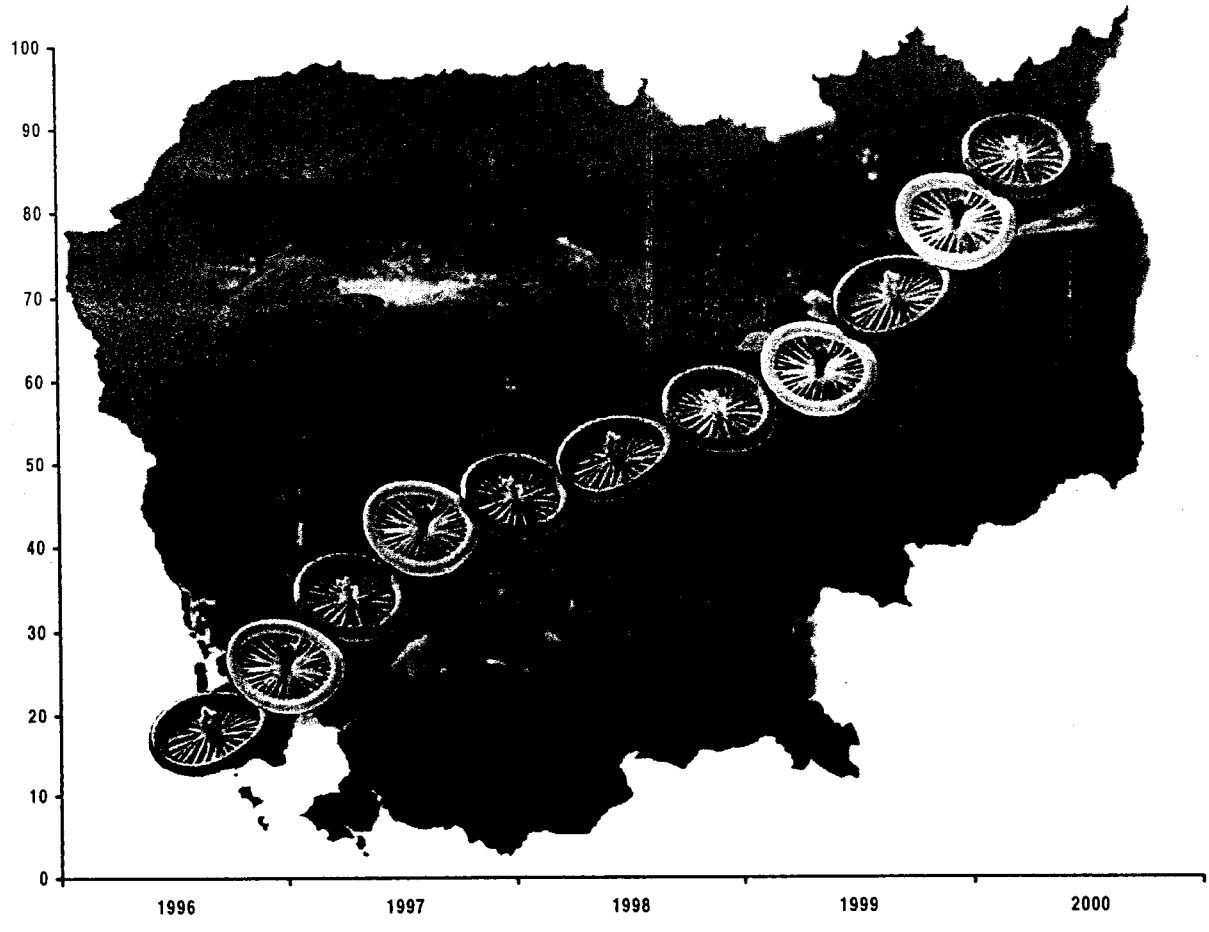
Ministry of Health
National Center for HIV/AIDS, Dermatology and STD

Cambodian Household Male Survey
BSS IV 2000



Dr. Hor Bun Leng, Dr. Seng Sut Wantha
Dr. Heng Sopheab, Dr. Mun Phalkun
National Center for HIV/AIDS, Dermatology and STD
Ministry of Health

Pamina M. Gorbach, PhD
FHI Consultant/San Diego State University

Table of Contents

FOREWORD

HIV/AIDS is a serious threat to the health and welfare of the people of Cambodia. Based on findings from annual HIV Sero-surveillance conducted so far, we know that the prevalence of HIV among both high-risk and general population remains the highest in Asia. The National Center for HIV/AIDS, Dermatolgy and STD (NCHADS) is therefore putting all our efforts into responding effectively to the utmost within the resources and capabilities available to us, to design effective strategies, interventions and programme activities. Anyway, our primary focus is to change the high risk behavior among our population.

To establish the effectiveness of our interventions, and to monitor changes and trends in behavior among specific populations, NCHADS has conducted annual Behavioral Surveillance Surveys (BSS) since 1997 among these populations.

In the year 2000, to establish in detail behavioral patterns among the general population, the BSS IV was designed to sample men from randomly selected households in the general population. Both rural and urban areas were sampled.

The results from this survey do allow NCHADS and other sectors involved in the response to HIV/AIDS to learn more deeply the pattern of sexual practice and behavior among male general population and to effectively design and target interventions at situations of high risk behavior wherever they occur.

We would like to take this opportunity to appeal to those who use theses findings and results to interpret them accurately, and in the spirit in which they were collected.

Finally, NCHADS and myself would like to express our gratitude for the participation and support, financially, technically and morally from different individuals and institutions active in Cambodia, whose contribution made the Survey a success. We would particularly like to thank the interviewees – ordinary men from Cambodian households who frankly and honestly answered difficult and sensitive questions about their behavior.

Phnom Penh, 02 - 8 - 2001

Dr. MEAN-CHHI VUN

I. INTRODUCTION

Well established HIV/AIDS and sexually transmitted disease (STD) epidemics have been clearly documented in the past few years in Cambodia. HIV prevalence from 1995-1998 among brothel-based direct female sex workers (DFSWs) measured around 40% but in 1999 it declined to 33% possibly as a result of the scaling up of a multi-sectoral HIV/AIDS prevention program. However, an HIV prevalence of 2.6% was found in pregnant women in 1999, suggesting that the epidemic has expanded from core groups into the general population. This classifies Cambodia's epidemic as "generalized"[1]. To control this epidemic, the National Center for HIV/AIDS, Dermatology and STDs (NCHADS) has developed programs to educate people about STDs/HIV and to prevent the spread of the diseases through promotion of condom use and treatment of STDs. Many non-governmental organizations have also implemented STD/HIV prevention and treatment programs in Cambodia. Such intervention efforts require reliable systems for tracking risk behaviors associated with STD/HIV transmission to determine if and to what extent such behaviors change.

Throughout the world, changes in disease patterns are followed through regular tracking of cases of infectious diseases known as *surveillance*. For public health purposes, most countries systematically collect data on the health behaviors related to chronic diseases such as smoking, physical activity, eating patterns, alcohol consumption, violence and risky sexual behavior. Although surveillance of risk factors for cardiovascular health has been conducted since the 1960s [2], surveillance of sexual behaviors is relatively new. The rise of the global HIV epidemic has lead to increasing attention on the need for standardized systems for surveillance of the behaviors associated with acquiring and transmitting HIV. To contribute to that need, USAID-funded AIDSCAP launched a series of studies in developing countries to provide a foundation for the establishing regular surveillance of sexual behavior in those countries called the Behavioral Surveillance Survey (BSS) that is being continued through the IMPACT Project. Behavioral surveillance, defined as repeat cross-sectional surveys of behavior in a representative population, has been identified as an essential component of second generation HIV surveillance systems [1]. These surveys are designed to be administered on a regular basis (either annually or bi-annually) to provide data on changes of risk behavior over time.

The 2000 BSS in Cambodia was conducted by NCHADS with support from the Cambodian Disease Control and Development Program, UNICEF, and technical support from FHI/USAID.

II. CHANGES FOR BEHAVIORAL SURVEILLANCE 2000

From 1997-99, the Cambodian BSS was a series of repeated cross-sectional surveys conducted at regular intervals on a national scale in target groups. The goal was to monitor and track high-risk sexual behaviors in selected target groups on a regular and systematic basis. The measures in the questionnaire focused on the main behaviors that put people at risk for HIV infection. Cambodia's BSS focused on sentinel groups such as police, military, mototaxi drivers and brothel-based direct female sex workers (DFSWs) and indirect female sex workers (IDFSWs). Behavior change has been very rapid in the five provinces where BSS has taken place, and the overall change nationally has been significant each year in each sentinel group. As levels of risk behavior become smaller, it becomes more difficult to sustain such high levels of change each year. On the other hand, as the HIV epidemic shifts increasingly to the general population, little is known about the extent of high risk behavior in the general population. How much more risk behavior is practiced by the sentinel groups when compared to the general population is not known (i.e, which are high, medium, and low risk compared to the general population). This is especially an issue for male groups because the assumption has been that military and police are higher risk than other urban men. However, there has not been empirical evidence to validate this assumption and justify the targeting of such groups for behavior change interventions. The need for more generalized behavior change programs for the Cambodian population or for other special segments of the population such as youth cannot be assessed without representative data on the general population of Cambodians. Therefore, the objective of the 2000 round of BSS was to provide a comprehensive description of sexual behavior among men in Cambodia, to gain a better understanding of the extent of high risk behavior in urban and rural general population males.

Objectives of BSS IV:

- Describe sexual behavior of general population of Cambodian men
- Compare risk for HIV/AIDS between urban and rural Cambodian men
- Compare male sentinel groups to general population

III. BSS 2000 METHODOLOGY

- Household survey of males in the 5 provinces where BSS has annually occurred (Battambang, Sihanoukville, Kompong Cham, Phnom Penh and Siem Reap).
- The sample covered urban and rural areas: each of the 5 provinces contained 1 urban district (the provincial capital of the 5 provinces) and 3 rural districts.
- The survey included men 15-49 years of age.

A. STUDY SITES

The BSS is conducted in urban centers and rural areas in each of Cambodia's five major provinces. The following are the BSS sites: Phnom Penh, Battambang, Siem Reap, Sihanoukville, and Kampong Cham.

B. SAMPLE SIZE

BSS IV was a multi-stage cluster sample of household men. The proper channels and local authorities were used to gain access to the survey populations and to create lists of clusters. Therefore; sampling frames from all groups were needed before the fieldwork was implemented.

The number of respondents for each group was determine based on the estimated level of key risk behaviors (such as percent of always using condoms in commercial sex) and the degree of confidence required to detect a significant change in behavior over time in this population. Sample sizes were also estimated to be large enough to detect cross-sectional differences between sub-populations (i.e. rural men vs. urban men). All samples were calculated assuming two-sided test, alpha 0.05, power 80%. Estimates of levels or risk behavior were generated from the 1997 data on working men/vocational students (the lowest risk male sentinel groups from which there is BSS data) shown in Table 1 below.

Table 1: Levels of Sexual Behavior from BSS I
Low Risk Populations Used to Estimate Sample Size for BSS IV

	student	gov't	est. GP	estimated prevalence change
Sex w/ FSW past month	19.3%	16.3%	15%	5%
Sex w/ FSW past year	59%	55%	50%	5%
Always condom FSW of all men	38%	42%	40%	5%

The sample size required for a two-sample comparison of proportions (so analysis can determine differences between households samples between years) with an estimated 5% difference in the general population use of condoms with FSW at 40% over 5 years, with 95% confidence, 80% power, onesided tests is 1248 for each year compared. Therefore, a sample size of 1,250 men was estimated to be required for the samples of rural and urban men. That was divided by the 5 provinces to produce a sample of 250 rural and 250 urban men per rural and urban areas in each province.

The following estimations were conducted to determine an inflation factor and the actual numbers required to reach the sample size. These numbers came from the pilot field tests of the HSS household survey for Battambang and a Phnom Penh BSS household field test.

Table 2: Calculation of Inflation Factor

	BTB	PNP
Number of households to be sampled per cluster	20	20
Number of men per 20 households	36 men	41
Refusal rate	10%	0%
Non residing rate	28%	5%
Non response rate (after 3 callbacks)	10%	39%*

*No callback were attempted in the PNP pilot. But someone in the household was asked what time an interviewer could return to interview the men not at home and all responded between 5:30 and 7:00pm.

The total expected to be not interviewed was 48%, that means 52% expected interviewed (250/.52= 481). The total number for each sample (rural and urban) in each province required was 481. Therefore, the total sample size needed per province was 962, for a total sample across all sites of 4,810. (with PNP 44%)

The sample size required per province to test a difference between urban and rural male behavior of 10%, is 325 urban and 325 rural men per province. Therefore, with the inflation factor, the above sample size calculations were determined to be big enough to allow to test for differences within provinces cross-sectionally for rural and urban comparisons, and nationally over time.

The final numbers interviewed by province are in Table 2 below. The required sample size of 1,250 rural and 1,250 urban was achieved.

Table 3. Sample size By Province: BSS 2000

	Rural	Urban	Total	Total expected
Sihanouk Ville	261	311	572	962
Battam Bang	214	242	456	962
Kampong Cham	377	374	751	962
Siem Reap	360	313	673	962
Phnom Penh	363	351	714	962
Total	1575	1591	**3166**	4810

C. SAMPLE DESIGN

The BSS team decided that the most feasible approach to the fieldwork would be to select 3 districts for the rural sample, and then select villages within each district, and households within each district. For the urban sample, as each province contains only 1 urban area we decided to select that and then select quarters within the city and households within each quarter. The rural districts were selected proportional to size, using a list of all districts with the total number of households per district added up and then divided by 3 to obtain the sampling interval. A random start between 1 and the sampling interval was obtained, and that was the first district.

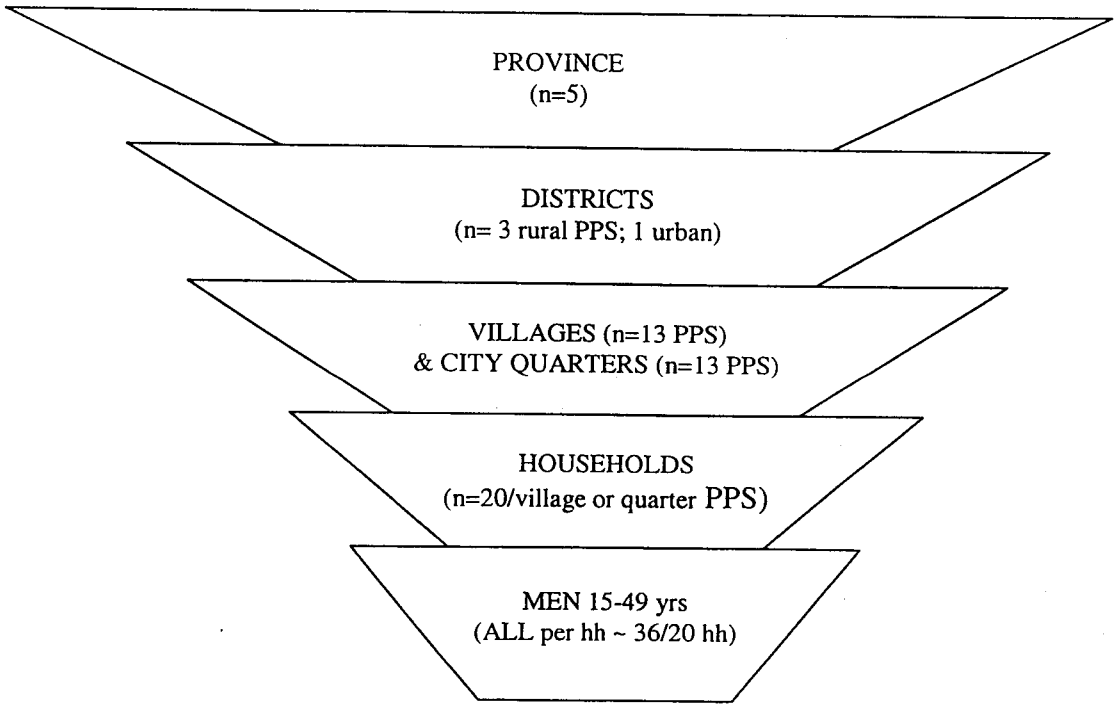
The sampling interval was added to that and where that fell in terms of the number of households was the 2nd district, and so on to select the third district.

To determine the number of clusters (villages or city quarters) needed per site we divided the total sample number by expected men per household unit (481/36= 13 clusters of 20 households). For the rural sample, the actual clusters are then selected from a list of all villages in the three districts, proportional to size. Using the same procedure described above for selection of districts but dividing the total number of households in all three selected districts by 13 (the required number of villages per district) and the list included all villages in all three districts.

As a final step in this multistage sample, 20-35 households were selected from each village until the required number of men were interviewed per cluster. To do so, a complete list of all households in all selected villages was requested from the provincial supervisor. Then 20 households were sampled from the list using a random start and a sampling interval.

In each selected household, all eligible men were interviewed (a "take-all" approach) and there was no replacement of households where there were no eligible men. The inflation factor accounted for the number of expected men per household (36 men/20 households) so that in households with more than one man all men were interviewed. To obtain all eligible men in each selected household, the interviewers made at least two callbacks to each house, at different times of the day. A household record sheet was developed that each interviewer filled out at each visit to identify the numbers of eligible men interviewed, refused, not at home, and non-residing (permanently not at home). Figure 1 below summarizes the sampling approach.

Figure 1: BSS IV 2000: Design for Multistage Sample of Household Males



D. QUESTIONNAIRES

BSS questionnaires used in the last BSS were also used in BSS IV with minor additions of a few new questions. The questionnaires cover demographic information (age, marital status, education, number of living children), social context, perceptions of peer behavior, treatment seeking for STIs, and partner notification. Most of the BSS questions focus on risk behaviors such as number of different sex partners by type and condom use. The final versions of the questionnaires used in BSS IV represent a fifth generation of the original forms, insuring clarity in question style and recording format.

For BSS IV, all questionnaires used in BSS II were reviewed and a few questions were removed. A special attempt was made to keep the questions exactly the same for the important variables of interest such as condom use in commercial sex in order to allow for comparison between the BSS sentinel groups and the general population on the same measures. However, some questions were added to issues specific to the general population such as migration. The questions new to BSS IV were pretested and revised during the field tests, supervisor and interviewer trainings before incorporated into the questionnaire. Therefore, the questionnaires were basically identical for all rounds of BSS.

E. DATA COLLECTION TEAM

Supervision:

All NCHADS supervisors went to the first province for 3 days to all participate in the launching of the fieldwork and agree on field techniques. After that first week, the other sites were launched and then 3 provinces conducted simultaneously. All supervisors participated in the Phnom Penh data collection as it was the most difficult. Therefore, the total time for field work began in October 2, 2000 and finished mid December, 2000.

Interviewers:

Many of the interviewers from BSS III but new interviewers were recruited in each site. Each interviewer underwent a five day training course in Phnom Penh conducted by NCHADS supervisors and was supplied with an Interviewer Manual and the questionnaire in advance of the training to review. See Appendix A for the list of BSS IV Supervisors and Interviewers. There were 6 interviewers per province, for a total of 30 interviewers.

Interviews were be conducted face to face by male interviewers. Experience from BSS III in 1999, showed that two trained local supervisors from each province and one or two from the NCHADS were sufficient to manage the data collection. The mixed supervisor team was present at all times to ensure that interviews were conducted in privacy, in an appropriately sensitive manner, and that confidentiality was insured. All questionnaires were checked in the field by supervisors to ensure data quality before the data was entered. EXCEL and STATA software were used for data entry and analysis. Oral informed consent was obtained from all participants who remained anonymous.

A combination of good supervision and interviewing resulted a low refusal rate in the survey. The table 4 below demonstrates that less than 5% of those approached refused to participate in the BSS IV survey.

Table 4: Percent Refused by province in BSS IV, 2000

Sites	Rural	Urban	Total
Sihanouk Ville	0	0	0
Battambang	0	0	0
Siem Reap	0	0	0
Kampong Cham	0.4%	2.1%	
Phnom Penh	3.1%	3.5%	
Total	**3.5%**	**5.6%**	**4.6%**

IV. RESULTS

A. DEMOGRAPHICS AND GENERAL RISK BEHAVIOR

BSS IV was exactly half urban and rural, across all provinces. The sample was also well distributed by age, catching a good representation of men in each age group. However, in general the urban men were slightly younger than the rural sample (median age 29.2 vs. 30.1). The youngest age group (those 15-19 years old) was 16.8% of the rural men and 21.1% of urban men allowing for separate analyses for the youth. More than half the men were currently married; although more rural men were currently married than the urban men. Among those who are married, most men (over 80%) report having their marriage arranged by their parents, with slightly more urban men reporting arranged marriage than rural men. Urban men report delaying marriage significantly longer than rural men, with the median age of marriage a full year less. Virtually all married men report at least one child (97.5%), and the median number of children is higher in the rural than rural populations. More rural men have larger families, with 26.2% of rural men reporting more than 3 children versus 18.9% of urban men.

Table 5. BSS IV Basic Demographics

	Rural (n=1574)	Urban (n=1592)	Total (n=3166)
Mean Age (median)	30.1 (30)	29.2 (28)	29.6 (29)*
Currently Married	65.4%	53.5%	59.4% **
% in arranged marriage	80.5%	84.4%	82.3% *
Mean age 1st marriage (median)	23.3 (23)	24.5 (24)	23.9 (23) **
Mean number of children (median)	2.1 (2)	1.6 (1)	1.9 (1)**
Mean years school (median) % no school	5.3 (5) 8.7%	7.4 (7) 4.3%	6.4 (6)** 6.5%
Mean monthly income (Riels) ** (median)	84,000 (50,000)	130,000 (80,000)	108,815** (60,000)

* $p \leq 0.05$ **$p<0.005$ **Exchange rate February 25, 2001 = 3,900 R /$1.00 US

Although most men have had some education, less than 10% of rural and less than 5% of the urban men have no schooling. The median years of schooling is significantly higher among the urban man than the rural men. The percent of men attending school beyond primary school (5 years) is higher among urban than rural men (67.7% vs. 45.9%), and the percent who complete high school is much higher among urban than rural men (17.3% vs. 4.1%). Median monthly income is greatest for report earning. There were great differences between groups in terms of the living situations of the respondents.

Many of these differences in education and income reflect the occupational differences among the populations. Table 6 below illustrates the different occupations in which men are working, with clear differences between rural and urban men. Half the sample overall are men working in manual labor, however, many more rural men (about 70%) are working in manual labor than urban men (about 30%). The few men are in the "other" group category are relatively well educated and have high incomes, suggested these men may be traders or other market sellers that earn good incomes.

Table 6: Occupational Groups of BSS IV

Occupation	Rural % (n)	Urban % (n)	Total % (n)
Student (high school, vocational and professional)	10.6% (166)	21.5% (342)	16.05% (508)
Military or police	3.2% (51)	6.2% (99)	4.74% (150)
Seller or office worker	9.2% (145)	22.4% (356))	15.83% (501)
Motodriver	3.8% (60)	9.0% (143)	6.41% (203)
Farmer, fisherman, laborer	69.3% (1090)	29.8% (474)	49.42% (1564)
Other	3.9% (61)	11.2% (178)	7.55% (239)

General risk behaviors of the respondents were assessed in Table 7 below. These included travel away from home, alcohol consumption, drug use, and how long the respondent has lived in the current place (permanent migration). Slightly more rural men report being away from their home for at least a month in the past year (17%), but not significantly more than urban men (15%). A very low percentage of men reported ever using drugs, however, regular alcohol consumption was high in both the rural and urban samples; but the consumption patters were similar with 18% of rural and urban reported drinking more than two times a week in the past month. The only one of the general sexual behaviors in which there is a significant difference between rural and urban men is recent migration, more urban men report having moved to their current location in the last five years than rural men (13% vs. 8%). For very recent migrants who have migrated in the past year, the difference between urban and rural men is even greater although few men report being recent migrants (5% urban vs. 2%rural).

Table 7: General risk behavior

	Rural	Urban	Total
% away from home >month in past year	17.2	15.0	16.1
% Alcohol consumption in past month			
None	42.4	40.4	41.4
≥ 2x/week	17.2	18.8	18.0
≤ 1 x/week	40.3	40.8	40.6
% Ever Drug Use (marijuana, heroin, opium, yamma)	3.2	2.6	3.0
% Lived in current place ≤ 5 years	8.2	13.2	10.7**

**p<0.005

B. SEXUAL BEHAVIOR

The average age of sexual debut for men is about 22 years of age, although it is slightly lower for rural men (Table 8 below). The majority of the never married of these urban men studied (71%) report never having sex which means only 30% of never married men are sexually active. The median age of first sex is about 2 years younger than the median age of first marriage (see Table 3), leaving most men two years of sexual activity before marriage. Urban men report an average of twice as many lifetime partners as rural men (8 vs. 4), and significantly more in the past year (1.7 vs. 1.3). More rural men report only having had one lifetime partner (38.9% rural vs. 26.4% urban), and half as many rural men report having had sex with more than 15 partners than urban men (5.1% rural vs. 10.2%urban). Among those currently married, rural men report slightly higher sexual frequency with their wives, although the difference is not significant.

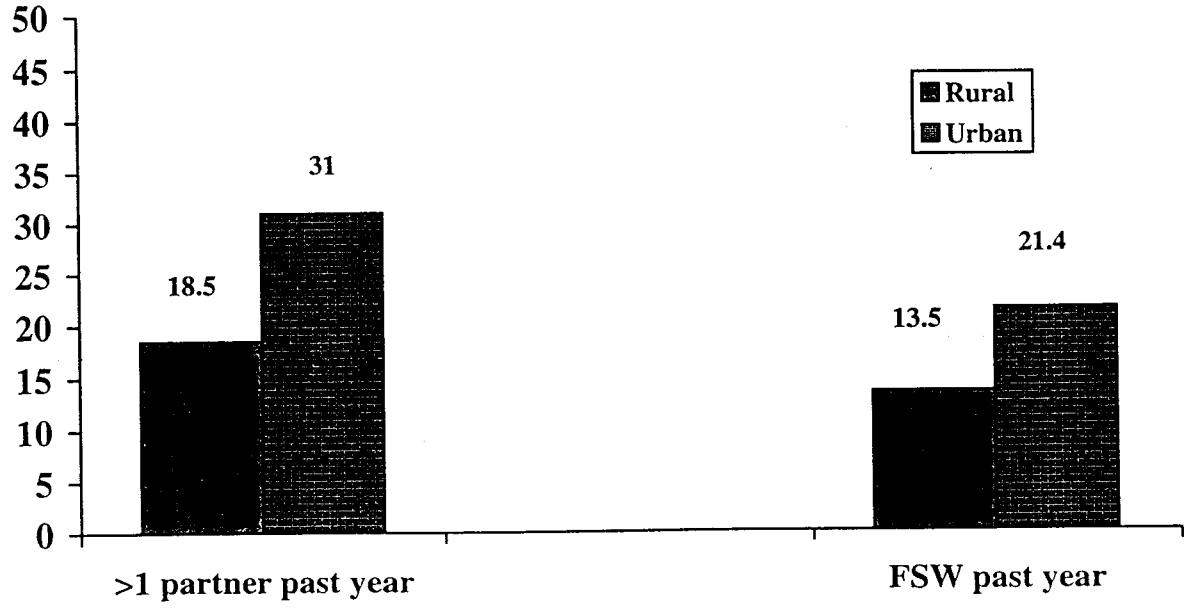
BSS has included questions on partners called "sweethearts". The meaning of sweethearts to in Cambodia is still not understood; therefore, it is not clear if these are casual partners or pre- or extra-marital main partners. BSS IV reveals most men report ever having had a sweetheart (66%), but less than half of those who had sweethearts report ever having had sex with a sweetheart (40%) and less than 10% of men report having a sweetheart in the past year. There is no difference between urban or rural men in either the percent of men ever reporting sweethearts, sex with those sweethearts, or having a recent sweetheart. Finally, men were asked if they had sex with someone who was not their wife, not their sweetheart, and not a sex worker in the past year, what we define as a "casual" sexual partner. Significantly more urban men (13.5%) report a casual partner compared to rural men (9.4%) as shown in Table 8 below.

Table 8: SEXUAL Behavior: BSS IV

	Rural	Urban	Total
Mean age first sex (median)	21.7 (21)	22.2 (21)	22.0* (21)
Mean Life time sex partners (median)	3.98 (1)	8.6 (1)	6.3**
Mean # Partners Past Year (median)	1.3 (1)	1.7 (1)	1.5 (1)**
Mean # times sex with wife past month (median)	6.2 (4)	5.8 (4)	5.6 (4)
% Ever sweetheart	68.1	65.1	66.6
% Ever sex with sweetheart among those who ever had sweethearts	38.1	41.9	40.1
% Sweetheart past year	9.4	9.1	9.2
% Casual partner past year (not wife, sweetheart or sex worker)	9.4	13.5	11.4**

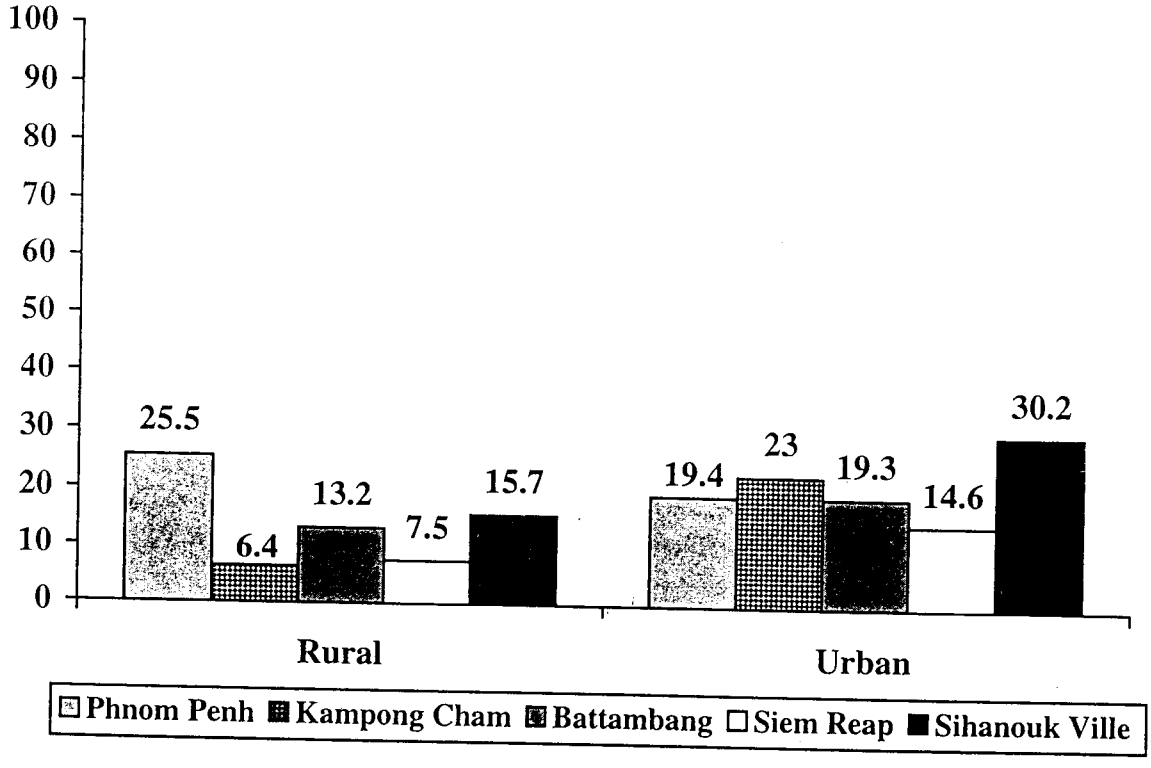
Figure 2 below illustrates that there are significant differences between the number of partners and commercial sex in the past year between urban and rural men ($p<.001$). Significantly more urban men than rural men reported more than one partner in the past year, and sex with FSW in the past year. However, about half of all men report having sex with just one partner in the past year (58.3% of rural and 45.8% of urban men).

Figure 2: Percent of Men With > 1 Sex Partner in past year and FSW in past year



There are differences by province in how frequently men have sex with sex workers as shown in Figure 3 below. The highest percent of rural men report sex with a FSW in the past year in Phnom Penh followed by Sihanoukville, Battambang, Siem Reap with the fewest in Kompong Cham. But among urban men, the highest percent report having sex in the past year with a FSW in Sihanoukville followed by Kompong Cham, Phnom Penh, Battambang, and finally the fewest in Siem Reap. For urban men, about twice as many men in Sihanoukville report past year sex with FSW as in Siem Reap (30% vs. 15%), and the difference is even greater between the rural provinces with 26% in Phnom Penh vs. only 6% in Kompong Cham.

Figure 3: Percent of Rural and Urban Men Reporting Sex with FSW in Past Year by Province



Certainly, men access commercial sex regularly. Recent informal ethnographic research in Cambodian cities and observation has revealed that there are many forms of commercial sex available. Women seem to sell sex in a variety of venues and locales, suggesting that Cambodian men have many choices as to where to purchase sex. To identify which types of women may be in need of future HIV/AIDS prevention, in BSS IV men were asked if in the past year if they had had sex with each of the following types of women summarized in Table 9 below.

TABLE 9: TYPE OF PARTNER BSS 2000

	Rural	Urban	Total
With Hotel FSW	1.0 (16)	1.07 (17)	1.0 (33)
With Street FSW	0.3 (5)	0.5 (8)	0.4 (13)
With Masseuse	1.3 (20)	1.44 (23)	1.4 (43)
With Dancing/bar girl	2.4 (37)	3.3 (53)	2.8 (90)
With Beer girl* **	0.8 (13)	2.5 (40)	1.7 (53)
With Karoke girl* **	0.8 (13)	3.3 (52)	2.1 (65)
With woman at festival	1.7 (27)	1.1 (17)	1.4 (44)
Total Non brothel- FSW* **	5.8 (92)	9.0 (143)	7.4 (235)
With Brothel FSW * **	12.7 (200)	20.2 (321)	16.5 (521)

Table 9 above reveals many more men in the BSS studied report sex with brothel-based FSWs than any other type of woman, as brothels are clearly the most common locale for locating a sex worker and where the majority of commercial sex occurs. The next most frequent type of sex partner reported was a dancing/bar girl and beer promoter and more urban men reported sex with these women than rural men (2.4% vs. 3.3%). The proportion of men who reported sex with either a woman on the street was extremely low. Less than 5% of men reported sex with any of the types of women listed above but significantly more urban men report sex with women working as beer promoters and in karoke bars. When the totals of men who had sex with any non-brothel based FSW (these may be considered to be indirect sex workers) are added up, significantly less rural men as urban men had had sex with a women outside a brothel (6% vs. 9%). Finally, it should be noted that men may not always being paying for sex with the women listed or in the locales listed. It is possible that sex with women such as beer promoters or dancing girls was non-commercial. Finally, choice of where to have sex and the type of partner with which to have sex may reflect a man's socio-economic status as middle or upper class men may purchase sex outside of brothels more than lower socio-economic status men.

Men were also asked where they met the last sex worker they had sex with, to determine the locales where men recruit commercial sex. Over 80% of men report having met the last sex worker in a brothel. Differences between where rural and urban men met sex workers were not significant, but slightly more rural than urban men met a sex worker in the street (1.5% s. 0.8%), and less rural men met women in massage parlors (1.7% vs. 2.3%) or in hotels and guesthouses (10.8% vs. 11.4%). About equal percentages of rural and urban men met a sex worker in a karoke bar (1.5 rural vs. 1.7% urban) but slightly more rural men reported meeting a sex worker

in an "other" place (1.7% vs. 0.7%). Clearly, men meet sex workers far more often in a brothel or hotel than any other locale.

There were significant differences in the patterns of commercial sex use by age, a curvilinear relationship with the youngest and the oldest reporting the least commercial sex ($p < .000$). Very few youth (men under 20 years) report sex with a sex worker in either time period; men in their twenties reported the most commercial sex. As men age, they report purchasing less sex.

FIGURE 4: Percent of Men Reporting Sex with FSW in Past Month and Past Year by Age Group

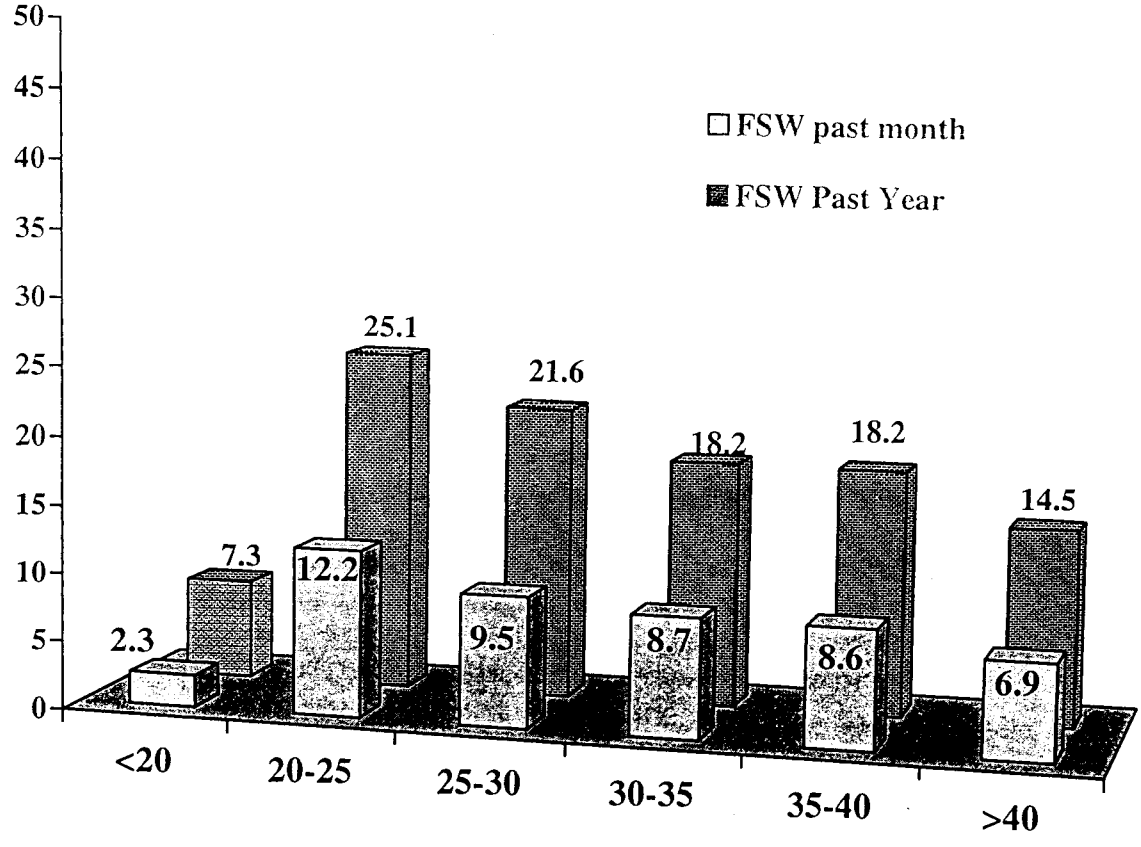
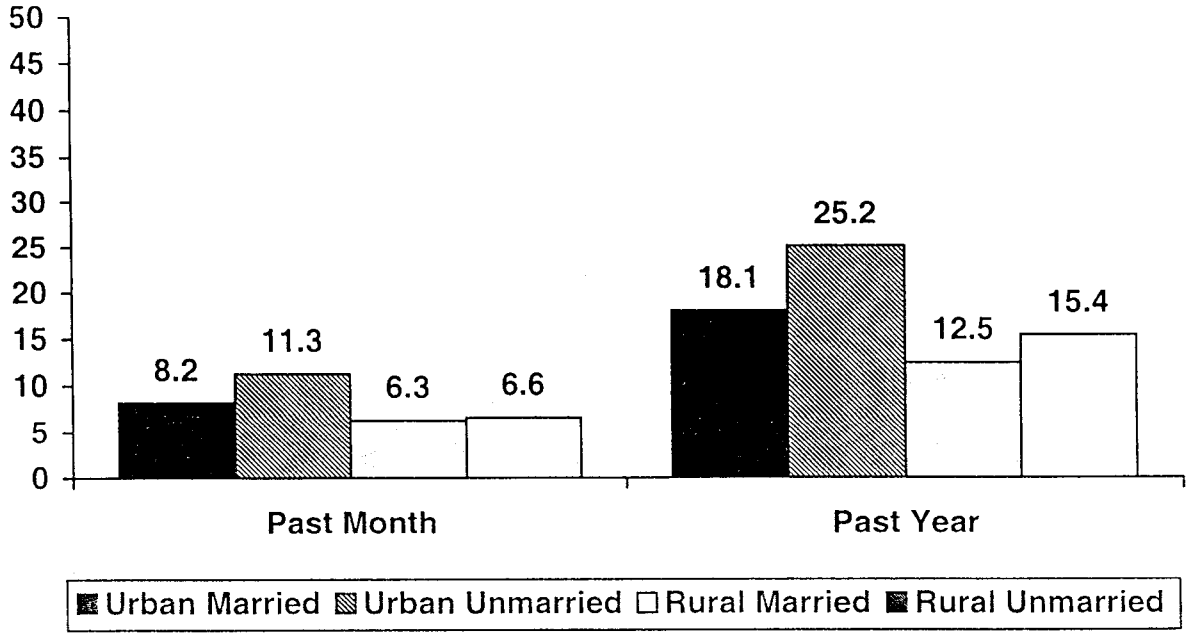


Figure 4 above suggests men continue to seek commercial sex as they marry because the mean age of first marriage is the age group when the highest percentage of men report purchasing sex.

Additionally, Figure 5 below shows that while a greater percent of urban men have commercial sex than rural men in general, significantly more single than married urban men have had sex with FSW in the past month ($p=.04$) and past year ($p= 001$) while there is no difference by marital status in the percent of rural men who have had sex with FSW either in the past month or year.

Figure 5: Commercial Sex Use Among Rural and Urban Men By Marital Status



Dynamics of Commercial Sex: The Market, Peer Influence, and Alcohol Use, Travel

The mean and median cost of sex with a sex worker is surprisingly similar between rural and urban areas. Commercial sex as a social activity influenced by peers has been demonstrated for Thai men. Similar forces may operate in Cambodia to exert social pressure on men to purchase sex and create social situations in which commercial sex is expected. To determine whether Cambodian men purchase sex as a social activity, men were asked about the number of men in the group the last time they purchased sex. Table 7 below reveals that most men go in large groups to purchase sex. Only 21% report going alone the last time they purchased sex, and 42% reported going one other man; therefore 37% going in a group of three or more other men. The difference in the group size between rural and urban men is not significant, however, slightly more rural men go to FSWs alone (24% vs. 18.5%), and less rural men go in large groups than urban men (35% vs. 39%). More Cambodian men seem to purchase sex with other men than alone, suggesting social influence does play a role for men in seeking commercial sex.

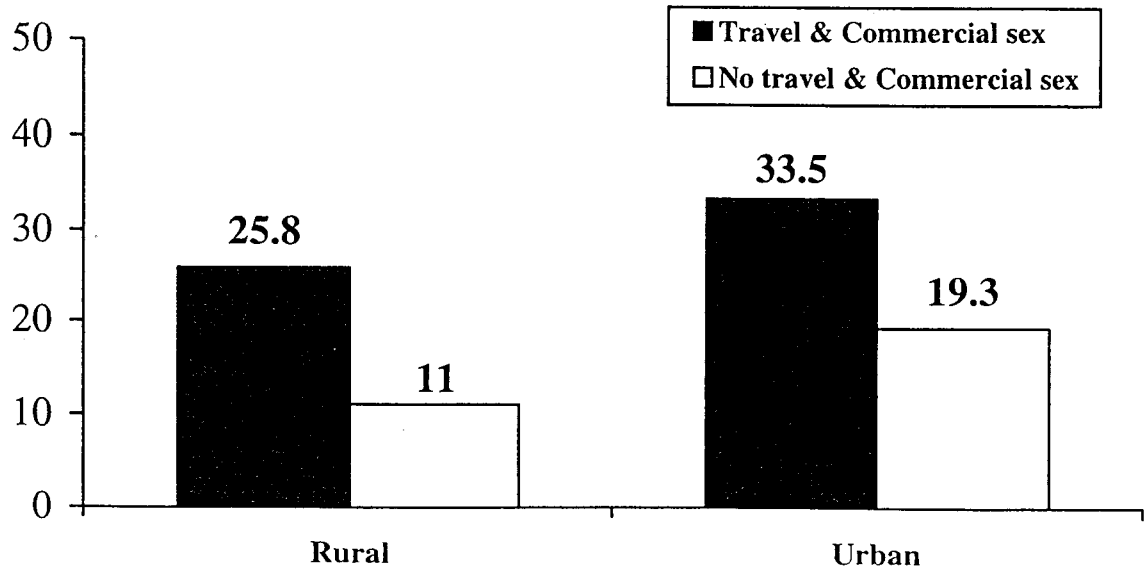
Another social facilitator studied was alcohol consumption during the purchase of sex. Surprisingly, many of the men reported not consuming any alcohol the last time they had sex with a sex worker (Table 10 below). Additionally, few men reported drinking heavily at the last purchase of sex. There was no difference between urban and rural men by drinking at commercial sex behavior. Although most men drink some alcohol, this data does not suggest that heavy alcohol is a major factor in sexual behavior at the time of commercial sex.

TABLE 10: Commercial Sex Dynamics

	Rural	Urban	Total
Mean cost last sex w/ last FSW	9481	10354	10007
(median)	5000	5000	5000
Met last FSW in brothel	82.9	83.2	83.1%
Met last FSW in hotel	10.8	11.4	11.2%
Mean # men/group	2.5	2.6	2.5
% Went alone	24.1	18.5	20.8%
Consumed much alcohol last time paid for sex	10.8	7.5	8.9%
Consumed no alcohol last time paid for sex	37.6	35.6	36.4%

Travel away from home, assumed to represent migration from rural areas to the urban areas for employment during the dry season, also contributes to risky sexual behavior. Figure 6 below looks at the association between travel and purchase of sex in the past year. Men who have spent more than one month away from home in the past year purchased sex significantly more than men who do not travel (P<.0001). These differences persist even among urban, who surprisingly also report a lot of travel.

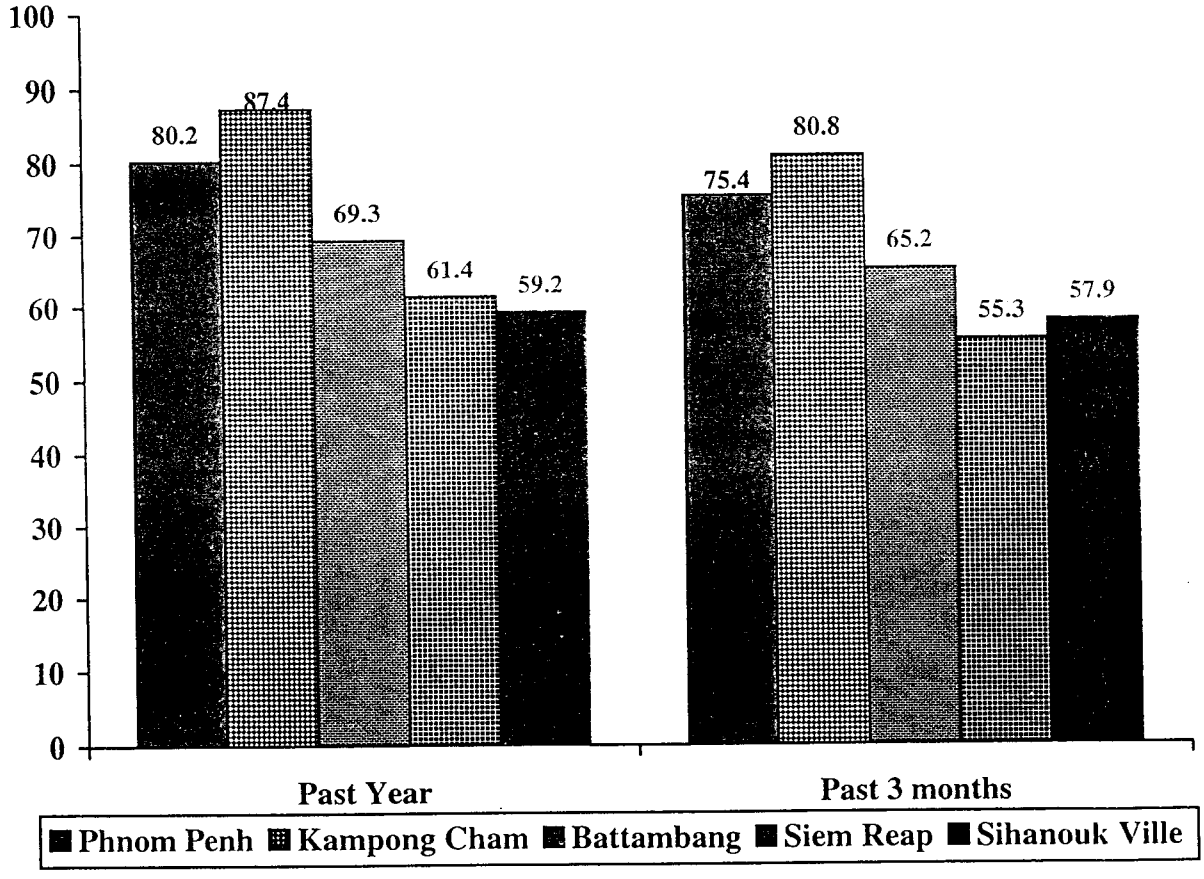
FIGURE 6: Travel away from home and Commercial sex in the Past Year



C. CONDOM USE

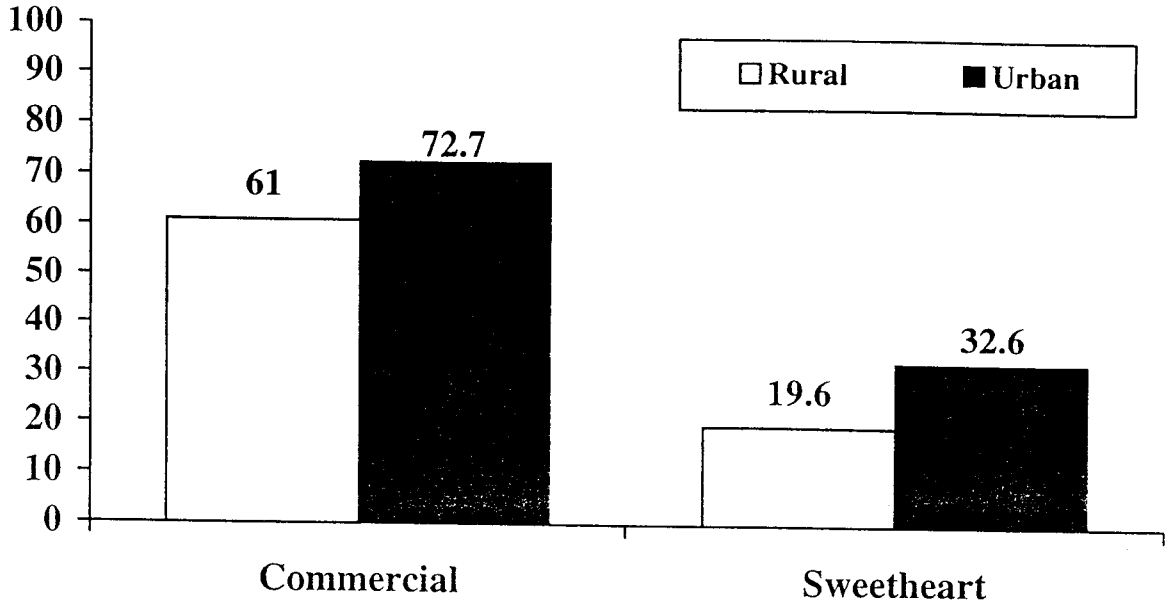
Perhaps the most important behavior studied in BSS is condom use. There are significant differences in condom use during commercial sex by province. Figure 7 below shows the percentage of men reporting always using condom in past year and past three months. The highest Men from Kompong Cham province report using condoms consistently the most more than men

Figure 7: Percent of men always using condoms with FSWs in past year and Past 3 Months by Province



Men were asked to report on the consistency of condom use during commercial sex and with their sweethearts in the last three months, the past year, and at last sex. Figure 8 below compares percentages reporting *consistent* condom use with FSWs and sweethearts. Consistent condom use is the reply "always" from the responses "always, frequently, rarely, never". At least twice as much condom use is reported with FSWs than with other partners. However, less than half report using always (consistently) using condoms with their sweethearts as do with FSWs.

Figure 8: Percent Always Using Condoms by Partner Type



The possibility of men transmitting of STD/HIV from FSWs to their wives (bridging) is strongly influenced by their condom use during commercial sex. Men almost never use condoms with their wives, therefore, it is condom use with FSWs that influences the possibility of transmission.

FIGURE 9: Percent of Men Always Using Condom during Commercial Sex by Marital Status

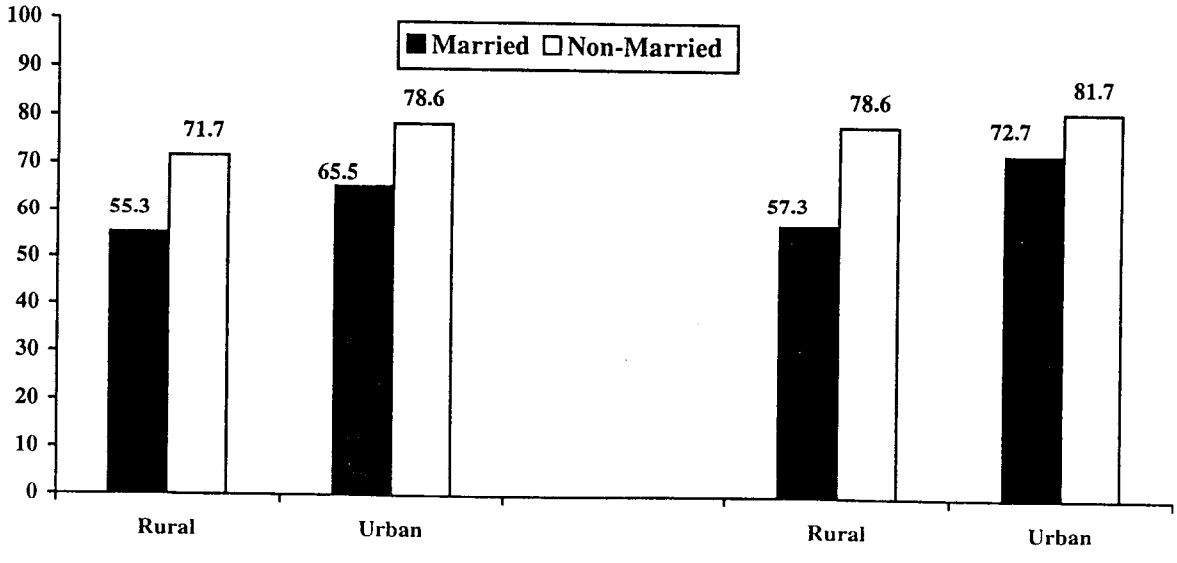
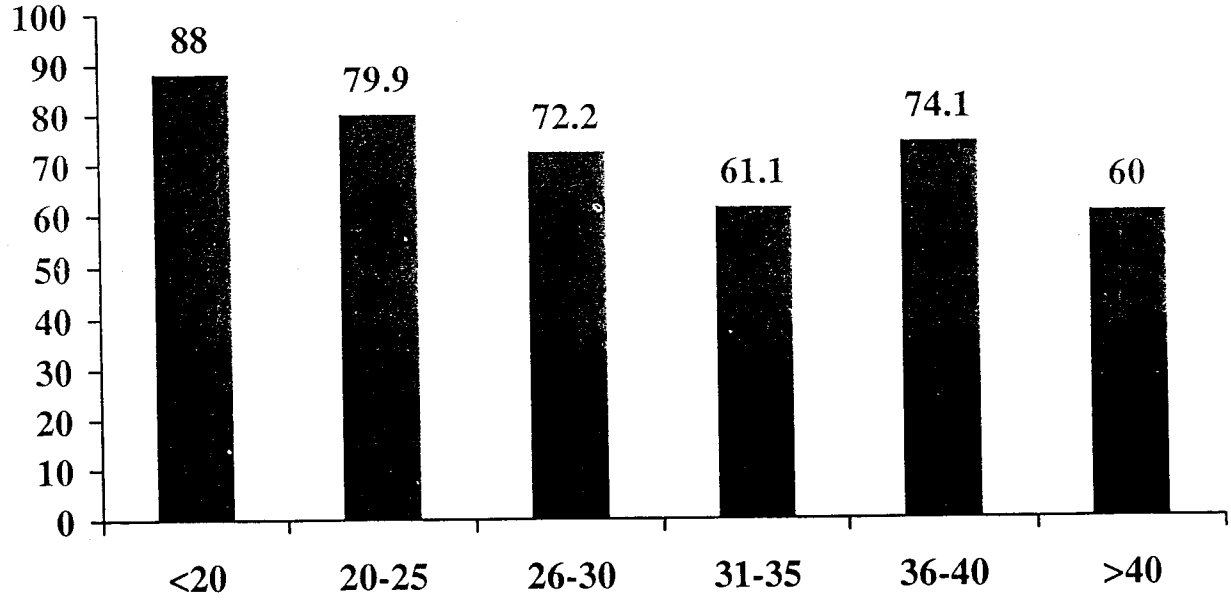


Figure 8 above shows that married men do not use condoms at a higher rate than single men. In fact urban single men use condoms significantly more than urban married men, but this may be due to the fact that there are more older men who are married than young men and the older men use condoms less than younger men. Men who are married and have sex with FSWs may not practice safer sex practices to prevent STD/HIV transmission to their wives. This suggests the motivation for men to use condoms is not to prevent transmission but to protect themselves from infection.

Practice of condom use may not vary among men by marital status, however, it does vary by age. Figure 10 below. While the numbers of youth (men less than 20 years old) who have any sex including commercial

Figure 10: Percent Men Reporting Always Condom Use with FSWs in the Past year by Age Group

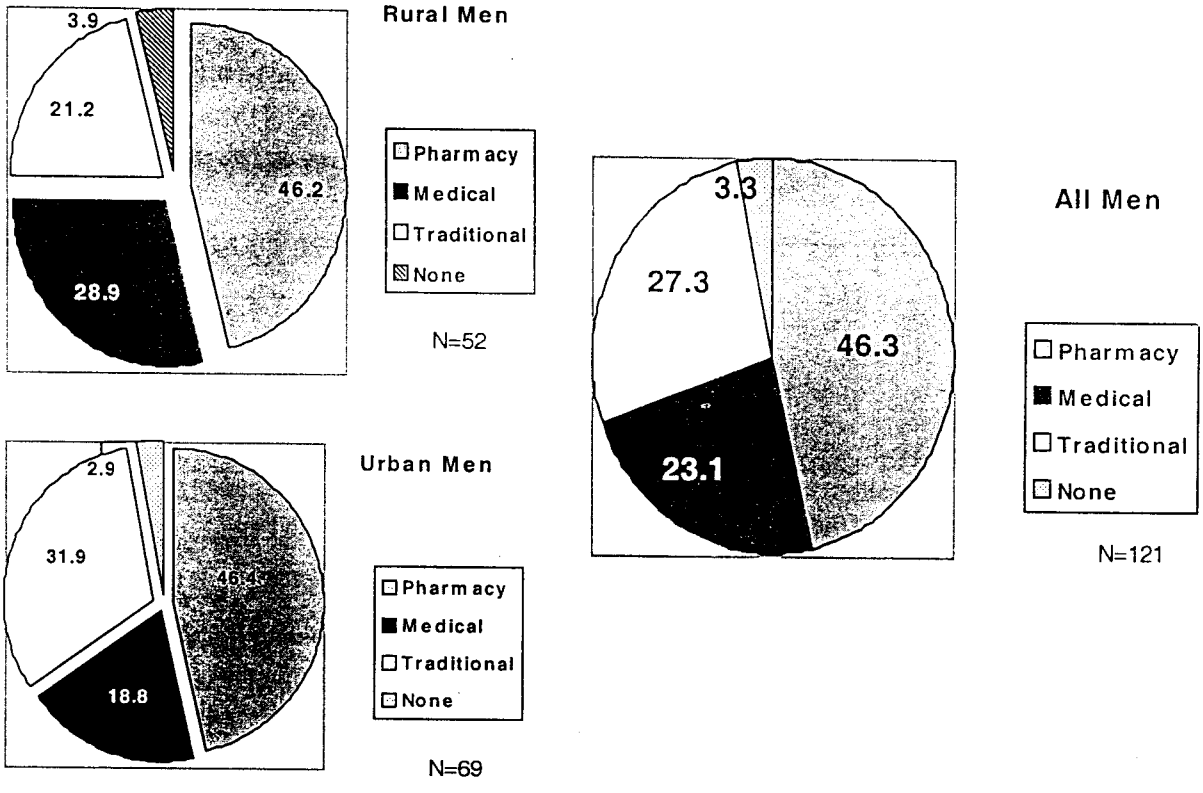


D. STD SYMPTOMS AND TREATMENT

All respondents were asked if they had experienced symptoms of a sexually transmitted disease. Male respondents were asked if in the past year they had had unusual discharge from their penis. A small percentage of men reported a STD symptom in the past year (3.8%) and there was no significant difference in the rural or urban percentage reporting symptoms. Reporting of symptoms in surveys is not a particularly useful estimate of actual prevalence, but it is useful for assessing the health seeking behavior of those who perceive themselves to have a STD. Therefore, men were asked to report the place they first sought care for their symptom, the last time they experienced a symptom. Figure 11 below illustrates where care was sought among those who reported having an experienced a STD symptom. Pharmacy use, however, still serves

as an important source of care. Overall most men seek treatment first at pharmacy (46%), follwed by and those who seek a traditional form of care less (27%), with about a quarter seeking medical attention first (23%) which includes both those going to a private clinic (19%) and the very the very few going to a public hospital or clinic (4%).

Source of Care: Last STD Symptom: 2000

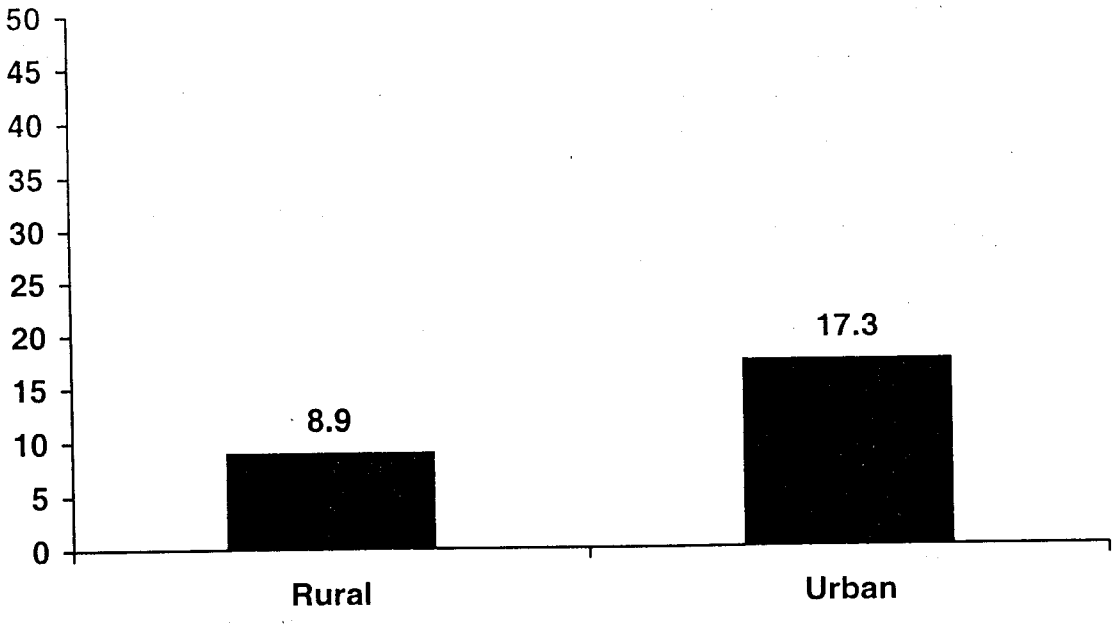


Men who reported having experienced symptoms of STD were asked if they informed anyone about their STD symptom. For all men combined (because the numbers were too small in general to compare between urban and rural men) about equal percentages of report informing a wife, friend or drug seller (26.8%, 26.6%, 24.4% respectively). More rural men told their wives than urban men (30% vs. 22%), although the numbers were too small to tell if this difference was signficant. Almost no men told their sweethearts (2.4%). More urban than rural men reported telling friends (29% vs. 23%rural). Very few men reported telling medical staff (5%), confirming that men do not tend to turn to medical staff either for care or counseling when they suspect they have a STD. A relatively large percentage of men report not telling anyone (8%), and finally 7% of men report telling someone else not listed as a choice.

E. HIV TESTING & EXPOSURE TO PEOPLE WITH HIV/AIDS

HIV tests have become increasingly available in Cambodia's cities over the past year. Private testing centers as well as public facilities provide such tests at low cost and try to provide reasonable privacy to their clients. BSS IV asked respondents how many had been tested for HIV, but did ask how many had received their results. Therefore, many of the respondents below may have been tested for HIV through the government run HIV sentinel surveillance program (HSS) which does not provide the results. Overall 9% of rural men but 17% of urban men report every being tested for HIV. Among those tested for HIV, most report having been tested in a public clinic (40%), with significantly more rural men reporting testing at a public hospital than urban men (46.8% vs. 36.7%). Many men also report being tested at a private clinic or lab (36%), with no difference between rural and urban. But many more urban men report have been tested at a Voluntary Testing and Counseling Center (VTC), 18.6% or urban compared to 8.5% of rural men and also through the government HIV sentinel surveillance program (HSS) (8% urban vs. 6% rural). Finally, about 1% of men report being tested in another site. Figure 12 below reports the overall percentages of rural and urban men who report being tested for HIV.

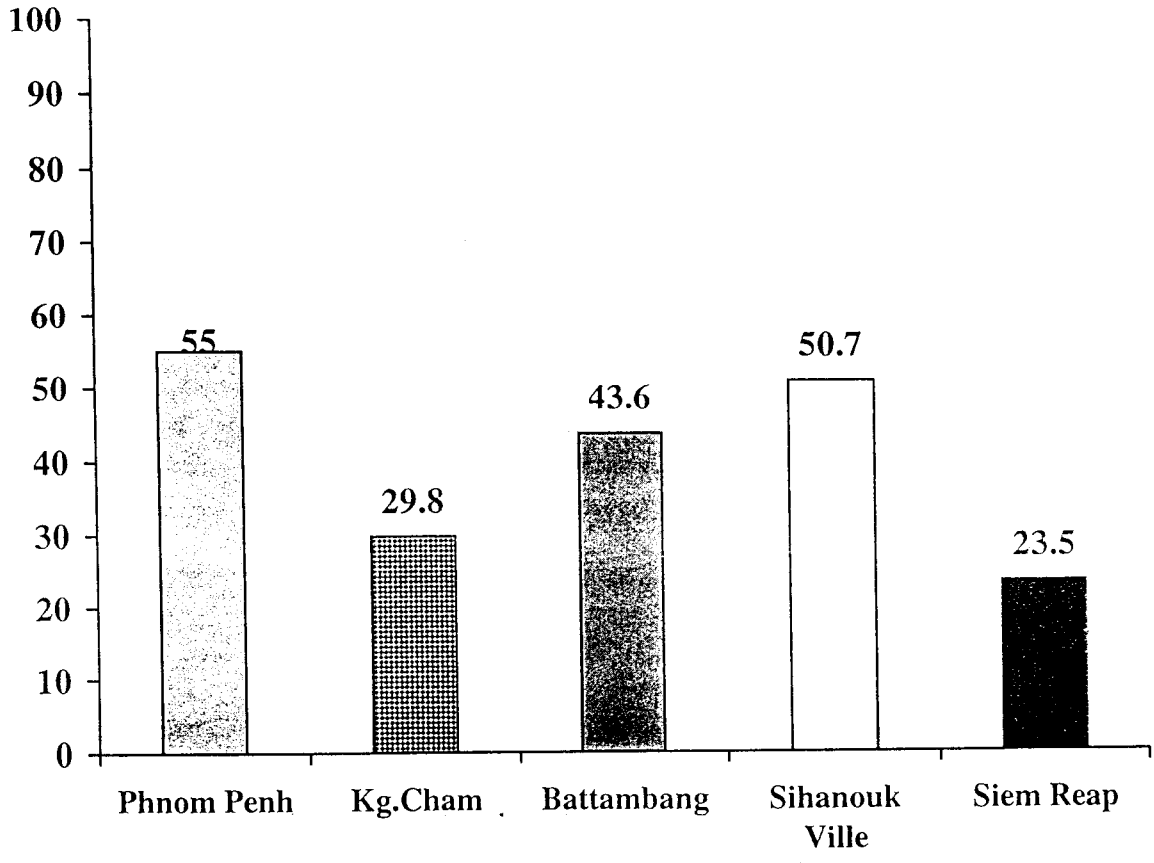
Figure 12: Percent of Urban and Rural Men Who Report Being Tested for HIV



Exposure to People Living with HIV/AIDS:

Overall 37% of rural men and 43% of urban men report knowing someone who is sick with AIDS or who has died of AIDS. However, there is great variation by province as shown in Figure 13 below. In Phnom Penh and Sihanoukville more than half of the men report knowing someone who has died or is sick from AIDS, followed by Battambang, Kompong Cham, and then down to almost a quarter of the men in Siem Reap having known someone affected by AIDS.

Figure 13: Percentage Know Someone Sick or Who Has Died from AIDS by Provinces: BSS 2000



F. OVERALL MEASURES OF SEXUAL RISK AND BRIDGING

An overall measure of sexual risk was constructed to compare the distribution of risk behavior in the Cambodian male population. A man was defined as at "low risk" if he did not report sex with a DFSW, IDFSW, and did not report having a girlfriend in the past year. A man was defined as "medium risk" if he reported sex with a DFSW in the past year but reported always using condoms with FSWs in the past year, or if he reported having a girlfriend in t. past year. Finally, men were defined as at "high risk" if they reported sex with a DFSW in the past year and reported not always using condoms. Table 11 below reveals that about 5 % of rural and urban men are at high risk, and more urban than rural men are at medium risk. Overall, about one quarter (24%) of the Cambodian male population was at some risk for HIV/AIDS in the past year.

Table 11: % Distribution of Sexual Risk in Past Year

	Rural	Urban	Total	
Low	79.0	72.1	75.0	
Medium	16.2	22.9	19.6	
High	4.8	5.0	4.9	X2 p<.000

For BSS IV, men were defined as "bridges" if they reported having sex with both high (FSWs) and low risk (wives and sweethearts) partners in the past year. Active bridgers were men who reported not always using condoms with DFSWs; potential bridgers were men who had sex with DFSWs but reported always using condoms in the past year. Table 12 below reveals that more urban men than rural men are bridgners (14% vs. 12%), but there are more rural men than urban men who actively bridge; and more urban men than rural men who are potential bridgers. Bridgers represent a high risk for continued transmission of HIV/AIDS from core groups into the general population.

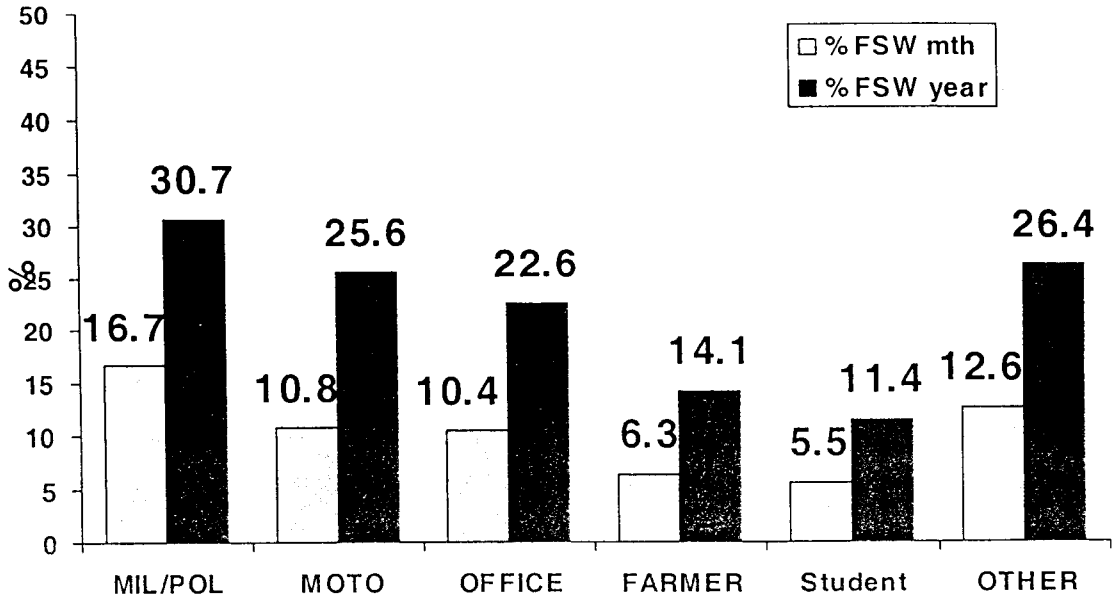
Table 12: Bridging in the Past Year

	Rural%	Urban %	Total %
Nonbridger	87.9	86.2	87.0
Potential Bridger	7.8	10.2	9.1
Active Bridger	4.3	3.6	3.9
Any bridger	(12.1)	(13.8)	p=.049

G. COMPARISONS BETWEEN THE GENERAL POPULATION AND SENTINEL GROUPS

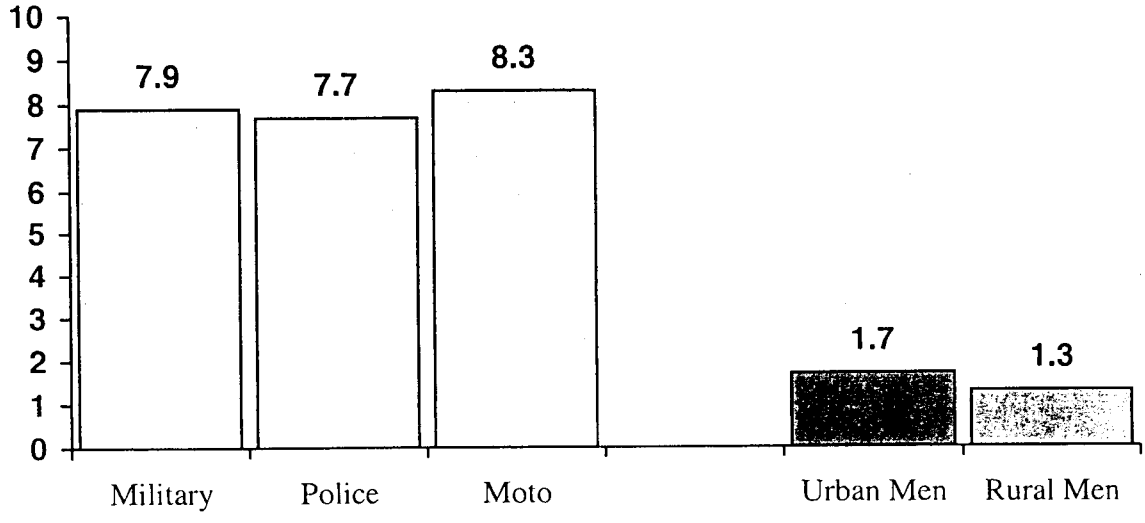
BSS IV provides evidence that the sentinel groups followed for BSS I-III are in fact higher risk than the general population. When the men in BSS IV are stratified by occupational and their use of commercial sex examined, police and military have the most with sex workers than any other occupational group, and the motodrivers the next most percentage who report sex with sex workers as shown in Figure 14 below. Therefore, these groups do represent core groups in the Cambodian population.

Figure 14: Percent Commercial Sex: By Occupation BSS 2000



When the total number of lifetime partners are compared between BSS sentinel groups and the BSSIV population, it is clear that the sentinel groups are have many more sexual partners than other Cambodian men as the mean lifetime partners was 43, 31, 27 among military, police and motodrivers and 9 for urban and 4 rural household men (with a medians of 20, 12, 8 respectively for BSS III and a median of 1 for both urban and rural men in BSSIV). The sentinel groups also have had more sexual partners in the last year than either the urban and rural populations as well (see Figure 15 below).

Figure 15. Lifetime Partners (mean): BSS II 1998 & BSSIV 2000



Men in the BSS sentinel groups also have more sex with IDFSWs than men in the general population, with police reporting the most sex with IDFSWs. In the past year, 28% of military, 44% of police, and 30% of motodrivers compared to 9% of urban men in the general population reported sex with an indirect sex worker (including women working as beer promoters, karoke workers, bar girls, masseuses, and dancing girls).

Finally, although men in the BSS sentinel groups clearly seek more commercial sex and have sex with more partners than Cambodian men in the general population, they use condoms at a similar rate. In 1999 consistent condom use with DFSWs among men having sex with a DFSW in the past three months was: 67.0%, 78.1% and 69.3% military, police, and motodrivers; and 72.7% for urban men and 61% among rural household men in 2000. While condom use with sex workers is similar between the sentinel groups and general population, the higher exposure of core groups to sex workers creates a greater probability of HIV infection.

V. CONCLUSIONS AND RECOMMENDATIONS

- About ¼ of all Cambodian men recently practiced behavior that puts them at risk for HIV/AIDs. About 5% of Cambodian men recently have been at very high risk for HIV/AIDS.
- Men in their 20's have the more partners but use condoms more than other men.
- Urban men have slightly more partners and more high risk partners than rural men but use condoms more than rural men
- Besides their wives, men have sex more with brothel based sex workers than other types of partners including non-brothel sex workers, indirect sex workers, casual partners and sweethearts.
- About 16% of Cambodian men are mobile; those who travel are more likely to have sex with DFSWs than those who do not travel
- Married urban men have sex with sex workers less than single urban men, but married rural men have sex with DFSWs as often as single rural men. Single men (both urban and rural) use condoms MORE with DFSWs than married men
- There is great variation in risk behavior (sex with DFSWs and condom use with DFSWs) by province.
- Almost half of men first seek care for STD symptoms at pharmacy followed by traditional healer then medical facility

VI. IMPLICATIONS

- Brothels should remain a priority of HIV/AIDS prevention programs
- Special programs should be developed for older married men, especially rural men with low education, such as community based programs and IEC
- Men away from home should be a target for HIV/STD prevention
- Condom use should be promoted with other sexual partners besides DFSWs such as IDFSWs, sweethearts and casual partners.
- STD programs should work to increase the percent of men who seek medical care for STD symptoms.

APPENDIX A:

List of BSS 4 Supervisors and interviewers- 2000

National Supervisor team				
	No.	**Name**	**Responsibility**	**Place of work**
	1	Dr. Heng Sopheab	Team Leader	NCHADS
	2	Dr. Mun Phalkun	Supervisor	NCHADS
	3	Ms. Tep Samnang	Supervisor	NCHADS
	4	Ms. Khoa Chantha	Supervisor	NCHADS
	5	Ms. Seng Sopheata	Supervisor	NCHADS
Provincial coordinators and interviewers				
Sihanouk Ville				
	6	Mr. Kim Sitha	Coordinator	PAO
	7	Mr. Cheam, Mong	Supervisor	PAO
	8	Ms. Chhim Samlot	Supervisor	PAO
	9	Than Khung	Interviewer	PAO
	10	Mr. Chhim Kim Oun	Interviewer	PAO
	11	Mr. Touch Chy	Interviewer	PAO
	12	Mr. Suon Soeun	Interviewer	PAO
	13	Mr. San Borith	Interviewer	PAO
	14	Mr. Un Chanthou	Interviewer	PAO
Battambang	15	Dr. Chum Sopheak	Coordinator	PAO
	16	Mr. Tuon Sophal	Supervisor	PAO
	17	Ms. Kim Sok khy	Supervisor	PAO
	18	Dr. Lay Vithyea	Interviewer	PAO
	19	Mr. Sou Norath	Interviewer	PAO
	20	Mr. Choeun Sovanna	Interviewer	PAO
	21	Mr. Mut Phirum	Interviewer	PAO

	22	Mr. Chan Kunthy	Interviewer	PAO
	23	Mr. Sut Sameth	Interviewer	PAO
Siem Reap	24	Dr. Kros Sarath	Coordinator	PAO
	25	Ms. Pen Sary	Supervisor	PAO
	26	Ms. Ear Sam Ath	Supervisor	PAO
	27	Dr. Nouv Lay	Interviewer	PAO
	28	Dr. Pin Prakath	Interviewer	PAO
	29	Mr. Nuon Ponlork	Interviewer	PAO
	30	Mr. Mak Vanna	Interviewer	PAO
	31	Mr. Bou Sarin	Interviewer	PAO
	32	Mr. Sou Saroeun	Interviewer	PAO
Kampong Cham	33	Dr. Chhun Ly Pech	Coordinator	PAO
	34	Mr. Mom Chandara	Supervisor	PAO
	35	Ms. Chun Sopheap	Supervisor	PAO
	36	Mr. Yung Serey	Interviewer	PAO
	37	Mr. So Mony	Interviewer	PAO
	38	Taing Nouch	Interviewer	PAO
	39	Mr. Sim Khoun	Interviewer	PAO
	40	Mr. Tong Kheang	Interviewer	PAO
	41	Mr. Bany Vuth	Interviewer	PAO
Phnom Penh	42	Mr. Meas Sarun	Coordinator	PAO
	43	Mr. Chan An	Supervisor	PAO
	44	Ms. Sok Phalla	Supervisor	PAO
	45	Mr. Vok Chandyna	Interviewer	PAO
	46	Mr. Phum Phai Rith	Interviewer	PAO
	47	Mr. Krech Sinorn	Interviewer	PAO
	48	Mr. Leng Muor	Interviewer	PAO
	49	Mr. Bou Sarin	Interviewer	PAO
	50	Mr. Kung Chamroeun	Interviewer	PAO

Supported by

Cambodia Disease Control and Health Development Project

WHO

UNICEF

IMPACT/FHI