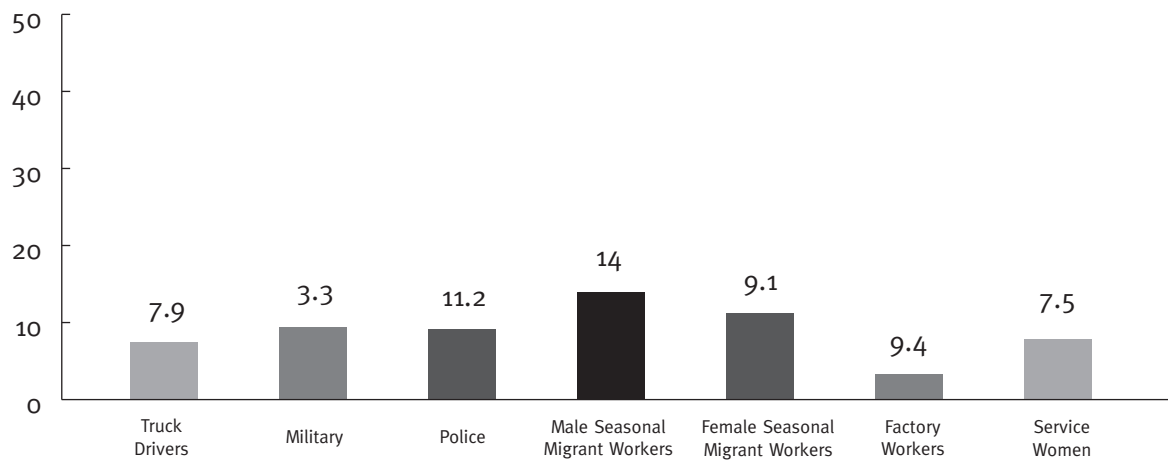


Figure 18: Percent of All Populations Who Know Someone Living with or Has Died from HIV/AIDS



DISCUSSION AND RECOMMENDATIONS

Risk Characteristics

All Groups

- Truck drivers, service women and police emerged as the groups with higher levels of potential risk for HIV.

Male Groups

- Approximately one-third of truck drivers and one-quarter of police reported paying for sex in the past year.
- Thirty-two percent of truck drivers and 24% of police reported three or more partners in the past year.
- Among male migrants, only 6% reported commercial partners and 12% reported non-regular partners in the past year.
- Only 9% of male migrants reported more than one partner in the past year.

Female Groups

- Sixty-one percent of service women reported selling sex for money in the past year.
- Sixty-eight percent of service women reported having either a commercial or non-regular sex partner in the past year.
- Among service women with commercial partners, the median number of partners in the past year was five.

- Virtually no female migrants or factory workers reported exchanging sex for money and fewer than 3% reported non-regular partners in the past year.

Condom Use, STDs and Knowledge

- Seventy-four percent of truck drivers and 64% of police reported using a condom every time with commercial partners in the past year.
- Seventy-three percent of service women reported using a condom every time with clients in the past year.
- Twenty-one percent of service women reported STD symptoms in the past year.
- Knowledge of HIV prevention and access to information was lowest among male and female seasonal migrant workers and female factory workers.

Programmatic Recommendations

- Improved IEC interventions are needed to increase knowledge levels and access to information, especially among male and female migrant workers and female factory workers.
- Behavior change interventions are necessary to increase condom use among truck drivers, service women and police.

- Behavior change interventions are likely to be needed among migrant populations.
- Maintaining strong condom social marketing will keep condom use at a high level.

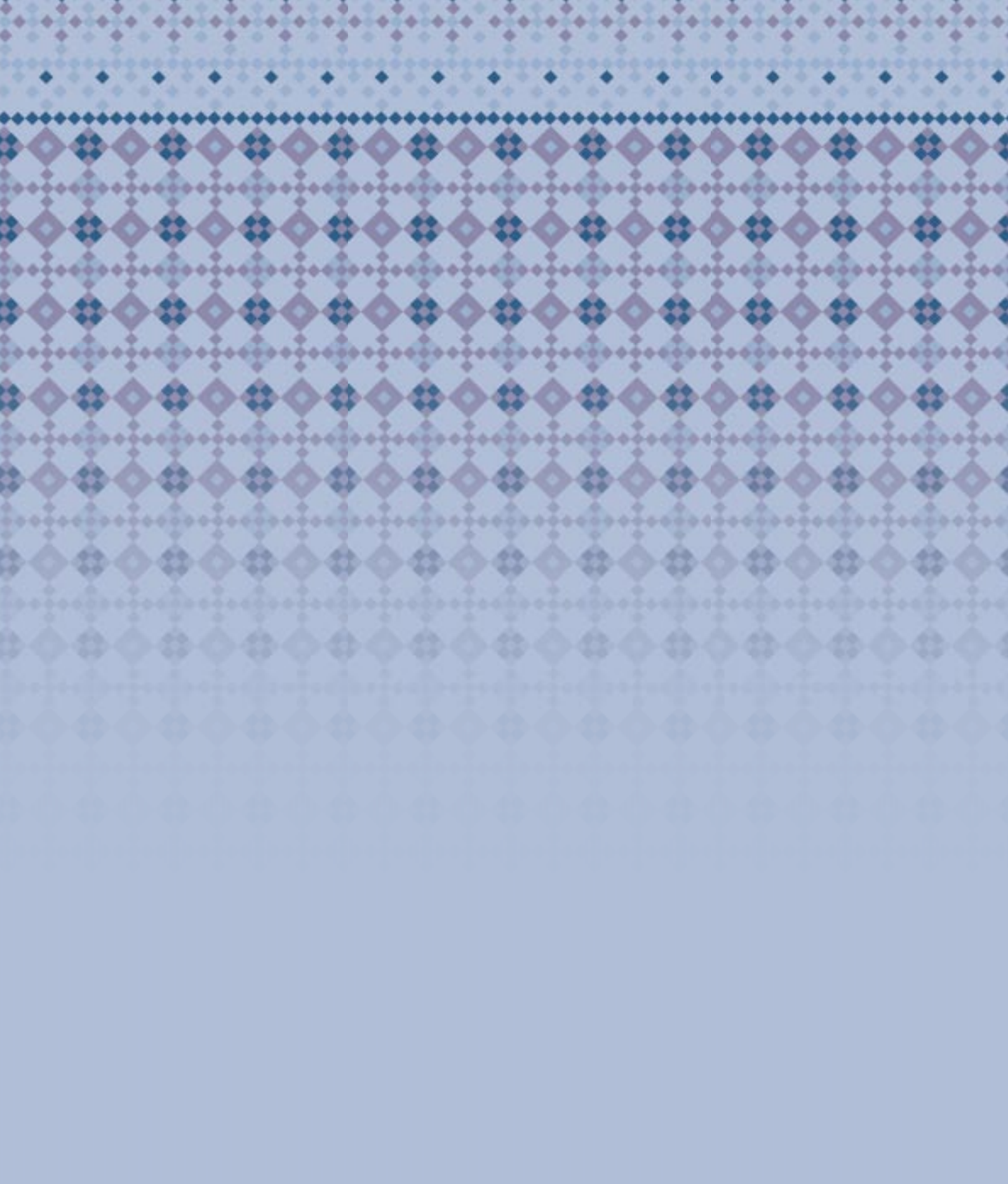
----- Supplementary Research -----

- Qualitative research should be undertaken to better understand how to identify and reach migrant and mobile populations that are moving in between high and low prevalence areas.
- A synthesis of secondary research should be conducted to inform subsequent BSS on movement between Lao PDR and surrounding countries.
- Case studies among returning migrants infected with HIV should be used to understand how this population is becoming infected.
- Qualitative research is needed to validate the high level of condom use reported among sex workers and their clients.
- Qualitative research on different partners types (regular, non-regular, client) is necessary to better define sexual partner categories.

----- Future BSS -----

- Surveillance should continue among truck drivers, police and service women, given their high levels of risk behavior.
- Surveillance should remain focused on mobile and migratory populations and assessments should be conducted among these populations to improve the methodology.
- The possibility of reaching migrants in “destination” as opposed to “source” communities should be explored.

- The possibility of adding businessmen or government workers as a BSS group should be addressed, given their high levels of contact with service women.
- Questionnaires should be augmented to provide understanding of the intersection between high and low prevalence areas (Thailand/Lao PDR) including:
 - Do truck drivers have commercial sex in *both* Thailand and Lao PDR ?
 - Do male migrant workers have commercial and/or non-regular partners in *both* Thailand and Lao PDR ?
 - Do Lao sex workers ever travel to Thailand to sell sex ?
 - Do Lao sex workers have clients from Thailand ?



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